UNITED STATES
SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

FORM 10-Q

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

For the quarterly period ended June 30, 2023

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 LaSalle Street	**60603**
Chicago, Illinois	**(Zip Code)**
(Address of principal executive offices)	

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

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

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

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

Large accelerated filer	☒	Accelerated filer	☐
Non-accelerated filer	☐	Smaller reporting company	☐
		Emerging growth 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 is a shell company (as defined in Rule 12b-2 of the Exchange Act). Yes ☐ No ☒

At June 30, 2023, 207,004,181 shares of common stock, $1.66 2/3 par value, were outstanding.

NORTHERN TRUST CORPORATION

QUARTERLY REPORT ON FORM 10-Q
FOR THE QUARTERLY PERIOD ENDED JUNE 30, 2023

TABLE OF CONTENTS

CONSOLIDATED FINANCIAL HIGHLIGHTS
(UNAUDITED)

	THREE MONTHS ENDED JUNE 30,			SIX MONTHS ENDED JUNE 30,		
CONDENSED INCOME STATEMENTS ($ In Millions)	**2023**	2022	% CHANGE[1]	**2023**	2022	% CHANGE[1]
Noninterest Income	**$ 1,245.6**	$ 1,310.0	(5)%	**$ 2,459.0**	$ 2,647.7	(7)%
Net Interest Income	**511.5**	458.7	12	**1,042.7**	839.7	24
Total Revenue	**1,757.1**	1,768.7	(1)	**3,501.7**	3,487.4	—
(Release of) Provision for Credit Losses	**(15.5)**	4.5	N/M	**(0.5)**	6.5	N/M
Noninterest Expense	**1,331.9**	1,223.6	9	**2,617.5**	2,429.5	8
Income before Income Taxes	**440.7**	540.6	(18)	**884.7**	1,051.4	(16)
Provision for Income Taxes	**108.9**	144.4	(25)	**218.3**	265.9	(18)
Net Income	**$ 331.8**	$ 396.2	(16)%	**$ 666.4**	$ 785.5	(15)%
PER COMMON SHARE						
Net Income — Basic	**$ 1.56**	$ 1.86	(16)%	**$ 3.07**	$ 3.64	(16)%
— Diluted	**1.56**	1.86	(16)	**3.07**	3.63	(16)
Cash Dividends Declared Per Common Share	**0.75**	0.70	7	**1.50**	1.40	7
Book Value — End of Period (EOP)	**51.94**	48.87	6	**51.94**	48.87	6
Market Price — EOP	**74.14**	96.48	(23)	**74.14**	96.48	(23)

SELECTED BALANCE SHEET DATA ($ In Millions)	JUNE 30, 2023	DECEMBER 31, 2022	% CHANGE[1]
End of Period:			
Total Assets	**$ 156,752.5**	$ 155,036.7	1 %
Earning Assets	**145,042.1**	142,484.7	2
Deposits	**113,203.6**	123,932.1	(9)
Stockholders' Equity	**11,635.7**	11,259.5	3

	THREE MONTHS ENDED JUNE 30,			SIX MONTHS ENDED JUNE 30,		
	2023	2022	% CHANGE[1]	**2023**	2022	% CHANGE[1]
Average Balances:						
Total Assets	**$ 145,899.6**	$ 154,084.1	(5)%	**$ 146,973.8**	$ 158,091.3	(7)%
Earning Assets	**134,116.4**	139,901.5	(4)	**135,031.8**	144,807.8	(7)
Deposits	**105,598.7**	129,393.8	(18)	**108,874.0**	133,921.8	(19)
Stockholders' Equity	**11,448.7**	10,907.0	5	**11,365.5**	11,207.5	1

CLIENT ASSETS ($ In Billions)	JUNE 30, 2023	DECEMBER 31, 2022	% CHANGE[1]
Assets Under Custody/Administration[2]	**$ 14,478.9**	$ 13,604.0	6 %
Assets Under Custody	**11,284.8**	10,604.6	6
Assets Under Management	**1,365.8**	1,249.5	9

N/M - Not meaningful

(1) *Percentage calculations are based on actual balances rather than the rounded amounts presented in the Consolidated Financial Highlights.*

(2) *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 in this amount.*

SELECTED RATIOS AND METRICS

	THREE MONTHS ENDED JUNE 30,		SIX MONTHS ENDED JUNE 30,	
	2023	2022	**2023**	2022
Financial Ratios:				
Return on Average Common Equity	**12.4 %**	15.7 %	**12.4 %**	14.9 %
Return on Average Assets	**0.91**	1.03	**0.91**	1.00
Dividend Payout Ratio	**48.1**	37.6	**48.9**	38.6
Net Interest Margin[(1)]	**1.57**	1.35	**1.60**	1.19

	JUNE 30, 2023		DECEMBER 31, 2022			
	STANDARDIZED APPROACH	ADVANCED APPROACH	STANDARDIZED APPROACH	ADVANCED APPROACH	WELL-CAPITALIZED RATIOS	MINIMUM CAPITAL RATIOS
Capital Ratios:						
Northern Trust Corporation						
Common Equity Tier 1 Capital	**11.3 %**	**13.0 %**	10.8 %	11.5 %	N/A	4.5 %
Tier 1 Capital	**12.3**	**14.1**	11.8	12.5	6.0	6.0
Total Capital	**14.4**	**16.3**	13.9	14.5	10.0	8.0
Tier 1 Leverage	**7.4**	**7.4**	7.1	7.1	N/A	4.0
Supplementary Leverage	**N/A**	**8.3**	N/A	7.9	N/A	3.0
The Northern Trust Company						
Common Equity Tier 1 Capital	**12.1 %**	**14.3 %**	11.6 %	12.4 %	6.5 %	4.5 %
Tier 1 Capital	**12.1**	**14.3**	11.6	12.4	8.0	6.0
Total Capital	**13.9**	**16.2**	13.5	14.2	10.0	8.0
Tier 1 Leverage	**7.4**	**7.4**	6.9	6.9	5.0	4.0
Supplementary Leverage	**N/A**	**8.2**	N/A	7.7	3.0	3.0

(1) *Net interest margin is presented on a fully taxable equivalent (FTE) basis, a non-generally accepted accounting principle (GAAP) financial measure that facilitates the analysis of asset yields. The net interest margin on a GAAP basis and a reconciliation of net interest income on a GAAP basis to net interest income on an FTE basis are presented in "Reconciliation to Fully Taxable Equivalent" within the "Management's Discussion and Analysis of Financial Condition and Results of Operations" section.*

PART I – FINANCIAL INFORMATION

Items 2. and 3. Management's Discussion and Analysis of Financial Condition and Results of Operations and Quantitative and Qualitative Disclosures about Market Risk

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 second quarter of 2023. The following should be read in conjunction with the consolidated financial statements and related footnotes included in this report as well as the Annual Report on Form 10-K for the year ended December 31, 2022. Investors also should read the section entitled "Forward-Looking Statements."

Certain terms used in this report are defined in the Glossary included in our Annual Report on Form 10-K for the year ended December 31, 2022.

SECOND QUARTER CONSOLIDATED RESULTS OF OPERATIONS

General

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: Asset Servicing and Wealth Management. Asset management and related services are provided to Asset Servicing and Wealth Management clients primarily by the Asset Management business. Except where the context requires otherwise, the terms "Northern Trust," "we," "us," "our," "its," or similar terms mean the Corporation and its subsidiaries on a consolidated basis.

Overview of Financial Results

Net Income per diluted common share was $1.56 in the current quarter and $1.86 in the second quarter of 2022. Net Income decreased $64.4 million to $331.8 million in the current quarter from $396.2 million in the prior-year quarter. Annualized return on average common equity was 12.4% in the current quarter and 15.7% in the prior-year quarter. The annualized return on average assets was 0.91% in the current quarter as compared to 1.03% in the prior-year quarter. Reflected in Net Income were impacts from the changes in monetary policy implemented by the Federal Reserve Board to address inflation, which positively impacted Net Interest Income relative to the prior-year quarter. The impacts of a tight labor market are reflected in our Compensation expense. Inflationary pressures were also reflected in higher Equipment and Software expense.

Revenue decreased $11.6 million, or 1%, to $1.76 billion in the current quarter from $1.77 billion in the prior-year quarter.

Trust, Investment and Other Servicing Fees decreased $47.1 million, or 4%, from $1.14 billion in the prior-year quarter to $1.10 billion in the current quarter, primarily due to unfavorable lagged markets, asset outflows, and lower transaction volumes.

Other Noninterest Income decreased $17.3 million, or 10%, from $166.6 million in the prior-year quarter to $149.3 million in the current quarter, primarily reflecting lower Foreign Exchange Trading Income, partially offset by higher Other Operating Income.

Net Interest Income increased $52.8 million, or 12%, to $511.5 million in the current quarter as compared to $458.7 million in the prior-year quarter, primarily due to higher average interest rates, partially offset by lower average earning assets.

There was a $15.5 million release of credit reserves in the current quarter, as compared to a $4.5 million Provision for Credit Losses in the prior-year quarter. The current quarter release of credit reserves was primarily due to a decrease in the reserve evaluated on a collective basis, primarily driven by improved credit quality in certain commercial and institutional and certain commercial real estate (CRE) loans, partially offset by expectations for higher economic stress in the CRE market, particularly office CRE. The reserve evaluated on a collective basis relates to pooled financial assets sharing similar risk characteristics.

Noninterest Expense increased $108.3 million, or 9%, from $1.22 billion in the prior-year quarter to $1.33 billion in the current quarter, primarily attributable to higher Compensation, Equipment and Software, and Other Operating Expense.

The Provision for Income Taxes in the current quarter totaled $108.9 million, representing an effective tax rate of 24.7%. The Provision for Income Taxes in the prior-year quarter totaled $144.4 million, representing an effective tax rate of 26.7%. The effective tax rate decreased compared to the prior-year quarter primarily due to a lower net tax impact from international operations.

Trust, Investment and Other Servicing Fees

Trust, Investment and Other Servicing Fees 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.

Trust, Investment and Other Servicing Fees (continued)

Northern Trust voluntarily waived $2.3 million of money market fund fees for the three months ended June 30, 2023 and $8.6 million of money market fund fees for the three months ended June 30, 2022.

The components of Trust, Investment and Other Servicing Fees are provided below.

TABLE 1: TRUST, INVESTMENT AND OTHER SERVICING FEES

($ In Millions)	THREE MONTHS ENDED JUNE 30, 2023	2022	CHANGE	
Asset Servicing Trust, Investment and Other Servicing Fees				
Custody and Fund Administration	**$ 427.4**	$ 433.8	$ (6.4)	(1)%
Investment Management	**134.1**	148.4	(14.3)	(10)
Securities Lending	**21.5**	21.6	(0.1)	—
Other	**38.2**	38.9	(0.7)	(2)
Total Asset Servicing Trust, Investment and Other Servicing Fees	**$ 621.2**	$ 642.7	$ (21.5)	(3)%
Wealth Management Trust, Investment and Other Servicing Fees				
Central	**$ 166.0**	$ 177.4	$ (11.4)	(6)%
East	**124.1**	128.1	(4.0)	(3)
West	**93.7**	98.7	(5.0)	(5)
Global Family Office	**91.3**	96.5	(5.2)	(5)
Total Wealth Management Trust, Investment and Other Servicing Fees	**$ 475.1**	$ 500.7	$ (25.6)	(5)%
Total Consolidated Trust, Investment and Other Servicing Fees	**$ 1,096.3**	$ 1,143.4	$ (47.1)	(4)%

Asset Servicing

Custody and Fund Administration fees, the largest component of Asset Servicing fees, are driven primarily by values of client assets under custody/administration (AUC/A), transaction volumes and the 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 fee category in Asset Servicing 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 decreased from the prior-year quarter, primarily due to unfavorable lagged markets.

Investment Management fees decreased from the prior-year quarter, primarily due to asset outflows and unfavorable lagged markets.

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. Fee income in the regions (Central, East and West) decreased from the prior-year quarter, primarily due to unfavorable lagged markets and product-related asset outflows. Global Family Office fee income decreased from the prior-year quarter, primarily due to unfavorable lagged markets.

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 2: EQUITY MARKET INDICES

	DAILY AVERAGES THREE MONTHS ENDED JUNE 30, 2023	2022	CHANGE	PERIOD-END AS OF JUNE 30, 2023	2022	CHANGE
S&P 500	**4,205**	4,112	2 %	**4,450**	3,785	18 %
MSCI EAFE (U.S. dollars)	**2,121**	2,001	6	**2,132**	1,846	15
MSCI EAFE (local currency)	**1,337**	1,253	7	**1,357**	1,188	14

Trust, Investment and Other Servicing Fees (continued)

TABLE 3: FIXED INCOME MARKET INDICES

	AS OF JUNE 30,		
	2023	2022	CHANGE
Barclays Capital U.S. Aggregate Bond Index	**2,092**	2,111	(1)%
Barclays Capital Global Aggregate Bond Index	**452**	458	(1)

Client Assets

As noted above, AUC/A and assets under management are two of the primary drivers 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 in this amount. The following table presents AUC/A by reporting segment.

TABLE 4: ASSETS UNDER CUSTODY / ADMINISTRATION BY REPORTING SEGMENT

($ In Billions)	**JUNE 30, 2023**	MARCH 31, 2023	JUNE 30, 2022	CHANGE Q2-23/ Q1-23	CHANGE Q2-23/ Q2-22
Asset Servicing	**$ 13,483.5**	$ 13,221.5	$ 12,812.2	2 %	5 %
Wealth Management	**995.4**	953.3	921.5	4	8
Total Assets Under Custody / Administration	**$ 14,478.9**	$ 14,174.8	$ 13,733.7	2 %	5 %

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

TABLE 5: ASSETS UNDER CUSTODY BY REPORTING SEGMENT

($ In Billions)	**JUNE 30, 2023**	MARCH 31, 2023	JUNE 30, 2022	CHANGE Q2-23/ Q1-23	CHANGE Q2-23/ Q2-22
Asset Servicing	**$ 10,295.7**	$ 10,065.6	$ 9,771.2	2 %	5 %
Wealth Management	**989.1**	947.6	913.0	4	8
Total Assets Under Custody	**$ 11,284.8**	$ 11,013.2	$ 10,684.2	2 %	6 %

Consolidated assets under custody increased from the prior quarter and from the prior-year quarter, primarily reflecting favorable markets and favorable currency translation, partially offset by asset outflows.

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

TABLE 6: ALLOCATION OF ASSETS UNDER CUSTODY

	JUNE 30, 2023			MARCH 31, 2023			JUNE 30, 2022		
	AS	**WM**	**TOTAL**	AS	WM	TOTAL	AS	WM	TOTAL
Equities	**46 %**	**60 %**	**47 %**	45 %	58 %	46 %	44 %	56 %	45 %
Fixed Income Securities	**33**	**13**	**31**	33	14	32	35	15	33
Cash and Other Assets	**19**	**27**	**21**	20	28	20	19	29	20
Securities Lending Collateral	**2**	**—**	**1**	2	—	2	2	—	2

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

TABLE 7: ASSETS UNDER CUSTODY BY INVESTMENT TYPE

($ In Billions)	**JUNE 30, 2023**	MARCH 31, 2023	JUNE 30, 2022	CHANGE Q2-23/Q1-23	CHANGE Q2-23/Q2-22
Equities	**$ 5,328.7**	$ 5,091.1	$ 4,785.5	5 %	11 %
Fixed Income Securities	**3,524.7**	3,501.4	3,513.8	1	—
Cash and Other Assets	**2,262.6**	2,252.8	2,215.6	—	2
Securities Lending Collateral	**168.8**	167.9	169.3	1	—
Total Assets Under Custody	**$ 11,284.8**	$ 11,013.2	$ 10,684.2	2 %	6 %

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

TABLE 8: ASSETS UNDER MANAGEMENT BY REPORTING SEGMENT

($ In Billions)	**JUNE 30, 2023**	MARCH 31, 2023	JUNE 30, 2022	CHANGE Q2-23/Q1-23	CHANGE Q2-23/Q2-22
Asset Servicing	**$ 989.8**	$ 962.1	$ 950.0	3 %	4 %
Wealth Management	**376.0**	368.3	352.8	2	7
Total Assets Under Management	**$ 1,365.8**	$ 1,330.4	$ 1,302.8	3 %	5 %

Trust, Investment and Other Servicing Fees (continued)

Consolidated assets under management increased compared to the prior quarter, primarily reflecting the impact of favorable markets and net inflows, partially offset by unfavorable currency translation. Consolidated assets under management increased compared to the prior-year quarter, primarily reflecting the impact of favorable markets, partially offset by product-related outflows.

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

TABLE 9: ALLOCATION OF ASSETS UNDER MANAGEMENT

	JUNE 30, 2023			MARCH 31, 2023			JUNE 30, 2022		
	AS	**WM**	**TOTAL**	AS	WM	TOTAL	AS	WM	TOTAL
Equities	**54 %**	**55 %**	**54 %**	54 %	53 %	54 %	50 %	52 %	51 %
Fixed Income Securities	**11**	**21**	**14**	11	22	14	12	23	15
Cash and Other Assets	**18**	**24**	**20**	18	25	19	20	25	21
Securities Lending Collateral	**17**	**—**	**12**	17	—	13	18	—	13

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

TABLE 10: ASSETS UNDER MANAGEMENT BY INVESTMENT TYPE

($ In Billions)	**JUNE 30, 2023**	MARCH 31, 2023	JUNE 30, 2022	CHANGE Q2-23/Q1-23	CHANGE Q2-23/Q2-22
Equities	**$ 740.5**	$ 712.1	$ 664.1	4 %	12 %
Fixed Income Securities	**188.7**	187.6	194.9	1	(3)
Cash and Other Assets	**267.8**	262.8	274.5	2	(2)
Securities Lending Collateral	**168.8**	167.9	169.3	1	—
Total Assets Under Management	**$ 1,365.8**	$ 1,330.4	$ 1,302.8	3 %	5 %

The following table presents activity in consolidated assets under management by product.

TABLE 11: ACTIVITY IN CONSOLIDATED ASSETS UNDER MANAGEMENT BY PRODUCT

	THREE MONTHS ENDED				
($ In Billions)	**JUNE 30, 2023**	MARCH 31, 2023	DECEMBER 31, 2022	SEPTEMBER 30, 2022	JUNE 30, 2022
Beginning Balance of AUM	**$ 1,330.4**	$ 1,249.5	$ 1,209.9	$ 1,302.8	$ 1,487.8
Inflows by Product					
Equities	**44.8**	52.1	37.7	39.5	51.4
Fixed Income	**11.2**	14.4	11.6	12.3	11.8
Cash and Other Assets	**551.3**	276.7	121.9	128.9	186.5
Securities Lending Collateral	**53.4**	66.3	48.2	55.3	61.6
Total Inflows	**660.7**	409.5	219.4	236.0	311.3
Outflows by Product					
Equities	**(54.7)**	(59.2)	(42.8)	(56.5)	(60.6)
Fixed Income	**(10.2)**	(16.6)	(12.7)	(12.4)	(14.8)
Cash and Other Assets	**(529.7)**	(264.0)	(128.5)	(152.2)	(220.3)
Securities Lending Collateral	**(52.5)**	(46.7)	(62.0)	(62.5)	(69.5)
Total Outflows	**(647.1)**	(386.5)	(246.0)	(283.6)	(365.2)
Net Inflows (Outflows)	**13.6**	23.0	(26.6)	(47.6)	(53.9)
Market Performance, Currency & Other					
Market Performance & Other	**27.7**	52.4	55.9	(35.1)	(118.5)
Currency	**(5.9)**	5.5	10.3	(10.2)	(12.6)
Total Market Performance, Currency & Other	**21.8**	57.9	66.2	(45.3)	(131.1)
Ending Balance of AUM	**$ 1,365.8**	$ 1,330.4	$ 1,249.5	$ 1,209.9	$ 1,302.8

Other Noninterest Income

The components of Other Noninterest Income are provided below.

TABLE 12: OTHER NONINTEREST INCOME

	THREE MONTHS ENDED JUNE 30,			
($ In Millions)	**2023**	2022	CHANGE	
Foreign Exchange Trading Income	**$ 50.1**	$ 77.6	$ (27.5)	(35)%
Treasury Management Fees	**7.9**	10.6	(2.7)	(24)
Security Commissions and Trading Income	**36.1**	32.8	3.3	10
Other Operating Income	**55.2**	45.6	9.6	21
Investment Security Gains (Losses), net	**—**	—	—	N/M
Total Other Noninterest Income	**$ 149.3**	$ 166.6	$ (17.3)	(10)%

N/M - Not meaningful

Foreign Exchange Trading Income decreased compared to the prior-year quarter primarily driven by lower client volumes and an unfavorable impact from foreign exchange swap activity.

Security Commissions and Trading Income increased primarily due to higher bond underwriting referral fees.

Other Operating Income increased compared to the prior-year quarter, primarily driven by higher income associated with a market value increase in supplemental compensation plans, higher non-trading foreign exchange income, and banking and credit-related services fees, partially offset by higher expenses related to existing swap agreements related to Visa Inc. Class B common shares. Please refer to Note 15—Other Operating Income to the consolidated financial statements provided in Item 1. Consolidated Financial Statements (unaudited) for further detail.

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, Securities, Loans, and Other Interest-Earning Assets—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 are also 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 a fully taxable equivalent (FTE) basis is a non-generally accepted accounting principle (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 in "Reconciliation to Fully Taxable Equivalent" within this MD&A.

SECOND QUARTER CONSOLIDATED RESULTS OF OPERATIONS (continued)

Net Interest Income (continued)

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 13: AVERAGE CONSOLIDATED BALANCE SHEETS WITH ANALYSIS OF NET INTEREST INCOME

(INTEREST AND RATE ON A FULLY TAXABLE EQUIVALENT BASIS)	SECOND QUARTER					
	2023			2022		
($ In Millions)	INTEREST	AVERAGE BALANCE	AVERAGE RATE[7]	INTEREST	AVERAGE BALANCE	AVERAGE RATE[7]
Interest-Earning Assets						
Federal Reserve and Other Central Bank Deposits	**$ 398.9**	**$ 34,380.4**	**4.65 %**	$ 59.2	$ 36,691.1	0.65 %
Interest-Bearing Due from and Deposits with Banks[1]	**32.1**	**4,573.4**	**2.82**	6.5	4,227.6	0.62
Federal Funds Sold	**0.1**	**2.9**	**5.25**	—	2.2	0.75
Securities Purchased under Agreements to Resell[2]	**284.3**	**1,238.6**	**92.09**	7.0	1,149.3	2.47
Debt Securities						
Available for Sale	**254.7**	**24,511.8**	**4.17**	138.1	35,676.6	1.55
Held to Maturity	**112.5**	**25,053.3**	**1.80**	56.2	20,244.3	1.11
Trading Account	**—**	**0.2**	**42.53**	—	0.4	5.40
Total Debt Securities	**367.2**	**49,565.3**	**2.97**	194.3	55,921.3	1.39
Loans and Leases[3]	**640.5**	**42,365.4**	**6.06**	257.1	40,747.0	2.53
Other Interest-Earning Assets[4]	**25.0**	**1,990.4**	**5.04**	11.8	1,163.0	4.07
Total Interest-Earning Assets	**1,748.1**	**134,116.4**	**5.23**	535.9	139,901.5	1.54
Cash and Due from Banks and Other Central Bank Deposits[5]	**—**	**1,842.5**	**—**	—	2,559.1	—
Other Noninterest-Earning Assets	**—**	**9,940.7**	**—**	—	11,623.5	—
Total Assets	**$ —**	**$ 145,899.6**	**— %**	$ —	$ 154,084.1	— %
Average Source of Funds						
Deposits						
Savings, Money Market and Other	**$ 152.8**	**$ 22,961.2**	**2.67 %**	$ 18.7	$ 30,967.5	0.24 %
Savings Certificates and Other Time	**32.0**	**3,036.1**	**4.23**	1.1	792.3	0.58
Non-U.S. Offices — Interest-Bearing	**448.7**	**62,046.3**	**2.90**	3.4	63,900.7	0.02
Total Interest-Bearing Deposits	**633.5**	**88,043.6**	**2.89**	23.2	95,660.5	0.10
Federal Funds Purchased	**87.6**	**7,070.0**	**4.97**	2.8	922.8	1.22
Securities Sold under Agreements to Repurchase[2]	**273.4**	**467.8**	**234.39**	6.0	596.7	4.01
Other Borrowings[6]	**156.5**	**12,132.6**	**5.17**	8.4	4,186.7	0.80
Senior Notes	**42.1**	**2,761.1**	**6.14**	18.9	2,885.1	2.65
Long-Term Debt	**30.4**	**2,069.7**	**5.89**	6.8	1,096.4	2.47
Total Interest-Related Funds	**1,223.5**	**112,544.8**	**4.36**	66.1	105,348.2	0.25
Interest Rate Spread	**—**	**—**	**0.87**	—	—	1.29
Demand and Other Noninterest-Bearing Deposits	**—**	**17,555.1**	**—**	—	33,733.3	—
Other Noninterest-Bearing Liabilities	**—**	**4,351.0**	**—**	—	4,095.6	—
Stockholders' Equity	**—**	**11,448.7**	**—**	—	10,907.0	—
Total Liabilities and Stockholders' Equity	**$ —**	**$ 145,899.6**	**— %**	$ —	$ 154,084.1	— %
Net Interest Income/Margin (FTE Adjusted)	**$ 524.6**	**$ —**	**1.57 %**	$ 469.8	$ —	1.35 %
Net Interest Income/Margin (Unadjusted)	**$ 511.5**	**$ —**	**1.53 %**	$ 458.7	$ —	1.31 %

(1) 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.

(2) Includes the impact of balance sheet netting under master netting arrangements of approximately $21.3 billion and $2.8 billion for the three months ended June 30, 2023 and 2022, respectively. Excluding the impact of netting for the three months ended June 30, 2023 and 2022, the average interest rate on Securities Purchased under Agreements to Resell would be approximately 5.06% and 0.72%, respectively. Excluding the impact of netting for the three months ended June 30, 2023 and 2022, the average interest rate on Securities Sold under Agreements to Repurchase would be approximately 5.04% and 0.70%, respectively. Northern Trust nets securities sold under repurchase agreements against those purchased under resale agreements when there is a legally enforceable master netting agreement.

(3) Average balances include nonaccrual loans.

(4) Other Interest-Earning Assets include certain community development investments, collateral deposits with certain securities depositories and clearing houses, Federal Home Loan Bank and Federal Reserve stock, and money market investments which are classified in Other Assets on the consolidated balance sheets.

(5) 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.

(6) Other Borrowings primarily includes advances from the Federal Home Loan Bank of Chicago.

(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.

Net Interest Income (continued)

TABLE 14: ANALYSIS OF NET INTEREST INCOME CHANGES DUE TO VOLUME AND RATE[1]

(INTEREST AND RATE ON A FULLY TAXABLE EQUIVALENT BASIS) (In Millions)	THREE MONTHS ENDED JUNE 30, 2023/2022 CHANGE DUE TO AVERAGE BALANCE	AVERAGE RATE	NET (DECREASE) INCREASE
Increase (Decrease) in Net Interest Income (FTE)			
Federal Reserve and Other Central Bank Deposits	$ (3.9)	$ 343.6	$ 339.7
Interest-Bearing Due from and Deposits with Banks	0.5	25.1	25.6
Federal Funds Sold	—	0.1	0.1
Securities Purchased under Agreements to Resell	0.6	276.7	277.3
Debt Securities			
Available for Sale	(64.8)	181.4	116.6
Held to Maturity	15.6	40.7	56.3
Trading Account	—	—	—
Total Debt Securities	(49.2)	222.1	172.9
Loans and Leases	10.6	372.8	383.4
Other Interest-Earning Assets	9.9	3.3	13.2
Total Interest Income	$ (31.5)	$ 1,243.7	$ 1,212.2
Interest-Bearing Deposits			
Savings, Money Market and Other	$ (38.9)	$ 173.0	$ 134.1
Savings Certificates and Other Time	9.5	21.4	30.9
Non-U.S. Offices - Interest-Bearing	(0.1)	445.4	445.3
Total Interest-Bearing Deposits	(29.5)	639.8	610.3
Federal Funds Purchased	58.0	26.8	84.8
Securities Sold under Agreements to Repurchase	(1.6)	269.0	267.4
Other Borrowings	38.3	109.8	148.1
Senior Notes	(0.8)	24.0	23.2
Long-Term Debt	9.3	14.3	23.6
Total Interest Expense	$ 73.7	$ 1,083.7	$ 1,157.4
Increase (Decrease) in Net Interest Income (FTE)	$ (105.2)	$ 160.0	$ 54.8

[1] *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.*

Notes: *Net Interest Income (FTE), a non-GAAP financial measure, includes adjustments to a fully taxable equivalent basis for loans, securities and other interest-earning assets. 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 $13.1 million and $11.1 million for the three months ended June 30, 2023 and 2022, respectively. 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 in "Reconciliation to Fully Taxable Equivalent" within this MD&A. 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.

Net Interest Income, stated on a FTE basis, increased from the prior-year quarter, primarily due to higher average interest rates, partially offset by lower average earning assets. Average earning assets decreased from the prior-year quarter, primarily due to lower client deposits, partially offset by increased short-term borrowing activity.

The net interest margin on an FTE basis increased from the prior-year quarter, primarily due to higher average interest rates, partially offset by an unfavorable balance sheet mix shift.

Federal Reserve and Other Central Bank Deposits averaged $34.4 billion and decreased $2.3 billion, or 6%, from $36.7 billion in the prior-year quarter. Interest-Bearing Due from and Deposits with Banks averaged $4.6 billion and increased $0.4 billion, or 8%, from $4.2 billion in the prior-year quarter. Average Securities were $49.6 billion and decreased $6.3 billion, or 11%, from $55.9 billion in the prior-year quarter. Average Other Interest-Earning Assets include certain community development investments, Federal Home Loan Bank stock, collateral deposits with certain securities depositories and clearing houses, money market investments, and Federal Reserve stock of $902.5 million, $398.5 million, $355.2 million, $90.8 million, and $70.0 million, respectively, which are recorded in Other Assets on the consolidated balance sheets. Average taxable Securities were $46.7 billion in the current quarter and $53.2 billion in the prior-year quarter. Average nontaxable Securities, which represent securities that are primarily exempt from U.S. federal and state income taxes, were $2.9 billion in the current quarter and $2.7 billion in the prior-year quarter.

Net Interest Income (continued)

Loans and Leases averaged $42.4 billion and increased $1.7 billion, or 4%, from $40.7 billion in the prior-year quarter, primarily reflecting higher levels of commercial and institutional, commercial real estate, and residential real estate loans, partially offset by lower levels of non-U.S. and private client loans. Commercial and institutional loans averaged $12.9 billion and increased $670.2 million, or 5%, from $12.3 billion for the prior-year quarter. Commercial real estate loans averaged $4.9 billion and increased $620.5 million, or 14%, from $4.3 billion for the prior-year quarter. Residential real estate loans averaged $6.4 billion and increased $36.8 million, or 1%, from $6.3 billion for the prior-year quarter. Non-U.S. loans averaged $3.4 billion and decreased $475.1 million or 12%, from $3.8 billion for the prior-year quarter. Private client loans averaged $13.8 billion and decreased $61.8 million from $13.9 billion for the prior-year quarter.

Northern Trust utilizes a diverse mix of funding sources. Average Interest-Bearing Deposits decreased $7.7 billion, or 8%, to an average of $88.0 billion in the current quarter from $95.7 billion in the prior-year quarter. Other Average Interest-Related Funds increased $14.8 billion, or 153%, to an average of $24.5 billion in the current quarter from $9.7 billion in the prior-year quarter. 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.

Interest expense for Interest-Bearing Deposits in the current quarter was driven by higher interest rates. Average Non-U.S. Offices Interest-Bearing Deposits comprised 70% and 67% of total average Interest-Bearing Deposits for the three months ended June 30, 2023 and 2022, respectively.

Provision for Credit Losses

There was a $15.5 million release of credit reserves in the current quarter, as compared to a $4.5 million Provision for Credit Losses in the prior-year quarter. The release of credit reserves in the current quarter was primarily due to a decrease in the reserve evaluated on a collective basis, primarily driven by improved credit quality in certain commercial and institutional and certain CRE loans, partially offset by expectations for higher economic stress in the CRE market, particularly office CRE. The reserve evaluated on a collective basis relates to pooled financial assets sharing similar risk characteristics.

The Provision for Credit Losses in the prior-year quarter was primarily due to an increase in the reserve evaluated on a collective basis, partially offset by recoveries in the prior-year quarter. The increase in the collective basis reserve was primarily driven by market conditions and a higher risk of recession at the time as compared to the previous period, partially offset by improvements in credit quality mainly within the CRE and commercial and institutional portfolios.

Net charge-offs in the current quarter were de minimis, reflecting $0.8 million of recoveries and $0.8 million of charge-offs. The prior-year quarter included $5.5 million of net recoveries, reflecting $5.5 million of recoveries and de minimis charge-offs. Nonaccrual assets of $47.4 million decreased $42.4 million, or 47%, from $89.8 million at the end of the prior-year quarter.

For additional discussion of the allowance for credit losses, refer to the “Asset Quality” section in this MD&A.

Noninterest Expense

The components of Noninterest Expense are provided in the following table.

TABLE 15: NONINTEREST EXPENSE

	THREE MONTHS ENDED JUNE 30,			
($ In Millions)	**2023**	2022	CHANGE	
Compensation	**$ 604.5**	$ 546.5	$ 58.0	11 %
Employee Benefits	**101.4**	119.6	(18.2)	(15)
Outside Services	**230.9**	213.1	17.8	8
Equipment and Software	**229.3**	203.5	25.8	13
Occupancy	**53.8**	51.0	2.8	6
Other Operating Expense	**112.0**	89.9	22.1	25
Total Noninterest Expense	**$ 1,331.9**	$ 1,223.6	$ 108.3	9 %

Compensation expense, the largest component of Noninterest Expense, increased compared to the prior-year quarter, primarily due to $36.7 million of severance-related charges and higher salaries, partially offset by lower incentives.

Employee Benefits expense decreased compared to the prior-year quarter primarily due to a U.S. Qualified Plan pension settlement charge of $20.3 million in the prior-year quarter.

Outside Services expense increased compared to the prior-year quarter primarily due to higher technical services.

Equipment and Software expense increased compared to the prior-year quarter, primarily due to higher amortization as well as higher software costs driven by continued technology investments.

Noninterest Expense (continued)

Other Operating Expense increased compared to the prior-year quarter primarily due to a $25.6 million charge related to the write-off of an investment in a client capability.

Provision for Income Taxes

Income tax expense for the three months ended June 30, 2023 was $108.9 million, representing an effective tax rate of 24.7%, compared to $144.4 million in the prior-year quarter, representing an effective tax rate of 26.7%.

The effective tax rate decreased compared to the prior-year quarter primarily due to a lower net tax impact from international operations.

SIX-MONTH CONSOLIDATED RESULTS OF OPERATIONS

Overview of Financial Results

Net Income per diluted common share decreased in the current period to $3.07 from $3.63 in the comparable prior-year period. Net Income decreased $119.1 million, or 15%, to $666.4 million in the current period from $785.5 million in the prior-year period. Annualized return on average common equity was 12.4% in the current period and 14.9% in the prior-year period. The annualized return on average assets was 0.91% in the current period compared to 1.00% in the prior-year period.

Revenue for the six months ended June 30, 2023 increased $14.3 million from $3.49 billion in the prior-year period to $3.50 billion in the current period.

Trust, Investment and Other Servicing Fees decreased $151.9 million, or 7%, from $2.31 billion in the prior-year period to $2.16 billion in the current period, primarily driven by unfavorable lagged markets, asset outflows, and unfavorable currency translation, partially offset by lower money market fund fee waivers.

Other Noninterest Income decreased $36.8 million, or 11% from $335.9 million in the prior-year period to $299.1 million in the current period, primarily driven by lower Foreign Exchange Trading Income, partially offset by higher Other Operating Income.

Net Interest Income increased $203.0 million, or 24%, to $1.04 billion in the current period from $839.7 million in the prior-year period, primarily due to higher average interest rates, partially offset by lower average earning assets.

There was a $0.5 million release of credit reserves in the current period, as compared to a $6.5 million Provision for Credit Losses in the prior-year period. The release of credit reserves was primarily due to a decrease in the collective basis reserve, driven by improvements in credit quality within the commercial and institutional portfolio, partially offset by growth in the size and duration of the CRE portfolio and expectations of higher economic stress in the CRE market, particularly office CRE. The reserve evaluated on a collective basis relates to pooled financial assets sharing similar risk characteristics.

Noninterest Expense increased $188.0 million, or 8%, from $2.43 billion in the prior-year period to $2.62 billion in the current period, primarily attributable to higher Compensation and Equipment and Software expense.

The Provision for Income Taxes for the six months ended June 30, 2023 totaled $218.3 million, representing an effective tax rate of 24.7%. The Provision for Income Taxes for the six months ended June 30, 2022 totaled $265.9 million, representing an effective tax rate of 25.3%. The effective tax rate decreased compared to the prior-year period primarily due to a decrease in pretax earnings and a higher level of tax benefits from tax-credit investments and tax-exempt income, partially offset by lower tax benefits from share-based compensation.

Trust, Investment and Other Servicing Fees

Northern Trust voluntarily waived $4.3 million of money market fund fees for the six months ended June 30, 2023 as compared to $59.3 million for the six months ended June 30, 2022.

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

TABLE 16: TRUST, INVESTMENT AND OTHER SERVICING FEES

	SIX MONTHS ENDED JUNE 30,			
($ In Millions)	**2023**	2022	CHANGE	
Asset Servicing Trust, Investment and Other Servicing Fees				
Custody and Fund Administration	**$ 841.0**	$ 886.5	$ (45.5)	(5)%
Investment Management	**260.3**	295.3	(35.0)	(12)
Securities Lending	**40.6**	40.4	0.2	1
Other	**82.3**	82.9	(0.6)	(1)
Total Asset Servicing Trust, Investment and Other Servicing Fees	**$ 1,224.2**	$ 1,305.1	$ (80.9)	(6)%
Wealth Management Trust, Investment and Other Servicing Fees				
Central	**$ 329.6**	$ 359.1	$ (29.5)	(8)%
East	**243.9**	262.1	(18.2)	(7)
West	**184.9**	200.1	(15.2)	(8)
Global Family Office	**177.3**	185.4	(8.1)	(4)
Total Wealth Management Trust, Investment and Other Servicing Fees	**$ 935.7**	$ 1,006.7	$ (71.0)	(7)%
Total Consolidated Trust, Investment and Other Servicing Fees	**$ 2,159.9**	$ 2,311.8	$ (151.9)	(7)%

Asset Servicing

Custody and Fund Administration fees, the largest component of Asset Servicing fees, decreased primarily driven by unfavorable lagged markets. Investment Management fees decreased primarily due to asset outflows and unfavorable lagged markets, partially offset by lower money market fund fee waivers.

Wealth Management

Fee income in the regions (Central, East and West) decreased primarily due to unfavorable lagged markets and product-related asset outflows, partially offset by lower money market fund fee waivers. Global Family Office fee income decreased primarily due to unfavorable lagged markets, partially offset by lower money market fund fee waivers.

Other Noninterest Income

The components of other noninterest income are provided in the following table.

TABLE 17: OTHER NONINTEREST INCOME

	SIX MONTHS ENDED JUNE 30,			
($ In Millions)	**2023**	2022	CHANGE	
Foreign Exchange Trading Income	**$ 103.1**	$ 158.5	$ (55.4)	(35)%
Treasury Management Fees	**16.3**	21.7	(5.4)	(25)
Security Commissions and Trading Income	**70.8**	69.0	1.8	3
Other Operating Income	**102.0**	86.7	15.3	18
Investment Security Gains (Losses), net	**6.9**	—	6.9	N/M
Total Other Noninterest Income	**$ 299.1**	$ 335.9	$ (36.8)	(11)%

N/M - Not meaningful

Foreign Exchange Trading Income decreased from the prior-year period, primarily due to lower client volumes and an unfavorable impact from foreign exchange swap activity.

Treasury Management Fees decreased from the prior-year period, primarily due to an increase in the earnings credit rate applied to client balances.

Other Operating Income increased from the prior-year period, primarily driven by higher income associated with a market value increase in supplemental compensation plans, increased income related to a bank-owned life insurance program, higher non-trading foreign exchange income, and increased income from banking and credit-related services fees, partially offset by higher expenses related to existing swap agreements related to Visa Inc. Class B common shares. Please refer to Note 15—Other Operating Income to the consolidated financial statements provided in Item 1. Consolidated Financial Statements (unaudited) for further detail.

Investment Security Gains (Losses), net included a $6.9 million gain upon sale of certain available for sale debt securities in the current-year period. Please refer to Note 4—Securities to the consolidated financial statements provided in Item 1. Consolidated Financial Statements (unaudited) for additional details related to the sale of available for sale debt securities.

SIX-MONTH CONSOLIDATED RESULTS OF OPERATIONS (continued)

Net Interest Income

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

TABLE 18: AVERAGE CONSOLIDATED BALANCE SHEETS WITH ANALYSIS OF NET INTEREST INCOME

(INTEREST AND RATE ON A FULLY TAXABLE EQUIVALENT BASIS)	SIX MONTHS ENDED JUNE 30,					
	2023			2022		
($ In Millions)	INTEREST	AVERAGE BALANCE	AVERAGE RATE[7]	INTEREST	AVERAGE BALANCE	AVERAGE RATE[7]
Interest-Earning Assets						
Federal Reserve and Other Central Bank Deposits	**$ 775.9**	**$ 35,504.9**	**4.41 %**	$ 76.8	$ 40,921.8	0.38 %
Interest-Bearing Due from and Deposits with Banks[1]	**60.3**	**4,387.1**	**2.77**	9.1	4,305.4	0.43
Federal Funds Sold	**0.3**	**11.2**	**4.85**	—	1.5	0.67
Securities Purchased under Agreements to Resell[2]	**410.2**	**1,142.9**	**72.38**	7.9	921.7	1.74
Debt Securities						
Available for Sale	**489.4**	**24,769.8**	**3.98**	258.6	36,581.4	1.43
Held to Maturity	**216.3**	**25,216.8**	**1.72**	105.5	20,773.3	1.02
Trading Account	**—**	**0.7**	**12.45**	—	0.6	8.59
Total Debt Securities	**705.7**	**49,987.3**	**2.85**	364.1	57,355.3	1.28
Loans and Leases[3]	**1,220.0**	**42,163.5**	**5.83**	448.8	40,149.0	2.25
Other Interest-Earning Assets[4]	**44.3**	**1,834.9**	**4.87**	19.4	1,153.1	3.39
Total Interest-Earning Assets	**3,216.7**	**135,031.8**	**4.80**	926.1	144,807.8	1.29
Cash and Due from Banks and Other Central Bank Deposits[5]	**—**	**1,819.3**	**—**	—	2,304.4	—
Other Noninterest-Earning Assets	**—**	**10,122.7**	**—**	—	10,979.1	—
Total Assets	**$ —**	**$ 146,973.8**	**— %**	$ —	$ 158,091.3	— %
Average Source of Funds						
Deposits						
Savings, Money Market and Other	**$ 310.8**	**$ 25,103.0**	**2.50 %**	$ 22.0	$ 31,644.6	0.14 %
Savings Certificates and Other Time	**53.6**	**2,700.0**	**4.00**	2.2	817.1	0.54
Non-U.S. Offices — Interest-Bearing	**833.7**	**62,227.7**	**2.70**	(16.9)	66,038.3	(0.05)
Total Interest-Bearing Deposits	**1,198.1**	**90,030.7**	**2.68**	7.3	98,500.0	0.01
Federal Funds Purchased	**127.7**	**5,371.4**	**4.79**	2.8	464.0	1.22
Securities Sold under Agreements to Repurchase[2]	**389.5**	**407.8**	**192.58**	6.3	426.1	2.97
Other Borrowings[6]	**291.5**	**11,730.6**	**5.01**	11.5	3,940.2	0.59
Senior Notes	**81.3**	**2,754.6**	**5.97**	28.5	2,664.9	2.17
Long-Term Debt	**59.6**	**2,068.0**	**5.81**	12.2	1,112.3	2.20
Total Interest-Related Funds	**2,147.7**	**112,363.1**	**3.85**	68.6	107,107.5	0.13
Interest Rate Spread	**—**	**—**	**0.95**	—	—	1.16
Demand and Other Noninterest-Bearing Deposits	**—**	**18,843.3**	**—**	—	35,421.8	—
Other Noninterest-Bearing Liabilities	**—**	**4,401.9**	**—**	—	4,354.5	—
Stockholders' Equity	**—**	**11,365.5**	**—**	—	11,207.5	—
Total Liabilities and Stockholders' Equity	**$ —**	**$ 146,973.8**	**— %**	$ —	$ 158,091.3	— %
Net Interest Income/Margin (FTE Adjusted)	**$ 1,069.0**	**$ —**	**1.60 %**	$ 857.5	$ —	1.19 %
Net Interest Income/Margin (Unadjusted)	**$ 1,042.7**	**$ —**	**1.56 %**	$ 839.7	$ —	1.17 %

(1) *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.*
(2) *Includes the impact of balance sheet netting under master netting arrangements of approximately $15.7 billion and $2.0 billion for the six months ended June 30, 2023 and 2022, respectively. Excluding the impact of netting for the six months ended June 30, 2023 and 2022, the average interest rate on Securities Purchased under Agreements to Resell would be approximately 4.92% and 0.55%, respectively. Excluding the impact of netting for the six months ended June 30, 2023 and 2022, the average interest rate on Securities Sold under Agreements to Repurchase would be approximately 4.88% and 0.53%, respectively. Northern Trust nets securities sold under repurchase agreements against those purchased under resale agreements when there is a legally enforceable master netting agreement.*
(3) *Average balances include nonaccrual loans.*
(4) *Other Interest-Earning Assets include certain community development investments, collateral deposits with certain securities depositories and clearing houses, Federal Home Loan Bank and Federal Reserve stock, and money market investments which are classified in Other Assets on the consolidated balance sheets.*
(5) *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.*
(6) *Other Borrowings primarily includes advances from the Federal Home Loan Bank of Chicago.*
(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.*

SIX-MONTH CONSOLIDATED RESULTS OF OPERATIONS (continued)

Net Interest Income (continued)

TABLE 19: ANALYSIS OF NET INTEREST INCOME CHANGES DUE TO VOLUME AND RATE[1]

(INTEREST AND RATE ON A FULLY TAXABLE EQUIVALENT BASIS)	SIX MONTHS ENDED JUNE 30, 2023/2022		
	CHANGE DUE TO		
(In Millions)	AVERAGE BALANCE	AVERAGE RATE	NET (DECREASE) INCREASE
Increase (Decrease) in Net Interest Income (FTE)			
Federal Reserve and Other Central Bank Deposits	$ (55.8)	$ 754.9	$ 699.1
Interest-Bearing Due from and Deposits with Banks	0.2	51.0	51.2
Federal Funds Sold	—	0.3	0.3
Securities Purchased under Agreements to Resell	2.4	399.9	402.3
Debt Securities			
Available For Sale	(80.9)	311.7	230.8
Held To Maturity	26.5	84.3	110.8
Trading Account	—	—	—
Total Debt Securities	(54.4)	396.0	341.6
Loans and Leases	19.3	751.9	771.2
Other Interest-Earning Assets	14.4	10.5	24.9
Total Interest Income	$ (73.9)	$ 2,364.5	$ 2,290.6
Interest-Bearing Deposits			
Savings, Money Market and Other	$ (10.4)	$ 299.2	$ 288.8
Savings Certificates and Other Time	8.5	42.9	51.4
Non-U.S. Offices - Interest-Bearing	(6.0)	856.6	850.6
Total Interest-Bearing Deposits	(7.9)	1,198.7	1,190.8
Federal Funds Purchased	97.8	27.1	124.9
Securities Sold under Agreements to Repurchase	(0.3)	383.5	383.2
Other Borrowings	58.5	221.5	280.0
Senior Notes	1.0	51.8	52.8
Long-Term Debt	16.3	31.1	47.4
Total Interest Expense	$ 165.4	$ 1,913.7	$ 2,079.1
(Decrease) Increase in Net Interest Income (FTE)	$ (239.3)	$ 450.8	$ 211.5

[1] *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.*

Notes: *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 $26.3 million and $17.8 million for the six months ended June 30, 2023 and 2022, respectively. 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 in "Reconciliation to Fully Taxable Equivalent" within this MD&A. 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 within Interest-Bearing Due from and Deposits with Banks and within Loans and Leases. Interest expense on cash collateral positions is reported above within 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 within Other Assets and Other Liabilities, respectively.

Net Interest Income, stated on an FTE basis, increased from the prior-year period, primarily due to higher average interest rates, partially offset by lower average earning assets. Average earning assets decreased from the prior-year period, primarily due to lower client deposits, partially offset by increased short-term borrowing activity.

The net interest margin on an FTE basis increased from the prior-year period, primarily due to higher average interest rates, partially offset by unfavorable balance sheet mix shift.

Federal Reserve and Other Central Bank Deposits averaged $35.5 billion and decreased $5.4 billion, or 13%, from $40.9 billion in the prior-year period. Average Securities were $50.0 billion and decreased $7.4 billion, or 13%, from $57.4 billion in the prior-year period and include certain community development investments, Federal Home Loan Bank stock, collateral deposits with certain securities depositories and clearing houses, money market investments, and Federal Reserve stock of $901.9 million, $375.9 million, $266.6 million, $76.6 million and $70.0 million, respectively, which are recorded in Other Assets on the consolidated balance sheets. Average taxable Securities were $47.0 billion in the current period and $54.8 billion in the prior-year period. Average nontaxable Securities, which represent securities that are primarily exempt from U.S. federal and state income taxes, were $3.0 billion in the current period and $2.6 billion in the prior-year period. Interest-Bearing Due from and Deposits with Banks averaged $4.4 billion in the current period and $4.3 billion in the prior-year period.

Loans and leases averaged $42.2 billion and increased $2.1 billion, or 5%, from $40.1 billion in the prior-year period, primarily reflecting higher levels of commercial and institutional, commercial real estate, residential real estate, and non-U.S. loans, partially offset by lower levels of private client loans. Commercial and institutional loans averaged $12.7 billion and increased $705.3 million, or 6%, from $12.0 billion for the prior-year period. Commercial real estate loans averaged $4.9 billion and

Net Interest Income (continued)

increased $605.3 million, or 14%, from $4.3 billion for the prior-year period. Residential real estate loans averaged $6.4 billion and increased $135.6 million, or 2%, from $6.3 billion for the prior-year period. Non-U.S. loans averaged $3.5 billion and increased $97.6 million or 3% from $3.4 billion for the prior-year period. Private client loans averaged $13.8 billion and decreased $122.0 million, or 1%, from $14.0 billion for the prior-year period.

Northern Trust utilizes a diverse mix of funding sources. Average Interest-Bearing Deposits decreased $8.5 billion, or 9%, to an average of $90.0 billion in the current period from $98.5 billion in the prior-year period. Other Average Interest-Related Funds increased $13.7 billion, or 159%, to an average of $22.3 billion in the current period from $8.6 billion in the prior-year period. 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.

Interest expense for Interest-Bearing Deposits in the current period was driven by higher interest rates. Average non-U.S. offices interest-bearing deposits comprised 69% and 67% of total average interest-bearing deposits for the six months ended June 30, 2023 and 2022, respectively.

Provision for Credit Losses

There was a $0.5 million release of credit reserves for the six months ended June 30, 2023, as compared to a $6.5 million provision in the prior-year period. The release of credit reserves was primarily due to a decrease in the collective basis reserve, driven by improvements in credit quality within the commercial and institutional portfolio, partially offset by growth in the size and duration of the CRE portfolio and expectations of higher economic stress in the CRE market, particularly office CRE. The reserve evaluated on a collective basis relates to pooled financial assets sharing similar risk characteristics.

The provision in the prior-year period was primarily due to an increase in the reserve evaluated on a collective basis and an increase in the reserve evaluated on an individual basis for two commercial borrowers, partially offset by net recoveries during the prior-year period. The increase in the collective basis reserve was primarily driven by market conditions at the time and a higher risk of recession as compared to the previous period, partially offset by improvements in credit quality mainly within the commercial real estate and commercial and institutional portfolios.

Net charge-offs in the current-year period totaled $2.9 million resulting from $4.8 million of charge-offs and $1.9 million of recoveries, compared to net recoveries of $8.7 million in the prior-year period resulting from $0.1 million of charge-offs and $8.8 million of recoveries.

For additional discussion of the allowance for credit losses, refer to the “Asset Quality” section in this MD&A.

Noninterest Expense

The components of Noninterest Expense are provided in the following table.

TABLE 20: NONINTEREST EXPENSE

	SIX MONTHS ENDED JUNE 30,			
($ In Millions)	**2023**	2022	CHANGE	
Compensation	**$ 1,199.7**	$ 1,110.4	$ 89.3	8 %
Employee Benefits	**202.4**	223.9	(21.5)	(10)
Outside Services	**441.7**	426.5	15.2	4
Equipment and Software	**461.0**	397.0	64.0	16
Occupancy	**115.1**	102.1	13.0	13
Other Operating Expense	**197.6**	169.6	28.0	17
Total Noninterest Expense	**$ 2,617.5**	$ 2,429.5	$ 188.0	8 %

Compensation expense, the largest component of Noninterest Expense increased compared to the prior-year period, primarily due to higher salary expense and $36.7 million of severance-related charges, partially offset by lower incentives.

Employee Benefits expense decreased compared to the prior-year period, primarily due to a U.S. Qualified Plan pension settlement charge of $20.3 million in the prior-year period.

Outside Services expense increased compared to the prior-year period, primarily reflecting higher technical services, partially offset by lower subcustodian expense and third-party advisory fees.

Equipment and Software expense increased compared to the prior-year period, primarily due to higher amortization as well as higher software costs driven by continued technology investments.

Noninterest Expense (continued)

Occupancy expense increased compared to the prior-year period, primarily due to a $9.8 million charge during the first quarter related to early lease exits.

Other Operating Expense increased compared to the prior-year period, primarily due to a $25.6 million charge related to the write-off of an investment in a client capability.

Provision for Income Taxes

Income tax expense for the six months ended June 30, 2023 was $218.3 million, representing an effective tax rate of 24.7%, compared to $265.9 million for the six months ended June 30, 2022, representing an effective tax rate of 25.3%.

The effective tax rate decreased compared to the prior-year period primarily due to a decrease in pretax earnings and a higher level of tax benefits from tax-credit investments and tax-exempt income, partially offset by lower tax benefits from share-based compensation.

REPORTING SEGMENTS

Northern Trust is organized around its two client-focused reporting segments: Asset Servicing and Wealth Management. Asset management and related services are provided to Asset Servicing 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 Asset Servicing 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. Additionally, segment information is presented on an FTE basis as management believes an FTE presentation provides a clearer indication of net interest income. The adjustment to an FTE basis has no impact on Net Income.

Revenues, expenses and average assets are allocated to Asset Servicing 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.

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 contributions and average assets of Northern Trust's reporting segments for the three- and six-month periods ended June 30, 2023 and 2022.

TABLE 21: RESULTS OF REPORTING SEGMENTS

($ In Millions)	ASSET SERVICING		WEALTH MANAGEMENT		OTHER		RECONCILING ITEMS		TOTAL CONSOLIDATED	
THREE MONTHS ENDED JUNE 30,	**2023**	2022	**2023**	2022	**2023**	2022	**2023**	2022	**2023**	2022
Noninterest Income										
Trust, Investment and Other Servicing Fees	**$ 621.2**	$ 642.8	**$ 475.1**	$ 500.6	**$ —**	$ —	**$ —**	$ —	**$ 1,096.3**	$ 1,143.4
Foreign Exchange Trading Income (Loss)	**52.0**	74.8	**(1.9)**	2.8	**—**	—	**—**	—	**50.1**	77.6
Other Noninterest Income	**69.7**	61.8	**40.4**	32.8	**(10.9)**	(5.6)	**—**	—	**99.2**	89.0
Total Noninterest Income	**742.9**	779.4	**513.6**	536.2	**(10.9)**	(5.6)	**—**	—	**1,245.6**	1,310.0
Net Interest Income	**309.3**	255.1	**215.3**	214.7	**—**	—	**(13.1)**	(11.1)	**511.5**	458.7
Revenue	**1,052.2**	1,034.5	**728.9**	750.9	**(10.9)**	(5.6)	**(13.1)**	(11.1)	**1,757.1**	1,768.7
(Release of) Provision for Credit Losses	**(3.5)**	0.5	**(12.0)**	4.0	**—**	—	**—**	—	**(15.5)**	4.5
Noninterest Expense	**849.4**	751.1	**476.3**	439.1	**6.2**	33.4	**—**	—	**1,331.9**	1,223.6
Income before Income Taxes	**206.3**	282.9	**264.6**	307.8	**(17.1)**	(39.0)	**(13.1)**	(11.1)	**440.7**	540.6
Provision for Income Taxes	**52.6**	74.5	**73.7**	90.7	**(4.3)**	(9.7)	**(13.1)**	(11.1)	**108.9**	144.4
Net Income	**$ 153.7**	$ 208.4	**$ 190.9**	$ 217.1	**$ (12.8)**	$ (29.3)	**$ —**	$ —	**$ 331.8**	$ 396.2
Percentage of Consolidated Net Income	**46 %**	53 %	**58 %**	54 %	**(4)%**	(7)%	**N/A**	N/A	**100 %**	100 %
Average Assets	**$111,029.9**	$117,047.6	**$34,869.7**	$37,036.5	**$ —**	$ —	**N/A**	N/A	**$145,899.6**	$154,084.1

($ In Millions)	ASSET SERVICING		WEALTH MANAGEMENT		OTHER		RECONCILING ITEMS		TOTAL CONSOLIDATED	
SIX MONTHS ENDED JUNE 30,	**2023**	2022	**2023**	2022	**2023**	2022	**2023**	2022	**2023**	2022
Noninterest Income										
Trust, Investment and Other Servicing Fees	**$ 1,224.2**	$ 1,305.2	**$ 935.7**	$ 1,006.6	**$ —**	$ —	**$ —**	**$ —**	**$ 2,159.9**	$ 2,311.8
Foreign Exchange Trading Income (Loss)	**106.9**	152.2	**(3.8)**	6.3	**—**	—	**—**	—	**103.1**	158.5
Other Noninterest Income	**132.9**	122.9	**74.7**	64.6	**(11.6)**	(10.1)	**—**	—	**196.0**	177.4
Total Noninterest Income	**1,464.0**	1,580.3	**1,006.6**	1,077.5	**(11.6)**	(10.1)	**—**	—	**2,459.0**	2,647.7
Net Interest Income	**621.4**	445.2	**447.6**	412.3	**—**	—	**(26.3)**	**(17.8)**	**1,042.7**	839.7
Revenue	**2,085.4**	2,025.5	**1,454.2**	1,489.8	**(11.6)**	(10.1)	**(26.3)**	**(17.8)**	**3,501.7**	3,487.4
(Release of) Provision for Credit Losses	**(6.4)**	8.9	**5.9**	(2.4)	**—**	—	**—**	—	**(0.5)**	6.5
Noninterest Expense	**1,650.4**	1,509.0	**945.5**	884.2	**21.6**	36.3	**—**	—	**2,617.5**	2,429.5
Income before Income Taxes	**441.4**	507.6	**502.8**	608.0	**(33.2)**	(46.4)	**(26.3)**	**(17.8)**	**884.7**	1,051.4
Provision for Income Taxes	**113.1**	126.3	**139.8**	169.0	**(8.3)**	(11.6)	**(26.3)**	**(17.8)**	**218.3**	265.9
Net Income	**$ 328.3**	$ 381.3	**$ 363.0**	$ 439.0	**$ (24.9)**	$ (34.8)	**$ —**	**$ —**	**$ 666.4**	$ 785.5
Percentage of Consolidated Net Income	**49 %**	49 %	**55 %**	55 %	**(4)%**	(4)%	**N/A**	N/A	**100 %**	100 %
Average Assets	**$111,143.6**	$121,114.2	**$35,830.2**	$36,977.1	**$ —**	$ —	**N/A**	N/A	**$146,973.8**	$158,091.3

Note: Segment results are stated on an FTE basis. The FTE adjustments are eliminated in the reconciling items column with the Corporation's total consolidated financial results stated on a GAAP basis. The adjustment to an FTE basis has no impact on Net Income.

Asset Servicing

Asset Servicing Net Income

For the quarter ended June 30, 2023, Net Income decreased $54.7 million, or 26%, from the prior-year quarter, primarily reflecting higher Noninterest Expense, partially offset by higher Net Interest Income.

For the six months ended June 30, 2023, Net Income, decreased $53.0 million, or 14%, from the prior-year period, primarily reflecting higher Noninterest Expense and lower Trust, Investment and Other Servicing Fees, partially offset by higher Net Interest Income.

REPORTING SEGMENTS (continued)

Asset Servicing (continued)

Asset Servicing Trust, Investment and Other Servicing Fees

For an explanation of Asset Servicing 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.

Asset Servicing Foreign Exchange Trading Income

For the three and six months ended June 30, 2023, Foreign Exchange Trading Income decreased $22.8 million, or 30%, from the prior-year quarter and decreased $45.3 million, or 30%, from the prior-year period, primarily driven by lower client volumes and an unfavorable impact from foreign exchange swap activity.

Asset Servicing Other Noninterest Income

For the quarter ended June 30, 2023, Other Noninterest Income increased $7.9 million, or 13%, from the prior-year quarter, primarily due to higher Other Operating Income.

For the six months ended June 30, 2023, Other Noninterest Income increased $10.0 million, or 8%, from the prior-year period, primarily due to higher allocations, including in Other Operating Income.

Asset Servicing Net Interest Income

For the quarter ended June 30, 2023, Net Interest Income stated on an FTE basis increased $54.2 million, or 21%, from the prior-year quarter. For the six months ended June 30, 2023, Net Interest Income stated on an FTE basis increased $176.2 million, or 40%, from the prior-year period. The increase for the three and six months ended June 30, 2023 primarily reflected higher average interest rates.

Average earning assets decreased $4.0 billion, or 4%, to $101.8 billion in the current quarter from $105.8 billion in the prior-year quarter and decreased $8.3 billion, or 8%, to $101.9 billion for the six months ended June 30, 2023 from $110.2 billion in the prior-year period. Average earning assets decreased in Asset Servicing for the three and six months ended June 30, 2023 primarily due to lower client deposits, partially offset by increased short-term borrowing activity.

Asset Servicing Provision for Credit Losses

For the three and six months ended June 30, 2023, there was a $3.5 million and a $6.4 million release of credit reserves, respectively, compared to a $0.5 million and a $8.9 million Provision for Credit Losses for the three and six months ended June 30, 2022, respectively.

The release of credit reserves for the three and six months ended June 30, 2023 was primarily due to a decrease in the reserve evaluated on a collective basis, primarily driven by improved credit quality of certain commercial and institutional loans. The reserve evaluated on a collective basis relates to pooled financial assets sharing similar characteristics.

Asset Servicing Noninterest Expense

For the three and six months ended June 30, 2023, 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 $98.3 million, or 13%, from the prior-year quarter and increased $141.4 million, or 9%, from the prior-year period, primarily due to higher expense allocations, Compensation, Other Operating Expense, and Outside Services.

Wealth Management

Wealth Management Net Income

For the quarter ended June 30, 2023, Net Income decreased $26.2 million, or 12%, from the prior-year quarter primarily due to higher Noninterest Expense and lower Trust, Investment and Other Servicing Fees, partially offset by a lower Provision for Income Taxes and a release of credit reserves compared to a Provision for Credit Losses in the prior-year quarter.

For the six months ended June 30, 2023, Net Income decreased $76.0 million, or 17%, from the prior-year period, primarily reflecting lower Trust, Investment and Other Servicing Fees and higher Noninterest Expense, partially offset by higher Net Interest Income and a lower Provision for Income Taxes.

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

For the quarter ended June 30, 2023, Other Noninterest Income increased $7.6 million, or 23%, from the prior-year quarter primarily due to higher Other Operating Income.

For the six months ended June 30, 2023, Other Noninterest Income increased $10.1 million, or 16%, from the prior-year period, primarily due to higher income allocations and Other Operating Income.

REPORTING SEGMENTS (continued)

Wealth Management (continued)

Wealth Management Net Interest Income

For the quarter ended June 30, 2023, Net Interest Income stated on an FTE basis increased $0.6 million from the prior-year quarter. For the six months ended June 30, 2023, Net Interest Income stated on an FTE basis increased $35.3 million, or 9%, from the prior-year period. The increase for the three and six months ended June 30, 2023, primarily reflected higher average interest rates.

Average earning assets decreased $1.8 billion, or 5%, to $32.3 billion in the current quarter from $34.1 billion in the prior-year quarter and decreased $1.4 billion, or 4%, to $33.2 billion for the six months ended June 30, 2023 from $34.6 billion in the prior-year period. Average earning assets decreased in Wealth Management for the three and six months ended June 30, 2023 primarily due to lower client deposits, partially offset by higher average lending activity.

Wealth Management Provision for Credit Losses

For the three and six months ended June 30, 2023, there was a $12.0 million release of credit reserves and a $5.9 million Provision for Credit Losses, respectively, compared to a $4.0 million Provision for Credit Losses and a $2.4 million release of credit reserves for the three and six months ended June 30, 2022, respectively.

The release of credit reserves for the three months ended June 30, 2023 reflected a decrease in the reserve evaluated on a collective basis, which relates to pooled financial assets sharing similar risk characteristics. The decrease in the collective basis reserve was primarily due to improved credit quality in certain commercial and institutional and certain CRE loans, partially offset by expectations of higher economic stress in the CRE market, particularly office CRE.

The Provision for Credit Losses for the six months ended June 30, 2023 was primarily due to an increase in the reserve evaluated on a collective basis, primarily due to growth in the size and duration of the CRE portfolio and expectations of higher economic stress in the CRE market, particularly office CRE, partially offset by improved credit quality for certain commercial and institutional and certain CRE loans.

Wealth Management Noninterest Expense

For the quarter ended June 30, 2023, Noninterest Expense, which includes the direct expenses of the reporting segment, indirect expense allocations for product and operating support and indirect expense allocations for certain corporate support services, increased $37.2 million, or 8%, from the prior-year quarter, primarily reflecting higher expense allocations and Other Operating Expense. For the six months ended June 30, 2023, Noninterest Expense increased $61.3 million, or 7%, from the prior-year period, primarily reflecting higher expense allocations, Compensation, and Other Operating Expense.

Other

Other—Noninterest Income

For the quarter ended June 30, 2023, Other Noninterest Income decreased $5.3 million, or 95%, primarily due to higher expenses for existing swap agreements related to Visa Inc. Class B common shares.

Other—Noninterest Expense

For the quarter ended June 30, 2023, Other Noninterest Expense decreased $27.2 million, or 81%, primarily due to a $20.3 million pension settlement charge in the prior-year quarter.

For the six months ended June 30, 2023, Other Noninterest Expense decreased $14.7 million, or 40%, from the prior-year period, primarily due to a $20.3 million pension settlement charge in the prior-year period and other miscellaneous expense in the prior-year period, partially offset by higher non-allocated occupancy expense primarily arising from early lease exits.

CONSOLIDATED BALANCE SHEETS

The following tables summarize selected consolidated balance sheet information.

TABLE 22: SELECT CONSOLIDATED BALANCE SHEET INFORMATION

($ In Billions)	JUNE 30, 2023	DECEMBER 31, 2022	CHANGE	
Assets				
Federal Reserve and Other Central Bank Deposits	**$ 42.7**	$ 40.0	$ 2.7	7 %
Interest-Bearing Due from and Deposits with Banks[(1)]	**4.6**	4.9	(0.3)	(6)
Securities Purchased under Agreements to Resell	**1.2**	1.1	0.1	15
Total Debt Securities	**50.3**	51.8	(1.5)	(3)
Loans	**43.5**	42.9	0.6	2
Other Interest-Earning Assets[(2)]	**2.7**	1.8	0.9	52
Total Earning Assets	**145.0**	142.5	2.5	2
Total Assets	**156.8**	155.0	1.8	1
Liabilities and Stockholders' Equity				
Total Interest-Bearing Deposits	**91.9**	98.6	(6.7)	(7)
Demand and Other Noninterest-Bearing Deposits	**21.3**	25.3	(4.0)	(16)
Federal Funds Purchased	**9.3**	1.9	7.4	N/M
Securities Sold under Agreements to Repurchase	**1.0**	0.6	0.4	74
Other Borrowings[(3)]	**12.4**	7.6	4.8	63
Total Stockholders' Equity	**11.6**	11.3	0.3	3

(1) 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.
(2) Other Interest-Earning Assets includes certain community development investments, collateral deposits with certain securities depositories and clearing houses, Federal Home Loan Bank and Federal Reserve stock, and money market investments which are classified in Other Assets on the consolidated balance sheets.
(3) Other Borrowings primarily includes advances from the Federal Home Loan Bank of Chicago.
N/M - Not meaningful

TABLE 23: SELECT AVERAGE CONSOLIDATED BALANCE SHEET INFORMATION

	THREE MONTHS ENDED JUNE 30,				SIX MONTHS ENDED JUNE 30,			
($ In Billions)	**2023**	2022	CHANGE		**2023**	2022	CHANGE	
Assets								
Federal Reserve and Other Central Bank Deposits	**$ 34.4**	$ 36.7	$ (2.3)	(6)%	**$ 35.5**	$ 40.9	$ (5.4)	(13)%
Interest-Bearing Due from and Deposits with Banks[(1)]	**4.6**	4.2	0.4	8	**4.4**	4.3	0.1	2
Securities Purchased under Agreements to Resell	**1.2**	1.1	0.1	8	**1.1**	0.9	0.2	24
Total Debt Securities	**49.6**	55.9	(6.3)	(11)	**50.0**	57.4	(7.4)	(13)
Loans and Leases	**42.4**	40.8	1.6	4	**42.2**	40.2	2.0	5
Other Interest-Earning Assets[(2)]	**1.9**	1.2	0.7	71	**1.8**	1.1	0.7	59
Total Earning Assets	**134.1**	139.9	(5.8)	(4)	**135.0**	144.8	(9.8)	(7)
Total Assets	**145.9**	154.1	(8.2)	(5)	**147.0**	158.1	(11.1)	(7)
Liabilities and Stockholders' Equity								
Total Interest-Bearing Deposits	**88.0**	95.7	(7.7)	(8)	**90.0**	98.5	(8.5)	(9)
Demand and Other Noninterest-Bearing Deposits	**17.6**	33.7	(16.1)	(48)	**18.8**	35.4	(16.6)	(47)
Federal Funds Purchased	**7.1**	0.9	6.2	N/M	**5.4**	0.5	4.9	N/M
Securities Sold under Agreements to Repurchase	**0.5**	0.6	(0.1)	(22)	**0.4**	0.4	—	(4)
Other Borrowings[(3)]	**12.1**	4.2	7.9	190	**11.7**	3.9	7.8	198
Total Stockholders' Equity	**11.4**	10.9	0.5	5	**11.4**	11.2	0.2	1

(1) 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.
(2) Other Interest-Earning Assets includes certain community development investments, collateral deposits with certain securities depositories and clearing houses, Federal Home Loan Bank and Federal Reserve stock, and money market investments which are classified in Other Assets on the consolidated balance sheets.
(3) Other Borrowings primarily includes advances from the Federal Home Loan Bank of Chicago.
N/M - Not meaningful

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. Average earning assets decreased from the prior-year quarter and prior-year period, primarily due to lower client deposits, partially offset by higher short-term borrowing activity.

Select Earning Assets. Average securities decreased from the prior-year quarter and prior-year period, reflecting the impact of repositioning and reinvesting in short-term securities that will mature usually in one year or less. For additional discussion relating to the securities portfolio, refer to the "Asset Quality" section in this MD&A and to Note 4—Securities to the consolidated financial statements provided in Item 1. Consolidated Financial Statements (unaudited).

Client Deposits. Average Interest-Bearing Deposits and Demand and Other Noninterest-Bearing Deposits decreased from the prior-year quarter and prior-year period as clients migrated into higher yielding products.

Short-Term Borrowings. Short-term borrowings includes Federal Funds Purchased, Securities Sold under Agreements to Repurchase, and Other Borrowings. The increase in average Other Borrowings from the prior-year quarter and prior-year period was primarily due to borrowings executed to manage regulatory liquidity ratios and as part of an overall net interest income strategy, based on the spread earned on these borrowings.

Stockholders' Equity. The increase in average Stockholders' Equity for the current quarter was primarily due to higher Retained Earnings. The increase in average Stockholders' Equity for the current-year period was primarily attributable to higher Retained Earnings, partially offset by changes in Accumulated Other Comprehensive Loss relative to the prior-year period.

During the three and six months ended June 30, 2023, the Corporation declared cash dividends totaling $157.8 million and $316.4 million to common stockholders, and cash dividends totaling $4.7 million and $20.9 million to preferred stockholders, respectively. During the three and six months ended June 30, 2022, the Corporation declared cash dividends totaling $148.0 million and $295.8 million to common stockholders, and cash dividends totaling $4.7 million and $20.9 million to preferred stockholders, respectively.

For the three and six months ended June 30, 2023, the Corporation repurchased 1,361,828 and 2,412,055 shares of common stock, respectively, at a total cost of $99.3 million ($72.91 average price per share) and $200.2 million ($82.98 average price per share), respectively, including 14,596 and 341,407 shares, respectively, withheld to satisfy tax withholding obligations related to share-based compensation.

For the three and six months ended June 30, 2022, the Corporation repurchased 2,844 and 298,254 shares of common stock, respectively, at a total cost of $0.3 million ($110.36 average price per share) and $34.1 million ($114.54 average price per share), respectively, all of which were shares withheld to satisfy tax withholding obligations related to share-based compensation.

ASSET QUALITY

Securities Portfolio

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 available for sale (AFS) debt securities and amortized cost of held to maturity (HTM) debt securities by credit rating.

TABLE 24: FAIR VALUE OF AVAILABLE FOR SALE DEBT SECURITIES BY CREDIT RATING

	JUNE 30, 2023					
($ In Millions)	AAA	AA	A	BBB	NOT RATED	TOTAL
U.S. Government	$ 2,843.9	$ —	$ —	$ —	$ —	$ 2,843.9
Obligations of States and Political Subdivisions	88.4	200.8	—	—	—	289.2
Government Sponsored Agency	11,349.0	—	—	—	—	11,349.0
Non-U.S. Government	251.5	—	—	—	—	251.5
Corporate Debt	89.9	114.3	239.1	—	17.6	460.9
Covered Bonds	319.8	—	21.2	—	—	341.0
Sub-Sovereign, Supranational and Non-U.S. Agency Bonds	2,203.0	447.2	267.8	—	—	2,918.0
Other Asset-Backed	4,909.6	—	—	—	—	4,909.6
Commercial Mortgage-Backed	901.3	—	—	—	—	901.3
Total	$ 22,956.4	$ 762.3	$ 528.1	$ —	$ 17.6	$ 24,264.4
Percent of Total	95 %	3 %	2 %	— %	— %	100 %

ASSET QUALITY (continued)

Securities Portfolio (continued)

	DECEMBER 31, 2022					
($ In Millions)	AAA	AA	A	BBB	NOT RATED	TOTAL
U.S. Government	$ 2,747.4	$ —	$ —	$ —	$ —	$ 2,747.4
Obligations of States and Political Subdivisions	136.4	651.2	—	—	—	787.6
Government Sponsored Agency	11,545.2	—	—	—	—	11,545.2
Non-U.S. Government	360.0	—	—	—	—	360.0
Corporate Debt	302.5	462.6	938.7	19.6	24.2	1,747.6
Covered Bonds	367.0	—	21.7	—	—	388.7
Sub-Sovereign, Supranational and Non-U.S. Agency Bonds	1,816.3	451.5	211.6	—	—	2,479.4
Other Asset-Backed	5,256.2	—	—	—	—	5,256.2
Commercial Mortgage-Backed	1,387.8	—	—	—	—	1,387.8
Total	$ 23,918.8	$ 1,565.3	$ 1,172.0	$ 19.6	$ 24.2	$ 26,699.9
Percent of Total	90 %	6 %	4 %	— %	— %	100 %

As of both June 30, 2023 and December 31, 2022, the less than 1% of AFS debt securities not rated by Moody's Investors Service, Inc. (Moody's), S&P Global Ratings (S&P Global) or Fitch Ratings, Inc. (Fitch Ratings) consisted of corporate debt securities.

TABLE 25: AMORTIZED COST OF HELD TO MATURITY DEBT SECURITIES BY CREDIT RATING

	JUNE 30, 2023					
($ In Millions)	**AAA**	**AA**	**A**	**BBB**	**NOT RATED**	**TOTAL**
Obligations of States and Political Subdivisions	**$ 932.1**	**$ 1,640.9**	**$ —**	**$ —**	**$ —**	**$ 2,573.0**
Government Sponsored Agency	**9,354.2**	**—**	**—**	**—**	**—**	**9,354.2**
Non-U.S. Government	**1,249.5**	**886.3**	**1,522.4**	**329.1**	**—**	**3,987.3**
Corporate Debt	**2.2**	**308.7**	**359.0**	**—**	**—**	**669.9**
Covered Bonds	**2,278.7**	**—**	**—**	**—**	**—**	**2,278.7**
Certificates of Deposit	**555.0**	**—**	**—**	**—**	**33.2**	**588.2**
Sub-Sovereign, Supranational and Non-U.S. Agency Bonds	**4,322.0**	**1,292.9**	**29.8**	**1.1**	**—**	**5,645.8**
Other Asset-Backed	**288.0**	**—**	**—**	**—**	**—**	**288.0**
Commercial Mortgage-Backed	**37.6**	**—**	**—**	**—**	**—**	**37.6**
Other	**64.1**	**—**	**—**	**—**	**519.5**	**583.6**
Total	**$ 19,083.4**	**$ 4,128.8**	**$ 1,911.2**	**$ 330.2**	**$ 552.7**	**$ 26,006.3**
Percent of Total	**74 %**	**16 %**	**7 %**	**1 %**	**2 %**	**100 %**

	DECEMBER 31, 2022					
(In Millions)	AAA	AA	A	BBB	NOT RATED	TOTAL
U.S. Government	$ 50.0	$ —	$ —	$ —	$ —	$ 50.0
Obligations of States and Political Subdivisions	926.8	1,638.5	—	—	—	2,565.3
Government Sponsored Agency	9,407.7	—	—	—	—	9,407.7
Non-U.S. Government	762.2	926.5	1,223.0	322.3	—	3,234.0
Corporate Debt	2.1	305.7	405.5	—	—	713.3
Covered Bonds	2,530.3	—	—	—	—	2,530.3
Certificates of Deposit	—	—	—	—	35.9	35.9
Sub-Sovereign, Supranational and Non-U.S. Agency Bonds	4,171.3	1,502.0	28.9	1.1	—	5,703.3
Other Asset-Backed	263.7	—	—	—	—	263.7
Other	65.8	—	—	—	466.8	532.6
Total	$ 18,179.9	$ 4,372.7	$ 1,657.4	$ 323.4	$ 502.7	$ 25,036.1
Percent of Total	73 %	17 %	7 %	1 %	2 %	100 %

As of both June 30, 2023 and December 31, 2022, the 2% of HTM debt securities not rated by Moody's, S&P Global 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 losses within the investment securities portfolio totaled $3.2 billion at both June 30, 2023 and December 31, 2022. Net unrealized losses as of both June 30, 2023 and December 31, 2022 were comprised of $9.1 million and $3.2 billion of

Securities Portfolio (continued)

gross unrealized gains and losses, respectively. $931.3 million of the $3.2 billion gross unrealized losses relate to AFS debt securities as of June 30, 2023, and $1.1 billion of the $3.2 billion gross unrealized losses relate to AFS debt securities as of December 31, 2022.

As of June 30, 2023, the $24.3 billion AFS debt securities portfolio had unrealized losses of $311.3 million, $226.2 million, and $142.6 million related to government-sponsored agency securities, other asset-backed and sub-sovereign, supranational and non-U.S. agency bonds respectively, which are primarily attributable to changes in overall market interest rates. As of December 31, 2022, the $26.7 billion AFS debt securities portfolio had unrealized losses of $351.6 million, $288.1 million, and $157.6 million related to government sponsored agency, other asset-backed, and sub-sovereign, supranational and non-U.S. agency bonds, respectively, which were primarily attributable to changes in overall market interest rates and credit spreads since their purchase.

As of December 31, 2022, the Corporation intended to sell certain AFS debt securities that were in an unrealized loss position. The securities were written down to their fair value of $2.1 billion with a $213.0 million loss recognized in Investment Security Gains (Losses), net on the consolidated statements of income for the period ended December 31, 2022. In January 2023, the securities were subsequently sold resulting in an incremental $6.9 million gain upon sale as compared to the fair value recorded on the consolidated balance sheets at December 31, 2022.

As of June 30, 2023, the $26.0 billion HTM debt securities portfolio had unrealized losses of $1.1 billion and $491.8 million related to government-sponsored agency securities and sub-sovereign, supranational and non-U.S. agency bonds, respectively, which are primarily attributable to changes in overall market interest rates. As of December 31, 2022, the $25.0 billion HTM debt securities portfolio had an unrealized loss of $1.1 billion and $436.1 million related to government-sponsored agency and sub-sovereign, supranational and non-U.S. agency bonds, respectively, which were primarily attributable to changes in overall market interest rates and credit spreads since their purchase.

HTM debt securities consist of securities that management intends to, and Northern Trust has the ability to, hold until maturity.

For additional information relating to the securities portfolio, refer to Note 4—Securities to the consolidated financial statements provided in Item 1. Consolidated Financial Statements (unaudited).

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 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 their repurchase.

For additional information relating to the securities sold under agreements to repurchase, refer to Note 22—Securities Sold Under Agreements to Repurchase to the consolidated financial statements provided in Item 1. Consolidated Financial Statements (unaudited).

Nonaccrual Loans and Other Real Estate Owned

Nonaccrual assets consist of nonaccrual loans and other real estate owned (OREO). OREO is comprised of commercial and residential properties acquired in partial or total satisfaction of loans.

The following table provides the amounts of nonaccrual loans, by loan segment and class, and of OREO that were outstanding at the dates shown, as well as the balance of loans that were delinquent 90 days or more and still accruing interest. Loans that are delinquent 90 days or more and still accruing interest can fluctuate widely based on the timing of cash collections, renegotiation and renewals.

Nonaccrual Loans and Other Real Estate Owned (continued)

TABLE 26: NONACCRUAL ASSETS

($ In Millions)	JUNE 30, 2023 AMOUNT	JUNE 30, 2023 % OF NONACCRUAL LOANS TO TOTAL NONACCRUAL LOANS	DECEMBER 31, 2022 AMOUNT	DECEMBER 31, 2022 % OF NONACCRUAL LOANS TO TOTAL NONACCRUAL LOANS
Nonaccrual Loans				
Commercial				
Commercial and Institutional	$ **16.4**	**35 %**	$ 17.4	38 %
Commercial Real Estate	**3.8**	**8**	10.2	22
Total Commercial	$ **20.2**	**43 %**	$ 27.6	60 %
Personal				
Private Client	$ **2.0**	**4 %**	$ —	— %
Residential Real Estate	**24.9**	**53**	18.3	40
Total Personal	$ **26.9**	**57 %**	$ 18.3	40 %
Total Nonaccrual Loans	**47.1**		45.9	
Other Real Estate Owned	**0.3**		—	
Total Nonaccrual Assets	$ **47.4**		$ 45.9	
90 Day Past Due Loans Still Accruing	$ **15.2**		$ 54.2	
Nonaccrual Loans to Total Loans	**0.11 %**		0.11 %	
Allowance for Credit Losses Assigned to Loans to Nonaccrual Loans	**3.2x**		3.1x	

Nonaccrual assets of $47.4 million as of June 30, 2023 increased slightly from December 31, 2022, primarily due to the addition of six new nonaccrual loans, partially offset by a commercial real estate upgrade and a commercial real estate charge-off. The six new nonaccrual loans were composed of three residential real estate, one commercial and institutional, one private client and one commercial real estate loan. 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.

Northern Trust's credit policies do not allow for the origination of loan types generally considered to be high risk in nature, such as option adjustable rate mortgage loans, subprime loans, loans with initial "teaser" rates and loans with excessively high loan-to-value ratios. Residential real estate loans consist of first lien mortgages and equity credit lines, which generally require a loan-to-collateral value of no more than 65% to 80% at inception. Appraisals of supporting collateral for residential real estate loans are obtained at loan origination and upon refinancing or default or when otherwise considered warranted. Residential real estate collateral appraisals are performed and reviewed by independent third parties.

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 owners through guarantees also is commonly required. For additional information relating to the loans portfolio, refer to Note 5—Loans to the consolidated financial statements provided in Item 1. Consolidated Financial Statements (unaudited).

Allowance 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 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 Department, and each of Northern Trust's reporting segments.

ASSET QUALITY (continued)

Allowance for Credit Losses (continued)

As of June 30, 2023, the Allowance for Credit Losses related to loans, undrawn loan commitments and standby letters of credit, HTM debt securities, and other financial assets, was $152.5 million, $26.0 million, $16.7 million, and $1.0 million, respectively. As of December 31, 2022, the Allowance for Credit Losses related to loans, undrawn loan commitments and standby letters of credit, HTM debt securities, and other financial assets, was $144.3 million, $38.5 million, $16.0 million, and $0.8 million, respectively. There was a $1.3 million allowance for credit losses related to AFS debt securities as of both June 30, 2023 and December 31, 2022. For additional information relating to the allowance for credit losses and the changes in the allowance for credit losses during the three and six months ended June 30, 2023 and June 30, 2022 due to charge-offs, recoveries and provisions for credit losses, refer to Note 6—Allowance for Credit Losses to the consolidated financial statements provided in Item 1. Consolidated Financial Statements (unaudited).

The table provides the allowance evaluated on an individual and collective basis for the loan portfolio by segment and class.

TABLE 27: ALLOCATION OF THE ALLOWANCE FOR CREDIT LOSSES FOR LOANS

($ In Millions)	JUNE 30, 2023 ALLOWANCE AMOUNT	JUNE 30, 2023 PERCENT OF LOANS TO TOTAL LOANS	DECEMBER 31, 2022 ALLOWANCE AMOUNT	DECEMBER 31, 2022 PERCENT OF LOANS TO TOTAL LOANS
Evaluated on an Individual Basis	**$ 11.0**	**— %**	$ 10.4	— %
Evaluated on a Collective Basis				
Commercial				
Commercial and Institutional	**47.1**	**28**	57.0	29
Commercial Real Estate	**88.6**	**11**	76.5	11
Non-U.S.	**2.6**	**7**	8.3	7
Other	**—**	**5**	0.3	3
Total Commercial	**138.3**	**51**	142.1	50
Personal				
Private Client	**10.4**	**32**	11.2	33
Residential Real Estate	**17.9**	**15**	18.0	15
Non-U.S.	**0.9**	**1**	1.1	1
Other	**—**	**1**	—	1
Total Personal	**29.2**	**49**	30.3	50
Total Allowance Evaluated on a Collective Basis	**$ 167.5**		$ 172.4	
Total Allowance for Credit Losses	**$ 178.5**		$ 182.8	
Allowance Assigned to				
Loans	**$ 152.5**		$ 144.3	
Undrawn Commitments and Standby Letters of Credit	**26.0**		38.5	
Total Allowance for Credit Losses	**$ 178.5**		$ 182.8	
Allowance Assigned to Loans to Total Loans	**0.35 %**		0.34 %	

Commercial Real Estate Loans

The table below provides additional detail regarding commercial real estate loan types.

TABLE 28: COMMERCIAL REAL ESTATE LOANS

(In Millions)	JUNE 30, 2023	DECEMBER 31, 2022
Commercial Mortgages		
Apartment/ Multi-family	**$ 1,531.1**	$ 1,392.7
Office	**1,023.6**	1,054.0
Industrial/ Warehouse	**609.6**	596.2
Retail	**607.0**	572.2
Other	**610.2**	548.0
Total Commercial Mortgages	**4,381.5**	4,163.1
Construction, Acquisition and Development Loans	**658.6**	609.9
Total Commercial Real Estate Loans	**$ 5,040.1**	$ 4,773.0

For an overall discussion on the loan portfolio and on the allowance, refer to Note 5—Loans and Note 6—Allowance for Credit Losses to the consolidated financial statements provided in Item 1. Consolidated Financial Statements (unaudited).

STATEMENTS OF CASH FLOWS

The following discusses the statement of cash flow activities for the six months ended June 30, 2023 and 2022.

TABLE 29: CASH FLOW ACTIVITY SUMMARY

(In Millions)	SIX MONTHS ENDED JUNE 30, 2023	2022
Net cash provided by (used in):		
Operating activities	**$ (264.3)**	$ (863.9)
Investing activities	**(431.4)**	25,225.8
Financing activities	**1,071.7**	(22,060.4)
Effect of Foreign Currency Exchange Rates on Cash	**(132.5)**	(238.5)
Change in Cash and Due from Banks	**$ 243.5**	$ 2,063.0

Operating Activities

Net cash used in operating activities of $264.3 million for the six months ended June 30, 2023, was primarily attributable to higher net collateral deposited with derivative counterparties, partially offset by period earnings and the impact of higher non-cash charges such as amortization and depreciation.

Net cash used in operating activities of $863.9 million for the six months ended June 30, 2022, was primarily attributable to higher net collateral deposited with derivative counterparties, partially offset by period earnings, the impact of higher non-cash charges such as amortization and depreciation, change in receivables and net changes in other operating activities.

Investing Activities

Net cash used in investing activities of $431.4 million for the six months ended June 30, 2023, was primarily attributable to increased levels of Federal Reserve and other central bank deposits and other net investing activities, partially offset by net proceeds associated with AFS debt securities.

Net cash provided by investing activities of $25.2 billion for the six months ended June 30, 2022, was primarily attributable to decreased levels of Federal Reserve and other central bank deposits.

Financing Activities

Net cash provided by financing activities of $1.1 billion for the six months ended June 30, 2023, was primarily attributable to increased levels of federal funds purchased and short-term other borrowings, partially offset by the decreased levels of total deposits. The decrease in total deposits was primarily attributable to lower levels of savings, money market and other interest-bearing deposits, and demand and other noninterest-bearing deposits.

Net cash used in financing activities of $22.1 billion for the six months ended June 30, 2022, was primarily attributable to the decreased levels of total deposits. The decrease in total deposits was primarily attributable to lower levels of non-U.S. office noninterest-bearing and interest-bearing deposits as well as savings, money market and other interest-bearing deposits.

CAPITAL RATIOS

The capital ratios of Northern Trust Corporation and its principal subsidiary, The Northern Trust Company, remained strong at June 30, 2023, exceeding the requirements for classification as “well-capitalized” under applicable U.S. regulatory requirements.

Northern Trust is a Category II institution as defined by the Federal Reserve Board which requires us to adhere to stringent capital standards. In adhering to these standards, Northern Trust engages in a range of reporting and activities with regulators to affirm our financial strength and stability, including but not limited to, capital adequacy reporting that deducts any unrealized losses related to AFS securities from reported capital, and stringent, annual company-run and supervisory stress testing in the form of Comprehensive Capital Analysis and Review (CCAR) exercises, which confirms our ability to remain solvent under severely adverse market conditions.

The results of the 2023 Dodd-Frank Act Stress Test (DFAST), published by the Federal Reserve Board on June 28, 2023, resulted in Northern Trust’s stress capital buffer and effective Common Equity Tier 1 capital ratio minimum requirement remaining constant at 2.5% and 7.0%, respectively, for the annual capital plan cycle beginning on October 1, 2023 through September 30, 2024.

The table below provides capital ratios, as well as the required minimum capital ratios, for Northern Trust Corporation and The Northern Trust Company determined by Basel III phased-in requirements.

TABLE 30: REGULATORY CAPITAL RATIOS

	JUNE 30, 2023		MARCH 31, 2023		JUNE 30, 2022			
Capital Ratios — Northern Trust Corporation	STANDARDIZED APPROACH	ADVANCED APPROACH	STANDARDIZED APPROACH	ADVANCED APPROACH	STANDARDIZED APPROACH	ADVANCED APPROACH	WELL-CAPITALIZED RATIOS	MINIMUM CAPITAL RATIOS
Common Equity Tier 1 Capital	**11.3 %**	**13.0 %**	11.3 %	11.7 %	10.5 %	11.6 %	N/A	4.5 %
Tier 1 Capital	**12.3**	**14.1**	12.3	12.7	11.5	12.7	6.0	6.0
Total Capital	**14.4**	**16.3**	14.4	14.7	12.6	13.7	10.0	8.0
Tier 1 Leverage	**7.4**	**7.4**	7.3	7.3	6.7	6.7	N/A	4.0
Supplementary Leverage	**N/A**	**8.3**	N/A	8.3	N/A	7.6	N/A	3.0

	JUNE 30, 2023		MARCH 31, 2023		JUNE 30, 2022			
Capital Ratios — The Northern Trust Company	STANDARDIZED APPROACH	ADVANCED APPROACH	STANDARDIZED APPROACH	ADVANCED APPROACH	STANDARDIZED APPROACH	ADVANCED APPROACH	WELL-CAPITALIZED RATIOS	MINIMUM CAPITAL RATIOS
Common Equity Tier 1 Capital	**12.1 %**	**14.3 %**	12.3 %	12.9 %	11.0 %	12.3 %	6.5 %	4.5 %
Tier 1 Capital	**12.1**	**14.3**	12.3	12.9	11.0	12.3	8.0	6.0
Total Capital	**13.9**	**16.2**	14.2	14.6	11.9	13.1	10.0	8.0
Tier 1 Leverage	**7.4**	**7.4**	7.3	7.3	6.3	6.3	5.0	4.0
Supplementary Leverage	**N/A**	**8.2**	N/A	8.3	N/A	7.2	3.0	3.0

RECENT ACCOUNTING PRONOUNCEMENTS AND DEVELOPMENTS

In March 2023, the Financial Accounting Standards Board (FASB) issued ASU No. 2023-02, "Investments—Equity Method and Joint Ventures (Topic 323): Accounting for Investments in Tax Credit Structures Using the Proportional Amortization Method—a consensus of the Emerging Issues Task Force" (ASU 2023-02). The amendments in ASU 2023-02 permit reporting entities to elect to account for their tax equity investments, regardless of the tax credit program from which the income tax credits are received, using the proportional amortization method if certain conditions are met. Under the proportional amortization method, an entity amortizes the initial cost of the investment in proportion to the income tax credits and other income tax benefits received and recognizes the net amortization and income tax credits and other income tax benefits in the income statement as a component of income tax expense (benefit). In addition, ASU 2023-02 requires specific disclosures that must be applied to all investments that generate income tax credits and other income tax benefits from a tax credit program for which the entity has elected to apply the proportional amortization method in accordance with Subtopic 323-740. ASU 2023-02 is effective for interim and annual periods beginning after December 15, 2023, although early adoption is permitted. Northern Trust is currently assessing the impacts of adoption of ASU 2023-02 on the consolidated financial condition and results of operations.

RISK MANAGEMENT

Liquidity Risk

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 is a Category II institution as defined by the Federal Reserve Board which requires us to adhere to the same stringent liquidity standards as Category I institutions. In adhering to these standards, Northern Trust engages in a range of reporting and activities with regulators to affirm our financial strength and stability, including but not limited to, daily Liquidity Coverage Ratio and Net Stable Funding Ratio calculations to regulators.

We maintain a highly liquid balance sheet consisting principally of cash held at the Federal Reserve and other central banks, money market assets, and short-term investment securities, which were 64% and 63% of total assets as of June 30, 2023 and December 31, 2022, respectively. 84% and 81% of Northern Trust's securities portfolio is composed of U.S. Treasury, government sponsored agency and triple-A rated securities as of June 30, 2023 and December 31, 2022, respectively.

Market Risk

There are two types of market risk, interest rate risk associated with the banking book and trading risk. Interest rate risk associated with the banking book is the potential for movements in interest rates to cause changes in Net Interest Income and the market value of equity, including Accumulated Other Comprehensive Income (Loss) from the AFS debt securities portfolio. 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.

Northern Trust uses two primary measurement techniques to manage interest rate risk: Net Interest Income (NII) sensitivity and Market Value of Equity (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. Higher interest rates may impact the fair value of AFS debt securities which in turn affects Accumulated Other Comprehensive Income (Loss), which can impact regulatory capital ratios.

As part of its risk management activities, Northern Trust also measures daily the risk of loss associated with all non-U.S. currency positions using a Value-at-Risk (VaR) model and applying the historical simulation methodology. The following information about Northern Trust's management of market risk should be read in conjunction with our Annual Report on Form 10-K for the year ended December 31, 2022.

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 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 as of June 30, 2023 and June 30, 2022. A 200 basis point ramp downward movement in interest rate relative to forward rate is also provided as of June 30, 2023. Each rate movement is assumed to occur gradually over a one-year period. Given the low level of interest rates at the time and assumed interest rate floors as rates approach zero, the 200 basis point ramp downward movement in interest rate relative to forward rate as of June 30, 2022 would not provide meaningful results and is therefore not provided.

TABLE 31: NET INTEREST INCOME SENSITIVITY

INCREASE (DECREASE) ESTIMATED IMPACT ON NEXT TWELVE MONTHS OF NET INTEREST INCOME

($ In Millions)	JUNE 30, 2023	JUNE 30, 2022
Increase in Interest Rates Above Market Implied Forward Rates		
100 Basis Points	**$ (40)**	$ 60
200 Basis Points	**(84)**	110
Decrease in Interest Rates Below Market Implied Forward Rates		
100 Basis Points	**$ 37**	$ (7)
200 Basis Points	**58**	N/M

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 MVE looks at the whole balance sheet, which includes AFS debt securities, HTM debt securities, money market accounts, deposits, loans and wholesale borrowings. 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.

Market Risk (continued)

The following table shows the estimated impact on MVE of 100 and 200 basis point shocks up and a 100 and 200 basis point shock down from current market implied forward rates at June 30, 2023 and December 31, 2022. Each rate movement is assumed to occur gradually over a one-year period.

TABLE 32: MARKET VALUE OF EQUITY SENSITIVITY

INCREASE (DECREASE) ESTIMATED IMPACT ON MARKET VALUE OF EQUITY

($ In Millions)	JUNE 30, 2023	DECEMBER 31, 2022
Increase in Interest Rates Above Market Implied Forward Rates		
100 Basis Points	**$ (622)**	$ (472)
200 Basis Points	**(1,294)**	(965)
Decrease in Interest Rates Below Market Implied Forward Rates		
100 Basis Points	**$ 686**	$ 596
200 Basis Points	**1,219**	842

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 Value-At-Risk (VaR) — Northern Trust measures daily the risk of loss associated with 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 and interest 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.

Northern Trust monitors several variations of the global foreign exchange (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 foreign exchange (FX) drivers and only interest rate (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.

During the three months ended June 30, 2023, Northern Trust did not incur an actual GFX trading loss in excess of the daily GFX VaR estimate.

The following table presents the levels of total regulatory VaR and its subcomponents for GFX in the periods 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 33: GLOBAL FOREIGN CURRENCY VALUE-AT-RISK

($ In Millions)	TOTAL VaR (FX AND IR DRIVERS)			FX VaR (FX DRIVERS ONLY)			IR VaR (IR DRIVERS ONLY)		
THREE MONTHS ENDED	**JUNE 30, 2023**	MARCH 31, 2023	JUNE 30, 2022	**JUNE 30, 2023**	MARCH 31, 2023	JUNE 30, 2022	**JUNE 30, 2023**	MARCH 31, 2023	JUNE 30, 2022
High	**$ 0.7**	$ 0.3	$ 0.2	**$ 0.7**	$ 0.2	$ 0.2	**$ 0.3**	$ 0.3	$ 0.2
Low	**0.1**	0.1	0.1	**—**	—	—	**—**	0.1	—
Average	**0.2**	0.2	0.1	**0.2**	0.1	0.1	**0.1**	0.2	0.1
Quarter-End	**0.3**	0.2	0.1	**0.4**	0.2	0.1	**0.2**	0.1	0.1

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 34: RECONCILIATION TO FULLY TAXABLE EQUIVALENT

	THREE MONTHS ENDED JUNE 30,		SIX MONTHS ENDED JUNE 30,	
($ In Millions)	**2023**	2022	**2023**	2022
Net Interest Income				
Interest Income - GAAP	**$ 1,735.0**	$ 524.8	**$ 3,190.4**	$ 908.3
Add: FTE Adjustment	**13.1**	11.1	**26.3**	17.8
Interest Income (FTE) - Non-GAAP	**$ 1,748.1**	$ 535.9	**$ 3,216.7**	$ 926.1
Net Interest Income - GAAP	**$ 511.5**	$ 458.7	**$ 1,042.7**	$ 839.7
Add: FTE Adjustment	**13.1**	11.1	**26.3**	17.8
Net Interest Income (FTE) - Non-GAAP	**$ 524.6**	$ 469.8	**$ 1,069.0**	$ 857.5
Net Interest Margin - GAAP	**1.53 %**	1.31 %	**1.56 %**	1.17 %
Net Interest Margin (FTE) - Non-GAAP	**1.57 %**	1.35 %	**1.60 %**	1.19 %
Total Revenue				
Total Revenue - GAAP	**$ 1,757.1**	$ 1,768.7	**$ 3,501.7**	$ 3,487.4
Add: FTE Adjustment	**13.1**	11.1	**26.3**	17.8
Total Revenue (FTE) - Non-GAAP	**$ 1,770.2**	$ 1,779.8	**$ 3,528.0**	$ 3,505.2

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:

- 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;
- changes in interest rates or in the monetary or other policies of various regulatory authorities or central banks;
- Northern Trust’s success in controlling the costs and expenses of its business operations and the impacts of any broader inflationary environment thereon;
- Federal Deposit Insurance Corporation (FDIC) assessments to recover losses to the Deposit Insurance Fund in connection with bank closures;
- a decline in the value of securities held in Northern Trust’s investment portfolio, 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, operational resilience (including systems performance), failure to maintain sustainable business practices, and breakdowns in processes or internal controls;
- Northern Trust's success in responding to and investing in changes and advancements in technology;
- geopolitical risks, risks related to global climate change and the risks of extraordinary events such as pandemics, natural disasters, terrorist events and war (including the continuing military conflict involving Ukraine and the Russian Federation), and the responses of the United States and other countries to those events;
- the effectiveness of Northern Trust’s management of its human capital, including its success in recruiting and retaining necessary and diverse personnel to support business growth and expansion and maintain sufficient expertise to support increasingly complex products and services;
- changes in the legal, regulatory and enforcement framework and oversight applicable to financial institutions, including Northern Trust;
- 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 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;
- the transition away from the London Interbank Offered Rate (LIBOR) or changes in the calculation of alternative interest rate benchmarks;
- the pace and extent of continued globalization of investment activity and growth in worldwide financial assets;
- 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;
- 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;
- 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 the Corporation’s Annual Report on Form 10-K for the year ended December 31, 2022, 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.

Item 1. Consolidated Financial Statements (unaudited)

CONSOLIDATED BALANCE SHEETS (UNAUDITED) **NORTHERN TRUST CORPORATION**

(In Millions Except Share Information)	JUNE 30, 2023	DECEMBER 31, 2022
ASSETS		
Cash and Due from Banks	**$ 4,897.7**	$ 4,654.2
Federal Reserve and Other Central Bank Deposits	**42,727.7**	40,030.4
Interest-Bearing Deposits with Banks	**1,479.2**	1,941.1
Federal Funds Sold	**—**	32.0
Securities Purchased under Agreements to Resell	**1,228.9**	1,070.3
Debt Securities		
Available for Sale (Amortized cost of $25,188.4 and $27,760.0)	**24,264.4**	26,699.9
Held to Maturity (Fair value of $23,759.2 and $22,879.3)	**26,006.3**	25,036.1
Trading Account	**0.1**	95.2
Total Debt Securities	**50,270.8**	51,831.2
Loans		
Commercial	**22,361.2**	21,635.6
Personal	**21,185.5**	21,257.7
Total Loans (Net of unearned income of $6.1 and $9.0)	**43,546.7**	42,893.3
Allowance for Credit Losses	**(170.2)**	(161.1)
Buildings and Equipment	**473.6**	500.5
Client Security Settlement Receivables	**431.3**	1,698.3
Goodwill	**698.8**	691.3
Other Assets	**11,168.0**	9,855.2
Total Assets	**$ 156,752.5**	$ 155,036.7
LIABILITIES		
Deposits		
Demand and Other Noninterest-Bearing	**$ 12,144.2**	$ 16,582.7
Savings, Money Market and Other Interest-Bearing	**23,535.5**	31,128.6
Savings Certificates and Other Time	**3,327.0**	1,981.3
Non U.S. Offices — Noninterest-Bearing	**9,182.2**	8,757.6
— Interest-Bearing	**65,014.7**	65,481.9
Total Deposits	**113,203.6**	123,932.1
Federal Funds Purchased	**9,344.5**	1,896.9
Securities Sold Under Agreements to Repurchase	**988.1**	567.2
Other Borrowings	**12,382.0**	7,592.3
Senior Notes	**2,729.5**	2,724.2
Long-Term Debt	**2,061.5**	2,066.2
Other Liabilities	**4,407.6**	4,998.3
Total Liabilities	**145,116.8**	143,777.2
STOCKHOLDERS' EQUITY		
Preferred Stock, No Par Value; Authorized 10,000,000 shares:		
Series D, outstanding shares of 5,000	**493.5**	493.5
Series E, outstanding shares of 16,000	**391.4**	391.4
Common Stock, $1.66 2/3 Par Value; Authorized 560,000,000 shares;		
Outstanding shares of 207,004,181 and 208,428,309	**408.6**	408.6
Additional Paid-In Capital	**980.0**	983.5
Retained Earnings	**14,127.6**	13,798.5
Accumulated Other Comprehensive Loss	**(1,405.9)**	(1,569.2)
Treasury Stock (38,167,343 and 36,743,215 shares, at cost)	**(3,359.5)**	(3,246.8)
Total Stockholders' Equity	**11,635.7**	11,259.5
Total Liabilities and Stockholders' Equity	**$ 156,752.5**	$ 155,036.7

See accompanying notes to the consolidated financial statements.

CONSOLIDATED STATEMENTS OF INCOME (UNAUDITED)

NORTHERN TRUST CORPORATION

(In Millions Except Share Information)	THREE MONTHS ENDED JUNE 30, 2023	THREE MONTHS ENDED JUNE 30, 2022	SIX MONTHS ENDED JUNE 30, 2023	SIX MONTHS ENDED JUNE 30, 2022
Noninterest Income				
Trust, Investment and Other Servicing Fees	**$ 1,096.3**	$ 1,143.4	**$ 2,159.9**	$ 2,311.8
Foreign Exchange Trading Income	**50.1**	77.6	**103.1**	158.5
Treasury Management Fees	**7.9**	10.6	**16.3**	21.7
Security Commissions and Trading Income	**36.1**	32.8	**70.8**	69.0
Other Operating Income	**55.2**	45.6	**102.0**	86.7
Investment Security Gains (Losses), net	**—**	—	**6.9**	—
Total Noninterest Income	**1,245.6**	1,310.0	**2,459.0**	2,647.7
Net Interest Income				
Interest Income	**1,735.0**	524.8	**3,190.4**	908.3
Interest Expense	**1,223.5**	66.1	**2,147.7**	68.6
Net Interest Income	**511.5**	458.7	**1,042.7**	839.7
(Release of) Provision for Credit Losses	**(15.5)**	4.5	**(0.5)**	6.5
Net Interest Income after Provision for Credit Losses	**527.0**	454.2	**1,043.2**	833.2
Noninterest Expense				
Compensation	**604.5**	546.5	**1,199.7**	1,110.4
Employee Benefits	**101.4**	119.6	**202.4**	223.9
Outside Services	**230.9**	213.1	**441.7**	426.5
Equipment and Software	**229.3**	203.5	**461.0**	397.0
Occupancy	**53.8**	51.0	**115.1**	102.1
Other Operating Expense	**112.0**	89.9	**197.6**	169.6
Total Noninterest Expense	**1,331.9**	1,223.6	**2,617.5**	2,429.5
Income before Income Taxes	**440.7**	540.6	**884.7**	1,051.4
Provision for Income Taxes	**108.9**	144.4	**218.3**	265.9
Net Income	**$ 331.8**	$ 396.2	**$ 666.4**	$ 785.5
Preferred Stock Dividends	**4.7**	4.7	**20.9**	20.9
Net Income Applicable to Common Stock	**$ 327.1**	$ 391.5	**$ 645.5**	$ 764.6
Per Common Share				
Net Income – Basic	**$ 1.56**	$ 1.86	**$ 3.07**	$ 3.64
– Diluted	**1.56**	1.86	**3.07**	3.63
Average Number of Common Shares Outstanding				
– Basic	**207,638,671**	208,383,991	**207,911,242**	208,205,469
– Diluted	**207,816,015**	208,878,350	**208,270,677**	208,843,934

CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME (UNAUDITED)

NORTHERN TRUST CORPORATION

(In Millions)	THREE MONTHS ENDED JUNE 30, 2023	THREE MONTHS ENDED JUNE 30, 2022	SIX MONTHS ENDED JUNE 30, 2023	SIX MONTHS ENDED JUNE 30, 2022
Net Income	**$ 331.8**	$ 396.2	**$ 666.4**	$ 785.5
Other Comprehensive Income (Loss) (Net of Tax and Reclassifications)				
Net Unrealized Gains (Losses) on Available for Sale Debt Securities	**(42.0)**	(533.4)	**138.2**	(1,401.8)
Net Unrealized Gains (Losses) on Cash Flow Hedges	**(0.6)**	4.4	**(0.7)**	3.0
Net Foreign Currency Adjustments	**1.9**	(9.7)	**24.6**	(17.6)
Net Pension and Other Postretirement Benefit Adjustments	**1.0**	(64.9)	**1.2**	(58.6)
Other Comprehensive Income (Loss)	**(39.7)**	(603.6)	**163.3**	(1,475.0)
Comprehensive Income (Loss)	**$ 292.1**	$ (207.4)	**$ 829.7**	$ (689.5)

See accompanying notes to the consolidated financial statements.

CONSOLIDATED STATEMENTS OF CHANGES IN STOCKHOLDERS' EQUITY (UNAUDITED)

(In Millions Except Per Share Information)	PREFERRED STOCK	COMMON STOCK	ADDITIONAL PAID-IN CAPITAL	RETAINED EARNINGS	ACCUMULATED OTHER COMPREHENSIVE INCOME (LOSS)	TREASURY STOCK	TOTAL
	SIX MONTHS ENDED JUNE 30, 2023						
Balance at December 31, 2022	**$ 884.9**	**$ 408.6**	**$ 983.5**	**$ 13,798.5**	**$ (1,569.2)**	**$ (3,246.8)**	**$ 11,259.5**
Net Income	—	—	—	**334.6**	—	—	**334.6**
Other Comprehensive Income (Loss) (Net of Tax and Reclassifications)	—	—	—	—	**203.0**	—	**203.0**
Dividends Declared:							
Common Stock, $0.75 per share	—	—	—	**(158.6)**	—	—	**(158.6)**
Preferred Stock	—	—	—	**(16.2)**	—	—	**(16.2)**
Stock Awards and Options Exercised	—	—	**(19.0)**	—	—	**85.4**	**66.4**
Stock Purchased	—	—	—	—	—	**(100.9)**	**(100.9)**
Balance at March 31, 2023	**$ 884.9**	**$ 408.6**	**$ 964.5**	**$ 13,958.3**	**$ (1,366.2)**	**$ (3,262.3)**	**$ 11,587.8**
Net Income	—	—	—	**331.8**	—	—	**331.8**
Other Comprehensive Income (Loss) (Net of Tax and Reclassifications)	—	—	—	—	**(39.7)**	—	**(39.7)**
Dividends Declared:							
Common Stock, $0.75 per share	—	—	—	**(157.8)**	—	—	**(157.8)**
Preferred Stock	—	—	—	**(4.7)**	—	—	**(4.7)**
Stock Awards and Options Exercised	—	—	**15.5**	—	—	**2.1**	**17.6**
Stock Purchased	—	—	—	—	—	**(99.3)**	**(99.3)**
Balance at June 30, 2023	**$ 884.9**	**$ 408.6**	**$ 980.0**	**$ 14,127.6**	**$ (1,405.9)**	**$ (3,359.5)**	**$ 11,635.7**

See accompanying notes to the consolidated financial statements.

(In Millions Except Per Share Information)	PREFERRED STOCK	COMMON STOCK	ADDITIONAL PAID-IN CAPITAL	RETAINED EARNINGS	ACCUMULATED OTHER COMPREHENSIVE INCOME (LOSS)	TREASURY STOCK	TOTAL
	SIX MONTHS ENDED JUNE 30, 2022						
Balance at December 31, 2021	$ 884.9	$ 408.6	$ 939.3	$ 13,117.3	$ (35.6)	$ (3,297.7)	$ 12,016.8
Net Income	—	—	—	389.3	—	—	389.3
Other Comprehensive Income (Loss) (Net of Tax and Reclassifications)	—	—	—	—	(871.4)	—	(871.4)
Dividends Declared:							
Common Stock, $0.70 per share	—	—	—	(147.8)	—	—	(147.8)
Preferred Stock	—	—	—	(16.2)	—	—	(16.2)
Stock Awards and Options Exercised	—	—	(7.6)	—	—	80.5	72.9
Stock Purchased	—	—	—	—	—	(33.8)	(33.8)
Balance at March 31, 2022	$ 884.9	$ 408.6	$ 931.7	$ 13,342.6	$ (907.0)	$ (3,251.0)	$ 11,409.8
Net Income	—	—	—	396.2	—	—	396.2
Other Comprehensive Income (Loss) (Net of Tax and Reclassifications)	—	—	—	—	(603.6)	—	(603.6)
Dividends Declared:							
Common Stock, $0.70 per share	—	—	—	(148.0)	—	—	(148.0)
Preferred Stock	—	—	—	(4.7)	—	—	(4.7)
Stock Awards and Options Exercised	—	—	19.4	—	—	0.9	20.3
Stock Purchased	—	—	—	—	—	(0.3)	(0.3)
Balance at June 30, 2022	$ 884.9	$ 408.6	$ 951.1	$ 13,586.1	$ (1,510.6)	$ (3,250.4)	$ 11,069.7

See accompanying notes to the consolidated financial statements.

(In Millions)	SIX MONTHS ENDED JUNE 30, 2023	2022
CASH FLOWS FROM OPERATING ACTIVITIES		
Net Income	**$ 666.4**	$ 785.5
Adjustments to Reconcile Net Income to Net Cash Used in Operating Activities		
Investment Security Gains	**(6.9)**	—
Amortization and Accretion of Securities and Unearned Income, net	**4.3**	34.4
Provision for Credit Losses	**(0.5)**	6.5
Depreciation and Amortization	**308.1**	264.5
Pension Plan Contributions	**(16.5)**	(20.7)
Change in Receivables	**72.3**	192.2
Change in Interest Payable	**44.0**	25.7
Change in Collateral With Derivative Counterparties, net	**(1,215.5)**	(2,314.2)
Other Operating Activities, net	**(120.0)**	162.2
Net Cash Used in Operating Activities	**(264.3)**	(863.9)
CASH FLOWS FROM INVESTING ACTIVITIES		
Change in Federal Funds Sold	**(32.0)**	(10.0)
Change in Securities Purchased under Agreements to Resell	**(106.5)**	(503.1)
Change in Interest-Bearing Deposits with Banks	**480.1**	(645.9)
Net Change in Federal Reserve and Other Central Bank Deposits	**(2,239.9)**	25,295.1
Purchases of Held to Maturity Debt Securities	**(18,715.2)**	(21,034.6)
Proceeds from the Maturity and Redemption of Held to Maturity Debt Securities	**18,076.7**	23,282.6
Purchases of Available for Sale Debt Securities	**(2,336.0)**	(2,741.1)
Proceeds from the Maturity and Sales of Available for Sale Debt Securities	**4,938.7**	3,646.9
Change in Loans	**(643.2)**	(763.9)
Purchases of Buildings and Equipment	**(31.6)**	(47.2)
Purchases and Development of Computer Software	**(268.9)**	(270.0)
Change in Client Security Settlement Receivables	**1,269.6**	(372.5)
Bank-Owned Life Insurance Policy Premiums	—	(500.0)
Other Investing Activities, net	**(823.2)**	(110.5)
Net Cash (Used in) Provided by Investing Activities	**(431.4)**	25,225.8
CASH FLOWS FROM FINANCING ACTIVITIES		
Change in Deposits	**(11,053.6)**	(23,291.2)
Change in Federal Funds Purchased	**7,447.6**	389.0
Change in Securities Sold under Agreements to Repurchase	**420.8**	267.5
Change in Short-Term Other Borrowings	**4,788.4**	(77.4)
Proceeds from Senior Notes	—	995.4
Treasury Stock Purchased	**(200.2)**	(34.1)
Net Proceeds from Stock Options	**1.6**	2.6
Cash Dividends Paid on Common Stock	**(311.9)**	(291.5)
Cash Dividends Paid on Preferred Stock	**(20.9)**	(20.9)
Other Financing Activities, net	**(0.1)**	0.2
Net Cash Provided by (Used in) Financing Activities	**1,071.7**	(22,060.4)
Effect of Foreign Currency Exchange Rates on Cash	**(132.5)**	(238.5)
Change in Cash and Due from Banks	**243.5**	2,063.0
Cash and Due from Banks at Beginning of Period	**4,654.2**	3,056.8
Cash and Due from Banks at End of Period	**$ 4,897.7**	$ 5,119.8
SUPPLEMENTAL DISCLOSURES OF CASH FLOW INFORMATION		
Interest Paid	**$ 2,103.1**	$ 44.2
Income Taxes Paid	**109.8**	164.1
Transfers from Loans to OREO	**0.2**	0.1

See accompanying notes to the consolidated financial statements.

Note 1 – 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 financial statements, as of and for the periods ended June 30, 2023 and 2022, have not been audited by the Corporation's independent registered public accounting firm. In the opinion of management, all accounting entries and adjustments, including normal recurring accruals, necessary for a fair presentation of the financial position and the results of operations for the interim periods have been made. The accounting and financial reporting policies of Northern Trust conform to U.S. generally accepted accounting principles (GAAP) and reporting practices prescribed for the banking industry. For a description of Northern Trust's significant accounting policies, refer to Note 1—Summary of Significant Accounting Policies included under Item 8. Financial Statements and Supplementary Data in the Annual Report on Form 10-K for the year ended December 31, 2022.

Note 2 – Recent Accounting Pronouncements

On January 1, 2023, Northern Trust adopted Accounting Standard Update (ASU) No. 2022-01, "Derivatives and Hedging (Topic 815): Fair Value Hedging—Portfolio Layer Method" (ASU 2022-01). The amendments in ASU 2022-01 expand the current last-of-layer hedging model from a single-layer method to allow multiple hedged layers of a single closed portfolio. To reflect that expansion, the last-of-layer method is renamed the portfolio layer method. In addition, ASU 2022-01 (1) expands the scope of the portfolio layer method to include non-prepayable assets, (2) specifies eligible hedging instruments in a single-layer hedge, (3) provides additional guidance on the accounting for and disclosure of hedge basis adjustments under the portfolio layer method and (4) specifies how hedge basis adjustments should be considered when determining credit losses for the assets included in the closed portfolio. Upon adoption of ASU 2022-01, there was no impact to Northern Trust's consolidated balance sheets or consolidated statements of income.

On January 1, 2023, Northern Trust adopted ASU No. 2022-02, "Financial Instruments—Credit Losses (Topic 326): Troubled Debt Restructurings and Vintage Disclosures" (ASU 2022-02). The amendments in ASU 2022-02 eliminate the accounting guidance for troubled debt restructurings (TDRs) for creditors that have adopted the current expected credit losses accounting standard while enhancing disclosure requirements for certain loan refinancings and restructurings made to borrowers experiencing financial difficulty. In addition, ASU 2022-02 requires that a public business entity disclose current-period gross charge-offs by year of origination for financing receivables and net investment in leases. Upon adoption of ASU 2022-02, there was no significant impact to Northern Trust's consolidated balance sheets or consolidated statements of income. Please refer to Note 5—Loans for further information.

On January 1, 2023, Northern Trust adopted ASU No. 2022-04, "Liabilities—Supplier Finance Programs (Topic 405-50): Disclosure of Supplier Finance Program Obligations" (ASU 2022-04). The amendments in ASU 2022-04 enhance the transparency about the use of supplier finance programs for investors or other allocators of capital. Specifically, ASU 2022-04 requires that a buyer in a supplier finance program disclose sufficient qualitative and quantitative information about the program to allow a user of financial statements to understand the program's nature, activity during the period, changes from period to period, and potential magnitude. Upon adoption of ASU 2022-04, there was no impact to Northern Trust's consolidated balance sheets or consolidated statements of income.

Note 3 – Fair Value Measurements

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. No transfers into or out of Level 3 occurred during the six months ended June 30, 2023 or the year ended December 31, 2022.

Level 1 — Quoted, active market prices for identical assets or liabilities.

Northern Trust's Level 1 assets are comprised primarily of available for sale (AFS) 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 AFS and certain 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 predetermined 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 June 30, 2023, Northern Trust's AFS debt securities portfolio included 1,013 Level 2 debt securities with an aggregate market value of $21.4 billion. All 1,013 debt securities were valued by external pricing vendors. As of December 31, 2022, Northern Trust's AFS debt securities portfolio included 1,163 Level 2 debt securities with an aggregate market value of $24.0 billion. All 1,163 debt securities were valued by external pricing vendors.

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; 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 20—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.

The following table presents the fair values of Northern Trust's Level 3 liabilities as of June 30, 2023 and December 31, 2022, 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 35: LEVEL 3 SIGNIFICANT UNOBSERVABLE INPUTS

			JUNE 30, 2023		
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	**$36.4 million**	**Discounted Cash Flow**	**Conversion Rate**	**1.59x**	**1.59x**
			Visa Class A Appreciation	**9.94%**	**9.94%**
			Expected Duration	**12 - 33 months**	**20 months**

[(1)] *Weighted average of expected duration based on scenario probability.*

			DECEMBER 31, 2022		
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	$34.8 million	Discounted Cash Flow	Conversion Rate	1.60x	1.60x
			Visa Class A Appreciation	8.53%	8.53%
			Expected Duration	12 - 33 months	20 months

[(1)] *Weighted average of expected duration based on scenario probability.*

The following table presents assets and liabilities measured at fair value on a recurring basis as of June 30, 2023 and December 31, 2022, segregated by fair value hierarchy level.

TABLE 36: RECURRING BASIS HIERARCHY LEVELING

			JUNE 30, 2023		
(In Millions)	**LEVEL 1**	**LEVEL 2**	**LEVEL 3**	**NETTING**	**ASSETS/ LIABILITIES AT FAIR VALUE**
Debt Securities					
Available for Sale					
U.S. Government	**$ 2,843.9**	**$ —**	**$ —**	**$ —**	**$ 2,843.9**
Obligations of States and Political Subdivisions	**—**	**289.2**	**—**	**—**	**289.2**
Government Sponsored Agency	**—**	**11,349.0**	**—**	**—**	**11,349.0**
Non-U.S. Government	**—**	**251.5**	**—**	**—**	**251.5**
Corporate Debt	**—**	**460.9**	**—**	**—**	**460.9**
Covered Bonds	**—**	**341.0**	**—**	**—**	**341.0**
Sub-Sovereign, Supranational and Non-U.S. Agency Bonds	**—**	**2,918.0**	**—**	**—**	**2,918.0**
Other Asset-Backed	**—**	**4,909.6**	**—**	**—**	**4,909.6**
Commercial Mortgage-Backed	**—**	**901.3**	**—**	**—**	**901.3**
Total Available for Sale	**2,843.9**	**21,420.5**	**—**	**—**	**24,264.4**
Trading Account	**—**	**0.1**	**—**	**—**	**0.1**
Total Available for Sale and Trading Debt Securities	**2,843.9**	**21,420.6**	**—**	**—**	**24,264.5**
Other Assets					
Money Market Investment	**95.0**	**—**	**—**	**—**	**95.0**
Derivative Assets					
Foreign Exchange Contracts	**—**	**2,264.1**	**—**	**(1,001.1)**	**1,263.0**
Interest Rate Contracts	**—**	**313.9**	**—**	**(244.8)**	**69.1**
Other Financial Derivatives	**—**	**—**	**—**	**—**	**—**
Total Derivative Assets	**—**	**2,578.0**	**—**	**(1,245.9)**	**1,332.1**
Other Liabilities					
Derivative Liabilities					
Foreign Exchange Contracts	**—**	**2,162.6**	**—**	**(1,422.1)**	**740.5**
Interest Rate Contracts	**—**	**408.1**	**—**	**(4.1)**	**404.0**
Other Financial Derivatives[(1)]	**—**	**—**	**36.4**	**(34.8)**	**1.6**
Total Derivative Liabilities	**$ —**	**$ 2,570.7**	**$ 36.4**	**$ (1,461.0)**	**$ 1,146.1**

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 June 30, 2023, derivative assets and liabilities shown above also include reductions of $304.9 million and $520.0 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, 2022 LEVEL 1	LEVEL 2	LEVEL 3	NETTING	ASSETS/ LIABILITIES AT FAIR VALUE
Debt Securities					
Available for Sale					
U.S. Government	$ 2,747.4	$ —	$ —	$ —	$ 2,747.4
Obligations of States and Political Subdivisions	—	787.6	—	—	787.6
Government Sponsored Agency	—	11,545.2	—	—	11,545.2
Non-U.S. Government	—	360.0	—	—	360.0
Corporate Debt	—	1,747.6	—	—	1,747.6
Covered Bonds	—	388.7	—	—	388.7
Sub-Sovereign, Supranational and Non-U.S. Agency Bonds	—	2,479.4	—	—	2,479.4
Other Asset-Backed	—	5,256.2	—	—	5,256.2
Commercial Mortgage-Backed	—	1,387.8	—	—	1,387.8
Total Available for Sale	2,747.4	23,952.5	—	—	26,699.9
Trading Account	95.0	0.2	—	—	95.2
Total Available for Sale and Trading Debt Securities	2,842.4	23,952.7	—	—	26,795.1
Other Assets					
Derivative Assets					
Foreign Exchange Contracts	—	3,510.1	—	(2,666.4)	843.7
Interest Rate Contracts	—	222.0	—	(144.3)	77.7
Other Financial Derivatives(1)	—	0.3	—	—	0.3
Total Derivative Assets	—	3,732.4	—	(2,810.7)	921.7
Other Liabilities					
Derivative Liabilities					
Foreign Exchange Contracts	—	3,187.5	—	(1,826.7)	1,360.8
Interest Rate Contracts	—	431.8	—	(5.9)	425.9
Other Financial Derivatives(2)	—	—	34.8	(33.3)	1.5
Total Derivative Liabilities	$ —	$ 3,619.3	$ 34.8	$ (1,865.9)	$ 1,788.2

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, 2022, derivative assets and liabilities shown above also include reductions of $1,140.2 million and $195.3 million, respectively, as a result of cash collateral received from and deposited with derivative counterparties.

(1) *This line consists of total return swap contracts.*

(2) *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 three and six months ended June 30, 2023 and 2022.

TABLE 37: CHANGES IN LEVEL 3 LIABILITIES

(In Millions)	SWAPS RELATED TO SALE OF CERTAIN VISA CLASS B COMMON SHARES	
THREE MONTHS ENDED JUNE 30,	**2023**	2022
Fair Value at April 1	**$ 34.6**	$ 35.3
Total (Gains) Losses:		
Included in Earnings(1)	**10.9**	5.6
Purchases, Issues, Sales, and Settlements		
Settlements	**(9.1)**	(9.8)
Fair Value at June 30	**$ 36.4**	$ 31.1

(1) *(Gains) losses are recorded in Other Operating Income on the consolidated statements of income.*

SIX MONTHS ENDED JUNE 30,	**2023**	2022
Fair Value at January 1	**$ 34.8**	$ 37.5
Total (Gains) Losses:		
Included in Earnings(1)	**18.5**	10.1
Purchases, Issues, Sales, and Settlements		
Settlements	**(16.9)**	(16.5)
Fair Value at June 30	**$ 36.4**	$ 31.1

(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 June 30, 2023 and December 31, 2022, 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 other real estate owned (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 a discount factor of 20.0% and a range of discount factors from 15.0% to 20.0% with a weighted average based on fair values of 20.0% and 17.2%, as of June 30, 2023 and December 31, 2022, 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-dependent nonaccrual loans that have been adjusted to fair value totaled $8.4 million and $6.6 million at June 30, 2023 and December 31, 2022, 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 June 30, 2023 and December 31, 2022, 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 38: LEVEL 3 NONRECURRING BASIS SIGNIFICANT UNOBSERVABLE INPUTS

			JUNE 30, 2023		
FINANCIAL INSTRUMENT	FAIR VALUE[1]	VALUATION TECHNIQUE	UNOBSERVABLE INPUTS	INPUT VALUES	WEIGHTED-AVERAGE INPUT VALUES
Loans	**$8.4 million**	**Market Approach**	**Discount factor applied to real estate collateral-dependent loans to reflect realizable value**	**20.0%**	**20.0%**

[1] *Includes real estate collateral-dependent loans and other collateral-dependent loans.*

			DECEMBER 31, 2022		
FINANCIAL INSTRUMENT	FAIR VALUE[1]	VALUATION TECHNIQUE	UNOBSERVABLE INPUTS	INPUT VALUES	WEIGHTED-AVERAGE INPUT VALUES
Loans	$6.6 million	Market Approach	Discount factor applied to real estate collateral-dependent loans to reflect realizable value	15.0 % - 20.0%	17.2%

[1] *Includes real estate collateral-dependent loans and other collateral-dependent loans.*

The following tables present the book value and estimated fair value, including the fair value hierarchy level, of Northern Trust's financial instruments that are not measured at fair value on the consolidated balance sheets as of June 30, 2023 and December 31, 2022. The following tables exclude those items measured at fair value on a recurring basis.

TABLE 39: FAIR VALUE OF FINANCIAL INSTRUMENTS

	JUNE 30, 2023				
			ESTIMATED FAIR VALUE		
(In Millions)	**BOOK VALUE**	**TOTAL ESTIMATED FAIR VALUE**	**LEVEL 1**	**LEVEL 2**	**LEVEL 3**
FINANCIAL ASSETS					
Cash and Due from Banks	**$ 4,897.7**	**$ 4,897.7**	**$ 4,897.7**	**$ —**	**$ —**
Federal Reserve and Other Central Bank Deposits	**42,727.7**	**42,727.7**	**—**	**42,727.7**	**—**
Interest-Bearing Deposits with Banks	**1,479.2**	**1,479.2**	**—**	**1,479.2**	**—**
Securities Purchased under Agreements to Resell	**1,228.9**	**1,228.9**	**—**	**1,228.9**	**—**
Debt Securities - Held to Maturity	**26,006.3**	**23,759.2**	**—**	**23,759.2**	**—**
Loans					
Held for Investment	**43,394.2**	**43,419.6**	**—**	**—**	**43,419.6**
Other Assets	**1,599.5**	**1,585.2**	**99.3**	**1,485.9**	**—**
FINANCIAL LIABILITIES					
Deposits					
Demand, Noninterest-Bearing, Savings, Money Market and Other Interest-Bearing	**$ 44,861.9**	**$ 44,861.9**	**$ 44,861.9**	**$ —**	**$ —**
Savings Certificates and Other Time	**3,327.0**	**3,348.8**	**—**	**3,348.8**	**—**
Non U.S. Offices Interest-Bearing	**65,014.7**	**65,014.7**	**—**	**65,014.7**	**—**
Federal Funds Purchased	**9,344.5**	**9,344.5**	**—**	**9,344.5**	**—**
Securities Sold Under Agreements to Repurchase	**988.1**	**988.1**	**—**	**988.1**	**—**
Other Borrowings	**12,382.0**	**12,378.2**	**—**	**12,378.2**	**—**
Senior Notes	**2,729.5**	**2,713.9**	**—**	**2,713.9**	**—**
Long-Term Debt	**2,061.5**	**2,069.3**	**—**	**2,069.3**	**—**
Unfunded Commitments	**219.1**	**219.1**	**—**	**219.1**	**—**
Other Liabilities	**86.8**	**86.8**	**—**	**—**	**86.8**

	DECEMBER 31, 2022				
			ESTIMATED FAIR VALUE		
(In Millions)	BOOK VALUE	TOTAL ESTIMATED FAIR VALUE	LEVEL 1	LEVEL 2	LEVEL 3
FINANCIAL ASSETS					
Cash and Due from Banks	$ 4,654.2	$ 4,654.2	$ 4,654.2	$ —	$ —
Federal Reserve and Other Central Bank Deposits	40,030.4	40,030.4	—	40,030.4	—
Interest-Bearing Deposits with Banks	1,941.1	1,941.1	—	1,941.1	—
Federal Funds Sold	32.0	32.0	—	32.0	—
Securities Purchased under Agreements to Resell	1,070.3	1,070.3	—	1,070.3	—
Debt Securities - Held to Maturity	25,036.1	22,879.3	50.0	22,829.3	—
Loans					
Held for Investment	42,749.0	42,636.5	—	—	42,636.5
Other Assets	1,476.9	1,460.4	94.7	1,365.7	—
FINANCIAL LIABILITIES					
Deposits					
Demand, Noninterest-Bearing, Savings, Money Market and Other Interest-Bearing	$ 56,468.9	$ 56,468.9	$ 56,468.9	$ —	$ —
Savings Certificates and Other Time	1,981.3	1,976.1	—	1,976.1	—
Non U.S. Offices Interest-Bearing	65,481.9	65,481.9	—	65,481.9	—
Federal Funds Purchased	1,896.9	1,896.9	—	1,896.9	—
Securities Sold Under Agreements to Repurchase	567.2	567.2	—	567.2	—
Other Borrowings	7,592.3	7,592.8	—	7,592.8	—
Senior Notes	2,724.2	2,729.8	—	2,729.8	—
Long-Term Debt	2,066.2	2,110.7	—	2,110.7	—
Unfunded Commitments	218.9	218.9	—	218.9	—
Other Liabilities	73.2	73.2	—	—	73.2

Note 4 – Securities

Available for Sale Debt Securities. The following tables provide the amortized cost and fair values as of June 30, 2023 and December 31, 2022, and remaining maturities of AFS debt securities as of June 30, 2023.

TABLE 40: RECONCILIATION OF AMORTIZED COST TO FAIR VALUE OF AVAILABLE FOR SALE DEBT SECURITIES

	JUNE 30, 2023			
(In Millions)	AMORTIZED COST	GROSS UNREALIZED GAINS	GROSS UNREALIZED LOSSES	FAIR VALUE
U.S. Government	**$ 2,942.3**	**$ 0.6**	**$ 99.0**	**$ 2,843.9**
Obligations of States and Political Subdivisions	**310.2**	—	**21.0**	**289.2**
Government Sponsored Agency	**11,656.4**	**3.9**	**311.3**	**11,349.0**
Non-U.S. Government	**277.8**	—	**26.3**	**251.5**
Corporate Debt	**479.7**	**0.3**	**19.1**	**460.9**
Covered Bonds	**353.6**	**0.2**	**12.8**	**341.0**
Sub-Sovereign, Supranational and Non-U.S. Agency Bonds	**3,068.0**	**1.4**	**151.4**	**2,918.0**
Other Asset-Backed	**5,135.0**	**0.8**	**226.2**	**4,909.6**
Commercial Mortgage-Backed	**965.4**	**0.1**	**64.2**	**901.3**
Total	**$ 25,188.4**	**$ 7.3**	**$ 931.3**	**$ 24,264.4**

	DECEMBER 31, 2022			
(In Millions)	AMORTIZED COST	GROSS UNREALIZED GAINS	GROSS UNREALIZED LOSSES	FAIR VALUE
U.S. Government	$ 2,837.7	$ 2.5	$ 92.8	$ 2,747.4
Obligations of States and Political Subdivisions	817.8	—	30.2	787.6
Government Sponsored Agency	11,892.5	4.3	351.6	11,545.2
Non-U.S. Government	387.6	—	27.6	360.0
Corporate Debt	1,774.3	0.2	26.9	1,747.6
Covered Bonds	403.1	0.3	14.7	388.7
Sub-Sovereign, Supranational and Non-U.S. Agency Bonds	2,645.8	0.3	166.7	2,479.4
Other Asset-Backed	5,544.3	—	288.1	5,256.2
Commercial Mortgage-Backed	1,456.9	0.1	69.2	1,387.8
Total	$ 27,760.0	$ 7.7	$ 1,067.8	$ 26,699.9

TABLE 41: REMAINING MATURITY OF AVAILABLE FOR SALE DEBT SECURITIES

JUNE 30, 2023	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	**$ 1,094.4**	**$ 1,092.7**	**$ 1,847.9**	**$ 1,751.2**	**$ —**	**$ —**	**$ —**	**$ —**	**$ 2,942.3**	**$ 2,843.9**
Obligations of States and Political Subdivisions	—	—	**45.1**	**41.6**	**246.2**	**229.5**	**18.9**	**18.1**	**310.2**	**289.2**
Government Sponsored Agency	**2,278.8**	**2,236.5**	**5,336.1**	**5,196.1**	**3,282.9**	**3,197.8**	**758.6**	**718.6**	**11,656.4**	**11,349.0**
Non-U.S. Government	—	—	**277.8**	**251.5**	—	—	—	—	**277.8**	**251.5**
Corporate Debt	**198.5**	**197.0**	**263.8**	**249.1**	**17.4**	**14.8**	—	—	**479.7**	**460.9**
Covered Bonds	**134.1**	**133.6**	**219.5**	**207.4**	—	—	—	—	**353.6**	**341.0**
Sub-Sovereign, Supranational and Non-U.S. Agency Bonds	**649.2**	**640.9**	**2,256.2**	**2,143.0**	**162.6**	**134.1**	—	—	**3,068.0**	**2,918.0**
Other Asset-Backed	**1,191.8**	**1,136.1**	**2,732.6**	**2,579.0**	**1,106.5**	**1,091.7**	**104.1**	**102.8**	**5,135.0**	**4,909.6**
Commercial Mortgage-Backed	**37.8**	**35.7**	**771.9**	**735.0**	**155.7**	**130.6**	—	—	**965.4**	**901.3**
Total	**$ 5,584.6**	**$ 5,472.5**	**$ 13,750.9**	**$ 13,153.9**	**$ 4,971.3**	**$ 4,798.5**	**$ 881.6**	**$ 839.5**	**$ 25,188.4**	**$ 24,264.4**

Note: Mortgage-backed and asset-backed securities are included in the above table taking into account anticipated future prepayments.

Available for Sale Debt Securities with Unrealized Losses. The following table provides information regarding AFS debt securities 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 June 30, 2023 and December 31, 2022.

TABLE 42: AVAILABLE FOR SALE DEBT SECURITIES IN UNREALIZED LOSS POSITION WITH NO CREDIT LOSSES REPORTED

JUNE 30, 2023	**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	**$ 865.4**	**$ 10.4**	**$ 1,182.8**	**$ 88.6**	**$ 2,048.2**	**$ 99.0**
Obligations of States and Political Subdivisions	**—**	**—**	**289.2**	**21.0**	**289.2**	**21.0**
Government Sponsored Agency	**2,564.0**	**13.9**	**7,969.2**	**297.4**	**10,533.2**	**311.3**
Non-U.S. Government	**—**	**—**	**251.5**	**26.3**	**251.5**	**26.3**
Corporate Debt	**6.9**	**0.1**	**311.0**	**10.6**	**317.9**	**10.7**
Covered Bonds	**—**	**—**	**256.3**	**12.8**	**256.3**	**12.8**
Sub-Sovereign, Supranational and Non-U.S. Agency Bonds	**542.4**	**2.8**	**1,798.7**	**139.8**	**2,341.1**	**142.6**
Other Asset-Backed	**—**	**—**	**4,748.4**	**226.2**	**4,748.4**	**226.2**
Commercial Mortgage-Backed	**1.2**	**—**	**872.6**	**64.2**	**873.8**	**64.2**
Total	**$ 3,979.9**	**$ 27.2**	**$ 17,679.7**	**$ 886.9**	**$ 21,659.6**	**$ 914.1**

Note: Three corporate debt AFS securities with a fair value of $92.6 million and unrealized losses of $8.4 million and one sub-sovereign, supranational and non-U.S. agency bond AFS security with a fair value of $68.6 million and unrealized losses of $8.8 million have been excluded from the table above as these AFS securities have a $1.3 million allowance for credit losses reported as of June 30, 2023. Refer to the discussion further below and Note 6—Allowance for Credit Losses for further information.

DECEMBER 31, 2022	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	$ 1,123.6	$ 64.1	$ 343.1	$ 28.7	$ 1,466.7	$ 92.8
Obligations of States and Political Subdivisions	160.0	16.8	120.6	13.4	280.6	30.2
Government Sponsored Agency	7,631.4	262.1	2,737.7	89.5	10,369.1	351.6
Non-U.S. Government	235.4	17.3	124.6	10.3	360.0	27.6
Corporate Debt	427.3	14.6	130.3	2.8	557.6	17.4
Covered Bonds	238.0	13.5	42.8	1.2	280.8	14.7
Sub-Sovereign, Supranational and Non-U.S. Agency Bonds	1,305.4	74.4	807.1	83.2	2,112.5	157.6
Other Asset-Backed	3,873.4	217.5	1,247.6	70.6	5,121.0	288.1
Commercial Mortgage-Backed	670.9	47.4	215.6	21.8	886.5	69.2
Total	$ 15,665.4	$ 727.7	$ 5,769.4	$ 321.5	$ 21,434.8	$ 1,049.2

Note: Three corporate debt AFS securities with a fair value of $93.8 million and unrealized losses of $9.5 million and one sub-sovereign, supranational and non-U.S. agency bonds AFS security with a fair value of $68.3 million and unrealized loss of $9.1 million have been excluded from the table above as these AFS securities have a $1.3 million allowance for credit losses reported as of December 31, 2022. Refer to the discussion further below and Note 6—Allowance for Credit Losses for further information.

As of June 30, 2023, 1,045 AFS debt securities with a combined fair value of $21.7 billion were in an unrealized loss position without an allowance for credit losses, with their unrealized losses totaling $914.1 million. As of June 30, 2023, unrealized losses related to AFS debt securities of $311.3 million, $226.2 million, and $142.6 million related to government-sponsored agency securities, other asset-backed and sub-sovereign, supranational and non-U.S. agency bonds, respectively, which are primarily attributable to changes in overall market interest rates.

As of December 31, 2022, 1,030 AFS debt securities with a combined fair value of $21.4 billion were in an unrealized loss position without an allowance for credit losses, with their unrealized losses totaling $1.0 billion. As of December 31, 2022, unrealized losses related to AFS debt securities of $351.6 million, $288.1 million, and $157.6 million related to government-sponsored agency, other asset-backed, and sub-sovereign, supranational and non-U.S. agency bonds, respectively, which are primarily attributable to changes in overall market interest rates and credit spreads since their purchase.

As of December 31, 2022, the Corporation intended to sell certain AFS debt securities that were in an unrealized loss position. The securities were written down to their fair value of $2.1 billion with a $213.0 million loss recognized in Investment Security Gains (Losses), net on the consolidated statements of income for the period ended December 31, 2022. In January 2023, the securities were subsequently sold resulting in an incremental $6.9 million gain upon sale as compared to the fair value recorded on the consolidated balance sheets at December 31, 2022.

AFS debt securities 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.

There was a $0.5 million release of credit reserves and no provision for credit losses for AFS securities for the three and six months ended June 30, 2023, respectively. There was a $1.3 million and a $1.7 million provision for credit losses for AFS securities for the three and six months ended June 30, 2022, respectively. There was a $1.3 million allowance for credit losses for AFS securities as of June 30, 2023 which was primarily corporate debt securities and $1.3 million allowance for credit losses for AFS securities as of December 31, 2022. The process for identifying credit losses for AFS securities is 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. For additional information, please refer to Note 6— Allowance for Credit Losses.

Held to Maturity Debt Securities. Held to maturity (HTM) debt securities consist of securities that management intends to, and Northern Trust has the ability to, hold until maturity. The following tables provide the amortized cost and fair values as of June 30, 2023 and December 31, 2022, and remaining maturities of HTM debt securities as of June 30, 2023.

TABLE 43: RECONCILIATION OF AMORTIZED COST TO FAIR VALUE OF HELD TO MATURITY DEBT SECURITIES

	JUNE 30, 2023			
(In Millions)	AMORTIZED COST	GROSS UNREALIZED GAINS	GROSS UNREALIZED LOSSES	FAIR VALUE
Obligations of States and Political Subdivisions	$ 2,573.0	$ 0.2	$ 108.5	$ 2,464.7
Government Sponsored Agency	9,354.2	—	1,137.2	8,217.0
Non-U.S. Government	3,987.3	0.1	145.5	3,841.9
Corporate Debt	669.9	—	46.7	623.2
Covered Bonds	2,278.7	0.3	151.3	2,127.7
Certificates of Deposit	588.2	0.2	—	588.4
Sub-Sovereign, Supranational and Non-U.S. Agency Bonds	5,645.8	0.8	491.8	5,154.8
Other Asset-Backed	288.0	0.2	0.5	287.7
Commercial Mortgage-Backed	37.6	—	0.8	36.8
Other	583.6	—	166.6	417.0
Total	$ 26,006.3	$ 1.8	$ 2,248.9	$ 23,759.2

	DECEMBER 31, 2022			
(In Millions)	AMORTIZED COST	GROSS UNREALIZED GAINS	GROSS UNREALIZED LOSSES	FAIR VALUE
U.S. Government	$ 50.0	$ —	$ —	$ 50.0
Obligations of States and Political Subdivisions	2,565.3	—	149.8	2,415.5
Government Sponsored Agency	9,407.7	—	1,076.0	8,331.7
Non-U.S. Government	3,234.0	0.1	133.8	3,100.3
Corporate Debt	713.3	—	45.4	667.9
Covered Bonds	2,530.3	0.3	158.7	2,371.9
Certificates of Deposit	35.9	—	—	35.9
Sub-Sovereign, Supranational and Non-U.S. Agency Bonds	5,703.3	1.0	436.1	5,268.2
Other Asset-Backed	263.7	—	1.0	262.7
Other	532.6	—	157.4	375.2
Total	$ 25,036.1	$ 1.4	$ 2,158.2	$ 22,879.3

As of June 30, 2023, the $26.0 billion HTM debt securities portfolio had unrealized losses of $1.1 billion and $491.8 million related to government-sponsored agency and sub-sovereign, supranational and non-U.S. agency bonds, respectively, which are primarily attributable to changes in overall market interest rates. As of December 31, 2022, the $25.0 billion HTM debt securities portfolio had unrealized losses of $1.1 billion and $436.1 million related to government-sponsored agency and sub-sovereign, supranational and non-U.S. agency bonds, respectively, which are primarily attributable to changes in overall market interest rates and credit spreads since their purchase.

TABLE 44: REMAINING MATURITY OF HELD TO MATURITY DEBT SECURITIES

JUNE 30, 2023	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
Obligations of States and Political Subdivisions	$ 45.0	$ 44.4	$ 909.3	$ 875.0	$ 1,218.2	$ 1,163.9	$ 400.5	$ 381.4	$ 2,573.0	$ 2,464.7
Government Sponsored Agency	876.5	765.3	3,058.1	2,692.9	3,592.4	3,180.0	1,827.2	1,578.8	9,354.2	8,217.0
Non-U.S. Government	2,555.9	2,550.7	1,398.0	1,263.3	33.4	27.9	—	—	3,987.3	3,841.9
Corporate Debt	107.0	104.3	547.5	506.5	15.4	12.4	—	—	669.9	623.2
Covered Bonds	224.0	219.1	1,741.4	1,638.8	313.3	269.8	—	—	2,278.7	2,127.7
Certificates of Deposit	588.2	588.4	—	—	—	—	—	—	588.2	588.4
Sub-Sovereign, Supranational and Non-U.S. Agency Bonds	864.8	854.5	4,724.3	4,254.2	56.7	46.1	—	—	5,645.8	5,154.8
Other Asset-Backed	12.3	12.3	79.0	78.8	171.4	171.3	25.3	25.3	288.0	287.7
Commercial Mortgage-Backed	—	—	37.6	36.8	—	—	—	—	37.6	36.8
Other	55.4	53.9	326.0	283.6	32.7	23.7	169.5	55.8	583.6	417.0
Total	$ 5,329.1	$ 5,192.9	$ 12,821.2	$ 11,629.9	$ 5,433.5	$ 4,895.1	$ 2,422.5	$ 2,041.3	$ 26,006.3	$ 23,759.2

Note: Mortgage-backed and asset-backed securities are included in the above table taking into account anticipated future prepayments.

Credit Quality Indicators. The following table provides the amortized cost of HTM debt securities by credit rating.

TABLE 45: AMORTIZED COST OF HELD TO MATURITY DEBT SECURITIES BY CREDIT RATING

	JUNE 30, 2023					
(In Millions)	AAA	AA	A	BBB	NOT RATED	TOTAL
Obligations of States and Political Subdivisions	$ 932.1	$ 1,640.9	$ —	$ —	$ —	$ 2,573.0
Government Sponsored Agency	9,354.2	—	—	—	—	9,354.2
Non-U.S. Government	1,249.5	886.3	1,522.4	329.1	—	3,987.3
Corporate Debt	2.2	308.7	359.0	—	—	669.9
Covered Bonds	2,278.7	—	—	—	—	2,278.7
Certificates of Deposit	555.0	—	—	—	33.2	588.2
Sub-Sovereign, Supranational and Non-U.S. Agency Bonds	4,322.0	1,292.9	29.8	1.1	—	5,645.8
Other Asset-Backed	288.0	—	—	—	—	288.0
Commercial Mortgage-Backed	37.6	—	—	—	—	37.6
Other	64.1	—	—	—	519.5	583.6
Total	$ 19,083.4	$ 4,128.8	$ 1,911.2	$ 330.2	$ 552.7	$ 26,006.3
Percent of Total	74 %	16 %	7 %	1 %	2 %	100 %

	DECEMBER 31, 2022					
(In Millions)	AAA	AA	A	BBB	NOT RATED	TOTAL
U.S. Government	$ 50.0	$ —	$ —	$ —	$ —	$ 50.0
Obligations of States and Political Subdivisions	926.8	1,638.5	—	—	—	2,565.3
Government Sponsored Agency	9,407.7	—	—	—	—	9,407.7
Non-U.S. Government	762.2	926.5	1,223.0	322.3	—	3,234.0
Corporate Debt	2.1	305.7	405.5	—	—	713.3
Covered Bonds	2,530.3	—	—	—	—	2,530.3
Certificates of Deposit	—	—	—	—	35.9	35.9
Sub-Sovereign, Supranational and Non-U.S. Agency Bonds	4,171.3	1,502.0	28.9	1.1	—	5,703.3
Other Asset-Backed	263.7	—	—	—	—	263.7
Other	65.8	—	—	—	466.8	532.6
Total	$ 18,179.9	$ 4,372.7	$ 1,657.4	$ 323.4	$ 502.7	$ 25,036.1
Percent of Total	73 %	17 %	7 %	1 %	2 %	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 97% of the HTM portfolio at both June 30, 2023 and December 31, 2022 comprised of securities rated A or higher. The remaining HTM debt securities portfolio was comprised of 1% rated BBB at both June 30, 2023 and December 31, 2022 and 2% was not rated by Moody's, S&P Global, or Fitch Ratings at both June 30, 2023 and December 31, 2022. Securities not explicitly rated were grouped where possible under the credit rating of the issuer of the security.

Investment Security Gains and Losses. There were no sales of debt securities and no net investment security gains (losses) for the three months ended June 30, 2023 and 2022. Proceeds of $2.1 billion from the sale of debt securities resulted in investment security gains of $6.9 million for the six months ended June 30, 2023 and there were no sales of debt securities during the six months ended June 30, 2022.

Note 5 – Loans

Amounts outstanding for Loans, by segment and class, are shown in the following table.

TABLE 46: LOANS

(In Millions)		JUNE 30, 2023		DECEMBER 31, 2022
Commercial				
Commercial and Institutional[(1)]	**$**	**12,239.0**	$	12,415.0
Commercial Real Estate		**5,040.1**		4,773.0
Non-U.S.[(1)]		**2,833.7**		3,131.1
Other		**2,248.4**		1,316.5
Total Commercial		**22,361.2**		21,635.6
Personal				
Private Client		**14,172.3**		14,119.0
Residential Real Estate		**6,357.9**		6,413.5
Non-U.S.		**415.0**		510.0
Other		**240.3**		215.2
Total Personal		**21,185.5**		21,257.7
Total Loans	**$**	**43,546.7**	$	42,893.3

[(1)] Commercial and institutional and commercial-non-U.S. combined include $5.2 billion and $5.6 billion of private equity capital call finance loans at June 30, 2023 and December 31, 2022, respectively.

Residential real estate loans consist of traditional first lien mortgages and equity credit lines that generally require a loan-to-collateral value 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 June 30, 2023 and December 31, 2022, equity credit lines totaled $228.8 million and $248.6 million, respectively, and equity credit lines for which first liens were held by Northern Trust represented 98% of the total equity credit lines as of both June 30, 2023 and December 31, 2022.

Included within the commercial-other, commercial-non-U.S., and personal-other classes are short-duration advances primarily related to the processing of custodied client investments, totaling $3.7 billion and $2.9 billion at June 30, 2023 and December 31, 2022, respectively. Demand deposit overdrafts reclassified as loan balances, primarily in personal-other, totaled $8.6 million and $24.4 million at June 30, 2023 and December 31, 2022, respectively.

There were no loans classified as held for sale at June 30, 2023 or December 31, 2022. Loans classified as held for sale are recorded at the lower of cost or fair value. There were no loans sold for the three and six months ended June 30, 2023 and $10.6 million and $11.2 million loans sold for the three and six months ended June 30, 2022, respectively, which were comprised of residential real estate and commercial and institutional loans.

Credit Quality Indicators. Credit quality indicators are statistics, measurements or other metrics that provide information regarding the relative credit risk of loans. Northern Trust utilizes a variety of credit quality indicators to assess the credit risk of loans 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 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 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;
- 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 segment and class balances as of June 30, 2023 and December 31, 2022 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 47: CREDIT QUALITY INDICATOR AT AMORTIZED COST BASIS BY ORIGINATION YEAR

June 30, 2023	TERM LOANS								
(In Millions)	2023	2022	2021	2020	2019	PRIOR	REVOLVING LOANS	REVOLVING LOANS CONVERTED TO TERM LOANS	TOTAL
Commercial									
Commercial and Institutional									
Risk Rating:									
1 to 3 Category	$ 230.2	$ 623.3	$ 941.2	$ 98.1	$ 140.8	$ 404.8	$ 5,310.4	$ 15.0	$ 7,763.8
4 to 5 Category	600.0	782.0	683.9	166.0	141.4	207.0	1,677.3	62.3	4,319.9
6 to 9 Category	3.8	93.4	29.1	—	0.2	1.7	27.1	—	155.3
Total Commercial and Institutional	834.0	1,498.7	1,654.2	264.1	282.4	613.5	7,014.8	77.3	12,239.0
Commercial Real Estate									
Risk Rating:									
1 to 3 Category	290.7	431.7	182.3	26.3	40.4	59.1	53.9	0.5	1,084.9
4 to 5 Category	1,179.0	1,169.7	612.4	275.3	257.6	167.6	212.3	15.4	3,889.3
6 to 9 Category	16.8	3.7	19.9	—	8.3	14.7	2.5	—	65.9
Total Commercial Real Estate	1,486.5	1,605.1	814.6	301.6	306.3	241.4	268.7	15.9	5,040.1
Commercial Real Estate Gross Charge-offs	—	(4.0)	—	—	—	—	—	—	(4.0)
Non-U.S.									
Risk Rating:									
1 to 3 Category	547.1	—	45.0	98.3	44.9	3.3	1,008.4	—	1,747.0
4 to 5 Category	759.5	7.9	—	—	23.1	170.1	109.6	1.8	1,072.0
6 to 9 Category	—	14.7	—	—	—	—	—	—	14.7
Total Non-U.S.	1,306.6	22.6	45.0	98.3	68.0	173.4	1,118.0	1.8	2,833.7
Other									
Risk Rating:									
1 to 3 Category	1,400.7	—	—	—	—	—	—	—	1,400.7
4 to 5 Category	847.7	—	—	—	—	—	—	—	847.7
Total Other	2,248.4	—	—	—	—	—	—	—	2,248.4
Total Commercial	5,875.5	3,126.4	2,513.8	664.0	656.7	1,028.3	8,401.5	95.0	22,361.2
Commercial Gross Charge-offs	—	(4.0)	—	—	—	—	—	—	(4.0)
Personal									
Private Client									
Risk Rating:									
1 to 3 Category	142.3	256.0	64.9	72.3	6.2	20.1	5,361.1	177.0	6,099.9
4 to 5 Category	110.9	757.2	713.5	119.3	177.2	182.7	5,581.8	408.6	8,051.2
6 to 9 Category	—	0.6	—	—	—	17.7	2.9	—	21.2
Total Private Client	253.2	1,013.8	778.4	191.6	183.4	220.5	10,945.8	585.6	14,172.3
Residential Real Estate									
Risk Rating:									
1 to 3 Category	129.0	622.8	545.0	409.7	161.7	793.9	219.5	—	2,881.6
4 to 5 Category	85.5	584.2	720.7	681.9	275.0	902.4	164.2	—	3,413.9
6 to 9 Category	—	4.7	5.6	2.2	10.8	35.5	3.6	—	62.4
Total Residential Real Estate	214.5	1,211.7	1,271.3	1,093.8	447.5	1,731.8	387.3	—	6,357.9
Residential Real Estate Gross Write-offs	(0.7)	—	—	—	—	(0.1)	—	—	(0.8)
Non-U.S.									
Risk Rating:									
1 to 3 Category	3.9	4.0	0.6	—	—	5.6	54.5	—	68.6
4 to 5 Category	8.8	20.6	39.4	—	18.8	8.2	243.0	7.5	346.3
6 to 9 Category	—	—	—	—	—	0.1	—	—	0.1
Total Non-U.S.	12.7	24.6	40.0	—	18.8	13.9	297.5	7.5	415.0
Other									
Risk Rating:									
1 to 3 Category	78.1	—	—	—	—	—	—	—	78.1
4 to 5 Category	162.2	—	—	—	—	—	—	—	162.2
Total Other	240.3	—	—	—	—	—	—	—	240.3
Total Personal	720.7	2,250.1	2,089.7	1,285.4	649.7	1,966.2	11,630.6	593.1	21,185.5
Personal Gross Charge-offs	(0.7)	—	—	—	—	(0.1)	—	—	(0.8)
Total Loans	$6,596.2	$5,376.5	$4,603.5	$1,949.4	$1,306.4	$2,994.5	$ 20,032.1	$ 688.1	$43,546.7
Total Loans Gross Charge-offs	$ (0.7)	$ (4.0)	$ —	$ —	$ —	$ (0.1)	$ —	$ —	$ (4.8)

December 31, 2022 (In Millions)	TERM LOANS 2022	2021	2020	2019	2018	PRIOR	REVOLVING LOANS	REVOLVING LOANS CONVERTED TO TERM LOANS	TOTAL
Commercial									
Commercial and Institutional									
Risk Rating:									
1 to 3 Category	$ 753.3	$ 1,087.5	$ 209.8	$ 159.3	$ 45.9	$ 511.3	$ 6,032.8	$ 17.7	$ 8,817.6
4 to 5 Category	744.1	740.6	300.8	191.1	151.4	174.7	1,102.3	32.9	3,437.9
6 to 9 Category	50.8	30.5	—	13.7	—	—	64.5	—	159.5
Total Commercial and Institutional	1,548.2	1,858.6	510.6	364.1	197.3	686.0	7,199.6	50.6	12,415.0
Commercial Real Estate									
Risk Rating:									
1 to 3 Category	318.7	227.4	123.6	123.5	39.8	39.1	113.4	3.0	988.5
4 to 5 Category	968.5	1,040.0	637.8	447.3	153.0	256.9	181.5	17.5	3,702.5
6 to 9 Category	7.7	22.7	—	49.1	—	—	2.5	—	82.0
Total Commercial Real Estate	1,294.9	1,290.1	761.4	619.9	192.8	296.0	297.4	20.5	4,773.0
Non-U.S.									
Risk Rating:									
1 to 3 Category	991.9	46.2	109.6	14.8	—	6.5	1,158.3	—	2,327.3
4 to 5 Category	459.0	—	—	—	—	214.9	89.5	1.8	765.2
6 to 9 Category	0.1	—	—	23.1	—	—	15.4	—	38.6
Total Non-U.S.	1,451.0	46.2	109.6	37.9	—	221.4	1,263.2	1.8	3,131.1
Other									
Risk Rating:									
1 to 3 Category	993.9	—	—	—	—	—	—	—	993.9
4 to 5 Category	322.6	—	—	—	—	—	—	—	322.6
Total Other	1,316.5	—	—	—	—	—	—	—	1,316.5
Total Commercial	5,610.6	3,194.9	1,381.6	1,021.9	390.1	1,203.4	8,760.2	72.9	21,635.6
Personal									
Private Client									
Risk Rating:									
1 to 3 Category	395.5	159.9	50.5	313.6	13.4	18.5	5,352.5	28.2	6,332.1
4 to 5 Category	430.3	755.1	192.4	191.3	38.7	160.0	5,728.6	267.2	7,763.6
6 to 9 Category	0.9	—	0.1	—	18.6	—	3.7	—	23.3
Total Private Client	826.7	915.0	243.0	504.9	70.7	178.5	11,084.8	295.4	14,119.0
Residential Real Estate									
Risk Rating:									
1 to 3 Category	871.6	666.7	567.7	168.1	102.9	750.8	128.4	7.9	3,264.1
4 to 5 Category	354.3	656.7	597.6	290.0	170.9	838.2	180.4	1.0	3,089.1
6 to 9 Category	—	6.8	1.5	1.1	3.7	35.9	11.3	—	60.3
Total Residential Real Estate	1,225.9	1,330.2	1,166.8	459.2	277.5	1,624.9	320.1	8.9	6,413.5
Non-U.S.									
Risk Rating:									
1 to 3 Category	3.0	3.7	—	—	4.6	2.3	124.6	—	138.2
4 to 5 Category	24.2	40.3	—	21.3	3.2	2.9	272.0	7.8	371.7
6 to 9 Category	—	—	—	—	—	0.1	—	—	0.1
Total Non-U.S.	27.2	44.0	—	21.3	7.8	5.3	396.6	7.8	510.0
Other									
Risk Rating:									
1 to 3 Category	190.8	—	—	—	—	—	—	—	190.8
4 to 5 Category	24.4	—	—	—	—	—	—	—	24.4
Total Other	215.2	—	—	—	—	—	—	—	215.2
Total Personal	2,295.0	2,289.2	1,409.8	985.4	356.0	1,808.7	11,801.5	312.1	21,257.7
Total Loans	$ 7,905.6	$ 5,484.1	$ 2,791.4	$ 2,007.3	$ 746.1	$ 3,012.1	$ 20,561.7	$ 385.0	$42,893.3

Loans 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 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 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 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.

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 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 by segment and class, as well as the other real estate owned and nonaccrual asset balances, as of June 30, 2023 and December 31, 2022.

TABLE 48: 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	NONACCRUAL WITH NO ALLOWANCE
June 30, 2023								
Commercial								
Commercial and Institutional	**$ 12,178.3**	**$ 18.1**	**$ 23.1**	**$ 3.1**	**$ 12,222.6**	**$ 16.4**	**$ 12,239.0**	**$ 4.1**
Commercial Real Estate	**5,034.4**	**1.4**	**—**	**0.5**	**5,036.3**	**3.8**	**5,040.1**	**—**
Non-U.S.	**2,833.7**	**—**	**—**	**—**	**2,833.7**	**—**	**2,833.7**	**—**
Other	**2,248.4**	**—**	**—**	**—**	**2,248.4**	**—**	**2,248.4**	**—**
Total Commercial	**22,294.8**	**19.5**	**23.1**	**3.6**	**22,341.0**	**20.2**	**22,361.2**	**4.1**
Personal								
Private Client	**14,066.1**	**59.2**	**33.4**	**11.6**	**14,170.3**	**2.0**	**14,172.3**	**—**
Residential Real Estate	**6,323.6**	**0.1**	**9.3**	**—**	**6,333.0**	**24.9**	**6,357.9**	**23.6**
Non-U.S.	**415.0**	**—**	**—**	**—**	**415.0**	**—**	**415.0**	**—**
Other	**240.3**	**—**	**—**	**—**	**240.3**	**—**	**240.3**	**—**
Total Personal	**21,045.0**	**59.3**	**42.7**	**11.6**	**21,158.6**	**26.9**	**21,185.5**	**23.6**
Total Loans	**$ 43,339.8**	**$ 78.8**	**$ 65.8**	**$ 15.2**	**$ 43,499.6**	**$ 47.1**	**$ 43,546.7**	**$ 27.7**
					Other Real Estate Owned	**$ 0.3**		
					Total Nonaccrual Assets	**$ 47.4**		

	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	NONACCRUAL WITH NO ALLOWANCE
December 31, 2022								
Commercial								
Commercial and Institutional	$ 12,353.7	$ 40.2	$ 3.0	$ 0.7	$ 12,397.6	$ 17.4	$ 12,415.0	$ 4.4
Commercial Real Estate	4,761.5	1.3	—	—	4,762.8	10.2	4,773.0	6.2
Non-U.S.	3,131.1	—	—	—	3,131.1	—	3,131.1	—
Other	1,316.5	—	—	—	1,316.5	—	1,316.5	—
Total Commercial	21,562.8	41.5	3.0	0.7	21,608.0	27.6	21,635.6	10.6
Personal								
Private Client	13,843.5	192.3	29.9	53.3	14,119.0	—	14,119.0	—
Residential Real Estate	6,373.2	9.6	12.3	0.1	6,395.2	18.3	6,413.5	18.3
Non-U.S	509.9	—	—	0.1	510.0	—	510.0	—
Other	215.2	—	—	—	215.2	—	215.2	—
Total Personal	20,941.8	201.9	42.2	53.5	21,239.4	18.3	21,257.7	18.3
Total Loans	$ 42,504.6	$ 243.4	$ 45.2	$ 54.2	$ 42,847.4	$ 45.9	$ 42,893.3	$ 28.9
					Other Real Estate Owned	$ —		
					Total Nonaccrual Assets	$ 45.9		

Interest income that would have been recorded for nonaccrual loans in accordance with their original terms was $0.7 million and $1.4 million for the three and six months ended June 30, 2023, respectively, and $1.0 million and $2.1 million for the three and six months ended June 30, 2022, respectively.

Northern Trust may obtain physical possession of real estate via foreclosure on an in-substance repossession. As of June 30, 2023 and December 31, 2022, Northern Trust held foreclosed real estate properties with an immaterial carrying value, as a result of obtaining physical possession. In addition, as of June 30, 2023 and December 31, 2022, Northern Trust had loans with a carrying value of $1.3 million and $1.1 million, respectively, for which formal foreclosure proceedings were in process.

Loan Modifications to Borrowers Experiencing Financial Difficulty (After the Adoption of Accounting Standards Update No. 2022-02)

For borrowers experiencing financial difficulties, Northern Trust may provide payment relief by modifying the terms of the original loan. Loan modifications to borrowers experiencing financial difficulty involve primarily the extensions of term, deferrals of principal and interest, interest rate concessions, and other modifications or a combination thereof. Northern Trust considers payment deferrals of less than 90 days as insignificant, absent any material modifications to other loan terms.

The following table shows the amortized cost basis of loan modifications provided to financially distressed borrowers that impacted the respective cash flows of the underlying loans as of June 30, 2023, disaggregated by relevant class of financing receivable and type of modification provided.

TABLE 49: LOAN MODIFICATIONS MADE TO BORROWERS EXPERIENCING FINANCIAL DIFFICULTY

		THREE MONTHS ENDED JUNE 30, 2023		SIX MONTHS ENDED JUNE 30, 2023	
(in $ million)	LOAN MODIFICATION DETAIL	AMORTIZED COST BASIS	% OF TOTAL SEGMENT	AMORTIZED COST BASIS	% OF TOTAL SEGMENT
Commercial					
Commercial Real Estate[(1)]	Combination of principal and/or interest deferral and extension of term	—	—	—	—
Total Commercial		**$ —**	**— %**	**$ —**	**— %**
Personal					
Residential Real Estate	Principal and/or interest deferral	$ 0.2	— %	$ 3.1	0.05 %
Private Client[(1)]	Extension of term	—	—	—	—
Total Personal		**$ 0.2**	**— %**	**$ 3.1**	**0.05 %**
Total Loans		**$ 0.2**	**— %**	**$ 3.1**	**0.05 %**

(1) During the three months ended June 30, 2023, Northern Trust provided $32.5 million of combinations of principal and/or interest deferral and term extensions for the commercial real estate portfolio and $0.2 million of term extensions for the private client portfolio for which the respective loans had no amortized cost basis as of the end of the period. The $32.5 million loan has been fully repaid as of June 30, 2023.

The following table describes the financial effect of the modifications made to borrowers experiencing financial difficulty.

TABLE 50: FINANCIAL EFFECT OF MODIFICATIONS MADE TO BORROWERS EXPERIENCING FINANCIAL DIFFICULTY

	THREE MONTHS ENDED JUNE 30, 2023	SIX MONTHS ENDED JUNE 30, 2023
	FINANCIAL EFFECT	FINANCIAL EFFECT
PRINCIPAL AND INTEREST DEFERRAL		
Commercial		
Commercial Real Estate	Northern Trust provided a weighted average of 6 months payment deferrals to borrowers for total deferred principal and interest of $32.5 million.	Northern Trust provided a weighted average of 6 months payment deferrals to borrowers for total deferred principal and interest of $32.5 million.
Personal		
Residential Real Estate	Northern Trust provided payment deferrals to borrowers for immaterial principal and interest deferral amounts.	Northern Trust provided a weighted average of 9 months payment deferrals to borrowers for immaterial principal and interest deferral amounts.
TERM EXTENSION		
Commercial		
Commercial Real Estate	Northern Trust provided weighted average term extensions of 6 months.	Northern Trust provided weighted average term extensions of 6 months.
Personal		
Private Client	Northern Trust provided weighted average term extensions of 60 months.	Northern Trust provided weighted average term extensions of 60 months.

The effectiveness of Northern Trust's modification efforts is measured by the loans' respective past due status under the modified terms as of the end of the period. All of the loans that were modified since the adoption of ASU 2022-02 as of January 1, 2023, were performing in accordance with their modified terms and were not considered past due for purposes of these disclosures as of June 30, 2023. During the current period, Northern Trust charged off $0.7 million related to modifications to borrowers experiencing financial difficulty that had been processed since the adoption of ASU 2022-02.

There were no undrawn loan commitments or standby letters of credit issued to financially distressed borrowers for which Northern Trust has modified the payment terms of the loans as of June 30, 2023.

The expected credit loss for nonaccrual loans including loan modifications to borrowers experiencing financial difficulty is measured based on either the expected future cash flows, the value of collateral, or other factors that may impact the borrower's ability to pay. If the discounted cash flow method is utilized, the credit loss is measured based upon the present value of expected future cash flows, discounted at the effective interest rate based on the post-modification 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. 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 for all loan modifications to borrowers experiencing financial difficulty.

Troubled Debt Restructurings (Prior to the Adoption of Accounting Standards Update No. 2022-02)

Prior to January 1, 2023, 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 starting in the calendar year of their restructuring. In subsequent years, a TDR may cease being reported 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.

All loans 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.

Included within nonaccrual loans were $35.3 million of nonaccrual TDRs, and $39.7 million of accrual TDRs as of December 31, 2022. There were $0.2 million of aggregate undrawn loan commitments and standby letters of credit at December 31, 2022, issued to borrowers with TDR modifications of loans.

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.

The following table provides, by segment and class, the number of TDR modifications of loans and leases entered into during the three and six months ended June 30, 2022, and the recorded investments and unpaid principal balances as of June 30, 2022.

TABLE 51: TROUBLED DEBT RESTRUCTURINGS

		THREE MONTHS ENDED JUNE 30, 2022			SIX MONTHS ENDED JUNE 30, 2022		
($ In Millions)	LOAN MODIFICATION DETAIL	NUMBER OF LOANS AND LEASES	RECORDED INVESTMENT	UNPAID PRINCIPAL BALANCE	NUMBER OF LOANS AND LEASES	RECORDED INVESTMENT	UNPAID PRINCIPAL BALANCE
Commercial							
Commercial and Institutional	Other modification	—	$ —	$ —	1	$ 0.5	$ 0.5
Total Commercial		—	—	—	1	0.5	0.5
Personal							
Residential Real Estate	Interest rate concession, deferrals of principal, and extension of term	—	—	—	2	0.1	0.1
Total Personal		—	—	—	2	0.1	0.1
Total Loans and Leases		—	$ —	$ —	3	$ 0.6	$ 0.6

Note: Period-end balances reflect all pay downs and charge-offs during the year.

There were no residential real estate loan TDR modifications during the twelve months ended March 31, 2022, which subsequently had a payment default during the three and six months ended June 30, 2022.

Note 6 – Allowance for Credit Losses

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.

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 Department, and each of Northern Trust's reporting segments. 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 Provision for Credit Losses on the consolidated statements of income represents the change in the Allowance for Credit Losses on the consolidated balance sheets after accounting for net charge-offs or recoveries 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 or less than actual net charge-offs.

The following table provides information regarding changes in the total allowance for credit losses during the three and six months ended June 30, 2023 and 2022.

TABLE 52: CHANGES IN THE ALLOWANCE FOR CREDIT LOSSES

	THREE MONTHS ENDED JUNE 30, 2023				
(In Millions)	LOANS	UNDRAWN LOAN COMMITMENTS AND STANDBY LETTERS OF CREDIT	HELD TO MATURITY DEBT SECURITIES	OTHER FINANCIAL ASSETS	TOTAL
Balance at Beginning of Period	$ 159.9	$ 34.3	$ 16.0	$ 1.0	$ 211.2
Charge-Offs	(0.8)	—	—	—	(0.8)
Recoveries	0.8	—	—	—	0.8
Net Recoveries (Charge-Offs)	—	—	—	—	—
(Release of) Provision for Credit Losses[(1)]	(7.4)	(8.3)	0.7	—	(15.0)
Balance at End of Period	$ 152.5	$ 26.0	$ 16.7	$ 1.0	$ 196.2

[(1)] *The table excludes a release of credit reserves of $0.5 million for the three months ended June 30, 2023 for AFS debt securities. See further detail in Note 4—Securities.*

	SIX MONTHS ENDED JUNE 30, 2023				
(In Millions)	LOANS	UNDRAWN LOAN COMMITMENTS AND STANDBY LETTERS OF CREDIT	HELD TO MATURITY DEBT SECURITIES	OTHER FINANCIAL ASSETS	TOTAL
Balance at Beginning of Period	$ 144.3	$ 38.5	$ 16.0	$ 0.8	$ 199.6
Charge-Offs	(4.8)	—	—	—	(4.8)
Recoveries	1.9	—	—	—	1.9
Net Recoveries (Charge-Offs)	(2.9)	—	—	—	(2.9)
(Release of) Provision for Credit Losses[(1)]	11.1	(12.5)	0.7	0.2	(0.5)
Balance at End of Period	$ 152.5	$ 26.0	$ 16.7	$ 1.0	$ 196.2

[(1)] *There was no provision for credit losses for the six months ended June 30, 2023 for AFS debt securities. See further detail in Note 4—Securities.*

	THREE MONTHS ENDED JUNE 30, 2022				
(In Millions)	LOANS AND LEASES	UNDRAWN LOAN COMMITMENTS AND STANDBY LETTERS OF CREDIT	HELD TO MATURITY DEBT SECURITIES	OTHER FINANCIAL ASSETS	TOTAL
Balance at Beginning of Period	$ 136.3	$ 37.5	$ 14.6	$ 1.1	$ 189.5
Charge-Offs	—	—	—	—	—
Recoveries	5.5	—	—	—	5.5
Net Recoveries (Charge-Offs)	5.5	—	—	—	5.5
(Release of) Provision for Credit Losses[(1)]	(3.6)	6.0	0.8	—	3.2
Balance at End of Period	$ 138.2	$ 43.5	$ 15.4	$ 1.1	$ 198.2

[(1)] *The table excludes a provision for credit losses of $1.3 million for the three months ended June 30, 2022 for AFS debt securities. See further detail in Note 4—Securities.*

	SIX MONTHS ENDED JUNE 30, 2022				
(In Millions)	LOANS AND LEASES	UNDRAWN LOAN COMMITMENTS AND STANDBY LETTERS OF CREDIT	HELD TO MATURITY DEBT SECURITIES	OTHER FINANCIAL ASSETS	TOTAL
Balance at Beginning of Period	$ 138.4	$ 34.1	$ 11.2	$ 1.0	$ 184.7
Charge-Offs	(0.1)	—	—	—	(0.1)
Recoveries	8.8	—	—	—	8.8
Net Recoveries (Charge-Offs)	8.7	—	—	—	8.7
(Release of) Provision for Credit Losses[(1)]	(8.9)	9.4	4.2	0.1	4.8
Balance at End of Period	$ 138.2	$ 43.5	$ 15.4	$ 1.1	$ 198.2

[(1)] *The table excludes a provision for credit losses of $1.7 million for the six months ended June 30, 2022 for AFS debt securities. See further detail in Note 4—Securities.*

The release of credit reserves, excluding the release of credit reserves for available for sale debt securities, was $15.0 million in the current quarter, as compared to a $3.2 million provision in the prior-year quarter. The release of credit reserves was primarily due to a decrease in the reserve evaluated on a collective basis, primarily driven by improved credit quality in certain commercial and institutional and certain commercial real estate (CRE) loans, partially offset by expectations for higher economic stress in the CRE market, particularly office CRE. The reserve evaluated on a collective basis relates to pooled financial assets sharing similar risk characteristics. There were no net charge-offs during the three months ended June 30, 2023, as compared to net recoveries of $5.5 million for the three months ended June 30, 2022. For further detail, please see the Allowance for the Loan and Lease Portfolio and the Allowance for Held to Maturity Debt Securities Portfolio sections below.

The release of credit reserves was $0.5 million for the six months ended June 30, 2023, as compared to a $4.8 million provision in the prior-year period. The release of credit reserves was primarily due to a decrease in the collective basis reserve, driven by improvements in credit quality within the commercial and institutional portfolio, partially offset by growth in the size and duration of the CRE portfolio and expectations of higher economic stress in the CRE market, particularly office CRE. The reserve evaluated on a collective basis relates to pooled financial assets sharing similar risk characteristics. There were net charge-offs of $2.9 million during the six months ended June 30, 2023, as compared to net recoveries of $8.7 million during the six months ended June 30, 2022. For further detail, please see the Allowance for the Loan and Lease Portfolio and the Allowance for Held to Maturity Debt Securities Portfolio sections below.

The portion of the allowance assigned to loans, HTM debt securities, 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. For credit exposure and the associated allowance related to fee receivables, please refer to Note 13—Revenue from Contracts with Clients. For information related to the allowance for AFS debt securities, 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, and Other Assets, please refer to the Allowance for Other Financial Assets section within this footnote.

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 (currently two years) to project future conditions. 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 on a straight-line basis over four quarters. The primary forecast in the current quarter reflects an outlook of continued slow but steady growth, with inflation, labor markets, and interest rates stabilizing. Recognizing the uncertainty in the primary forecast, an alternative scenario is also considered, which reflects a recession that incorporates the experiences of a wider set of historical economic cycles.

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.

Allowance for the Loan and Lease Portfolio. The following table provides information regarding changes in the total allowance for credit losses related to loans and leases, including undrawn loan commitments and standby letters of credit, by segment during the three and six months ended June 30, 2023 and 2022.

TABLE 53: CHANGES IN THE ALLOWANCE FOR CREDIT LOSSES RELATED TO LOANS AND LEASES

	THREE MONTHS ENDED JUNE 30, 2023					
	LOANS			UNDRAWN LOAN COMMITMENTS AND STANDBY LETTERS OF CREDIT		
(In Millions)	COMMERCIAL	PERSONAL	TOTAL	COMMERCIAL	PERSONAL	TOTAL
Balance at Beginning of Period	$ 130.8	$ 29.1	$ 159.9	$ 31.3	$ 3.0	$ 34.3
Charge-Offs	—	(0.8)	(0.8)	—	—	—
Recoveries	0.1	0.7	0.8	—	—	—
Net Recoveries (Charge-Offs)	0.1	(0.1)	—	—	—	—
(Release of) Provision for Credit Losses	(6.9)	(0.5)	(7.4)	(8.0)	(0.3)	(8.3)
Balance at End of Period	$ 124.0	$ 28.5	$ 152.5	$ 23.3	$ 2.7	$ 26.0

	SIX MONTHS ENDED JUNE 30, 2023					
	LOANS			UNDRAWN LOAN COMMITMENTS AND STANDBY LETTERS OF CREDIT		
(In Millions)	COMMERCIAL	PERSONAL	TOTAL	COMMERCIAL	PERSONAL	TOTAL
Balance at Beginning of Period	$ 116.2	$ 28.1	$ 144.3	$ 36.3	$ 2.2	$ 38.5
Charge-Offs	(4.0)	(0.8)	(4.8)	—	—	—
Recoveries	0.1	1.8	1.9	—	—	—
Net Recoveries (Charge-Offs)	(3.9)	1.0	(2.9)	—	—	—
(Release of) Provision for Credit Losses	11.7	(0.6)	11.1	(13.0)	0.5	(12.5)
Balance at End of Period	$ 124.0	$ 28.5	$ 152.5	$ 23.3	$ 2.7	$ 26.0

	THREE MONTHS ENDED JUNE 30, 2022					
	LOANS AND LEASES			UNDRAWN LOAN COMMITMENTS AND STANDBY LETTERS OF CREDIT		
(In Millions)	COMMERCIAL	PERSONAL	TOTAL	COMMERCIAL	PERSONAL	TOTAL
Balance at Beginning of Period	$ 102.5	$ 33.8	$ 136.3	$ 34.7	$ 2.8	$ 37.5
Charge-Offs	—	—	—	—	—	—
Recoveries	0.2	5.3	5.5	—	—	—
Net Recoveries (Charge-Offs)	0.2	5.3	5.5	—	—	—
(Release of) Provision for Credit Losses	(0.2)	(3.4)	(3.6)	5.6	0.4	6.0
Balance at End of Period	$ 102.5	$ 35.7	$ 138.2	$ 40.3	$ 3.2	$ 43.5

	SIX MONTHS ENDED JUNE 30, 2022					
	LOANS AND LEASES			UNDRAWN LOAN COMMITMENTS AND STANDBY LETTERS OF CREDIT		
(In Millions)	COMMERCIAL	PERSONAL	TOTAL	COMMERCIAL	PERSONAL	TOTAL
Balance at Beginning of Period	$ 105.6	$ 32.8	$ 138.4	$ 31.4	$ 2.7	$ 34.1
Charge-Offs	—	(0.1)	(0.1)	—	—	—
Recoveries	2.4	6.4	8.8	—	—	—
Net Recoveries (Charge-Offs)	2.4	6.3	8.7	—	—	—
(Release of) Provision for Credit Losses	(5.5)	(3.4)	(8.9)	8.9	0.5	9.4
Balance at End of Period	$ 102.5	$ 35.7	$ 138.2	$ 40.3	$ 3.2	$ 43.5

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 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 homogenous 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 or qualitative estimation methodologies 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.

Allowance Related to Credit Exposure Evaluated on an Individual Basis. The allowance is determined through an individual evaluation of loans, and lending-related commitments that have defaulted, generally those with borrower ratings of 8 and 9, 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 defaulted 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 following table provides information regarding the recorded investments in loans and the allowance for credit losses for loans and undrawn loan commitments and standby letters of credit by segment as of June 30, 2023 and December 31, 2022.

TABLE 54: RECORDED INVESTMENTS IN LOANS

	JUNE 30, 2023			DECEMBER 31, 2022		
(In Millions)	**COMMERCIAL**	**PERSONAL**	**TOTAL**	COMMERCIAL	PERSONAL	TOTAL
Loans						
Evaluated on an Individual Basis	**$ 26.7**	**$ 51.2**	**$ 77.9**	$ 63.0	$ 46.1	$ 109.1
Evaluated on a Collective Basis	**22,334.5**	**21,134.3**	**43,468.8**	21,572.6	21,211.6	42,784.2
Total Loans	**22,361.2**	**21,185.5**	**43,546.7**	21,635.6	21,257.7	42,893.3
Allowance for Credit Losses on Loans						
Evaluated on an Individual Basis	**9.0**	**2.0**	**11.0**	10.4	—	10.4
Evaluated on a Collective Basis	**115.0**	**26.5**	**141.5**	105.8	28.1	133.9
Allowance Assigned to Loans	**124.0**	**28.5**	**152.5**	116.2	28.1	144.3
Allowance for Undrawn Loan Commitments and Standby Letters of Credit						
Evaluated on an Individual Basis	**—**	**—**	**—**	—	—	—
Evaluated on a Collective Basis	**23.3**	**2.7**	**26.0**	36.3	2.2	38.5
Allowance Assigned to Undrawn Loan Commitments and Standby Letters of Credit	**23.3**	**2.7**	**26.0**	36.3	2.2	38.5
Total Allowance Assigned to Loans and Undrawn Loan Commitments and Standby Letters of Credit	**$ 147.3**	**$ 31.2**	**$ 178.5**	$ 152.5	$ 30.3	$ 182.8

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. 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 Held to Maturity Debt Securities Portfolio. The following table provides information regarding changes in the total allowance for credit losses for HTM debt securities during the three and six months ended June 30, 2023 and 2022.

TABLE 55: CHANGES IN THE ALLOWANCE FOR CREDIT LOSSES RELATED TO HELD TO MATURITY DEBT SECURITIES

	THREE MONTHS ENDED JUNE 30, 2023						
(In Millions)	**CORPORATE DEBT**	**NON-U.S. GOVERNMENT**	**SUB-SOVEREIGN, SUPRANATIONAL, AND NON-U.S. AGENCY BONDS**	**OBLIGATIONS OF STATES AND POLITICAL SUBDIVISIONS[(1)]**	**COVERED BONDS**	**OTHER**	**TOTAL**
Balance at Beginning of Period	**$ 1.9**	**$ 3.9**	**$ 4.1**	**$ 1.3**	**$ 0.1**	**$ 4.7**	**$ 16.0**
(Release of) Provision for Credit Losses	**(0.5)**	**1.5**	**(0.7)**	**—**	**—**	**0.4**	**0.7**
Balance at End of Period	**$ 1.4**	**$ 5.4**	**$ 3.4**	**$ 1.3**	**$ 0.1**	**$ 5.1**	**$ 16.7**

(1) The allowance for Obligations of States and Political Subdivisions is related to (non pre-refunded) municipal securities that do not fall under Northern Trust's zero-loss assumption.

(In Millions)	SIX MONTHS ENDED JUNE 30, 2023 CORPORATE DEBT	NON-U.S. GOVERNMENT	SUB-SOVEREIGN, SUPRANATIONAL, AND NON-U.S. AGENCY BONDS	OBLIGATIONS OF STATES AND POLITICAL SUBDIVISIONS[1]	COVERED BONDS	OTHER	TOTAL
Balance at Beginning of Period	**$ 1.9**	**$ 3.6**	**$ 4.0**	**$ 1.5**	**$ 0.1**	**$ 4.9**	**$ 16.0**
(Release of) Provision for Credit Losses	**(0.5)**	**1.8**	**(0.6)**	**(0.2)**	**—**	**0.2**	**0.7**
Balance at End of Period	**$ 1.4**	**$ 5.4**	**$ 3.4**	**$ 1.3**	**$ 0.1**	**$ 5.1**	**$ 16.7**

[1] The allowance for Obligations of States and Political Subdivisions is related to (non pre-refunded) municipal securities that do not fall under Northern Trust's zero-loss assumption.

(In Millions)	THREE MONTHS ENDED JUNE 30, 2022 CORPORATE DEBT	NON-U.S. GOVERNMENT	SUB-SOVEREIGN, SUPRANATIONAL, AND NON-U.S. AGENCY BONDS	OBLIGATIONS OF STATES AND POLITICAL SUBDIVISIONS	COVERED BONDS	OTHER	TOTAL
Balance at Beginning of Period	$ 1.6	$ 3.4	$ 4.6	$ —	$ 0.1	$ 4.9	$ 14.6
Provision for Credit Losses	0.2	0.4	0.2	—	—	—	0.8
Balance at End of Period	$ 1.8	$ 3.8	$ 4.8	$ —	$ 0.1	$ 4.9	$ 15.4

(In Millions)	SIX MONTHS ENDED JUNE 30, 2022 CORPORATE DEBT	NON-U.S. GOVERNMENT	SUB-SOVEREIGN, SUPRANATIONAL, AND NON-U.S. AGENCY BONDS	OBLIGATIONS OF STATES AND POLITICAL SUBDIVISIONS	COVERED BONDS	OTHER	TOTAL
Balance at Beginning of Period	$ 1.4	$ 1.9	$ 3.0	$ —	$ 0.1	$ 4.8	$ 11.2
Provision for Credit Losses	0.4	1.9	1.8	—	—	0.1	4.2
Balance at End of Period	$ 1.8	$ 3.8	$ 4.8	$ —	$ 0.1	$ 4.9	$ 15.4

HTM debt securities 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.

HTM debt securities classified as "other" relate 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 HTM debt securities 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 Other Financial Assets. The allowance for Other Financial Assets consists of the allowance for Due from Banks, Other Central Bank Deposits, Interest Bearing Deposits with Banks, 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 the one used for the HTM debt securities portfolio. It consists of a combination of externally and internally developed loss data, adjusted for the appropriate contractual term. Northern Trust's portfolio of Other Financial Assets is composed mostly of institutions within the "1 to 3" internal borrower rating category and is expected to exhibit minimal to modest likelihood of loss. The Allowance for Credit Losses related to Other Financial Assets was $1.0 million and $0.8 million as of June 30, 2023 and December 31, 2022, respectively.

Accrued Interest. Accrued interest balances are reported within Other Assets on the consolidated balance sheets. Northern Trust elected not to measure an allowance for credit losses for accrued interest receivables related to its loan and securities portfolio 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.

The following table provides the amount of accrued interest excluded from the amortized cost basis of the following portfolios.

TABLE 56: ACCRUED INTEREST

(In Millions)	JUNE 30, 2023	DECEMBER 31, 2022
Loans	$ 227.2	$ 203.1
Debt Securities		
Held to Maturity	77.9	63.2
Available for Sale	169.5	147.1
Other Financial Assets	52.6	43.8
Total	$ 527.2	$ 457.2

The amount of accrued interest reversed through interest income for loans was immaterial for the three and six months ended June 30, 2023 and 2022, and there was no accrued interest reversed through interest income related to any other financial assets for the three and six months ended June 30, 2023 and 2022.

Note 7 – Pledged Assets, Collateral and Restricted Assets

Pledged Assets. For our liquidity management strategy, we may pledge loans and/or securities to various financial market utilities to allow for client payment, clearing and settlement processing as part of our custody services. We may pledge loans or securities to Central Banks, Federal Home Loan Bank (FHLB) of Chicago and third parties for various purposes, for example: securing public and trust deposits, repurchase agreements and borrowings and derivative settlements.

The following table presents the carrying value of Northern Trust's pledged assets by type.

TABLE 57: TYPE OF PLEDGED ASSETS

(In Billions)	JUNE 30, 2023	DECEMBER 31, 2022
Debt Securities(1)	$ 32.9	$ 31.4
Loans(2)	11.8	11.8
Total Pledged Assets	$ 44.7	$ 43.2

(1) Debt securities are comprised of held to maturity and available for sale securities.
(2) Loans pledged at the FHLB of Chicago and the Federal Reserve Bank of Chicago.

Collateral required for these purposes totaled $15.0 billion and $8.7 billion at June 30, 2023 and December 31, 2022, respectively.

The following table presents the AFS debt securities pledged as collateral that are included in pledged assets.

TABLE 58: FAIR VALUE OF AVAILABLE FOR SALE DEBT SECURITIES INCLUDED IN PLEDGED ASSETS

	SECURITIES SOLD UNDER AGREEMENTS TO REPURCHASE		DERIVATIVE CONTRACTS	
(In Millions)	JUNE 30, 2023	DECEMBER 31, 2022	JUNE 30, 2023	DECEMBER 31, 2022
Debt Securities				
Available for Sale	$ 995.9	$ 464.7	$ 50.4	$ 34.7

The secured parties to these transactions have the right to repledge or sell the securities as it relates to $995.9 million and $464.7 million of the pledged collateral as of June 30, 2023 and December 31, 2022, respectively.

Accepted Collateral. Northern Trust accepts financial assets as collateral that it may, in some instances, be 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.

TABLE 59: ACCEPTED COLLATERAL

(In Millions)	JUNE 30, 2023	DECEMBER 31, 2022
Collateral that may be repledged or sold		
Reverse repurchase agreements(1)(2)	$ 35,560.8	$ 12,119.4
Derivative contracts	3.9	5.0
Collateral that may not be repledged or sold		
Reverse repurchase agreements	300.0	450.0
Total Collateral Accepted	$ 35,864.7	$ 12,574.4

(1) The fair value of securities collateral that was repledged or sold totaled $34.6 billion and $11.5 billion at June 30, 2023 and December 31, 2022, respectively.
(2) This includes collateral accepted as related to the sponsored member program. Refer to Note 20—Commitments and Contingent Liabilities for further information.

Restricted Assets. Certain cash may be restricted in terms of usage or withdrawal. As a result of the continuing military conflict involving Ukraine and the Russian Federation and related sanctions and legal restrictions in place, cash balances denominated in Russian rubles received for the benefit of certain clients in our Asset Servicing business are subject to distribution restrictions. As of June 30, 2023 and December 31, 2022, these balances totaled $477.7 million and $330.4 million, respectively, and are reported in Cash and Due from Banks on the consolidated balance sheets.

At June 30, 2023 and December 31, 2022, Northern Trust held cash of $583.5 million and $574.2 million, respectively, to meet non-U.S. reserve requirements. As a result of the economic environment arising from the COVID-19 pandemic, the Federal Reserve reduced the U.S. reserve requirement to zero percent on March 26, 2020. There were no average deposits required to meet Federal Reserve Bank reserve requirements for both the three and six months ended June 30, 2023 and 2022.

Note 8 – Goodwill and Other Intangibles

Goodwill. Changes by reporting segment in the carrying amount of Goodwill for the six months ended June 30, 2023, including the effect of foreign exchange rates on non-U.S. dollar denominated balances, were as follows.

TABLE 60: GOODWILL

(In Millions)	ASSET SERVICING	WEALTH MANAGEMENT	TOTAL
Balance at December 31, 2022	$ 611.0	$ 80.3	$ 691.3
Foreign Exchange Rates	7.4	0.1	7.5
Balance at June 30, 2023	**$ 618.4**	**$ 80.4**	**$ 698.8**

Other Intangible Assets Subject to Amortization. The gross carrying amount and accumulated amortization of other intangible assets subject to amortization as of June 30, 2023 and December 31, 2022 were as follows.

TABLE 61: OTHER INTANGIBLE ASSETS

(In Millions)	**JUNE 30, 2023**	DECEMBER 31, 2022
Gross Carrying Amount	**$ 132.1**	$ 197.9
Less: Accumulated Amortization	**57.4**	120.3
Net Book Value	**$ 74.7**	$ 77.6

Other intangible assets consist primarily of the value of acquired client relationships and are included within Other Assets on the consolidated balance sheets. Amortization expense related to other intangible assets totaled $2.4 million and $4.7 million for the three and six months ended June 30, 2023, respectively and $2.2 million and $4.9 million for the three and six months ended June 30, 2022, respectively. Amortization for the remainder of 2023 and for the years 2024, 2025, 2026, and 2027 is estimated to be $4.7 million, $9.3 million, $8.7 million, $8.3 million, and $8.1 million, respectively.

Capitalized Software. The gross carrying amount and accumulated amortization of capitalized software as of June 30, 2023 and December 31, 2022 were as follows.

TABLE 62: CAPITALIZED SOFTWARE

(In Millions)	**JUNE 30, 2023**	DECEMBER 31, 2022
Gross Carrying Amount	**$ 3,754.7**	$ 3,479.3
Less: Accumulated Amortization	**1,759.3**	1,517.4
Net Book Value	**$ 1,995.4**	$ 1,961.9

Capitalized software, which is included in Other Assets on the consolidated balance sheets, 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, totaled $122.8 million and $244.1 million for the three and six months ended June 30, 2023, respectively and $104.4 million and $205.9 million for the three and six months ended June 30, 2022, respectively.

Note 9 – Reporting Segments

Northern Trust is organized around its two client-focused reporting segments: Asset Servicing and Wealth Management. Asset management and related services are provided to Asset Servicing 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 Asset Servicing 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. Additionally, segment information is presented on an FTE basis as management believes an FTE presentation provides a clearer indication of net interest income. The adjustment to an FTE basis has no impact on Net Income.

Revenues, expenses and average assets are allocated to Asset Servicing 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.

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 contributions and average assets of Northern Trust's reporting segments for the three- and six-month periods ended June 30, 2023 and 2022.

TABLE 63: RESULTS OF REPORTING SEGMENTS

($ In Millions)	ASSET SERVICING		WEALTH MANAGEMENT		OTHER		RECONCILING ITEMS		TOTAL CONSOLIDATED	
THREE MONTHS ENDED JUNE 30,	**2023**	2022	**2023**	2022	**2023**	2022	**2023**	2022	**2023**	2022
Noninterest Income										
Trust, Investment and Other Servicing Fees	**$ 621.2**	$ 642.8	**$ 475.1**	$ 500.6	**$ —**	$ —	**$ —**	$ —	**$ 1,096.3**	$ 1,143.4
Foreign Exchange Trading Income (Loss)	**52.0**	74.8	**(1.9)**	2.8	**—**	—	**—**	—	**50.1**	77.6
Other Noninterest Income	**69.7**	61.8	**40.4**	32.8	**(10.9)**	(5.6)	**—**	—	**99.2**	89.0
Total Noninterest Income	**742.9**	779.4	**513.6**	536.2	**(10.9)**	(5.6)	**—**	—	**1,245.6**	1,310.0
Net Interest Income	**309.3**	255.1	**215.3**	214.7	**—**	—	**(13.1)**	(11.1)	**511.5**	458.7
Revenue	**1,052.2**	1,034.5	**728.9**	750.9	**(10.9)**	(5.6)	**(13.1)**	(11.1)	**1,757.1**	1,768.7
(Release of) Provision for Credit Losses	**(3.5)**	0.5	**(12.0)**	4.0	**—**	—	**—**	—	**(15.5)**	4.5
Noninterest Expense	**849.4**	751.1	**476.3**	439.1	**6.2**	33.4	**—**	—	**1,331.9**	1,223.6
Income before Income Taxes	**206.3**	282.9	**264.6**	307.8	**(17.1)**	(39.0)	**(13.1)**	(11.1)	**440.7**	540.6
Provision for Income Taxes	**52.6**	74.5	**73.7**	90.7	**(4.3)**	(9.7)	**(13.1)**	(11.1)	**108.9**	144.4
Net Income	**$ 153.7**	$ 208.4	**$ 190.9**	$ 217.1	**$ (12.8)**	$ (29.3)	**$ —**	$ —	**$ 331.8**	$ 396.2
Percentage of Consolidated Net Income	**46 %**	53 %	**58 %**	54 %	**(4)%**	(7)%	**N/A**	N/A	**100 %**	100 %
Average Assets	**$111,029.9**	$117,047.6	**$34,869.7**	$37,036.5	**$ —**	$ —	**N/A**	N/A	**$145,899.6**	$154,084.1

($ In Millions)	ASSET SERVICING		WEALTH MANAGEMENT		OTHER		RECONCILING ITEMS		TOTAL CONSOLIDATED	
SIX MONTHS ENDED JUNE 30,	**2023**	2022	**2023**	2022	**2023**	2022	**2023**	2022	**2023**	2022
Noninterest Income										
Trust, Investment and Other Servicing Fees	**$ 1,224.2**	$ 1,305.2	**$ 935.7**	$ 1,006.6	**$ —**	$ —	**$ —**	$ —	**$ 2,159.9**	$ 2,311.8
Foreign Exchange Trading Income (Loss)	**106.9**	152.2	**(3.8)**	6.3	**—**	—	**—**	—	**103.1**	158.5
Other Noninterest Income	**132.9**	122.9	**74.7**	64.6	**(11.6)**	(10.1)	**—**	—	**196.0**	177.4
Total Noninterest Income	**1,464.0**	1,580.3	**1,006.6**	1,077.5	**(11.6)**	(10.1)	**—**	—	**2,459.0**	2,647.7
Net Interest Income	**621.4**	445.2	**447.6**	412.3	**—**	—	**(26.3)**	(17.8)	**1,042.7**	839.7
Revenue	**2,085.4**	2,025.5	**1,454.2**	1,489.8	**(11.6)**	(10.1)	**(26.3)**	(17.8)	**3,501.7**	3,487.4
(Release of) Provision for Credit Losses	**(6.4)**	8.9	**5.9**	(2.4)	**—**	—	**—**	—	**(0.5)**	6.5
Noninterest Expense	**1,650.4**	1,509.0	**945.5**	884.2	**21.6**	36.3	**—**	—	**2,617.5**	2,429.5
Income before Income Taxes	**441.4**	507.6	**502.8**	608.0	**(33.2)**	(46.4)	**(26.3)**	(17.8)	**884.7**	1,051.4
Provision for Income Taxes	**113.1**	126.3	**139.8**	169.0	**(8.3)**	(11.6)	**(26.3)**	(17.8)	**218.3**	265.9
Net Income	**$ 328.3**	$ 381.3	**$ 363.0**	$ 439.0	**$ (24.9)**	$ (34.8)	**$ —**	$ —	**$ 666.4**	$ 785.5
Percentage of Consolidated Net Income	**49 %**	49 %	**55 %**	55 %	**(4)%**	(4)%	**N/A**	N/A	**100 %**	100 %
Average Assets	**$111,143.6**	$121,114.2	**$35,830.2**	$36,977.1	**$ —**	$ —	**N/A**	N/A	**$146,973.8**	$158,091.3

Note: Segment results are stated on an FTE basis. The FTE adjustments are eliminated in the reconciling items column with the Corporation's total consolidated financial results stated on a GAAP basis. The adjustment to an FTE basis has no impact on Net Income.

Note 10 – Stockholders' Equity

Preferred Stock. The Corporation is authorized to issue 10.0 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 June 30, 2023, 5,000 shares of Series D Non-Cumulative Perpetual Preferred Stock (Series D Preferred Stock) and 16,000 shares of Series E Non-Cumulative Perpetual Preferred Stock (Series E Preferred Stock) were outstanding.

Series D Preferred Stock. As of June 30, 2023, 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 June 30, 2023 and December 31, 2022 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 the three-month CME Term Secured Overnight Finance Rate, as administered by CME Group Benchmark Administration, Ltd., plus a statutory spread adjustment of 0.26161% (as set forth in the final rule to implement the LIBOR Act) 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.

Series E Preferred Stock. As of June 30, 2023, the Corporation had issued and outstanding 16.0 million depositary shares, each representing 1/1,000th ownership interest in a share of Series E Preferred Stock, issued in November 2019. Equity related to Series E Preferred Stock as of June 30, 2023 and December 31, 2022 was $391.4 million. 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, will accrue and be 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 April 26, 2023, the Corporation declared a cash dividend of $293.75 per share of Series E Preferred Stock payable on July 1, 2023, to stockholders of record as of June 15, 2023.

Common Stock. The Corporation's current stock repurchase authorization to repurchase up to 25.0 million shares was approved by the Board of Directors in October 2021. 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. For the three and six months ended June 30, 2023, the Corporation repurchased 1,361,828 and 2,412,055 shares of common stock, respectively, at a total cost of $99.3 million ($72.91 average price per share) and $200.2 million ($82.98 average price per share), respectively, including 14,596 and 341,407 shares, respectively, withheld to satisfy tax withholding obligations related to share-based compensation. For the three and six months ended June 30, 2022, the Corporation repurchased 2,844 and 298,254 shares of common stock, respectively, at a total cost of $0.3 million ($110.36 average price per share) and $34.1 million ($114.54 average prices per share), respectively, all of which were shares withheld to satisfy tax withholding obligations related to share-based compensation.

Note 11 – Accumulated Other Comprehensive Income (Loss)

The following tables summarize the components of Accumulated Other Comprehensive Income (Loss) (AOCI) at June 30, 2023 and 2022, and changes during the three and six months then ended.

TABLE 64: SUMMARY OF CHANGES IN ACCUMULATED OTHER COMPREHENSIVE INCOME (LOSS)

	THREE MONTHS ENDED JUNE 30, 2023				
(In Millions)	NET UNREALIZED GAINS (LOSSES) ON AVAILABLE FOR SALE DEBT SECURITIES[1]	NET UNREALIZED GAINS (LOSSES) ON CASH FLOW HEDGES	NET FOREIGN CURRENCY ADJUSTMENT	NET PENSION AND OTHER POSTRETIREMENT BENEFIT ADJUSTMENTS	TOTAL
Balance at March 31, 2023	$ (1,187.4)	$ 1.1	$ 187.3	$ (367.2)	$ (1,366.2)
Net Change	**(42.0)**	**(0.6)**	**1.9**	**1.0**	**(39.7)**
Balance at June 30, 2023	**$ (1,229.4)**	**$ 0.5**	**$ 189.2**	**$ (366.2)**	**$ (1,405.9)**

[1] *Includes net unrealized gains (losses) on debt securities transferred from AFS to HTM. Refer to Note 4—Securities for further information.*

	SIX MONTHS ENDED JUNE 30, 2023				
(In Millions)	NET UNREALIZED GAINS (LOSSES) ON AVAILABLE FOR SALE DEBT SECURITIES[1]	NET UNREALIZED GAINS (LOSSES) ON CASH FLOW HEDGES	NET FOREIGN CURRENCY ADJUSTMENT	NET PENSION AND OTHER POSTRETIREMENT BENEFIT ADJUSTMENTS	TOTAL
Balance at December 31, 2022	$ (1,367.6)	$ 1.2	$ 164.6	$ (367.4)	$ (1,569.2)
Net Change	**138.2**	**(0.7)**	**24.6**	**1.2**	**163.3**
Balance at June 30, 2023	**$ (1,229.4)**	**$ 0.5**	**$ 189.2**	**$ (366.2)**	**$ (1,405.9)**

[1] *Includes net unrealized gains (losses) on debt securities transferred from AFS to HTM. Refer to Note 4—Securities for further information.*

	THREE MONTHS ENDED JUNE 30, 2022				
(In Millions)	NET UNREALIZED GAINS (LOSSES) ON AVAILABLE FOR SALE DEBT SECURITIES[1]	NET UNREALIZED GAINS (LOSSES) ON CASH FLOW HEDGES	NET FOREIGN CURRENCY ADJUSTMENT	NET PENSION AND OTHER POSTRETIREMENT BENEFIT ADJUSTMENTS	TOTAL
Balance at March 31, 2022	$ (761.3)	$ (3.8)	$ 147.3	$ (289.2)	$ (907.0)
Net Change	(533.4)	4.4	(9.7)	(64.9)	(603.6)
Balance at June 30, 2022	$ (1,294.7)	$ 0.6	$ 137.6	$ (354.1)	$ (1,510.6)

[1] *Includes net unrealized gains (losses) on debt securities transferred from AFS to HTM. Refer to Note 4—Securities for further information.*

	SIX MONTHS ENDED JUNE 30, 2022				
(In Millions)	NET UNREALIZED GAINS (LOSSES) ON AVAILABLE FOR SALE DEBT SECURITIES[1]	NET UNREALIZED GAINS (LOSSES) ON CASH FLOW HEDGES	NET FOREIGN CURRENCY ADJUSTMENT	NET PENSION AND OTHER POSTRETIREMENT BENEFIT ADJUSTMENTS	TOTAL
Balance at December 31, 2021	$ 107.1	$ (2.4)	$ 155.2	$ (295.5)	$ (35.6)
Net Change	(1,401.8)	3.0	(17.6)	(58.6)	(1,475.0)
Balance at June 30, 2022	$ (1,294.7)	$ 0.6	$ 137.6	$ (354.1)	$ (1,510.6)

[1] *Includes net unrealized gains (losses) on debt securities transferred from AFS to HTM. Refer to Note 4—Securities for further information.*

TABLE 65: DETAILS OF CHANGES IN ACCUMULATED OTHER COMPREHENSIVE INCOME (LOSS)

THREE MONTHS ENDED JUNE 30,		**2023**			2022	
(In Millions)	**PRE-TAX**	**TAX**	**AFTER TAX**	PRE-TAX	TAX	AFTER TAX
Unrealized Gains (Losses) on Available for Sale Debt Securities						
Unrealized Gains (Losses) on Available for Sale Debt Securities	**$ (88.7)**	**$ 23.9**	**$ (64.8)**	$ (731.2)	$ 188.5	$ (542.7)
Reclassification Adjustments for (Gains) Losses Included in Net Income:						
Interest Income on Debt Securities[(1)]	**30.4**	**(7.6)**	**22.8**	12.4	(3.1)	9.3
Net Change	**$ (58.3)**	**$ 16.3**	**$ (42.0)**	$ (718.8)	$ 185.4	$ (533.4)
Unrealized Gains (Losses) on Cash Flow Hedges						
Foreign Exchange Contracts	**$ 1.4**	**$ (0.4)**	**$ 1.0**	$ 4.4	$ (1.1)	$ 3.3
Reclassification Adjustment for (Gains) Losses Included in Net Income[(3)]	**(2.2)**	**0.6**	**(1.6)**	1.5	(0.4)	1.1
Net Change	**$ (0.8)**	**$ 0.2**	**$ (0.6)**	$ 5.9	$ (1.5)	$ 4.4
Foreign Currency Adjustments						
Foreign Currency Translation Adjustments	**$ 26.7**	**$ (0.7)**	**$ 26.0**	$ (163.7)	$ 2.4	$ (161.3)
Long-Term Intra-Entity Foreign Currency Transaction Gains (Losses)	**(1.6)**	**0.4**	**(1.2)**	(1.8)	0.5	(1.3)
Net Investment Hedge Gains (Losses)	**(30.6)**	**7.7**	**(22.9)**	204.3	(51.4)	152.9
Net Change	**$ (5.5)**	**$ 7.4**	**$ 1.9**	$ 38.8	$ (48.5)	$ (9.7)
Pension and Other Postretirement Benefit Adjustments						
Net Actuarial Gains (Losses)	**$ (0.2)**	**$ —**	**$ (0.2)**	$ (114.4)	$ 28.8	$ (85.6)
Reclassification Adjustment for (Gains) Losses Included in Net Income[(4)]						
Amortization of Net Actuarial Loss	**1.6**	**(0.4)**	**1.2**	7.6	(1.9)	5.7
Amortization of Prior Service Cost (Credit)	—	—	—	(0.2)	—	(0.2)
Settlement Loss	—	—	—	20.3	(5.1)	15.2
Net Change	**$ 1.4**	**$ (0.4)**	**$ 1.0**	$ (86.7)	$ 21.8	$ (64.9)
Total Net Change	**$ (63.2)**	**$ 23.5**	**$ (39.7)**	$ (760.8)	$ 157.2	$ (603.6)

SIX MONTHS ENDED JUNE 30,		**2023**			2022	
(In Millions)	**PRE-TAX**	**TAX**	**AFTER TAX**	PRE-TAX	TAX	AFTER TAX
Unrealized Gains (Losses) on Available for Sale Debt Securities						
Unrealized Gains (Losses) on Available for Sale Debt Securities	**$ 140.6**	**$ (36.4)**	**$ 104.2**	$ (1,902.7)	$ 489.9	$ (1,412.8)
Reclassification Adjustments for (Gains) Losses Included in Net Income:						
Interest Income on Debt Securities[(1)]	**52.3**	**(13.1)**	**39.2**	14.7	(3.7)	11.0
Net Gains on Debt Securities[(2)]	**(6.9)**	**1.7**	**(5.2)**	—	—	—
Net Change	**$ 186.0**	**$ (47.8)**	**$ 138.2**	$ (1,888.0)	$ 486.2	$ (1,401.8)
Unrealized Gains (Losses) on Cash Flow Hedges						
Foreign Exchange Contracts	**$ 1.9**	**$ (0.5)**	**$ 1.4**	$ 0.8	$ (0.2)	$ 0.6
Reclassification Adjustment for (Gains) Losses Included in Net Income[(3)]	**(2.8)**	**0.7**	**(2.1)**	3.2	(0.8)	2.4
Net Change	**$ (0.9)**	**$ 0.2**	**$ (0.7)**	$ 4.0	$ (1.0)	$ 3.0
Foreign Currency Adjustments						
Foreign Currency Translation Adjustments	**$ 73.5**	**$ (0.5)**	**$ 73.0**	$ (214.0)	$ 0.6	$ (213.4)
Long-Term Intra-Entity Foreign Currency Transaction Gains (Losses)	**(1.6)**	**0.4**	**(1.2)**	(1.8)	0.5	(1.3)
Net Investment Hedge Gains (Losses)	**(63.1)**	**15.9**	**(47.2)**	263.7	(66.6)	197.1
Net Change	**$ 8.8**	**$ 15.8**	**$ 24.6**	$ 47.9	$ (65.5)	$ (17.6)
Pension and Other Postretirement Benefit Adjustments						
Net Actuarial Gains (Losses)	**$ (1.3)**	**$ 0.1**	**$ (1.2)**	$ (113.6)	$ 28.2	$ (85.4)
Reclassification Adjustment for (Gains) Losses Included in Net Income[(4)]						
Amortization of Net Actuarial Loss	**3.2**	**(0.8)**	**2.4**	15.2	(3.8)	11.4
Amortization of Prior Service Cost (Credit)	—	—	—	(0.5)	0.1	(0.4)
Settlement Loss	—	—	—	21.0	(5.2)	15.8
Net Change	**$ 1.9**	**$ (0.7)**	**$ 1.2**	$ (77.9)	$ 19.3	$ (58.6)
Total Net Change	**$ 195.8**	**$ (32.5)**	**$ 163.3**	$ (1,914.0)	$ 439.0	$ (1,475.0)

[(1)] The before-tax reclassification adjustment is related to the unrealized gains (losses) amortization on AFS debt securities that were transferred to HTM debt securities during the second quarter of 2021 and third quarter of 2022. Refer to Note 4—Securities for further information.
[(2)] The net gains (losses) on AFS debt securities before-tax reclassification adjustment is recorded in Investment Security Gains (Losses), net on the consolidated statements of income.
[(3)] See Note 21—Derivative Financial Instruments for the location of the reclassification adjustment related to cash flow hedges.
[(4)] The pension and other postretirement benefit before-tax reclassification adjustment is recorded in Employee Benefits expense on the consolidated statements of income.

Note 12 – Net Income Per Common Share

The computations of net income per common share are presented in the following table.

TABLE 66: NET INCOME PER COMMON SHARE

	THREE MONTHS ENDED JUNE 30,		SIX MONTHS ENDED JUNE 30,	
($ In Millions Except Per Common Share Information)	**2023**	2022	**2023**	2022
Basic Net Income Per Common Share				
Average Number of Common Shares Outstanding	**207,638,671**	208,383,991	**207,911,242**	208,205,469
Net Income	**$ 331.8**	$ 396.2	**$ 666.4**	$ 785.5
Less: Dividends on Preferred Stock	**4.7**	4.7	**20.9**	20.9
Net Income Applicable to Common Stock	**327.1**	391.5	**645.5**	764.6
Less: Earnings Allocated to Participating Securities	**3.4**	3.2	**6.6**	6.3
Earnings Allocated to Common Shares Outstanding	**323.7**	388.3	**638.9**	758.3
Basic Net Income Per Common Share	**$ 1.56**	$ 1.86	**$ 3.07**	$ 3.64
Diluted Net Income Per Common Share				
Average Number of Common Shares Outstanding	**207,638,671**	208,383,991	**207,911,242**	208,205,469
Plus: Dilutive Effect of Share-based Compensation	**177,344**	494,359	**359,435**	638,465
Average Common and Potential Common Shares	**207,816,015**	208,878,350	**208,270,677**	208,843,934
Earnings Allocated to Common and Potential Common Shares	**$ 323.6**	$ 388.3	**$ 638.8**	$ 758.3
Diluted Net Income Per Common Share	**1.56**	1.86	**3.07**	3.63

Note: For the three and six months ended June 30, 2023 and 2022, there were no common stock equivalents excluded in the computation of diluted net income per share.

Note 13 – 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 Asset Servicing clients. Investment Management and Advisory income contains revenue received from providing asset management and related services to Wealth Management and Asset Servicing 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 Asset Servicing clients. Other income largely consists of revenues received from providing employee benefit, investment risk and analytic and other services to Asset Servicing and Wealth Management clients.

Other Noninterest Income. Treasury Management income represents revenues received from providing cash and liquidity management services to Asset Servicing 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 Asset Servicing 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 Asset Servicing 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 for 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 67: REVENUE DISAGGREGATION

	THREE MONTHS ENDED JUNE 30,		SIX MONTHS ENDED JUNE 30,	
(In Millions)	**2023**	2022	**2023**	2022
Noninterest Income				
Trust, Investment and Other Servicing Fees				
Custody and Fund Administration	**$ 458.1**	$ 464.4	**$ 899.7**	$ 948.4
Investment Management and Advisory	**558.8**	597.3	**1,099.3**	1,200.5
Securities Lending	**21.5**	21.6	**40.6**	40.5
Other	**57.9**	60.1	**120.3**	122.4
Total Trust, Investment and Other Servicing Fees	**$ 1,096.3**	$ 1,143.4	**$ 2,159.9**	$ 2,311.8
Other Noninterest Income				
Foreign Exchange Trading Income	**$ 50.1**	$ 77.6	**$ 103.1**	$ 158.5
Treasury Management Fees	**7.9**	10.6	**16.3**	21.7
Security Commissions and Trading Income	**36.1**	32.8	**70.8**	69.0
Other Operating Income	**55.2**	45.6	**102.0**	86.7
Investment Security Gains (Losses), net	**—**	—	**6.9**	—
Total Other Noninterest Income	**$ 149.3**	$ 166.6	**$ 299.1**	$ 335.9
Total Noninterest Income	**$ 1,245.6**	$ 1,310.0	**$ 2,459.0**	$ 2,647.7

On the consolidated statements of income, Trust, Investment and Other Servicing Fees and Treasury Management Fees represent revenue from contracts with clients. For the three months ended June 30, 2023, revenue from contracts with clients also includes $29.0 million of the $36.1 million total Security Commissions and Trading Income and $10.2 million of the $55.2 million total Other Operating Income. For the six months ended June 30, 2023, revenue from contracts with clients also includes $58.9 million of the $70.8 million total Security Commissions and Trading Income and $19.3 million of the $102.0 million total Other Operating Income.

For the three months ended June 30, 2022, revenue from contracts with clients also includes $27.3 million of the $32.8 million total Security Commissions and Trading Income and $9.7 million of the $45.6 million total Other Operating Income. For the six months ended June 30, 2022, revenue from contracts with clients also includes $58.9 million of the $69.0 million total Security Commissions and Trading Income and $19.4 million of the $86.7 million total Other Operating Income.

Receivables Balances. The table below represents receivables balances from contracts with clients, which are included in Other Assets on the consolidated balance sheets, at June 30, 2023 and December 31, 2022.

TABLE 68: CLIENT RECEIVABLES

(In Millions)	**JUNE 30, 2023**	DECEMBER 31, 2022
Trust Fees Receivable, net[1]	**$ 864.4**	$ 882.5
Other	**50.2**	55.4
Total Client Receivables	**$ 914.6**	$ 937.9

[1] *Trust Fees Receivable is net of a $14.5 million and $13.5 million fee receivable allowance as of June 30, 2023 and December 31, 2022, respectively.*

Note 14 – Net Interest Income

The components of Net Interest Income were as follows.

TABLE 69: NET INTEREST INCOME

	THREE MONTHS ENDED JUNE 30,		SIX MONTHS ENDED JUNE 30,	
(In Millions)	**2023**	2022	**2023**	2022
Interest Income				
Federal Reserve and Other Central Bank Deposits	**$ 398.9**	$ 59.2	**$ 775.9**	$ 76.8
Interest-Bearing Due from and Deposits with Banks(1)	**32.1**	6.5	**60.3**	9.1
Federal Funds Sold	**0.1**	—	**0.3**	—
Securities Purchased under Agreements to Resell	**284.3**	7.0	**410.2**	7.9
Securities — Taxable	**366.3**	193.7	**704.1**	362.7
— Nontaxable(2)	**0.4**	0.3	**0.7**	0.7
Loans and Leases	**639.2**	256.4	**1,217.4**	447.6
Other Interest-Earning Assets(3)	**13.7**	1.7	**21.5**	3.5
Total Interest Income	**$ 1,735.0**	$ 524.8	**$ 3,190.4**	$ 908.3
Interest Expense				
Deposits	**$ 633.5**	$ 23.2	**$ 1,198.1**	$ 7.3
Federal Funds Purchased	**87.6**	2.8	**127.7**	2.8
Securities Sold Under Agreements to Repurchase	**273.4**	6.0	**389.5**	6.3
Other Borrowings	**156.5**	8.4	**291.5**	11.5
Senior Notes	**42.1**	18.9	**81.3**	28.5
Long-Term Debt	**30.4**	6.8	**59.6**	12.2
Total Interest Expense	**$ 1,223.5**	$ 66.1	**$ 2,147.7**	$ 68.6
Net Interest Income	**$ 511.5**	$ 458.7	**$ 1,042.7**	$ 839.7

(1) *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.*
(2) *Non-taxable Securities represent securities that are exempt from U.S. federal income taxes.*
(3) *Other Interest-Earning Assets include certain community development investments, collateral deposits with certain securities depositories and clearing houses, Federal Home Loan Bank and Federal Reserve stock, and money market investments which are classified in Other Assets on the consolidated balance sheets.*

Note 15 – Other Operating Income

The components of Other Operating Income were as follows.

TABLE 70: OTHER OPERATING INCOME

	THREE MONTHS ENDED JUNE 30,		SIX MONTHS ENDED JUNE 30,	
(In Millions)	**2023**	2022	**2023**	2022
Loan Service Fees	**$ 21.4**	$ 18.1	**$ 40.1**	$ 34.8
Banking Service Fees	**13.6**	12.9	**25.8**	25.6
Bank Owned Life Insurance	**17.0**	14.9	**33.7**	26.7
Other Income(1)	**3.2**	(0.3)	**2.4**	(0.4)
Total Other Operating Income	**$ 55.2**	$ 45.6	**$ 102.0**	$ 86.7

(1) *Other Income includes the mark-to-market gain or loss on derivative swap activity primarily related to the sale of certain Visa Class B common shares.*

Note 16 – Other Operating Expense

The components of Other Operating Expense were as follows.

TABLE 71: OTHER OPERATING EXPENSE

	THREE MONTHS ENDED JUNE 30,		SIX MONTHS ENDED JUNE 30,	
($ In Millions)	**2023**	2022	**2023**	2022
Business Promotion	**$ 21.1**	$ 18.1	**$ 37.3**	$ 28.9
Staff Related	**8.9**	6.2	**16.7**	9.1
FDIC Insurance Premiums	**6.6**	4.6	**12.8**	10.4
Charitable Contributions	**4.3**	4.6	**7.5**	7.1
Other Expenses	**71.1**	56.4	**123.3**	114.1
Total Other Operating Expense	**$ 112.0**	$ 89.9	**$ 197.6**	$ 169.6

Note 17 – Pension

The following table sets forth the net periodic pension expense for Northern Trust's U.S. Qualified Plan, Non-U.S. Pension Plans, and U.S. Non-Qualified Plan for the three and six months ended June 30, 2023 and 2022.

TABLE 72: NET PERIODIC PENSION EXPENSE (BENEFIT)

U.S. QUALIFIED PLAN	THREE MONTHS ENDED JUNE 30,		SIX MONTHS ENDED JUNE 30,	
(In Millions)	**2023**	2022	**2023**	2022
Service Cost	**$ 11.5**	$ 13.2	**$ 23.0**	$ 26.4
Interest Cost	**13.5**	10.3	**27.0**	20.6
Expected Return on Plan Assets	**(25.3)**	(20.2)	**(50.6)**	(40.4)
Amortization				
Net Actuarial Loss	**0.4**	5.7	**0.8**	11.4
Prior Service Cost (Credit)	**—**	—	**—**	(0.1)
Net Periodic Pension Expense	**$ 0.1**	$ 9.0	**$ 0.2**	$ 17.9
Settlement Expense	**—**	20.3	**—**	20.3
Total Pension Expense	**$ 0.1**	$ 29.3	**$ 0.2**	$ 38.2

NON-U.S. PENSION PLANS	THREE MONTHS ENDED JUNE 30,		SIX MONTHS ENDED JUNE 30,	
(In Millions)	**2023**	2022	**2023**	2022
Service Cost	**$ 0.4**	$ 0.5	**$ 0.7**	$ 0.9
Interest Cost	**1.2**	0.6	**2.4**	1.3
Expected Return on Plan Assets	**(1.6)**	(0.8)	**(3.1)**	(1.5)
Amortization				
Net Actuarial Loss (Gain)	**(0.1)**	0.2	**(0.2)**	0.4
Net Periodic Pension Expense (Benefit)	**$ (0.1)**	$ 0.5	**$ (0.2)**	$ 1.1
Settlement Expense	**—**	—	**—**	0.7
Total Pension Expense (Benefit)	**$ (0.1)**	$ 0.5	**$ (0.2)**	$ 1.8

U.S. NON-QUALIFIED PLAN	THREE MONTHS ENDED JUNE 30,		SIX MONTHS ENDED JUNE 30,	
(In Millions)	**2023**	2022	**2023**	2022
Service Cost	**$ 1.2**	$ 1.4	**$ 2.4**	$ 2.8
Interest Cost	**1.3**	1.0	**2.6**	2.0
Amortization				
Net Actuarial Loss	**1.3**	1.8	**2.6**	3.6
Net Periodic Pension Expense	**$ 3.8**	$ 4.2	**$ 7.6**	$ 8.4

The components of net periodic pension expense are recorded in Employee Benefits expense on the consolidated statements of income.

There were no contributions to the U.S. Qualified Plan during the six months ended June 30, 2023 and 2022, and $16.5 million and $20.7 million of contributions to the U.S. Non-Qualified Plan during the six months ended June 30, 2023 and 2022, respectively.

Note 18 – Share-Based Compensation Plans

The Northern Trust Corporation 2017 Long-Term Incentive 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.

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.

Total compensation expense for share-based payment arrangements and the associated tax impacts were as follows for the three and six months ended June 30, 2023 and 2022.

TABLE 73: TOTAL COMPENSATION EXPENSE FOR SHARE-BASED PAYMENT ARRANGEMENTS

	THREE MONTHS ENDED JUNE 30,		SIX MONTHS ENDED JUNE 30,	
(In Millions)	**2023**	2022	**2023**	2022
Restricted Stock Unit Awards	**$ 15.5**	$ 16.9	**$ 65.8**	$ 69.5
Performance Stock Units	**1.9**	3.1	**16.0**	20.5
Total Share-Based Compensation Expense	**17.4**	20.0	**81.8**	90.0
Tax Benefits Recognized	**$ 4.3**	$ 5.0	**$ 20.5**	$ 22.6

Note 19 – Variable Interest Entities

Northern Trust is involved with various entities in the normal course of business that are deemed to be variable interest entities (VIEs). 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.

Tax credit structures. Northern Trust holds tax-advantaged investments in unconsolidated entities that own and operate affordable housing and other community development projects. These entities, which are limited partnerships and similar entities, are primarily VIEs and are designed to generate a return primarily through the realization of tax credits and other tax benefits, such as tax deductions from operating losses of the investments. Northern Trust invests as a limited partner/investor member and lacks both the power to direct the entities' most significant activities and the obligation to absorb losses or right to receive benefits that could potentially be significant to the entities. Northern Trust is not required to consolidate these entities as it does not have a controlling financial interest and thus is not the primary beneficiary.

Northern Trust's maximum exposure to loss as a result of its involvement with these entities is limited to the carrying amounts of its investments, including any undrawn commitments. 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 these entities.

Northern Trust's investments in these unconsolidated entities and related unfunded commitments are reported in Other Assets and Other Liabilities, respectively, on the consolidated balance sheets.

TABLE 74: SUMMARY OF UNCONSOLIDATED TAX CREDIT STRUCTURES

(In Millions)	**JUNE 30, 2023**	DECEMBER 31, 2022
Investment Carrying Amount		
Affordable Housing	**$ 656.3**	$ 635.9
Other Community Development	**259.0**	268.4
Total Investment Carrying Amount[1]	**$ 915.3**	$ 904.3
Unfunded Commitments		
Affordable Housing	**$ 219.1**	$ 218.9
Other Community Development	**—**	—
Total Unfunded Commitments[2]	**$ 219.1**	$ 218.9

[1] *As of June 30, 2023 and December 31, 2022, $880.8 million and $867.2 million are VIEs, respectively.*
[2] *As of June 30, 2023 and December 31, 2022, $212.1 million and $210.1 million relate to undrawn commitments on VIEs, respectively.*

Tax credits and other tax benefits attributable to unconsolidated tax credit structures totaled $28.3 million and $25.7 million for the three months ended June 30, 2023 and 2022, respectively, and $56.6 million and $48.4 million for the six months ended June 30, 2023, and 2022, respectively.

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 $2.3 million and $8.6 million of money market fund fees for the three months ended June 30, 2023 and 2022, respectively, related to certain competitive factors, and $4.3 million and $59.3 million for the six months ended June 30, 2023, and 2022, respectively, related to the low-interest rate environment and certain competitive factors. 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 June 30, 2023, Northern Trust had no seed capital investments and no unfunded commitments related to seed capital investments. As of December 31, 2022, Northern Trust had $19.9 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 20 – 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 maximum 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. Northern Trust does not believe the total contractual amount of these instruments to be representative of its future credit exposure or funding requirements.

The following table provides details of Northern Trust's off-balance sheet financial instruments as of June 30, 2023 and December 31, 2022.

TABLE 75: SUMMARY OF OFF-BALANCE SHEET FINANCIAL INSTRUMENTS

	JUNE 30, 2023			DECEMBER 31, 2022		
($ In Millions)	ONE YEAR AND LESS	OVER ONE YEAR	TOTAL	ONE YEAR AND LESS	OVER ONE YEAR	TOTAL
Undrawn Commitments[(1)]	**$ 12,169.1**	**$ 18,047.1**	**$ 30,216.2**	$ 13,639.2	$ 17,321.4	$ 30,960.6
Standby Letters of Credit and Financial Guarantees[(2)(3)]	**48,306.3**	**378.1**	**48,684.4**	17,553.0	409.9	17,962.9
Commercial Letters of Credit	**34.9**	**1.2**	**36.1**	25.4	1.3	26.7
Securities Lent with Indemnification	**143,809.6**	**—**	**143,809.6**	130,311.0	—	130,311.0
Unsettled Reverse Repurchase Agreements	**4,872.8**	**—**	**4,872.8**	496.8	—	496.8
Total Off-Balance Sheet Financial Instruments	**$ 209,192.7**	**$ 18,426.4**	**$ 227,619.1**	$ 162,025.4	$ 17,732.6	$ 179,758.0

(1) These amounts exclude $215.8 million and $266.6 million of commitments participated to others at June 30, 2023 and December 31, 2022, respectively.
(2) These amounts include $30.8 million and $35.1 million of standby letters of credit secured by cash deposits or participated to others as of June 30, 2023 and December 31, 2022, respectively.
(3) These amounts include a $47.0 billion and $16.3 billion guarantee to the Fixed Income Clearing Corporation (FICC) under the sponsored member program, without taking into consideration the related collateral, as of June 30, 2023 and December 31, 2022, respectively. Northern Trust became a sponsored member during the third quarter of 2021.

Undrawn Commitments 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.

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 of 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 June 30, 2023 and December 31, 2022 subject to indemnification was $143.8 billion and $130.3 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 as of June 30, 2023 or December 31, 2022, related to these indemnifications.

Unsettled Repurchase and Reverse Repurchase Agreements. Northern Trust enters into repurchase agreements and reverse repurchase agreements which may settle at a future date. In repurchase agreements, Northern Trust receives cash from and provides securities as collateral to a counterparty. In reverse repurchase agreements, Northern Trust advances cash to and receives securities as collateral from a counterparty. These transactions are recorded on the consolidated balance sheets on the settlement date. As of June 30, 2023 and December 31, 2022, there were $4.9 billion and $496.8 million unsettled reverse repurchase agreements, respectively, and no unsettled repurchase agreements.

Sponsored Member Program. Northern Trust is an approved Government Securities Division (GSD) netting and sponsoring member in the FICC sponsored member program, through which Northern Trust submits eligible repurchase and reverse repurchase transactions in U.S. government securities between Northern Trust and its sponsored member clients for novation and clearing. Northern Trust may sponsor clients to clear their eligible repurchase transactions with the FICC. As a sponsoring member, Northern Trust guarantees to the FICC the prompt and full payment and performance of its sponsored member clients' respective obligations under the FICC GSD's rules. To mitigate Northern Trust's credit exposure under this guarantee, Northern Trust obtains a security interest in its sponsored member clients' collateral. See Note 23—Offsetting of Assets and Liabilities for additional information on Northern Trust's repurchase and reverse repurchase agreements.

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 U.S. Treasuries, obligations of states and political subdivisions, asset-backed securities, commercial paper, dollar placements, and securities issued by the Government National Mortgage Association.

Certain of these industry clearing and settlement exchanges require their members to guarantee their obligations and liabilities and/or to provide liquidity support in the event other members do not honor their obligations as stipulated in each clearing organization's membership agreement. Exposure related to these agreements varies, primarily as a result of fluctuations in the volume of transactions cleared through the organizations. At June 30, 2023 and December 31, 2022, Northern Trust has not recorded any material liabilities under these arrangements as Northern Trust believes the likelihood that a clearing or settlement exchange (of which Northern Trust is a member) would become insolvent is remote. Controls related to these clearing transactions are closely monitored by management to protect the assets of Northern Trust and its clients.

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 June 30, 2023, the Corporation has estimated the range of reasonably possible loss for these matters to be from zero to approximately $25 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 are scheduled to commence in September 2023. 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. Since 2018, Visa has deposited an additional $2.6 billion 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. In March 2023, the Second Circuit Court of Appeals affirmed the district court's approval of the 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 June 30, 2023 and December 31, 2022.

Note 21 – 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.

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 primarily 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 June 30, 2023 and December 31, 2022.

TABLE 76: NOTIONAL AND FAIR VALUES OF DERIVATIVE FINANCIAL INSTRUMENTS

	JUNE 30, 2023			DECEMBER 31, 2022		
	NOTIONAL VALUE	FAIR VALUE		NOTIONAL VALUE	FAIR VALUE	
(In Millions)		ASSET(1)	LIABILITY(2)		ASSET(1)	LIABILITY(2)
Derivatives Designated as Hedging under GAAP						
Interest Rate Contracts						
Fair Value Hedges	**$ 4,323.1**	**$ 57.0**	**$ 26.5**	$ 4,622.0	$ 58.5	$ 32.7
Foreign Exchange Contracts						
Cash Flow Hedges	**750.0**	**19.2**	**0.9**	150.9	7.4	5.7
Net Investment Hedges	**3,860.4**	**19.3**	**23.6**	3,765.0	283.5	12.7
Total Derivatives Designated as Hedging under GAAP	**$ 8,933.5**	**$ 95.5**	**$ 51.0**	$ 8,537.9	$ 349.4	$ 51.1
Derivatives Not Designated as Hedging under GAAP						
Non-Designated Risk Management Derivatives						
Foreign Exchange Contracts	**$ 95.8**	**$ 0.2**	**$ 0.3**	$ 55.9	$ 0.1	$ 0.1
Other Financial Derivatives(3)	**793.0**	**—**	**36.4**	717.7	0.3	34.8
Total Non-Designated Risk Management Derivatives	**$ 888.8**	**$ 0.2**	**$ 36.7**	$ 773.6	$ 0.4	$ 34.9
Client-Related and Trading Derivatives						
Foreign Exchange Contracts	**$ 299,322.9**	**$ 2,225.4**	**$ 2,137.8**	$ 288,994.6	$ 3,219.1	$ 3,169.0
Interest Rate Contracts	**14,764.9**	**256.9**	**381.6**	12,378.2	163.5	399.1
Total Client-Related and Trading Derivatives	**$ 314,087.8**	**$ 2,482.3**	**$ 2,519.4**	$ 301,372.8	$ 3,382.6	$ 3,568.1
Total Derivatives Not Designated as Hedging under GAAP	**$ 314,976.6**	**$ 2,482.5**	**$ 2,556.1**	$ 302,146.4	$ 3,383.0	$ 3,603.0
Total Gross Derivatives	**$ 323,910.1**	**$ 2,578.0**	**$ 2,607.1**	$ 310,684.3	$ 3,732.4	$ 3,654.1
Less: Netting(4)		**1,245.9**	**1,461.0**		2,810.7	1,865.9
Total Derivative Financial Instruments		**$ 1,332.1**	**$ 1,146.1**		$ 921.7	$ 1,788.2

(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 and total return swap contracts.*
(4) *See further detail in Note 23—Offsetting of Assets and Liabilities.*

Notional amounts of derivative financial instruments do not represent credit risk and are not recorded in 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.

All derivative financial instruments, whether designated as hedges or not, are recorded on the consolidated balance sheets at fair value within Other Assets or Other Liabilities. 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.

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").

In order to qualify for hedge accounting, a formal assessment is performed on a calendar-quarter basis to verify that derivatives used in designated hedging transactions continue to be highly effective in offsetting the changes in fair value or cash flows of the hedged item. If a derivative ceases to be highly effective, matures, is sold or is terminated, or if a hedged forecasted transaction is no longer probable of occurring, hedge accounting is terminated and the derivative is treated as if it were a trading instrument.

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. Northern Trust enters into interest rate swaps to hedge changes in fair value of AFS debt securities and long-term subordinated debt and senior notes. Northern Trust applied the "shortcut" method of accounting, available under GAAP, which assumes there is perfect effectiveness in a hedge, for all of its fair value hedges during the three- and six-month periods ended June 30, 2023 and 2022. 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 earnings within the same income statement line item.

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. Northern Trust enters into foreign exchange contracts to hedge changes in cash flows due to movements in foreign exchange rates of forecasted foreign-currency-denominated transactions and foreign-currency-denominated debt securities. Northern Trust also enters into interest rate contracts to hedge changes in cash flows due to movements in interest rates of AFS debt securities. The change in fair value of cash flow hedging derivative instruments are recorded in AOCI and reclassified to earnings when the hedged forecasted transaction impacts earnings within the same income statement line item.

There were no material gains or losses reclassified into earnings during the three- and six-month periods ended June 30, 2023 and 2022, as a result of the discontinuance of forecasted transactions that were no longer probable of occurring. It is estimated that net gains of $0.3 million and $17.9 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. As of June 30, 2023, three 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 tables provide fair value and cash flow hedge derivative gains and losses recognized in income during the three- and six-month periods ended June 30, 2023 and 2022.

TABLE 77: 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	
THREE MONTHS ENDED JUNE 30,	**2023**	2022	**2023**	2022	**2023**	2022
Total amounts on the consolidated statements of income	**$ 1,735.0**	$ 524.8	**$ 1,223.5**	$ 66.1	**$ 55.2**	$ 45.6
Gains (Losses) on fair value hedges recognized on						
Interest Rate Contracts						
Recognized on derivatives	**5.0**	18.5	**(49.8)**	(97.8)	**—**	—
Recognized on hedged items	**(5.0)**	(18.5)	**49.8**	97.8	**—**	—
Amounts related to interest settlements on derivatives	**11.3**	(0.4)	**(22.6)**	23.7	**—**	—
Total gains (losses) recognized on fair value hedges	**$ 11.3**	$ (0.4)	**$ (22.6)**	$ 23.7	**$ —**	$ —
Gains (Losses) on cash flow hedges recognized on						
Foreign Exchange Contracts						
Net gains (losses) reclassified from AOCI to net income	**$ 1.2**	$ —	**$ —**	$ —	**$ 1.0**	$ (1.5)
Total gains (losses) reclassified from AOCI to net income on cash flow hedges	**$ 1.2**	$ —	**$ —**	$ —	**$ 1.0**	$ (1.5)

(In Millions)	INTEREST INCOME		INTEREST EXPENSE		OTHER OPERATING INCOME	
SIX MONTHS ENDED JUNE 30,	**2023**	2022	**2023**	2022	**2023**	2022
Total amounts on the consolidated statements of income	**$ 3,190.4**	$ 908.3	**$ 2,147.7**	$ 68.6	**$ 102.0**	$ 86.7
Gains (Losses) on fair value hedges recognized on						
Interest Rate Contracts						
Recognized on derivatives	**(13.5)**	57.7	**(0.7)**	(253.7)	**—**	—
Recognized on hedged items	**13.5**	(57.7)	**0.7**	253.7	**—**	—
Amounts related to interest settlements on derivatives	**23.6**	(9.3)	**(41.0)**	24.9	**—**	—
Total gains (losses) recognized on fair value hedges	**$ 23.6**	$ (9.3)	**$ (41.0)**	$ 24.9	**$ —**	$ —
Gains (Losses) on cash flow hedges recognized on						
Foreign Exchange Contracts						
Net gains (losses) reclassified from AOCI to net income	**$ 1.2**	$ 0.6	**$ —**	$ —	**$ 1.6**	$ (3.8)
Total gains (losses) reclassified from AOCI to net income on cash flow hedges	**$ 1.2**	$ 0.6	**$ —**	$ —	**$ 1.6**	$ (3.8)

The following table provides the impact of fair value hedge accounting on the carrying value of the designated hedged items as of June 30, 2023 and December 31, 2022.

TABLE 78: HEDGED ITEMS IN FAIR VALUE HEDGES

	JUNE 30, 2023		DECEMBER 31, 2022	
(In Millions)	**CARRYING VALUE OF THE HEDGED ITEMS**	**CUMULATIVE HEDGE ACCOUNTING BASIS ADJUSTMENT[(1)(3)]**	CARRYING VALUE OF THE HEDGED ITEMS	CUMULATIVE HEDGE ACCOUNTING BASIS ADJUSTMENT[(2)(3)]
Available for Sale Debt Securities[(4)]	**$ 1,534.8**	**$ (41.5)**	$ 1,820.8	$ (60.2)
Senior Notes and Long-Term Subordinated Debt	**2,449.2**	**(294.7)**	2,746.2	(294.0)

(1) The cumulative hedge accounting basis adjustment includes $2.1 million related to discontinued hedging relationships of AFS debt securities as of June 30, 2023. 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 June 30, 2023.

(2) The cumulative hedge accounting basis adjustment includes $7.3 million related to discontinued hedging relationships of AFS debt securities as of December 31, 2022. 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, 2022.

(3) Positive (negative) amounts related to AFS securities represent cumulative fair value hedge basis adjustments that will reduce (increase) net interest income in future periods. Positive (negative) amounts related to Senior Notes and Long-Term Subordinated Debt represent cumulative fair value hedge basis adjustments that will increase (reduce) net interest income in future periods.

(4) 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 $30.6 million and gains of $204.3 million were recognized in AOCI related to foreign exchange contracts for the three months ended June 30, 2023 and 2022, respectively. Net investment hedge losses of $63.1 million and gains of $263.7 million were recognized in AOCI related to foreign exchange contracts for the six months ended June 30, 2023 and 2022, 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 in the consolidated statements of income for the three and six months ended June 30, 2023 and 2022 for derivative instruments not designated as hedges under GAAP.

TABLE 79: 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			
		THREE MONTHS ENDED JUNE 30,		SIX MONTHS ENDED JUNE 30,	
(In Millions)	DERIVATIVE GAINS (LOSSES) LOCATION RECOGNIZED IN INCOME	**2023**	2022	**2023**	2022
Non-designated risk management derivatives					
Foreign Exchange Contracts	Other Operating Income	**$ 0.8**	$ (4.1)	**$ 1.5**	$ (1.4)
Other Financial Derivatives[1]	Other Operating Income	**(11.9)**	(5.6)	**(20.7)**	(10.1)
Gains (Losses) from non-designated risk management derivatives		**$ (11.1)**	$ (9.7)	**$ (19.2)**	$ (11.5)
Client-related and trading derivatives					
Foreign Exchange Contracts	Foreign Exchange Trading Income	**$ 50.1**	$ 77.6	**$ 103.1**	$ 158.5
Interest Rate Contracts	Security Commissions and Trading Income	**4.4**	3.2	**6.9**	4.2
Gains from client-related and trading derivatives		**$ 54.5**	$ 80.8	**$ 110.0**	$ 162.7
Total gains from derivatives not designated as hedging under GAAP		**$ 43.4**	$ 71.1	**$ 90.8**	$ 151.2

[1] *This line includes swaps related to the sale of certain Visa Class B common shares and total return swap contracts.*

Note 22 – Securities Sold Under Agreements to Repurchase

Securities sold under agreements to repurchase are accounted for as collateralized financings and recorded at the amounts at which the securities were sold plus accrued interest. To minimize any potential credit risk associated with these transactions, the fair value of the securities sold is monitored, limits are set on exposure with counterparties, and the financial condition of counterparties is regularly assessed. Securities sold under agreements to repurchase are either directly held by, or pledged to the counterparty until the repurchase. Northern Trust nets securities sold under repurchase agreements against those purchased under resale agreements when there is a legally enforceable master netting agreement and the conditions to net are met.

The following table provides information regarding repurchase agreements that are accounted for as secured borrowings as of June 30, 2023 and December 31, 2022.

TABLE 80: REPURCHASE AGREEMENTS ACCOUNTED FOR AS SECURED BORROWINGS

	REMAINING CONTRACTUAL MATURITY OF THE AGREEMENTS	
	JUNE 30, 2023	DECEMBER 31, 2022
($ In Millions)	**OVERNIGHT AND CONTINUOUS**	
U.S. Treasury and Agency Securities	**$ 988.1**	$ 567.2
Total Borrowings	**988.1**	567.2
Net Amount of Recognized Liabilities for Repurchase Agreements in Note 23	**988.1**	567.2

Note 23 – Offsetting of Assets and Liabilities

Northern Trust has elected to net securities sold under repurchase agreements against those purchased under resale agreements and derivative assets and liabilities, when legally enforceable master netting arrangements or similar agreements exist between Northern Trust and the counterparty.

The following table provides information regarding the offsetting of derivative assets and securities purchased under agreements to resell within the consolidated balance sheets as of June 30, 2023 and December 31, 2022.

TABLE 81: OFFSETTING OF DERIVATIVE ASSETS AND SECURITIES PURCHASED UNDER AGREEMENTS TO RESELL

	JUNE 30, 2023				
(In Millions)	**GROSS RECOGNIZED ASSETS**	**GROSS AMOUNTS OFFSET IN THE BALANCE SHEET[3]**	**NET AMOUNTS PRESENTED IN THE BALANCE SHEET**	**GROSS AMOUNTS NOT OFFSET IN THE BALANCE SHEET[4]**	**NET AMOUNT[5]**
Derivative Assets[1]					
Foreign Exchange Contracts Over the Counter (OTC)	**$ 1,827.6**	**$ 1,001.1**	**$ 826.5**	**$ 3.9**	**$ 822.6**
Interest Rate Swaps OTC	**313.9**	**244.8**	**69.1**	**—**	**69.1**
Interest Rate Swaps Exchange Cleared	—	—	—	—	—
Other Financial Derivative	—	—	—	—	—
Total Derivatives Subject to a Master Netting Arrangement	**2,141.5**	**1,245.9**	**895.6**	**3.9**	**891.7**
Total Derivatives Not Subject to a Master Netting Arrangement	**436.5**	**—**	**436.5**	**—**	**436.5**
Total Derivatives	**2,578.0**	**1,245.9**	**1,332.1**	**3.9**	**1,328.2**
Securities Purchased under Agreements to Resell[2]	**$ 35,761.2**	**$ 34,532.3**	**$ 1,228.9**	**$ 1,228.9**	**$ —**

	DECEMBER 31, 2022				
(In Millions)	GROSS RECOGNIZED ASSETS	GROSS AMOUNTS OFFSET IN THE BALANCE SHEET[3]	NET AMOUNTS PRESENTED IN THE BALANCE SHEET	GROSS AMOUNTS NOT OFFSET IN THE BALANCE SHEET[4]	NET AMOUNT[5]
Derivative Assets[1]					
Foreign Exchange Contracts OTC	$ 2,928.9	$ 2,666.4	$ 262.5	$ 5.0	$ 257.5
Interest Rate Swaps OTC	217.6	144.3	73.3	—	73.3
Interest Rate Swaps Exchange Cleared	4.4	—	4.4	—	4.4
Other Financial Derivative	0.3	—	0.3	—	0.3
Total Derivatives Subject to a Master Netting Arrangement	3,151.2	2,810.7	340.5	5.0	335.5
Total Derivatives Not Subject to a Master Netting Arrangement	581.2	—	581.2	—	581.2
Total Derivatives	3,732.4	2,810.7	921.7	5.0	916.7
Securities Purchased under Agreements to Resell[2]	$ 12,494.2	$ 11,423.9	$ 1,070.3	$ 1,070.3	$ —

(1) *Derivative assets are reported in Other Assets on the consolidated balance sheets. Other Assets (excluding derivative assets) totaled $9.8 billion and $8.9 billion as of June 30, 2023 and December 31, 2022, respectively.*
(2) *Offsetting of Securities Purchased under Agreements to Resell primarily relates to our involvement in the FICC.*
(3) *Including cash collateral received from counterparties.*
(4) *Including financial assets accepted as collateral which are received from counterparties.*
(5) *Northern Trust did not possess any cash collateral that was not offset in the consolidated balance sheets that could have been used to offset the net amounts presented in the consolidated balance sheets as of June 30, 2023 and December 31, 2022.*

Notes to Consolidated Financial Statements (unaudited) (continued)

The following table provides information regarding the offsetting of derivative liabilities and securities sold under agreements to repurchase within the consolidated balance sheets as of June 30, 2023 and December 31, 2022.

TABLE 82: OFFSETTING OF DERIVATIVE LIABILITIES AND SECURITIES SOLD UNDER AGREEMENTS TO REPURCHASE

	JUNE 30, 2023				
(In Millions)	GROSS RECOGNIZED LIABILITIES	GROSS AMOUNTS OFFSET IN THE BALANCE SHEET(3)	NET AMOUNTS PRESENTED IN THE BALANCE SHEET	GROSS AMOUNTS NOT OFFSET IN THE BALANCE SHEET(4)	NET AMOUNT(5)
Derivative Liabilities(1)					
Foreign Exchange Contracts OTC	**$ 1,632.2**	**$ 1,422.1**	**$ 210.1**	**$ —**	**$ 210.1**
Interest Rate Swaps OTC	**408.1**	**4.1**	**404.0**	**—**	**404.0**
Other Financial Derivatives	**36.4**	**34.8**	**1.6**	**—**	**1.6**
Total Derivatives Subject to a Master Netting Arrangement	**2,076.7**	**1,461.0**	**615.7**	**—**	**615.7**
Total Derivatives Not Subject to a Master Netting Arrangement	**530.4**	**—**	**530.4**	**—**	**530.4**
Total Derivatives	**2,607.1**	**1,461.0**	**1,146.1**	**—**	**1,146.1**
Securities Sold under Agreements to Repurchase(2)	**$ 35,520.4**	**$ 34,532.3**	**$ 988.1**	**$ 988.1**	**$ —**

	DECEMBER 31, 2022				
(In Millions)	GROSS RECOGNIZED LIABILITIES	GROSS AMOUNTS OFFSET IN THE BALANCE SHEET(3)	NET AMOUNTS PRESENTED IN THE BALANCE SHEET	GROSS AMOUNTS NOT OFFSET IN THE BALANCE SHEET(4)	NET AMOUNT(5)
Derivative Liabilities(1)					
Foreign Exchange Contracts OTC	$ 2,082.3	$ 1,826.7	$ 255.6	$ —	$ 255.6
Interest Rate Swaps OTC	426.5	5.9	420.6	—	420.6
Interest Rate Swaps Exchange Cleared	5.3	—	5.3	—	5.3
Other Financial Derivatives	34.8	33.3	1.5	—	1.5
Total Derivatives Subject to a Master Netting Arrangement	2,548.9	1,865.9	683.0	—	683.0
Total Derivatives Not Subject to a Master Netting Arrangement	1,105.2	—	1,105.2	—	1,105.2
Total Derivatives	3,654.1	1,865.9	1,788.2	—	1,788.2
Securities Sold under Agreements to Repurchase(2)	$ 11,991.1	$ 11,423.9	$ 567.2	$ 567.2	$ —

(1) *Derivative liabilities are reported in Other Liabilities on the consolidated balance sheets. Other Liabilities (excluding derivative liabilities) totaled $3.3 billion and $3.2 billion as of June 30, 2023 and December 31, 2022, respectively.*
(2) *Offsetting of Securities Sold under Agreements to Repurchase primarily relates to our involvement in the FICC.*
(3) *Including cash collateral deposited with counterparties.*
(4) *Including financial assets accepted as collateral which are deposited with counterparties.*
(5) *Northern Trust did not place any cash collateral with counterparties that was not offset in the consolidated balance sheets that could have been used to offset the net amounts presented in the consolidated balance sheets as of June 30, 2023 and December 31, 2022.*

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 offset 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.

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 $75.8 million and $129.2 million, respectively, as of June 30, 2023, and $131.8 million and $26.3 million, respectively, as of December 31, 2022, was not offset against derivative assets and liabilities in 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 $354.8 million and $190.9 million at June 30, 2023 and December 31, 2022, respectively. Cash collateral amounts deposited with derivative counterparties on those dates included $290.0 million and $55.1 million, respectively, posted against these liabilities, resulting in a net maximum amount of termination payments that could have been required at June 30, 2023 and December 31, 2022, of $64.8 million and $135.8 million, respectively. Accelerated settlement of these liabilities would not have a material effect on the consolidated financial position or liquidity of Northern Trust.

Item 4. Controls and Procedures

As of June 30, 2023, 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 Securities Exchange Act of 1934, as amended (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 by the SEC's rules and forms. Based on such evaluation, such officers have concluded that, as of June 30, 2023, the Corporation's disclosure controls and procedures are effective.

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 that are reasonably likely to materially affect, the Corporation's internal control over financial reporting.

PART II — OTHER INFORMATION

Item 1. Legal Proceedings

The information presented under the caption "Legal Proceedings" in Note 20—Commitments and Contingent Liabilities included under Part I, Item 1 of this Form 10-Q is incorporated herein by reference.

Item 1A. Risk Factors

Refer to "Risk Factors" in our Annual Report on Form 10-K for the year ended December 31, 2022, for a discussion of risks identified as being most significant to Northern Trust.

Item 2. Unregistered Sales of Equity Securities and Use of Proceeds

(c) The following table shows certain information relating to the Corporation's purchases of common stock for the three months ended June 30, 2023.

TABLE 83: REPURCHASES OF COMMON STOCK

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
April 1 - 30, 2023	103,771	$ 77.09	103,771	24,172,813
May 1 - 31, 2023	1,215,671	72.37	1,215,671	22,957,142
June 1 - 30, 2023	27,790	72.78	27,790	22,929,352
Total (Second Quarter)	1,347,232	$ 72.74	1,347,232	22,929,352

On October 19, 2021, the Corporation announced a share repurchase program 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, thus the Corporation retains the ability to repurchase when circumstances warrant and applicable regulation permits. Please refer to Note 10—Stockholders' Equity to the consolidated financial statements provided in Item 1. Consolidated Financial Statements (unaudited).

Item 3. Defaults Upon Senior Securities

None.

Item 4. Mine Safety Disclosures

Not applicable.

Item 5. Other Information

During the three months ended June 30, 2023, none of our directors or officers (as defined in Rule 16a-1(f) promulgated under the Securities Exchange Act of 1934, as amended) adopted, terminated or modified a Rule 10b5-1 trading arrangement or a non-Rule 10b5-1 trading arrangement (as such terms are defined in Item 408 of Regulation S-K).

Item 6. Exhibits

Exhibit Number	Description
4.1	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.
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 Northern Trust’s Quarterly Report on Form 10-Q as of and for the quarter ended June 30, 2023, formatted in Inline Extensible Business Reporting Language (iXBRL): (1) the Consolidated Balance Sheets, (2) the Consolidated Statements of Income, (3) the Consolidated Statements of Comprehensive Income, (4) the Consolidated Statements of Changes in Stockholders’ Equity, (5) the Consolidated Statements of Cash Flows, and (6) Notes to Consolidated Financial Statements.
104	The cover page from this Quarterly Report on Form 10-Q, formatted in Inline XBRL.

SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned thereunto duly authorized.

NORTHERN TRUST CORPORATION
(Registrant)

Date: July 25, 2023

By: /s/ Jason J. Tyler
Jason J. Tyler
Executive Vice President and
Chief Financial Officer
(Duly Authorized Officer and Principal Financial Officer)

Date: July 25, 2023

By: /s/ Lauren Allnutt
Lauren Allnutt
Executive Vice President and Controller
(Principal Accounting Officer)

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-Q for the quarterly period ended June 30, 2023, 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.

/s/ Michael G. O'Grady

Date: July 25, 2023

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-Q for the quarterly period ended June 30, 2023, 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.

/s/ Jason J. Tyler

Date: July 25, 2023

Jason J. Tyler
Chief Financial Officer
(Principal Financial Officer)

Exhibit 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

In connection with the Quarterly Report of Northern Trust Corporation (the "Corporation") on Form 10-Q for the period ended June 30, 2023, 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)
Date: July 25, 2023

/s/ Jason J. Tyler
Jason J. Tyler
Chief Financial Officer
(Principal Financial Officer)
Date: July 25, 2023

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.