

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 number: 001-13221

Cullen/Frost Bankers, Inc.

(Exact name of registrant as specified in its charter)

Texas			74-1751768	
(State or other jurisdiction of incorporation or organization)			(I.R.S. Employer Identification No.)	
111 W. Houston Street,	San Antonio,	Texas	78205	
(Address of principal executive offices)			(Zip code)	
(210) 220-4011				
(Registrant's telephone number, including area code)				
N/A				
(Former name, former address and former fiscal year, if changed since last report)				

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

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Common Stock, \$.01 Par Value Depositary Shares, each representing a 1/40th interest in a share of 4.450% Non-Cumulative Perpetual Preferred Stock, Series B	CFR CFR.PrB	New York Stock Exchange New York Stock Exchange

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, 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 ☒

As of July 20, 2023, there were 64,123,111 shares of the registrant's Common Stock, \$.01 par value, outstanding.

Cullen/Frost Bankers, Inc.
Quarterly Report on Form 10-Q
June 30, 2023

Table of Contents

	<u>Page</u>
<u>Part I - Financial Information</u>	
Item 1.	
Financial Statements (Unaudited)	
Consolidated Balance Sheets	3
Consolidated Statements of Income	4
Consolidated Statements of Comprehensive Income (Loss)	5
Consolidated Statements of Changes in Shareholders' Equity	6
Consolidated Statements of Cash Flows	8
Notes to Consolidated Financial Statements	9
Item 2.	
Management's Discussion and Analysis of Financial Condition and Results of Operations	38
Item 3.	
Quantitative and Qualitative Disclosures About Market Risk	64
Item 4.	
Controls and Procedures	64
<u>Part II - Other Information</u>	
Item 1.	
Legal Proceedings	65
Item 1A.	
Risk Factors	65
Item 2.	
Unregistered Sales of Equity Securities and Use of Proceeds	65
Item 3.	
Defaults Upon Senior Securities	65
Item 4.	
Mine Safety Disclosures	65
Item 5.	
Other Information	65
Item 6.	
Exhibits	66
<u>Signatures</u>	67

Part I. Financial Information
Item 1. Financial Statements (Unaudited)
Cullen/Frost Bankers, Inc.
Consolidated Balance Sheets

(Dollars in thousands, except per share amounts)

	June 30, 2023	December 31, 2022
Assets:		
Cash and due from banks	\$ 680,843	\$ 691,553
Interest-bearing deposits	6,329,268	11,128,902
Federal funds sold	12,575	120,527
Resell agreements	84,650	87,150
Total cash and cash equivalents	7,107,336	12,028,132
Securities held to maturity, net of allowance for credit losses of \$267 at June 30, 2023 and \$158 at December 31, 2022	3,691,220	2,639,083
Securities available for sale, at estimated fair value	17,249,257	18,243,605
Trading account securities	32,517	28,045
Loans, net of unearned discounts	17,746,311	17,154,969
Less: Allowance for credit losses on loans	(233,619)	(227,621)
Net loans	17,512,692	16,927,348
Premises and equipment, net	1,154,235	1,102,695
Goodwill	654,952	654,952
Other intangible assets, net	208	386
Cash surrender value of life insurance policies	190,575	190,188
Accrued interest receivable and other assets	1,004,208	1,077,942
Total assets	\$ 48,597,200	\$ 52,892,376
Liabilities:		
Deposits:		
Non-interest-bearing demand deposits	\$ 14,904,614	\$ 17,598,234
Interest-bearing deposits	25,796,216	26,355,962
Total deposits	40,700,830	43,954,196
Federal funds purchased	13,525	51,650
Repurchase agreements	3,569,870	4,660,641
Junior subordinated deferrable interest debentures, net of unamortized issuance costs	123,098	123,069
Subordinated notes, net of unamortized issuance costs	99,413	99,335
Accrued interest payable and other liabilities	703,722	866,257
Total liabilities	45,210,458	49,755,148
Shareholders' Equity:		
Preferred stock, par value \$0.01 per share; 10,000,000 shares authorized; 150,000 Series B shares (\$1,000 liquidation preference) issued at June 30, 2023 and December 31, 2022	145,452	145,452
Common stock, par value \$0.01 per share; 210,000,000 shares authorized; 64,404,582 shares issued at June 30, 2023 and 64,354,695 at December 31, 2022	644	643
Additional paid-in capital	1,040,754	1,029,756
Retained earnings	3,532,542	3,309,671
Accumulated other comprehensive income (loss), net of tax	(1,305,027)	(1,348,294)
Treasury stock, at cost; 284,206 shares at June 30, 2023	(27,623)	—
Total shareholders' equity	3,386,742	3,137,228
Total liabilities and shareholders' equity	\$ 48,597,200	\$ 52,892,376

See accompanying Notes to Consolidated Financial Statements.

Cullen/Frost Bankers, Inc.
Consolidated Statements of Income
(Dollars in thousands, except per share amounts)

	Three Months Ended June 30,		Six Months Ended June 30,	
	2023	2022	2023	2022
Interest income:				
Loans, including fees	\$ 290,552	\$ 166,679	\$ 560,267	\$ 316,656
Securities:				
Taxable	101,960	56,365	199,735	99,423
Tax-exempt	60,637	57,078	127,271	113,944
Interest-bearing deposits	87,748	26,371	186,993	32,714
Federal funds sold	305	99	1,063	112
Resell agreements	1,126	10	2,194	14
Total interest income	542,328	306,602	1,077,523	562,863
Interest expense:				
Deposits	120,266	14,593	218,255	19,505
Federal funds purchased	412	75	995	87
Repurchase agreements	33,114	1,790	66,765	2,308
Junior subordinated deferrable interest debentures	2,106	772	4,094	1,356
Subordinated notes	1,164	1,164	2,328	2,328
Total interest expense	157,062	18,394	292,437	25,584
Net interest income	385,266	288,208	785,086	537,279
Credit loss expense	9,901	—	19,005	—
Net interest income after credit loss expense	375,365	288,208	766,081	537,279
Non-interest income:				
Trust and investment management fees	39,392	37,776	75,536	76,432
Service charges on deposit accounts	23,487	23,870	45,366	46,610
Insurance commissions and fees	12,940	11,776	31,892	28,384
Interchange and card transaction fees	5,250	4,911	10,139	9,137
Other charges, commissions and fees	12,090	9,887	23,794	19,514
Net gain (loss) on securities transactions	33	—	54	—
Other	10,336	9,707	22,012	19,240
Total non-interest income	103,528	97,927	208,793	199,317
Non-interest expense:				
Salaries and wages	133,195	116,881	263,540	228,210
Employee benefits	26,792	20,733	60,714	44,953
Net occupancy	31,714	28,379	62,063	55,790
Technology, furniture and equipment	33,043	29,921	65,524	59,078
Deposit insurance	6,202	3,724	12,447	7,357
Intangible amortization	82	131	178	277
Other	54,014	46,578	105,718	89,414
Total non-interest expense	285,042	246,347	570,184	485,079
Income before income taxes	193,851	139,788	404,690	251,517
Income taxes	31,733	20,674	64,919	33,301
Net income	162,118	119,114	339,771	218,216
Preferred stock dividends	1,669	—	3,338	3,338
Net income available to common shareholders	\$ 160,449	\$ 117,445	\$ 336,433	\$ 214,878
Earnings per common share:				
Basic	\$ 2.47	\$ 1.82	\$ 5.18	\$ 3.32
Diluted	2.47	1.81	5.17	3.31

See accompanying Notes to Consolidated Financial Statements.

Cullen/Frost Bankers, Inc.
Consolidated Statements of Comprehensive Income (Loss)
(Dollars in thousands)

	Three Months Ended June 30,		Six Months Ended June 30,	
	2023	2022	2023	2022
Net income	\$ 162,118	\$ 119,114	\$ 339,771	\$ 218,216
Other comprehensive income (loss), before tax:				
Securities available for sale and transferred securities:				
Change in net unrealized gain/loss during the period	(206,863)	(636,523)	53,406	(1,547,318)
Change in net unrealized gain on securities transferred to held to maturity	(162)	(189)	(322)	(398)
Reclassification adjustment for net (gains) losses included in net income	(33)	—	(54)	—
Total securities available for sale and transferred securities	(207,058)	(636,712)	53,030	(1,547,716)
Defined-benefit post-retirement benefit plans:				
Reclassification adjustment for net amortization of actuarial gain/loss included in net income as a component of net periodic cost (benefit)	870	741	1,740	1,482
Total defined-benefit post-retirement benefit plans	870	741	1,740	1,482
Other comprehensive income (loss), before tax	(206,188)	(635,971)	54,770	(1,546,234)
Deferred tax expense (benefit)	(43,299)	(133,555)	11,503	(324,710)
Other comprehensive income (loss), net of tax	(162,889)	(502,416)	43,267	(1,221,524)
Comprehensive income (loss)	\$ (771)	\$ (383,302)	\$ 383,038	\$ (1,003,308)

See accompanying Notes to Consolidated Financial Statements.

Cullen/Frost Bankers, Inc.
Consolidated Statements of Changes in Shareholders' Equity
(Dollars in thousands, except per share amounts)

	Preferred Stock	Common Stock	Additional Paid-In Capital	Retained Earnings	Accumulated Other Comprehensive Income (Loss), Net of Tax	Treasury Stock	Total
Three months ended:							
June 30, 2023							
Balance at beginning of period	\$ 145,452	\$ 644	\$ 1,035,961	\$ 3,428,991	\$ (1,142,138)	\$ (1,109)	\$ 3,467,801
Net income	—	—	—	162,118	—	—	162,118
Other comprehensive income (loss), net of tax	—	—	—	—	(162,889)	—	(162,889)
Stock option exercises/stock unit conversions (13,626 shares)	—	—	—	(491)	—	1,437	946
Stock-based compensation expense recognized in earnings	—	—	4,793	—	—	—	4,793
Purchase of treasury stock (289,149 shares)	—	—	—	—	—	(27,951)	(27,951)
Cash dividends – Series B preferred stock (approximately \$11.13 per share which is equivalent to approximately \$0.28 per depository share)	—	—	—	(1,669)	—	—	(1,669)
Cash dividends – common stock (\$0.87 per share)	—	—	—	(56,407)	—	—	(56,407)
Balance at end of period	<u>\$ 145,452</u>	<u>\$ 644</u>	<u>\$ 1,040,754</u>	<u>\$ 3,532,542</u>	<u>\$ (1,305,027)</u>	<u>\$ (27,623)</u>	<u>\$ 3,386,742</u>
June 30, 2022							
Balance at beginning of period	\$ 145,452	\$ 642	\$ 1,012,033	\$ 3,002,642	\$ (371,790)	\$ (12,687)	\$ 3,776,292
Net income	—	—	—	119,114	—	—	119,114
Other comprehensive income (loss), net of tax	—	—	—	—	(502,416)	—	(502,416)
Stock option exercises/stock unit conversions (28,832 shares)	—	—	—	(1,463)	—	2,214	751
Stock-based compensation expense recognized in earnings	—	—	3,418	—	—	—	3,418
Cash dividends – Series B preferred stock (approximately \$11.13 per share which is equivalent to approximately \$0.28 per depository share)	—	—	—	(1,669)	—	—	(1,669)
Cash dividends – common stock (\$0.75 per share)	—	—	—	(48,515)	—	—	(48,515)
Balance at end of period	<u>\$ 145,452</u>	<u>\$ 642</u>	<u>\$ 1,015,451</u>	<u>\$ 3,070,109</u>	<u>\$ (874,206)</u>	<u>\$ (10,473)</u>	<u>\$ 3,346,975</u>

See accompanying Notes to Consolidated Financial Statements

Cullen/Frost Bankers, Inc.
Consolidated Statements of Changes in Shareholders' Equity
(Dollars in thousands, except per share amounts)

	Preferred Stock	Common Stock	Additional Paid-In Capital	Retained Earnings	Accumulated Other Comprehensive Income (Loss), Net of Tax	Treasury Stock	Total
Six months ended:							
June 30, 2023							
Balance at beginning of period	\$ 145,452	\$ 643	\$ 1,029,756	\$ 3,309,671	\$ (1,348,294)	\$ —	\$ 3,137,228
Net income	—	—	—	339,771	—	—	339,771
Other comprehensive income (loss), net of tax	—	—	—	—	43,267	—	43,267
Stock option exercises/stock unit conversions (64,013 shares)	—	1	1,463	(519)	—	1,501	2,446
Stock-based compensation expense recognized in earnings	—	—	9,535	—	—	—	9,535
Purchase of treasury stock (298,332 shares)	—	—	—	—	—	(29,124)	(29,124)
Cash dividends – Series B preferred stock (approximately \$22.25 per share which is equivalent to approximately \$0.56 per depository share)	—	—	—	(3,338)	—	—	(3,338)
Cash dividends – common stock (\$1.74 per share)	—	—	—	(113,043)	—	—	(113,043)
Balance at end of period	<u>\$ 145,452</u>	<u>\$ 644</u>	<u>\$ 1,040,754</u>	<u>\$ 3,532,542</u>	<u>\$ (1,305,027)</u>	<u>\$ (27,623)</u>	<u>\$ 3,386,742</u>
June 30, 2022							
Balance at beginning of period	\$ 145,452	\$ 642	\$ 1,009,921	\$ 2,956,966	\$ 347,318	\$ (20,744)	\$ 4,439,555
Net income	—	—	—	218,216	—	—	218,216
Other comprehensive income (loss), net of tax	—	—	—	—	(1,221,524)	—	(1,221,524)
Stock option exercises/stock unit conversions (144,262 shares)	—	—	—	(4,777)	—	11,267	6,490
Stock-based compensation expense recognized in earnings	—	—	5,530	—	—	—	5,530
Purchase of treasury stock (7,459 shares)	—	—	—	—	—	(996)	(996)
Cash dividends – Series B preferred stock (approximately \$22.25 per share which is equivalent to approximately \$0.56 per depository share)	—	—	—	(3,338)	—	—	(3,338)
Cash dividends – common stock (\$1.50 per share)	—	—	—	(96,958)	—	—	(96,958)
Balance at end of period	<u>\$ 145,452</u>	<u>\$ 642</u>	<u>\$ 1,015,451</u>	<u>\$ 3,070,109</u>	<u>\$ (874,206)</u>	<u>\$ (10,473)</u>	<u>\$ 3,346,975</u>

See accompanying Notes to Consolidated Financial Statements

Cullen/Frost Bankers, Inc.
Consolidated Statements of Cash Flows
(Dollars in thousands)

	Six Months Ended June 30,	
	2023	2022
Operating Activities:		
Net income	\$ 339,771	\$ 218,216
Adjustments to reconcile net income to net cash from operating activities:		
Credit loss expense	19,005	—
Deferred tax expense (benefit)	(2,489)	(2,404)
Accretion of loan discounts	(9,265)	(6,581)
Securities premium amortization (discount accretion), net	36,919	53,225
Net (gain) loss on securities transactions	(54)	—
Depreciation and amortization	37,076	35,406
Net (gain) loss on sale/write-down of assets/foreclosed assets	(283)	103
Stock-based compensation	9,535	5,530
Net tax benefit from stock-based compensation	469	1,645
Earnings on life insurance policies	(1,387)	(1,016)
Net change in:		
Trading account securities	335	482
Lease right-of-use assets	11,193	12,042
Accrued interest receivable and other assets	59,051	(135,239)
Accrued interest payable and other liabilities	(176,718)	113,645
Net cash from operating activities	323,158	295,054
Investing Activities:		
Securities held to maturity:		
Purchases	(1,141,443)	(411,527)
Maturities, calls and principal repayments	92,547	263,226
Securities available for sale:		
Purchases	(7,607,014)	(4,778,475)
Sales	1,543,355	—
Maturities, calls and principal repayments	7,077,003	382,152
Proceeds from sale of loans	2,215	2,365
Net change in loans	(602,902)	(404,515)
Benefits received on life insurance policies	1,000	1,332
Proceeds from sales of premises and equipment	1,179	18
Purchases of premises and equipment	(85,156)	(28,016)
Proceeds from sales of repossessed properties	583	1,543
Net cash from investing activities	(718,633)	(4,971,897)
Financing Activities:		
Net change in deposits	(3,253,366)	2,906,069
Net change in short-term borrowings	(1,128,896)	(1,058,839)
Proceeds from stock option exercises	2,446	6,490
Purchase of treasury stock	(29,124)	(996)
Cash dividends paid on preferred stock	(3,338)	(3,338)
Cash dividends paid on common stock	(113,043)	(96,958)
Net cash from financing activities	(4,525,321)	1,752,428
Net change in cash and cash equivalents	(4,920,796)	(2,924,415)
Cash and cash equivalents at beginning of period	12,028,132	16,583,000
Cash and cash equivalents at end of period	\$ 7,107,336	\$ 13,658,585

See accompanying Notes to Consolidated Financial Statements.

Notes to Consolidated Financial Statements

(Table amounts in thousands, except for share and per share amounts)

Note 1 - Significant Accounting Policies

Nature of Operations. Cullen/Frost Bankers, Inc. (“Cullen/Frost”) is a financial holding company and a bank holding company headquartered in San Antonio, Texas that provides, through its subsidiaries, a broad array of products and services throughout numerous Texas markets. The terms “Cullen/Frost,” “the Corporation,” “we,” “us” and “our” mean Cullen/Frost Bankers, Inc. and its subsidiaries, when appropriate. In addition to general commercial and consumer banking, other products and services offered include trust and investment management, insurance, brokerage, mutual funds, leasing, treasury management, capital markets advisory and item processing.

Basis of Presentation. The consolidated financial statements in this Quarterly Report on Form 10-Q include the accounts of Cullen/Frost and all other entities in which Cullen/Frost has a controlling financial interest. All significant intercompany balances and transactions have been eliminated in consolidation. The accounting and financial reporting policies we follow conform, in all material respects, to accounting principles generally accepted in the United States and to general practices within the financial services industry.

The consolidated financial statements in this Quarterly Report on Form 10-Q have not been audited by an independent registered public accounting firm, but in the opinion of management, reflect all adjustments necessary for a fair presentation of our financial position and results of operations. All such adjustments were of a normal and recurring nature. The consolidated financial statements have been prepared in accordance with accounting principles generally accepted in the United States for interim financial information and with the instructions to Form 10-Q adopted by the Securities and Exchange Commission (“SEC”). Accordingly, the financial statements do not include all of the information and footnotes required by accounting principles generally accepted in the United States for complete financial statements and should be read in conjunction with our consolidated financial statements, and notes thereto, for the year ended December 31, 2022, included in our Annual Report on Form 10-K filed with the SEC on February 3, 2023 (the “[2022 Form 10-K](#)”). Operating results for the interim periods disclosed herein are not necessarily indicative of the results that may be expected for a full year or any future period.

Use of Estimates. The preparation of financial statements in conformity with accounting principles generally accepted in the United States requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements. Actual results could differ from those estimates. The allowance for loan losses and the fair values of financial instruments and the status of contingencies are particularly subject to change.

Cash Flow Reporting. Additional cash flow information was as follows:

	Six Months Ended June 30,			
	2023		2022	
Cash paid for interest	\$	270,358	\$	22,551
Cash paid for income taxes		66,500		45,500
Significant non-cash transactions:				
Unsettled securities transactions		10,988		110,623
Right-of-use lease assets obtained in exchange for lessee operating lease liabilities		8,914		8,857

Accounting Changes, Reclassifications and Restatements. Certain items in prior financial statements have been reclassified to conform to the current presentation.

Note 2 - Securities

Securities - Held to Maturity. A summary of the amortized cost, fair value and allowance for credit losses related to securities held to maturity as of June 30, 2023 and December 31, 2022 is presented below.

	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Estimated Fair Value	Allowance for Credit Losses	Net Carrying Amount
June 30, 2023						
Residential mortgage-backed securities	\$ 1,265,818	\$ —	\$ 72,286	\$ 1,193,532	\$ —	\$ 1,265,818
States and political subdivisions	2,424,169	24,288	99,491	2,348,966	(267)	2,423,902
Other	1,500	—	69	1,431	—	1,500
Total	\$ 3,691,487	\$ 24,288	\$ 171,846	\$ 3,543,929	\$ (267)	\$ 3,691,220
December 31, 2022						
Residential mortgage-backed securities	\$ 526,122	\$ —	\$ 65,322	\$ 460,800	\$ —	\$ 526,122
States and political subdivisions	2,111,619	13,048	119,033	2,005,634	(158)	2,111,461
Other	1,500	—	69	1,431	—	1,500
Total	\$ 2,639,241	\$ 13,048	\$ 184,424	\$ 2,467,865	\$ (158)	\$ 2,639,083

All mortgage-backed securities included in the above table were issued by U.S. government agencies and corporations. The carrying value of held-to-maturity securities pledged to secure public funds, trust deposits, repurchase agreements and for other purposes, as required or permitted by law was \$943.9 million and \$256.3 million at June 30, 2023 and December 31, 2022, respectively. Accrued interest receivable on held-to-maturity securities totaled \$39.4 million and \$30.2 million at June 30, 2023 and December 31, 2022, respectively and is included in accrued interest receivable and other assets in the accompanying consolidated balance sheets.

From time to time, we have reclassified certain securities from available for sale to held to maturity. The net unamortized, unrealized gain remaining on transferred securities included in accumulated other comprehensive income in the accompanying balance sheet totaled \$1.5 million (\$1.2 million, net of tax) at June 30, 2023 and \$1.8 million (\$1.4 million, net of tax) at December 31, 2022. This amount will be amortized out of accumulated other comprehensive income over the remaining life of the underlying securities as an adjustment of the yield on those securities.

The following table summarizes Moody's and/or Standard & Poor's bond ratings for our portfolio of held-to-maturity securities issued by States and political subdivisions and other securities as of June 30, 2023 and December 31, 2022:

	States and Political Subdivisions					Other Securities
	Not Guaranteed or Pre-Refunded	Guaranteed by the Texas PSF	Guaranteed by Third Party	Pre-Refunded	Total	
June 30, 2023						
Aaa/AAA	\$ 301,922	\$ 1,544,702	\$ 13,656	\$ 52,860	\$ 1,913,140	\$ —
Aa/AA	504,928	—	6,101	—	511,029	—
Not rated	—	—	—	—	—	1,500
Total	\$ 806,850	\$ 1,544,702	\$ 19,757	\$ 52,860	\$ 2,424,169	\$ 1,500
December 31, 2022						
Aaa/AAA	\$ 273,201	\$ 1,422,442	\$ —	\$ 121,961	\$ 1,817,604	\$ —
Aa/AA	294,015	—	—	—	294,015	—
Not rated	—	—	—	—	—	1,500
Total	\$ 567,216	\$ 1,422,442	\$ —	\$ 121,961	\$ 2,111,619	\$ 1,500

The following table details activity in the allowance for credit losses on held-to-maturity securities during the three and six months ended June 30, 2023 and 2022.

	Three Months Ended June 30,		Six Months Ended June 30,	
	2023	2022	2023	2022
Beginning balance	\$ 262	\$ 158	\$ 158	\$ 158
Credit loss expense (benefit)	5	—	109	—
Ending balance	\$ 267	\$ 158	\$ 267	\$ 158

Securities - Available for Sale. A summary of the amortized cost, fair value and allowance for credit losses related to securities available for sale as of June 30, 2023 and December 31, 2022 is presented below.

	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Allowance for Credit Losses	Estimated Fair Value
June 30, 2023					
U.S. Treasury	\$ 5,456,656	\$ —	\$ 383,768	\$ —	\$ 5,072,888
Residential mortgage-backed securities	7,725,403	5,105	937,733	—	6,792,775
States and political subdivisions	5,636,095	1,098	296,177	—	5,341,016
Other	42,578	—	—	—	42,578
Total	\$ 18,860,732	\$ 6,203	\$ 1,617,678	\$ —	\$ 17,249,257
December 31, 2022					
U.S. Treasury	\$ 5,450,546	\$ —	\$ 398,959	\$ —	\$ 5,051,587
Residential mortgage-backed securities	7,316,824	8,050	948,638	—	6,376,236
States and political subdivisions	7,098,635	9,108	334,388	—	6,773,355
Other	42,427	—	—	—	42,427
Total	\$ 19,908,432	\$ 17,158	\$ 1,681,985	\$ —	\$ 18,243,605

All mortgage-backed securities included in the above table were issued by U.S. government agencies and corporations. At June 30, 2023, all of the securities in our available for sale municipal bond portfolio were issued by the State of Texas or political subdivisions or agencies within the State of Texas, of which approximately 74.3% are either guaranteed by the Texas Permanent School Fund ("PSF") or have been pre-refunded. Securities with limited marketability, such as stock in the Federal Reserve Bank and the Federal Home Loan Bank, are carried at cost and are reported as other available for sale securities in the table above. The carrying value of available-for-sale securities pledged to secure public funds, trust deposits, repurchase agreements and for other purposes, as required or permitted by law was \$5.2 billion and \$8.0 billion at June 30, 2023 and December 31, 2022, respectively. Accrued interest receivable on available-for-sale securities totaled \$121.8 million and \$140.6 million at June 30, 2023 and December 31, 2022, respectively, and is included in accrued interest receivable and other assets in the accompanying consolidated balance sheets.

The table below summarizes, as of June 30, 2023, securities available for sale in an unrealized loss position for which an allowance for credit losses has not been recorded, aggregated by type of security and length of time in a continuous unrealized loss position.

	Less than 12 Months		More than 12 Months		Total	
	Estimated Fair Value	Unrealized Losses	Estimated Fair Value	Unrealized Losses	Estimated Fair Value	Unrealized Losses
U.S. Treasury	\$ 1,487,790	\$ 58,237	\$ 3,585,097	\$ 325,531	\$ 5,072,887	\$ 383,768
Residential mortgage-backed securities	2,176,299	65,646	4,239,828	872,087	6,416,127	937,733
States and political subdivisions	3,391,385	45,640	1,543,520	250,537	4,934,905	296,177
Total	\$ 7,055,474	\$ 169,523	\$ 9,368,445	\$ 1,448,155	\$ 16,423,919	\$ 1,617,678

As of June 30, 2023, no allowance for credit losses has been recognized on available for sale securities in an unrealized loss position as management does not believe any of the securities are impaired due to reasons of credit quality. This is based upon our analysis of the underlying risk characteristics, including credit ratings, and other qualitative factors related to our available for sale securities and in consideration of our historical credit loss experience and internal forecasts. The issuers of these securities continue to make timely principal and interest payments under the contractual terms of the securities. Furthermore, management does not have the intent to sell any of the securities classified as available for sale in the table above and believes that it is more likely than not that we will not have to sell any such securities before a recovery of cost. The unrealized losses

are due to increases in market interest rates over the yields available at the time the underlying securities were purchased. The fair value is expected to recover as the securities approach their maturity date or repricing date or if market yields for such investments decline.

Contractual Maturities. The following table summarizes the maturity distribution schedule of securities held to maturity and securities available for sale as of June 30, 2023. Mortgage-backed securities are included in maturity categories based on their stated maturity date. Expected maturities may differ from contractual maturities because issuers may have the right to call or prepay obligations. Other securities classified as available for sale include stock in the Federal Reserve Bank and the Federal Home Loan Bank, which have no maturity date. These securities have been included in the total column only.

	Within 1 Year	1 - 5 Years	5 - 10 Years	After 10 Years	Total
Held To Maturity					
<i>Amortized Cost</i>					
Residential mortgage-backed securities	\$ —	\$ —	\$ 513,530	\$ 752,288	\$ 1,265,818
States and political subdivisions	59,282	14,024	37,558	2,313,305	2,424,169
Other	—	1,500	—	—	1,500
Total	<u>\$ 59,282</u>	<u>\$ 15,524</u>	<u>\$ 551,088</u>	<u>\$ 3,065,593</u>	<u>\$ 3,691,487</u>
<i>Estimated Fair Value</i>					
Residential mortgage-backed securities	\$ —	\$ —	\$ 450,850	\$ 742,682	\$ 1,193,532
States and political subdivisions	59,242	13,949	36,609	2,239,166	2,348,966
Other	—	1,431	—	—	1,431
Total	<u>\$ 59,242</u>	<u>\$ 15,380</u>	<u>\$ 487,459</u>	<u>\$ 2,981,848</u>	<u>\$ 3,543,929</u>
Available For Sale					
<i>Amortized Cost</i>					
U. S. Treasury	\$ 1,286,197	\$ 2,542,538	\$ 1,435,692	\$ 192,229	\$ 5,456,656
Residential mortgage-backed securities	310	4,985	15,986	7,704,122	7,725,403
States and political subdivisions	439,111	317,371	831,502	4,048,111	5,636,095
Other	—	—	—	—	42,578
Total	<u>\$ 1,725,618</u>	<u>\$ 2,864,894</u>	<u>\$ 2,283,180</u>	<u>\$ 11,944,462</u>	<u>\$ 18,860,732</u>
<i>Estimated Fair Value</i>					
U. S. Treasury	\$ 1,257,329	\$ 2,420,131	\$ 1,250,420	\$ 145,008	\$ 5,072,888
Residential mortgage-backed securities	305	4,865	15,898	6,771,707	6,792,775
States and political subdivisions	438,969	315,373	811,631	3,775,043	5,341,016
Other	—	—	—	—	42,578
Total	<u>\$ 1,696,603</u>	<u>\$ 2,740,369</u>	<u>\$ 2,077,949</u>	<u>\$ 10,691,758</u>	<u>\$ 17,249,257</u>

Sales of Securities. Sales of available for sale securities were as follows:

	Three Months Ended June 30,		Six Months Ended June 30,	
	2023	2022	2023	2022
Proceeds from sales	\$ 659,082	\$ —	\$ 1,543,355	\$ —
Gross realized gains	561	—	5,417	—
Gross realized losses	(528)	—	(5,363)	—
Tax (expense) benefit of securities gains/losses	(7)	—	(11)	—

Premiums and Discounts. Premium amortization and discount accretion included in interest income on securities was as follows:

	Three Months Ended June 30,		Six Months Ended June 30,	
	2023	2022	2023	2022
Premium amortization	\$ (21,242)	\$ (28,053)	\$ (47,167)	\$ (57,113)
Discount accretion	4,843	2,482	10,248	3,888
Net (premium amortization) discount accretion	<u>\$ (16,399)</u>	<u>\$ (25,571)</u>	<u>\$ (36,919)</u>	<u>\$ (53,225)</u>

Trading Account Securities: Trading account securities, at estimated fair value, were as follows:

	June 30, 2023	December 31, 2022
U.S. Treasury	\$ 27,546	\$ 25,879
States and political subdivisions	4,971	2,166
Total	\$ 32,517	\$ 28,045

Net gains and losses on trading account securities were as follows:

	Three Months Ended June 30,		Six Months Ended June 30,	
	2023	2022	2023	2022
Net gain on sales transactions	\$ 903	\$ 1,012	\$ 1,871	\$ 1,352
Net mark-to-market gains (losses)	(10)	(76)	(27)	(244)
Net gain (loss) on trading account securities	\$ 893	\$ 936	\$ 1,844	\$ 1,108

Note 3 - Loans

Loans were as follows:

	June 30, 2023	December 31, 2022
Commercial and industrial	\$ 5,726,804	\$ 5,674,798
Energy:		
Production	718,829	696,570
Service	138,816	133,542
Other	128,926	95,617
Total energy	986,571	925,729
Paycheck Protection Program	22,333	34,852
Commercial real estate:		
Commercial mortgages	6,389,649	6,168,910
Construction	1,468,071	1,477,247
Land	535,247	537,168
Total commercial real estate	8,392,967	8,183,325
Consumer real estate:		
Home equity lines of credit	730,557	691,841
Home equity loans	575,284	449,507
Home improvement loans	680,811	577,377
Other	171,264	124,814
Total consumer real estate	2,157,916	1,843,539
Total real estate	10,550,883	10,026,864
Consumer and other	459,720	492,726
Total loans	\$ 17,746,311	\$ 17,154,969

Concentrations of Credit. Most of our lending activity occurs within the State of Texas, including the four largest metropolitan areas of Austin, Dallas/Ft. Worth, Houston and San Antonio, as well as other markets. The majority of our loan portfolio consists of commercial and industrial and commercial real estate loans. As of June 30, 2023, there were no concentrations of loans related to any single industry in excess of 10% of total loans. At that date, the largest industry concentrations were related to the automobile dealerships industry, which totaled 6.0% of total loans and the energy industry, which totaled 5.6% of total loans. Unfunded commitments to extend credit and standby letters of credit issued to customers in the automobile dealership industry totaled \$454.9 million and \$20.1 million, respectively, as of June 30, 2023, while unfunded commitments to extend credit and standby letters of credit issued to customers in the energy industry totaled \$1.0 billion and \$84.1 million, respectively, as of June 30, 2023.

Foreign Loans. We have U.S. dollar denominated loans and commitments to borrowers in Mexico. The outstanding balance of these loans and the unfunded amounts available under these commitments were not significant at June 30, 2023 or December 31, 2022.

Related Party Loans. In the ordinary course of business, we have granted loans to certain directors, executive officers and their affiliates (collectively referred to as “related parties”). Such loans totaled \$389.2 million at June 30, 2023 and \$391.3 million at December 31, 2022.

Accrued Interest Receivable. Accrued interest receivable on loans totaled \$73.9 million and \$68.7 million at June 30, 2023 and December 31, 2022, respectively, and is included in accrued interest receivable and other assets in the accompanying consolidated balance sheets.

Non-Accrual and Past Due Loans. Loans are considered past due if the required principal and interest payments have not been received as of the date such payments were due. Loans are placed on non-accrual status when, in management’s opinion, the borrower may be unable to meet payment obligations as they become due, as well as when required by regulatory provisions.

Non-accrual loans, segregated by class of loans, were as follows:

	June 30, 2023		December 31, 2022	
	Total Non-Accrual	Non-Accrual with No Credit Loss Allowance	Total Non-Accrual	Non-Accrual with No Credit Loss Allowance
Commercial and industrial	\$ 22,217	\$ 3,817	\$ 18,130	\$ 8,514
Energy	16,712	11,880	15,224	7,139
Commercial real estate:				
Buildings, land and other	25,682	6,617	3,552	1,991
Construction	—	—	—	—
Consumer real estate	3,170	3,170	927	927
Consumer and other	—	—	—	—
Total	\$ 67,781	\$ 25,484	\$ 37,833	\$ 18,571

The following table presents non-accrual loans as of June 30, 2023 by class and year of origination.

	2023	2022	2021	2020	2019	Prior	Revolving Loans	Revolving Loans Converted to Term	Total
Commercial and industrial	\$ —	\$ —	\$ 221	\$ 754	\$ 2,957	\$ 1,172	\$ 16,746	\$ 367	\$ 22,217
Energy	10,324	—	—	59	1,349	2	4,832	146	16,712
Commercial real estate:									
Buildings, land and other	1,924	8	296	18,328	1,483	3,643	—	—	25,682
Construction	—	—	—	—	—	—	—	—	—
Consumer real estate	—	—	—	39	2,470	95	—	566	3,170
Consumer and other	—	—	—	—	—	—	—	—	—
Total	\$ 12,248	\$ 8	\$ 517	\$ 19,180	\$ 8,259	\$ 4,912	\$ 21,578	\$ 1,079	\$ 67,781

In the table above, energy and commercial real estate loans reported as 2023 originations as of June 30, 2023 were first originated in years prior to 2023 but were renewed in the current year. Had non-accrual loans performed in accordance with their original contract terms, we would have recognized additional interest income, net of tax, of approximately \$835 thousand and \$1.4 million for the three and six months ended June 30, 2023, respectively, and approximately \$436 thousand and \$843 thousand for the three and six months ended June 30, 2022, respectively.

An age analysis of past due loans (including both accruing and non-accruing loans), segregated by class of loans, as of June 30, 2023 was as follows:

	Loans 30-89 Days Past Due	Loans 90 or More Days Past Due	Total Past Due Loans	Current Loans	Total Loans	Accruing Loans 90 or More Days Past Due
Commercial and industrial	\$ 29,280	\$ 5,224	\$ 34,504	\$ 5,692,300	\$ 5,726,804	\$ 3,025
Energy	2,224	6,386	8,610	977,961	986,571	—
Paycheck Protection Program	80	2,725	2,805	19,528	22,333	2,725
Commercial real estate:						
Buildings, land and other	28,554	20,022	48,576	6,876,320	6,924,896	568
Construction	669	118	787	1,467,284	1,468,071	118
Consumer real estate	8,843	8,114	16,957	2,140,959	2,157,916	5,039
Consumer and other	5,153	336	5,489	454,231	459,720	336
Total	\$ 74,803	\$ 42,925	\$ 117,728	\$ 17,628,583	\$ 17,746,311	\$ 11,811

Modifications to Borrowers Experiencing Financial Difficulty. From time to time, we may modify certain loans to borrowers who are experiencing financial difficulty. In some cases, these modifications may result in new loans. Loan modifications to borrowers experiencing financial difficulty may be in the form of a principal forgiveness, an interest rate reduction, an other-than-insignificant payment delay, or a term extension or a combination thereof, among other things. The period-end balance of loan modifications, segregated by type of modification, to borrowers experiencing financial difficulty during the six months ended June 30, 2023 and June 30, 2022 are set forth in the table below, regardless of whether such modifications resulted in a new loan. There were no commitments to lend additional funds to these borrowers at June 30, 2023.

	Payment Delay	Percent of Total Class of Loans	Combination: Payment Delay and Term Extension	Percent of Total Class of Loans
June 30, 2023				
Commercial and industrial	\$ —	— %	\$ 16,020	0.3 %
Commercial real estate:				
Buildings, land and other	—	—	20,466	0.3
	\$ —	—	\$ 36,486	0.2
June 30, 2022				
Commercial real estate:				
Buildings, land and other	\$ 1,116	—	—	—
	\$ 1,116	—	\$ —	—

The financial effects of the loan modifications made to borrowers experiencing financial difficulty were not significant during the six months ended June 30, 2023. The loan modifications reported in the table above did not significantly impact our determination of the allowance for credit losses on loans during the six months ended June 30, 2023.

Information as of or for the six months ended June 30, 2023 and June 30, 2022 related to loans modified (by type of modification) in the preceding twelve months, respectively, whereby the borrower was experiencing financial difficulty at the time of modification is set forth in the following table.

	June 30, 2023			June 30, 2022		
	Term Extension	Payment Delay	Combination: Payment Delay and Term Extension	Term Extension	Payment Delay	Combination: Payment Delay and Term Extension
Past due in excess of 90 days or on non-accrual status at period-end:						
Commercial and industrial	\$ —	\$ —	\$ 16,020	\$ —	\$ —	\$ —
Commercial real estate:						
Buildings, land and other	—	—	20,466	—	1,116	—
	<u>\$ —</u>	<u>\$ —</u>	<u>\$ 36,486</u>	<u>\$ —</u>	<u>\$ 1,116</u>	<u>\$ —</u>
Charge-offs during the period:						
Commercial real estate:						
Buildings, land and other	\$ —	\$ —	\$ —	\$ —	\$ 371	\$ 352
Proceeds from sales:						
Commercial real estate:						
Buildings, land and other	\$ —	\$ —	\$ —	\$ —	\$ —	\$ 1,070

Credit Quality Indicators. As part of the on-going monitoring of the credit quality of our loan portfolio, management tracks certain credit quality indicators including trends related to (i) the weighted-average risk grade of commercial loans, (ii) the level of classified commercial loans, (iii) the delinquency status of consumer loans, (iv) non-performing loans (see details above) and (v) the general economic conditions in the State of Texas.

We utilize a risk grading matrix to assign a risk grade to each of our commercial loans. Loans are graded on a scale of 1 to 14. A description of the general characteristics of the 14 risk grades is set forth in our 2022 Form 10-K. We monitor portfolio credit quality by the weighted-average risk grade of each class of commercial loan. Individual relationship managers, under the oversight of credit administration, review updated financial information for all pass grade loans to reassess the risk grade on at least an annual basis. When a loan has a risk grade of 9, it is still considered a pass grade loan; however, it is considered to be on management's "watch list," where a significant risk-modifying action is anticipated in the near term. When a loan has a risk grade of 10 or higher, a special assets officer monitors the loan on an on-going basis.

The following table presents weighted-average risk grades for all commercial loans, by class and year of origination/renewal, as of June 30, 2023. Paycheck Protection Program ("PPP") loans are excluded as such loans are fully guaranteed by the Small Business Administration ("SBA").

	2023	2022	2021	2020	2019	Prior	Revolving Loans	Revolving Loans Converted to Term	Total	W/A Risk Grade
Commercial and industrial										
Risk grades 1-8	\$ 1,113,216	\$ 919,731	\$ 524,735	\$ 406,763	\$ 186,103	\$ 243,703	\$ 2,026,310	\$ 48,004	\$ 5,468,565	6.29
Risk grade 9	17,610	17,339	32,116	3,745	2,307	10,869	40,715	5,203	129,904	9.00
Risk grade 10	9,988	510	622	396	4,165	744	19,268	564	36,257	10.00
Risk grade 11	4,491	4,164	4,001	8,747	16,121	1,523	19,749	11,065	69,861	11.00
Risk grade 12	—	—	221	702	2,687	1,172	14,607	367	19,756	12.00
Risk grade 13	—	—	—	52	270	—	2,139	—	2,461	13.00
	<u>\$ 1,145,305</u>	<u>\$ 941,744</u>	<u>\$ 561,695</u>	<u>\$ 420,405</u>	<u>\$ 211,653</u>	<u>\$ 258,011</u>	<u>\$ 2,122,788</u>	<u>\$ 65,203</u>	<u>\$ 5,726,804</u>	<u>6.46</u>
W/A risk grade	6.31	6.76	7.10	5.93	6.57	6.17	6.31	7.66	6.46	

	2023	2022	2021	2020	2019	Prior	Revolving Loans	Revolving Loans Converted to Term	Total	W/A Risk Grade
Energy										
Risk grades 1-8	\$ 301,108	\$ 65,831	\$ 83,174	\$ 4,240	\$ 2,393	\$ 5,297	\$ 457,225	\$ 33,858	\$ 953,126	5.79
Risk grade 9	311	4,456	139	—	445	589	3,603	1,972	11,515	9.00
Risk grade 10	—	—	—	—	355	189	—	—	544	10.00
Risk grade 11	—	—	106	170	3,101	12	1,285	—	4,674	11.00
Risk grade 12	10,324	—	—	59	1,349	2	2,132	146	14,012	12.00
Risk grade 13	—	—	—	—	—	—	2,700	—	2,700	13.00
	<u>\$ 311,743</u>	<u>\$ 70,287</u>	<u>\$ 83,419</u>	<u>\$ 4,469</u>	<u>\$ 7,643</u>	<u>\$ 6,089</u>	<u>\$ 466,945</u>	<u>\$ 35,976</u>	<u>\$ 986,571</u>	5.96
W/A risk grade	6.32	6.60	5.78	7.68	9.83	7.14	5.58	5.69	5.96	
Commercial real estate:										
Buildings, land, other										
Risk grades 1-8	\$ 699,039	\$ 1,735,438	\$ 1,421,130	\$ 851,503	\$ 570,561	\$ 1,009,089	\$ 150,060	\$ 103,188	\$ 6,540,008	6.97
Risk grade 9	9,069	15,323	10,729	40,843	70,271	27,324	1,980	1,214	176,753	9.00
Risk grade 10	491	29,583	7,991	4,086	1,754	3,796	—	2,646	50,347	10.00
Risk grade 11	7,653	6,163	48,496	8,477	—	57,948	2,993	376	132,106	11.00
Risk grade 12	1,924	8	296	17,178	1,483	3,493	—	—	24,382	12.00
Risk grade 13	—	—	—	1,150	—	150	—	—	1,300	13.00
	<u>\$ 718,176</u>	<u>\$ 1,786,515</u>	<u>\$ 1,488,642</u>	<u>\$ 923,237</u>	<u>\$ 644,069</u>	<u>\$ 1,101,800</u>	<u>\$ 155,033</u>	<u>\$ 107,424</u>	<u>\$ 6,924,896</u>	7.14
W/A risk grade	7.10	7.05	7.28	7.22	7.02	7.17	7.13	6.50	7.14	
Construction										
Risk grades 1-8	\$ 271,025	\$ 523,461	\$ 342,339	\$ 49,547	\$ 945	\$ 1,666	\$ 179,127	\$ —	\$ 1,368,110	7.19
Risk grade 9	9,975	14,668	3,067	2,100	—	—	3,291	—	33,101	9.00
Risk grade 10	18,297	—	7,347	—	—	—	9,126	—	34,770	10.00
Risk grade 11	—	31,972	118	—	—	—	—	—	32,090	11.00
Risk grade 12	—	—	—	—	—	—	—	—	—	12.00
Risk grade 13	—	—	—	—	—	—	—	—	—	13.00
	<u>\$ 299,297</u>	<u>\$ 570,101</u>	<u>\$ 352,871</u>	<u>\$ 51,647</u>	<u>\$ 945</u>	<u>\$ 1,666</u>	<u>\$ 191,544</u>	<u>\$ —</u>	<u>\$ 1,468,071</u>	7.38
W/A risk grade	7.68	7.39	7.39	4.63	7.07	6.77	7.65	—	7.38	
Total commercial real estate	<u>\$ 1,017,473</u>	<u>\$ 2,356,616</u>	<u>\$ 1,841,513</u>	<u>\$ 974,884</u>	<u>\$ 645,014</u>	<u>\$ 1,103,466</u>	<u>\$ 346,577</u>	<u>\$ 107,424</u>	<u>\$ 8,392,967</u>	7.18
W/A risk grade	7.27	7.13	7.30	7.09	7.02	7.17	7.41	6.50	7.18	

In the table above, certain loans are reported as 2023 originations and have risk grades of 11 or higher. These loans were, for the most part, first originated in various years prior to 2023 but were renewed in the current year.

The following tables present weighted average risk grades for all commercial loans by class as of December 31, 2022. Refer to our 2022 Form 10-K for details of these loans by year of origination/renewal.

	Commercial and Industrial		Energy		Commercial Real Estate - Buildings, Land and Other		Commercial Real Estate - Construction		Total Commercial Real Estate	
	W/A Risk Grade	Loans	W/A Risk Grade	Loans	W/A Risk Grade	Loans	W/A Risk Grade	Loans	W/A Risk Grade	Loans
Risk grades 1-8	6.24	\$ 5,435,917	5.44	\$ 887,182	6.94	\$ 6,340,028	7.04	\$ 1,430,012	6.96	\$ 7,770,040
Risk grade 9	9.00	146,192	9.00	11,112	9.00	189,928	9.00	34,952	9.00	224,880
Risk grade 10	10.00	37,596	10.00	642	10.00	91,020	10.00	931	10.00	91,951
Risk grade 11	11.00	36,963	11.00	11,569	11.00	81,550	11.00	11,352	11.00	92,902
Risk grade 12	12.00	12,521	12.00	10,840	12.00	2,957	12.00	—	12.00	2,957
Risk grade 13	13.00	5,609	13.00	4,384	13.00	595	13.00	—	13.00	595
Total	6.39	\$ 5,674,798	5.67	\$ 925,729	7.09	\$ 6,706,078	7.12	\$ 1,477,247	7.10	\$ 8,183,325

Information about the payment status of consumer loans, segregated by portfolio segment and year of origination, as of June 30, 2023 was as follows:

	2023	2022	2021	2020	2019	Prior	Revolving Loans	Revolving Loans Converted to Term	Total
Consumer real estate:									
Past due 30-89 days	\$ 297	\$ 1,126	\$ 1,075	\$ 236	\$ 480	\$ 1,534	\$ 3,861	\$ 234	\$ 8,843
Past due 90 or more days	—	95	172	63	2,539	1,081	523	3,641	8,114
Total past due	297	1,221	1,247	299	3,019	2,615	4,384	3,875	16,957
Current loans	284,398	438,609	300,363	182,845	62,030	150,136	713,920	8,658	2,140,959
Total	\$ 284,695	\$ 439,830	\$ 301,610	\$ 183,144	\$ 65,049	\$ 152,751	\$ 718,304	\$ 12,533	\$ 2,157,916
Consumer and other:									
Past due 30-89 days	\$ 2,202	\$ 316	\$ 158	\$ 12	\$ 42	\$ 49	\$ 2,226	\$ 148	\$ 5,153
Past due 90 or more days	84	34	1	—	—	—	212	5	336
Total past due	2,286	350	159	12	42	49	2,438	153	5,489
Current loans	49,542	39,133	13,771	4,820	1,985	1,900	320,720	22,360	454,231
Total	\$ 51,828	\$ 39,483	\$ 13,930	\$ 4,832	\$ 2,027	\$ 1,949	\$ 323,158	\$ 22,513	\$ 459,720

Revolving loans that converted to term during the three and six months ended June 30, 2023 and 2022 were as follows:

	Three Months Ended June 30,		Six Months Ended June 30,	
	2023	2022	2023	2022
Commercial and industrial	\$ 3,835	\$ 16,518	\$ 14,606	\$ 21,973
Energy	—	247	2,567	247
Commercial real estate:				
Buildings, land and other	5,944	10,681	5,944	10,726
Construction	—	13	—	4,248
Consumer real estate	1,064	888	1,743	1,684
Consumer and other	1,669	1,792	3,671	5,868
Total	\$ 12,512	\$ 30,139	\$ 28,531	\$ 44,746

In assessing the general economic conditions in the State of Texas, management monitors and tracks the Texas Leading Index ("TLI"), which is produced by the Federal Reserve Bank of Dallas. The TLI, the components of which are more fully described in our 2022 Form 10-K, totaled 127.7 at June 30, 2023 and 130.3 at December 31, 2022. A lower TLI value implies less favorable economic conditions.

Allowance For Credit Losses - Loans. The allowance for credit losses on loans is a contra-asset valuation account, calculated in accordance with ASC 326, that is deducted from the amortized cost basis of loans to present the net amount expected to be collected. The amount of the allowance represents management's best estimate of current expected credit losses on loans considering available information, from internal and external sources, relevant to assessing collectibility over the loans' contractual terms, adjusted for expected prepayments when appropriate. Credit loss expense related to loans reflects the totality of actions taken on all loans for a particular period including any necessary increases or decreases in the allowance related to changes in credit loss expectations associated with specific loans or pools of loans. Portions of the allowance may be allocated for specific credits; however, the entire allowance is available for any credit that, in management's judgment, should be charged off. While management utilizes its best judgment and information available, the ultimate appropriateness of the allowance is dependent upon a variety of factors beyond our control, including the performance of our loan portfolio, the economy, changes in interest rates and the view of the regulatory authorities toward loan classifications. Our allowance methodology is more fully described in our 2022 Form 10-K.

During the first quarter of 2023, we recalibrated and updated all of our commercial loan models, with the exception of the models related to commercial real estate - non-owner occupied loans, as well as our consumer real estate loan models. While the fundamental modeling methodologies remain unchanged, the updates included (i) separating the energy loan pool from the commercial and industrial pool as a result of differences in loss characteristics observed in recent history and (ii) changing the modeling approach related to loan renewals whereby each renewal is treated as a separate loan which impacted loan life assumptions. For modeling purposes, our loan pools now include (i) commercial and industrial non-revolving, (ii) commercial and industrial revolving, (iii) energy, (iv) commercial real estate - owner occupied, (v) commercial real estate - non-owner occupied, (vi) commercial real estate - construction/land development, (vii) consumer real estate and (viii) consumer and other. The overall approximate impact of the model updates during the first quarter was a \$45.0 million decrease in modeled expected

credit losses on loans though the impact of this decrease was largely offset with qualitative adjustments. The decrease in modeled expected credit losses on loans was largely driven by lower measurements for probability of default ("PD") and loss given default ("LGD") based on the historical data series (2008 through 2018) used for the recalibration. This period was one of relatively low losses and included higher levels of government stimulus. The lower PD and LGD measurements were also impacted by shorter loan life assumptions due to the aforementioned change in the modeling approach related to loan renewals.

The following table presents details of the allowance for credit losses on loans segregated by loan portfolio segment as of June 30, 2023 and December 31, 2022. No allowance for credit losses has been recognized for PPP loans as such loans are fully guaranteed by the SBA.

	Commercial and Industrial	Energy	Commercial Real Estate	Consumer Real Estate	Consumer and Other	Total
June 30, 2023						
Modeled expected credit losses	\$ 46,435	\$ 5,733	\$ 15,496	\$ 12,594	\$ 5,511	\$ 85,769
Q-Factor and other qualitative adjustments	26,270	6,496	104,130	441	4,052	141,389
Specific allocations	2,461	2,700	1,300	—	—	6,461
Total	\$ 75,166	\$ 14,929	\$ 120,926	\$ 13,035	\$ 9,563	\$ 233,619
December 31, 2022						
Modeled expected credit losses	\$ 61,918	\$ 8,531	\$ 27,013	\$ 7,847	\$ 4,983	\$ 110,292
Q-Factor and other qualitative adjustments	36,237	5,148	61,572	157	2,034	105,148
Specific allocations	6,082	4,383	1,716	—	—	12,181
Total	\$ 104,237	\$ 18,062	\$ 90,301	\$ 8,004	\$ 7,017	\$ 227,621

The following table details activity in the allowance for credit losses on loans by portfolio segment for the three and six months ended June 30, 2023 and 2022. Allocation of a portion of the allowance to one category of loans does not preclude its availability to absorb losses in other categories. No allowance for credit losses has been recognized for PPP loans as such loans are fully guaranteed by the SBA.

	Commercial and Industrial	Energy	Commercial Real Estate	Consumer Real Estate	Consumer and Other	Total
Three months ended:						
June 30, 2023						
Beginning balance	\$ 78,465	\$ 19,191	\$ 115,693	\$ 9,708	\$ 8,457	\$ 231,514
Credit loss expense (benefit)	2,404	(4,433)	5,133	3,822	5,007	11,933
Charge-offs	(7,136)	(518)	—	(1,080)	(7,016)	(15,750)
Recoveries	1,433	689	100	585	3,115	5,922
Net (charge-offs) recoveries	(5,703)	171	100	(495)	(3,901)	(9,828)
Ending balance	\$ 75,166	\$ 14,929	\$ 120,926	\$ 13,035	\$ 9,563	\$ 233,619
June 30, 2022						
Beginning balance	\$ 87,026	\$ 15,422	\$ 128,954	\$ 6,359	\$ 9,074	\$ 246,835
Credit loss expense (benefit)	942	427	(12,232)	583	5,884	(4,396)
Charge-offs	(1,891)	—	—	(131)	(5,322)	(7,344)
Recoveries	1,193	418	384	43	2,499	4,537
Net (charge-offs) recoveries	(698)	418	384	(88)	(2,823)	(2,807)
Ending balance	\$ 87,270	\$ 16,267	\$ 117,106	\$ 6,854	\$ 12,135	\$ 239,632

	Commercial and Industrial	Energy	Commercial Real Estate	Consumer Real Estate	Consumer and Other	Total
Six months ended:						
June 30, 2023						
Beginning balance	\$ 104,237	\$ 18,062	\$ 90,301	\$ 8,004	\$ 7,017	\$ 227,621
Credit loss expense (benefit)	(18,280)	(3,467)	30,494	5,105	10,756	24,608
Charge-offs	(13,316)	(518)	—	(1,330)	(13,958)	(29,122)
Recoveries	2,525	852	131	1,256	5,748	10,512
Net (charge-offs) recoveries	(10,791)	334	131	(74)	(8,210)	(18,610)
Ending balance	\$ 75,166	\$ 14,929	\$ 120,926	\$ 13,035	\$ 9,563	\$ 233,619
June 30, 2022						
Beginning balance	\$ 72,091	\$ 17,217	\$ 144,936	\$ 6,585	\$ 7,837	\$ 248,666
Credit loss expense (benefit)	18,503	(1,617)	(27,841)	557	10,466	68
Charge-offs	(5,346)	(371)	(702)	(362)	(11,093)	(17,874)
Recoveries	2,022	1,038	713	74	4,925	8,772
Net (charge-offs) recoveries	(3,324)	667	11	(288)	(6,168)	(9,102)
Ending balance	\$ 87,270	\$ 16,267	\$ 117,106	\$ 6,854	\$ 12,135	\$ 239,632

The following table presents year-to-date gross charge-offs by year of origination as of June 30, 2023.

	2023	2022	2021	2020	2019	Prior	Revolving Loans	Revolving Loans Converted to Term	Total
Commercial and industrial	\$ 124	\$ 208	\$ 178	\$ 55	\$ 25	\$ 29	\$ 7,427	\$ 5,270	\$ 13,316
Energy	—	—	—	—	—	—	—	518	518
Commercial real estate:									
Buildings, land and other	—	—	—	—	—	—	—	—	—
Construction	—	—	—	—	—	—	—	—	—
Consumer real estate	—	—	280	—	—	89	961	—	1,330
Consumer and other	8,143	4,354	57	12	—	23	1,051	318	13,958
Total	\$ 8,267	\$ 4,562	\$ 515	\$ 67	\$ 25	\$ 141	\$ 9,439	\$ 6,106	\$ 29,122

In the table above, \$8.1 million of the consumer and other loan charge-offs reported as 2023 originations and \$4.2 million of the total reported as 2022 originations were related to deposit overdrafts.

The following table presents loans that were evaluated for expected credit losses on an individual basis and the related specific allocations, by loan portfolio segment, as of June 30, 2023 and December 31, 2022.

	June 30, 2023		December 31, 2022	
	Loan Balance	Specific Allocations	Loan Balance	Specific Allocations
Commercial and industrial	\$ 20,862	\$ 2,461	\$ 18,980	\$ 6,082
Energy	16,445	2,700	15,058	4,383
Paycheck Protection Program	—	—	—	—
Commercial real estate:				
Buildings, land and other	24,954	1,300	17,711	1,716
Construction	—	—	—	—
Consumer real estate	3,030	—	827	—
Consumer and other	—	—	—	—
Total	\$ 65,291	\$ 6,461	\$ 52,576	\$ 12,181

Note 4 - Goodwill and Other Intangible Assets

Goodwill and other intangible assets are presented in the table below.

	June 30, 2023	December 31, 2022
Goodwill	\$ 654,952	\$ 654,952
Other intangible assets:		
Core deposits	\$ 155	\$ 310
Customer relationships	53	76
	<u>\$ 208</u>	<u>\$ 386</u>

The estimated aggregate future amortization expense for intangible assets remaining as of June 30, 2023 is as follows:

Remainder of 2023	\$ 105
2024	87
2025	11
2026	5
	<u>\$ 208</u>

Note 5 - Deposits

Deposits were as follows:

	June 30, 2023	December 31, 2022
Non-interest-bearing demand deposits	\$ 14,904,614	\$ 17,598,234
Interest-bearing deposits:		
Savings and interest checking	10,540,458	12,333,675
Money market accounts	11,026,368	12,227,247
Time accounts	4,229,390	1,795,040
Total interest-bearing deposits	<u>25,796,216</u>	<u>26,355,962</u>
Total deposits	<u>\$ 40,700,830</u>	<u>\$ 43,954,196</u>

The table below presents additional information about our deposits. Public funds in excess of deposit insurance limits are included in the totals for deposits not covered by insurance; however, such deposits are generally fully collateralized by securities.

	June 30, 2023	December 31, 2022
Deposits from foreign sources (primarily Mexico)	\$ 1,036,777	\$ 1,048,943
Non-interest-bearing public funds deposits	447,194	788,040
Interest-bearing public funds deposits	696,521	758,761
Total deposits not covered by deposit insurance	20,630,167	23,839,797
Time deposits not covered by deposit insurance	1,670,388	430,128

Note 6 - Off-Balance-Sheet Arrangements, Commitments, Guarantees and Contingencies

Financial Instruments with Off-Balance-Sheet Risk. In the normal course of business, we enter into various transactions, which, in accordance with generally accepted accounting principles are not included in our consolidated balance sheets. We enter into these transactions to meet the financing needs of our customers. As more fully discussed in our 2022 Form 10-K, these transactions include commitments to extend credit and standby letters of credit, which involve, to varying degrees, elements of credit risk and interest rate risk in excess of the amounts recognized in the consolidated balance sheets. We minimize our exposure to loss under these commitments by subjecting them to credit approval and monitoring procedures.

Financial instruments with off-balance-sheet risk were as follows:

	June 30, 2023	December 31, 2022
Commitments to extend credit	\$ 12,208,032	\$ 12,137,957
Standby letters of credit	405,900	383,851
Deferred standby letter of credit fees	2,176	2,236

Allowance For Credit Losses - Off-Balance-Sheet Credit Exposures. The allowance for credit losses on off-balance-sheet credit exposures is a liability account, calculated in accordance with ASC 326, representing expected credit losses over the contractual period for which we are exposed to credit risk resulting from a contractual obligation to extend credit. No allowance is recognized if we have the unconditional right to cancel the obligation. Off-balance-sheet credit exposures primarily consist of amounts available under outstanding lines of credit and letters of credit detailed in the table above. The amount of the allowance represents management's best estimate of expected credit losses on commitments expected to be funded over the contractual life of the commitment. Our allowance methodology is more fully described in our 2022 Form 10-K. This methodology was also impacted by the model updates during the first quarter of 2023 as described in Note 3 - Loans. The overall approximate impact of the model updates was a \$19.0 million decrease in modeled expected credit losses for off-balance-sheet credit exposures, though the impact of this decrease was largely offset with qualitative adjustments.

The following table details activity in the allowance for credit losses on off-balance-sheet credit exposures.

	Three Months Ended June 30,		Six Months Ended June 30,	
	2023	2022	2023	2022
Beginning balance	\$ 54,918	\$ 45,850	\$ 58,593	\$ 50,314
Credit loss expense (benefit)	(2,037)	4,396	(5,712)	(68)
Ending balance	\$ 52,881	\$ 50,246	\$ 52,881	\$ 50,246

Lease Commitments. We lease certain office facilities and office equipment under operating leases. The components of total lease expense were as follows:

	Three Months Ended June 30,		Six Months Ended June 30,	
	2023	2022	2023	2022
Amortization of lease right-of-use assets	\$ 8,747	\$ 8,209	\$ 17,512	\$ 16,314
Short-term lease expense	493	490	902	1,103
Non-lease components (including taxes, insurance, common maintenance, etc.)	3,662	2,748	7,043	5,768
Total	\$ 12,902	\$ 11,447	\$ 25,457	\$ 23,185

Right-of-use lease assets totaled \$286.5 million at June 30, 2023 and \$288.8 million at December 31, 2022 and are reported as a component of premises and equipment on our accompanying consolidated balance sheets. The related lease liabilities totaled \$320.6 million at June 30, 2023 and \$321.9 million at December 31, 2022 and are reported as a component of accrued interest payable and other liabilities in the accompanying consolidated balance sheets. Lease payments under operating leases that were applied to our operating lease liability totaled \$8.2 million and \$16.6 million during the three and six months ended June 30, 2023, respectively, and \$8.4 million and \$16.4 million during the three and six months ended June 30, 2022, respectively. There has been no significant change in our expected future minimum lease payments since December 31, 2022. See the 2022 Form 10-K for information regarding these commitments.

Litigation. We are subject to various claims and legal actions that have arisen in the course of conducting business. Management does not expect the ultimate disposition of these matters to have a material adverse impact on our financial statements.

Note 7 - Capital and Regulatory Matters

Banks and bank holding companies are subject to various regulatory capital requirements administered by state and federal banking agencies. Capital adequacy guidelines and, additionally for banks, prompt corrective action regulations, involve quantitative measures of assets, liabilities, and certain off-balance-sheet items calculated under regulatory accounting practices. Capital amounts and classifications are also subject to qualitative judgments by regulators about components, risk weighting and other factors.

Cullen/Frost's and Frost Bank's Common Equity Tier 1 capital ("CET1") includes common stock and related paid-in capital, net of treasury stock, and retained earnings. In connection with the adoption of the Basel III Capital Rules, we elected to opt-out of the requirement to include most components of accumulated other comprehensive income in CET1. We also elected to exclude the effects of credit loss accounting under CECL from CET1 for a five-year transitional period, as further discussed in our 2022 Form 10-K. This CECL transitional adjustment totaled \$30.8 million and \$46.2 million at June 30, 2023 and December 31, 2022, respectively. CET1 is reduced by goodwill and other intangible assets, net of associated deferred tax liabilities. Frost Bank's CET1 is also reduced by its equity investment in its financial subsidiary, Frost Insurance Agency ("FIA").

Tier 1 capital includes CET1 and additional Tier 1 capital. For Cullen/Frost, additional Tier 1 capital included \$145.5 million of 4.450% non-cumulative perpetual preferred stock at June 30, 2023 and December 31, 2022, the details of which are further discussed below. Frost Bank did not have any additional Tier 1 capital beyond Common Equity Tier 1 at June 30, 2023 or December 31, 2022. Total capital includes Tier 1 capital and Tier 2 capital. Tier 2 capital for both Cullen/Frost and Frost Bank includes a permissible portion of the allowances for credit losses on securities, loans and off-balance-sheet credit exposures. Tier 2 capital for Cullen/Frost also includes the permissible portion of qualified subordinated debt (which decreases 20.0% per year during the final five years of the term of the notes) totaling \$60.0 million at June 30, 2023 and \$80.0 million at December 31, 2022 and trust preferred securities totaling \$120.0 million at both June 30, 2023 and December 31, 2022.

The following table presents actual and required capital ratios as of June 30, 2023 and December 31, 2022 for Cullen/Frost and Frost Bank under the Basel III Capital Rules. Capital levels required to be considered well-capitalized are based upon prompt corrective action regulations, as amended to reflect the changes under the Basel III Capital Rules. See the 2022 Form 10-K for a more detailed discussion of the Basel III Capital Rules.

	Actual		Minimum Capital Required Plus Capital Conservation Buffer		Required to be Considered Well-Capitalized ⁽¹⁾	
	Capital Amount	Ratio	Capital Amount	Ratio	Capital Amount	Ratio
June 30, 2023						
Common Equity Tier 1 to Risk-Weighted Assets						
Cullen/Frost	\$ 3,943,110	13.42 %	\$ 2,056,052	7.00 %	N/A	N/A
Frost Bank	3,973,809	13.55	2,053,467	7.00	\$ 1,906,791	6.50 %
Tier 1 Capital to Risk-Weighted Assets						
Cullen/Frost	4,088,562	13.92	2,496,634	8.50	1,762,330	6.00
Frost Bank	3,973,809	13.55	2,493,496	8.50	2,346,820	8.00
Total Capital to Risk-Weighted Assets						
Cullen/Frost	4,520,634	15.39	3,084,077	10.50	2,937,217	10.00
Frost Bank	4,225,881	14.41	3,080,201	10.50	2,933,525	10.00
Leverage Ratio						
Cullen/Frost	4,088,562	8.11	2,016,414	4.00	N/A	N/A
Frost Bank	3,973,809	7.88	2,015,896	4.00	2,519,870	5.00
December 31, 2022						
Common Equity Tier 1 to Risk-Weighted Assets						
Cullen/Frost	\$ 3,751,200	12.85 %	\$ 2,042,876	7.00 %	N/A	N/A
Frost Bank	3,789,056	13.00	2,040,388	7.00	\$ 1,894,646	6.50 %
Tier 1 Capital to Risk-Weighted Assets						
Cullen/Frost	3,896,652	13.35	2,480,635	8.50	1,751,036	6.00
Frost Bank	3,789,056	13.00	2,477,614	8.50	2,331,872	8.00
Total Capital to Risk-Weighted Assets						
Cullen/Frost	4,330,982	14.84	3,064,313	10.50	2,918,394	10.00
Frost Bank	4,023,386	13.80	3,060,583	10.50	2,914,841	10.00
Leverage Ratio						
Cullen/Frost	3,896,652	7.29	2,136,680	4.00	N/A	N/A
Frost Bank	3,789,056	7.09	2,136,316	4.00	2,670,395	5.00

(1) "Well-capitalized" minimum Common Equity Tier 1 to Risk-Weighted Assets and Leverage Ratio are not formally defined under applicable banking regulations for bank holding companies.

As of June 30, 2023, capital levels at Cullen/Frost and Frost Bank exceed all capital adequacy requirements under the Basel III Capital Rules. Based on the ratios presented above, capital levels as of June 30, 2023 at Cullen/Frost and Frost Bank exceed the minimum levels necessary to be considered “well-capitalized.”

Cullen/Frost and Frost Bank are subject to the regulatory capital requirements administered by the Federal Reserve Board and, for Frost Bank, the Federal Deposit Insurance Corporation (“FDIC”). Regulatory authorities can initiate certain mandatory actions if Cullen/Frost or Frost Bank fail to meet the minimum capital requirements, which could have a direct material effect on our financial statements. Management believes, as of June 30, 2023, that Cullen/Frost and Frost Bank meet all capital adequacy requirements to which they are subject.

Preferred Stock. Outstanding preferred stock includes 150,000 shares, or \$150.0 million in aggregate liquidation preference, of our 4.450% Non-Cumulative Perpetual Preferred Stock, Series B, par value \$0.01 and liquidation preference \$1,000 per share (“Series B Preferred Stock”). Each share of Series B Preferred Stock issued and outstanding is represented by 40 depository shares, each representing a 1/40th ownership interest in a share of the Series B Preferred Stock (equivalent to a liquidation preference of \$25 per share). The Series B Preferred Stock qualifies as Tier 1 capital for the purposes of the regulatory capital calculations. The net proceeds from the issuance and sale of the Series B Preferred Stock, after deducting \$4.5 million of issuance costs including the underwriting discount and professional service fees, among other things, were approximately \$145.5 million. Refer to our 2022 Form 10-K for additional details related to our Series B Preferred Stock.

Stock Repurchase Plans. From time to time, our board of directors has authorized stock repurchase plans. In general, stock repurchase plans allow us to proactively manage our capital position and return excess capital to shareholders. Shares purchased under such plans also provide us with shares of common stock necessary to satisfy obligations related to stock compensation awards. On January 25, 2023, our board of directors authorized a \$100.0 million stock repurchase program, allowing us to repurchase shares of our common stock over a one-year period from time to time at various prices in the open market or through private transactions. Under this plan, we repurchased 288,912 shares at a total cost of \$28.0 million (which includes applicable excise taxes) during the second quarter of 2023. No shares were repurchased under prior plans during the reported periods. Under the Basel III Capital Rules, Cullen/Frost may not repurchase or redeem any of its preferred stock or subordinated notes and, in some cases, its common stock without the prior approval of the Federal Reserve Board.

Dividend Restrictions. In the ordinary course of business, Cullen/Frost is dependent upon dividends from Frost Bank to provide funds for the payment of dividends to shareholders and to provide for other cash requirements, including to repurchase its common stock. Banking regulations may limit the amount of dividends that may be paid. Approval by regulatory authorities is required if the effect of dividends declared would cause the regulatory capital of Frost Bank to fall below specified minimum levels. Approval is also required if dividends declared exceed the net profits for that year combined with the retained net profits for the preceding two years. Under the foregoing dividend restrictions and while maintaining its “well-capitalized” status, at June 30, 2023, Frost Bank could pay aggregate dividends of up to \$967.6 million to Cullen/Frost without prior regulatory approval.

Under the terms of the junior subordinated deferrable interest debentures that Cullen/Frost has issued to Cullen/Frost Capital Trust II, Cullen/Frost has the right at any time during the term of the debentures to defer the payment of interest at any time or from time to time for an extension period not exceeding 20 consecutive quarterly periods with respect to each extension period. In the event that we have elected to defer interest on the debentures, we may not, with certain exceptions, declare or pay any dividends or distributions on our capital stock or purchase or acquire any of our capital stock.

Under the terms of the Series B Preferred Stock, in the event that we do not declare and pay dividends on the Series B Preferred Stock for the most recent dividend period, we may not, with certain exceptions, declare or pay dividends on, or purchase, redeem or otherwise acquire, shares of our common stock or any of our securities that rank junior to the Series B Preferred Stock.

Note 8 - Derivative Financial Instruments

The fair value of derivative positions outstanding is included in accrued interest receivable and other assets and accrued interest payable and other liabilities in the accompanying consolidated balance sheets and in the net change in each of these financial statement line items in the accompanying consolidated statements of cash flows.

Interest Rate Derivatives. We utilize various interest rate swaps, caps and floors, among other things, to mitigate exposure to interest rate risk and to facilitate the needs of our customers. Our objectives for utilizing these derivative instruments are described in our 2022 Form 10-K.

The notional amounts and estimated fair values of interest rate derivative contracts are presented in the following table. The fair values of interest rate derivative contracts are estimated utilizing internal valuation methods with observable market data inputs, or as determined by the Chicago Mercantile Exchange (“CME”) for centrally cleared derivative contracts. CME rules

legally characterize variation margin payments for centrally cleared derivatives as settlements of the derivatives' exposure rather than collateral. As a result, the variation margin payment and the related derivative instruments are considered a single unit of account for accounting and financial reporting purposes. Variation margin, as determined by the CME, is settled daily. As a result, derivative contracts that clear through the CME have an estimated fair value of zero as of June 30, 2023 and December 31, 2022.

	June 30, 2023		December 31, 2022	
	Notional Amount	Estimated Fair Value	Notional Amount	Estimated Fair Value
Derivatives designated as hedges of fair value:				
Financial institution counterparties:				
Loan/lease interest rate swaps – assets	\$ —	\$ —	\$ 1,614	\$ 19
Non-hedging interest rate derivatives:				
Financial institution counterparties:				
Loan/lease interest rate swaps – assets	1,162,694	78,404	1,165,812	70,416
Loan/lease interest rate swaps – liabilities	72,833	(1,332)	78,798	(1,102)
Loan/lease interest rate caps – assets	229,804	14,557	246,442	15,256
Customer counterparties:				
Loan/lease interest rate swaps – assets	78,789	1,401	53,570	1,102
Loan/lease interest rate swaps – liabilities	1,156,738	(78,402)	1,175,563	(79,175)
Loan/lease interest rate caps – liabilities	229,804	(14,557)	246,442	(15,256)

The weighted-average rates paid and received for interest rate swaps outstanding at June 30, 2023 were as follows:

	Weighted-Average	
	Interest Rate Paid	Interest Rate Received
Interest rate swaps:		
Non-hedging interest rate swaps – financial institution counterparties	3.96 %	5.62 %
Non-hedging interest rate swaps – customer counterparties	5.62	3.96

The weighted-average strike rate for outstanding interest rate caps was 3.32% at June 30, 2023.

Commodity Derivatives. We enter into commodity swaps and option contracts that are not designated as hedging instruments primarily to accommodate the business needs of our customers. Upon the origination of a commodity swap or option contract with a customer, we simultaneously enter into an offsetting contract with a third-party financial institution to mitigate the exposure to fluctuations in commodity prices.

The notional amounts and estimated fair values of non-hedging commodity swap and option derivative positions outstanding are presented in the following table. We obtain dealer quotations and use internal valuation methods with observable market data inputs to value our commodity derivative positions.

	Notional Units	June 30, 2023		December 31, 2022	
		Notional Amount	Estimated Fair Value	Notional Amount	Estimated Fair Value
Financial institution counterparties:					
Oil – assets	Barrels	4,134	\$ 30,701	4,024	\$ 27,082
Oil – liabilities	Barrels	5,345	(21,229)	6,068	(53,579)
Natural gas – assets	MMBTUs	16,694	6,668	16,539	6,220
Natural gas – liabilities	MMBTUs	9,871	(6,841)	15,682	(19,138)
Customer counterparties:					
Oil – assets	Barrels	5,391	21,580	6,068	54,219
Oil – liabilities	Barrels	4,088	(30,255)	4,024	(26,551)
Natural gas – assets	MMBTUs	9,871	6,865	15,682	19,164
Natural gas – liabilities	MMBTUs	16,694	(6,477)	16,539	(6,124)

Foreign Currency Derivatives. We enter into foreign currency forward and option contracts that are not designated as hedging instruments primarily to accommodate the business needs of our customers. Upon the origination of a foreign currency denominated transaction with a customer, we simultaneously enter into an offsetting contract with a third-party financial

institution to negate the exposure to fluctuations in foreign currency exchange rates. We also utilize foreign currency forward contracts and options that are not designated as hedging instruments to mitigate the economic effect of fluctuations in foreign currency exchange rates on foreign currency holdings and certain short-term, non-U.S. dollar denominated loans. The notional amounts and fair values of open foreign currency forward and option contracts are presented in the following table.

		June 30, 2023		December 31, 2022	
	Notional Currency	Notional Amount	Estimated Fair Value	Notional Amount	Estimated Fair Value
Financial institution counterparties:					
Forward and option contracts – assets	EUR	—	\$ —	875	\$ 1
Forward and option contracts – liabilities	EUR	—	—	875	(10)
Customer counterparties:					
Forward and option contracts – assets	EUR	—	—	875	10
Forward and option contracts – liabilities	EUR	—	—	875	(1)

Gains, Losses and Derivative Cash Flows. For fair value hedges, the changes in the fair value of both the derivative hedging instrument and the hedged item are included in other non-interest income or other non-interest expense. The extent that such changes in fair value do not offset represents hedge ineffectiveness. Net cash flows from interest rate swaps on commercial loans/leases designated as hedging instruments in effective hedges of fair value are included in interest income on loans. For non-hedging derivative instruments, gains and losses due to changes in fair value and all cash flows are included in other non-interest income and other non-interest expense.

Amounts included in the consolidated statements of income related to interest rate derivatives designated as hedges of fair value were as follows:

	Three Months Ended June 30,		Six Months Ended June 30,	
	2023	2022	2023	2022
Commercial loan/lease interest rate swaps:				
Amount of gain (loss) included in interest income on loans	\$ 4	\$ (5)	\$ 16	\$ (18)
Amount of (gain) loss included in other non-interest expense	4	3	4	5

As stated above, we enter into non-hedge related derivative positions primarily to accommodate the business needs of our customers. Upon the origination of a derivative contract with a customer, we simultaneously enter into an offsetting derivative contract with a third party financial institution. We recognize immediate income based upon the difference in the bid/ask spread of the underlying transactions with our customers and the third party. Because we act only as an intermediary for our customer, subsequent changes in the fair value of the underlying derivative contracts for the most part offset each other and do not significantly impact our results of operations.

Amounts included in the consolidated statements of income related to non-hedge related derivative instruments are presented in the table below.

	Three Months Ended June 30,		Six Months Ended June 30,	
	2023	2022	2023	2022
Non-hedging interest rate derivatives:				
Other non-interest income	\$ 1,002	\$ 515	\$ 1,712	\$ 1,031
Other non-interest expense	1	—	—	—
Non-hedging commodity derivatives:				
Other non-interest income	503	649	925	1,578
Non-hedging foreign currency derivatives:				
Other non-interest income	—	45	25	63

Counterparty Credit Risk. Our credit exposure relating to interest rate, commodity and foreign currency derivative contracts with bank customers was approximately \$6.8 million at June 30, 2023. This credit exposure is partly mitigated as transactions with customers are generally secured by the collateral, if any, securing the underlying transaction being hedged. Our credit exposure, net of collateral pledged, relating to interest rate, commodity and foreign currency derivative contracts with upstream financial institution counterparties was approximately \$341 thousand at June 30, 2023. This amount was primarily related to a shortfall of collateral. Collateral positions are generally cleared on the next business day. Collateral levels for upstream financial institution counterparties are monitored and adjusted as necessary. See Note 9 – Balance Sheet Offsetting and

Repurchase Agreements for additional information regarding our credit exposure with upstream financial institution counterparties. At June 30, 2023, cash collateral related to derivative contracts on deposit with other financial institution counterparties was not significant.

Note 9 - Balance Sheet Offsetting and Repurchase Agreements

Balance Sheet Offsetting. Certain financial instruments, including resell and repurchase agreements and derivatives, may be eligible for offset in the consolidated balance sheet and/or subject to master netting arrangements or similar agreements. Our derivative transactions with upstream financial institution counterparties are generally executed under International Swaps and Derivative Association ("ISDA") master agreements which include "right of set-off" provisions. In such cases there is generally a legally enforceable right to offset recognized amounts and there may be an intention to settle such amounts on a net basis. Nonetheless, we do not generally offset such financial instruments for financial reporting purposes.

Information about financial instruments that are eligible for offset in the consolidated balance sheet as of June 30, 2023 is presented in the following tables.

		Gross Amount Recognized		Gross Amount Offset		Net Amount Recognized
June 30, 2023						
Financial assets:						
Derivatives:						
Interest rate contracts		\$ 92,961		\$ —		\$ 92,961
Commodity contracts		37,369		—		37,369
Total derivatives		130,330		—		130,330
Resell agreements		84,650		—		84,650
Total		\$ 214,980		\$ —		\$ 214,980
Financial liabilities:						
Derivatives:						
Interest rate contracts		\$ 1,332		\$ —		\$ 1,332
Commodity contracts		28,070		—		28,070
Total derivatives		29,402		—		29,402
Repurchase agreements		3,569,870		—		3,569,870
Total		\$ 3,599,272		\$ —		\$ 3,599,272
		Gross Amounts Not Offset				
	Net Amount Recognized	Financial Instruments	Collateral			Net Amount
June 30, 2023						
Financial assets:						
Derivatives:						
Counterparty B	\$ 32,143	\$ (9,548)	\$ (22,595)			\$ —
Counterparty E	16,312	(896)	(15,240)			176
Counterparty F	18,387	(8,839)	(9,463)			85
Counterparty G	10,484	—	(10,430)			54
Other counterparties	53,004	(10,119)	(42,861)			24
Total derivatives	130,330	(29,402)	(100,589)			339
Resell agreements	84,650	—	(84,650)			—
Total	\$ 214,980	\$ (29,402)	\$ (185,239)			\$ 339
Financial liabilities:						
Derivatives:						
Counterparty B	\$ 9,548	\$ (9,548)	\$ —			\$ —
Counterparty E	896	(896)	—			—
Counterparty F	8,839	(8,839)	—			—
Other counterparties	10,119	(10,119)	—			—
Total derivatives	29,402	(29,402)	—			—
Repurchase agreements	3,569,870	—	(3,569,870)			—
Total	\$ 3,599,272	\$ (29,402)	\$ (3,569,870)			\$ —

Information about financial instruments that are eligible for offset in the consolidated balance sheet as of December 31, 2022 is presented in the following tables.

		Gross Amount Recognized	Gross Amount Offset	Net Amount Recognized
December 31, 2022				
Financial assets:				
Derivatives:				
Interest rate contracts		\$ 85,691	\$ —	\$ 85,691
Commodity contracts		33,302	—	33,302
Foreign currency contracts		1	—	1
Total derivatives		118,994	—	118,994
Resell agreements		87,150	—	87,150
Total		\$ 206,144	\$ —	\$ 206,144
Financial liabilities:				
Derivatives:				
Interest rate contracts		\$ 1,102	\$ —	\$ 1,102
Commodity contracts		72,717	—	72,717
Foreign currency contracts		10	—	10
Total derivatives		73,829	—	73,829
Repurchase agreements		4,660,641	—	4,660,641
Total		\$ 4,734,470	\$ —	\$ 4,734,470
	Net Amount Recognized	Gross Amounts Not Offset		Net Amount
		Financial Instruments	Collateral	
December 31, 2022				
Financial assets:				
Derivatives:				
Counterparty B	\$ 39,370	\$ (24,500)	\$ (14,870)	\$ —
Counterparty E	14,430	(47)	(14,131)	252
Counterparty F	17,297	(17,297)	—	—
Counterparty G	10,660	—	(10,660)	—
Other counterparties	37,237	(20,684)	(16,307)	246
Total derivatives	118,994	(62,528)	(55,968)	498
Resell agreements	87,150	—	(87,150)	—
Total	\$ 206,144	\$ (62,528)	\$ (143,118)	\$ 498
Financial liabilities:				
Derivatives:				
Counterparty B	\$ 24,500	\$ (24,500)	\$ —	\$ —
Counterparty E	47	(47)	—	—
Counterparty F	27,747	(17,297)	(8,479)	1,971
Counterparty G	—	—	—	—
Other counterparties	21,535	(20,684)	(851)	—
Total derivatives	73,829	(62,528)	(9,330)	1,971
Repurchase agreements	4,660,641	—	(4,660,641)	—
Total	\$ 4,734,470	\$ (62,528)	\$ (4,669,971)	\$ 1,971

Repurchase Agreements. We utilize securities sold under agreements to repurchase to facilitate the needs of our customers and to facilitate secured short-term funding needs. Securities sold under agreements to repurchase are stated at the amount of cash received in connection with the transaction. We monitor collateral levels on a continuous basis. We may be required to provide additional collateral based on the fair value of the underlying securities. Securities pledged as collateral under repurchase agreements are maintained with our safekeeping agents.

The remaining contractual maturity of repurchase agreements in the consolidated balance sheets as of June 30, 2023 and December 31, 2022 is presented in the following tables.

	Remaining Contractual Maturity of the Agreements								
	Overnight and Continuous		Up to 30 Days		30-90 Days		Greater than 90 Days		Total
June 30, 2023									
Repurchase agreements:									
U.S. Treasury	\$	2,716,439	\$	—	\$	—	\$	—	2,716,439
Residential mortgage-backed securities		853,431		—		—		—	853,431
Total borrowings	\$	3,569,870	\$	—	\$	—	\$	—	3,569,870
Gross amount of recognized liabilities for repurchase agreements									\$ 3,569,870
Amounts related to agreements not included in offsetting disclosures above									\$ —
December 31, 2022									
Repurchase agreements:									
U.S. Treasury	\$	3,735,061	\$	—	\$	—	\$	—	3,735,061
Residential mortgage-backed securities		925,580		—		—		—	925,580
Total borrowings	\$	4,660,641	\$	—	\$	—	\$	—	4,660,641
Gross amount of recognized liabilities for repurchase agreements									\$ 4,660,641
Amounts related to agreements not included in offsetting disclosures above									\$ —

Note 10 - Stock-Based Compensation

A combined summary of activity in our active stock plans is presented in the table below. Performance stock units outstanding are presented assuming attainment of the maximum payout rate as set forth by the performance criteria. As of June 30, 2023, there were 514,028 shares remaining available for grant for future stock-based compensation awards.

	Deferred Stock Units Outstanding		Non-Vested Restricted Stock Units Outstanding		Performance Stock Units Outstanding		Stock Options Outstanding	
	Number of Units	Weighted-Average Fair Value at Grant	Number of Units	Weighted-Average Fair Value at Grant	Number of Units	Weighted-Average Fair Value at Grant	Number of Shares	Weighted-Average Exercise Price
Balance, January 1, 2023	45,661	\$ 87.15	465,319	\$ 105.36	213,749	\$ 96.20	616,227	\$ 71.27
Granted	8,503	103.47	2,594	128.42	—	—	—	—
Exercised/vested	—	—	(1,957)	91.96	(28,151)	85.74	(33,905)	72.13
Forfeited/expired	—	—	(1,415)	116.02	(18,254)	85.74	—	—
Balance, June 30, 2023	<u>54,164</u>	<u>89.71</u>	<u>464,541</u>	<u>105.52</u>	<u>167,344</u>	<u>99.10</u>	<u>582,322</u>	<u>71.22</u>

Shares issued in connection with stock compensation awards are issued from available treasury shares. If no treasury shares are available, new shares are issued from available authorized shares. Shares issued in connection with stock compensation awards along with other related information were as follows:

	Three Months Ended June 30,		Six Months Ended June 30,	
	2023	2022	2023	2022
New shares issued from available authorized shares	—	—	49,887	—
Shares issued from available treasury stock	13,626	28,832	14,126	144,262
Proceeds from stock option exercises	\$ 946	\$ 751	\$ 2,446	\$ 6,490

Stock-based compensation expense is recognized ratably over the requisite service period for all awards. For most stock option awards, the service period generally matches the vesting period. For stock options granted to certain executive officers and for non-vested stock units granted to all participants, the service period does not extend past the date the participant reaches 65 years of age. Deferred stock units granted to non-employee directors generally have immediate vesting and the related expense is fully recognized on the date of grant. For performance stock units, the service period generally matches the three-year performance period specified by the award, however, the service period does not extend past the date the participant reaches 65 years of age. Expense recognized each period is dependent upon our estimate of the number of shares that will ultimately be issued.

Stock-based compensation expense or benefit and the related income tax benefit is presented in the following table. The service period for performance stock units granted each year begins on January 1 of the following year.

	Three Months Ended June 30,		Six Months Ended June 30,	
	2023	2022	2023	2022
Non-vested stock units	\$ 2,864	\$ 2,291	\$ 6,171	\$ 4,649
Deferred stock units	880	720	880	720
Performance stock units	1,049	407	2,484	161
Total	\$ 4,793	\$ 3,418	\$ 9,535	\$ 5,530
Income tax benefit	\$ 800	\$ 612	\$ 1,868	\$ 1,320

Unrecognized stock-based compensation expense at June 30, 2023 is presented in the table below. Unrecognized stock-based compensation expense related to performance stock units is presented assuming attainment of the maximum payout rate as set forth by the performance criteria.

Non-vested stock units	\$ 15,768
Performance stock units	7,029
Total	\$ 22,797

Note 11 - Earnings Per Common Share

Earnings per common share is computed using the two-class method as more fully described in our 2022 Form 10-K. The following table presents a reconciliation of net income available to common shareholders, net earnings allocated to common stock and the number of shares used in the calculation of basic and diluted earnings per common share.

	Three Months Ended June 30,		Six Months Ended June 30,	
	2023	2022	2023	2022
Net income	\$ 162,118	\$ 119,114	\$ 339,771	\$ 218,216
Less: Preferred stock dividends	1,669	1,669	3,338	3,338
Net income available to common shareholders	160,449	117,445	336,433	214,878
Less: Earnings allocated to participating securities	1,645	1,036	3,468	1,888
Net earnings allocated to common stock	\$ 158,804	\$ 116,409	\$ 332,965	\$ 212,990
Distributed earnings allocated to common stock	\$ 55,783	\$ 48,092	\$ 111,789	\$ 96,143
Undistributed earnings allocated to common stock	103,021	68,317	221,176	116,847
Net earnings allocated to common stock	\$ 158,804	\$ 116,409	\$ 332,965	\$ 212,990
Weighted-average shares outstanding for basic earnings per common share	64,240,789	64,112,828	64,306,809	64,082,185
Dilutive effect of stock compensation	187,172	354,401	225,267	382,395
Weighted-average shares outstanding for diluted earnings per common share	64,427,961	64,467,229	64,532,076	64,464,580

Note 12 - Defined Benefit Plans

The components of the combined net periodic expense (benefit) for our defined benefit pension plans are presented in the table below.

	Three Months Ended June 30,		Six Months Ended June 30,	
	2023	2022	2023	2022
Expected return on plan assets, net of expenses	\$ (2,740)	\$ (3,492)	\$ (5,480)	\$ (6,983)
Interest cost on projected benefit obligation	1,746	1,004	3,492	2,008
Net amortization and deferral	870	741	1,740	1,482
Net periodic expense (benefit)	<u>\$ (124)</u>	<u>\$ (1,747)</u>	<u>\$ (248)</u>	<u>\$ (3,493)</u>

Our non-qualified defined benefit pension plan is not funded. No contributions to the qualified defined benefit pension plan were made during the six months ended June 30, 2023. We do not expect to make any contributions to the qualified defined benefit plan during the remainder of 2023.

Note 13 - Income Taxes

Income tax expense was as follows:

	Three Months Ended June 30,		Six Months Ended June 30,	
	2023	2022	2023	2022
Current income tax expense	\$ 32,413	\$ 22,646	\$ 67,408	\$ 35,705
Deferred income tax expense (benefit)	(680)	(1,972)	(2,489)	(2,404)
Income tax expense, as reported	<u>\$ 31,733</u>	<u>\$ 20,674</u>	<u>\$ 64,919</u>	<u>\$ 33,301</u>
Effective tax rate	<u>16.4 %</u>	<u>14.8 %</u>	<u>16.0 %</u>	<u>13.2 %</u>

We had a net deferred tax asset totaling \$365.4 million at June 30, 2023 and \$374.4 million at December 31, 2022. No valuation allowance for deferred tax assets was recorded at June 30, 2023 as management believes it is more likely than not that all of the deferred tax assets will be realized against deferred tax liabilities and projected future taxable income.

The effective income tax rates differed from the U.S. statutory federal income tax rates of 21% during the comparable periods primarily due to the effect of tax-exempt income from securities, loans and life insurance policies and the income tax effects associated with stock-based compensation, among other things. There were no unrecognized tax benefits during any of the reported periods. Interest and/or penalties related to income taxes are reported as a component of income tax expense. Such amounts were not significant during the reported periods.

We file income tax returns in the U.S. federal jurisdiction. We are no longer subject to U.S. federal income tax examinations by tax authorities for years before 2019.

Note 14 - Other Comprehensive Income (Loss)

The before and after tax amounts allocated to each component of other comprehensive income (loss) are presented in the following table. Reclassification adjustments related to securities available for sale are included in net gain (loss) on securities transactions in the accompanying consolidated statements of income. Reclassification adjustments related to defined-benefit post-retirement benefit plans are included in the computation of net periodic pension expense (see Note 12 – Defined Benefit Plans).

	Three Months Ended June 30, 2023			Three Months Ended June 30, 2022		
	Before Tax Amount	Tax Expense, (Benefit)	Net of Tax Amount	Before Tax Amount	Tax Expense, (Benefit)	Net of Tax Amount
Securities available for sale and transferred securities:						
Change in net unrealized gain/loss during the period	\$ (206,863)	\$ (43,441)	\$ (163,422)	\$ (636,523)	\$ (133,670)	\$ (502,853)
Change in net unrealized gain on securities transferred to held to maturity	(162)	(34)	(128)	(189)	(40)	(149)
Reclassification adjustment for net (gains) losses included in net income	(33)	(7)	(26)	—	—	—
Total securities available for sale and transferred securities	(207,058)	(43,482)	(163,576)	(636,712)	(133,710)	(503,002)
Defined-benefit post-retirement benefit plans:						
Reclassification adjustment for net amortization of actuarial gain/loss included in net income as a component of net periodic cost (benefit)	870	183	687	741	155	586
Total defined-benefit post-retirement benefit plans	870	183	687	741	155	586
Total other comprehensive income (loss)	<u>\$ (206,188)</u>	<u>\$ (43,299)</u>	<u>\$ (162,889)</u>	<u>\$ (635,971)</u>	<u>\$ (133,555)</u>	<u>\$ (502,416)</u>
	Six Months Ended June 30, 2023			Six Months Ended June 30, 2022		
	Before Tax Amount	Tax Expense, (Benefit)	Net of Tax Amount	Before Tax Amount	Tax Expense, (Benefit)	Net of Tax Amount
Securities available for sale and transferred securities:						
Change in net unrealized gain/loss during the period	\$ 53,406	\$ 11,215	\$ 42,191	\$ (1,547,318)	\$ (324,937)	\$ (1,222,381)
Change in net unrealized gain on securities transferred to held to maturity	(322)	(67)	(255)	(398)	(84)	(314)
Reclassification adjustment for net (gains) losses included in net income	(54)	(11)	(43)	—	—	—
Total securities available for sale and transferred securities	53,030	11,137	41,893	(1,547,716)	(325,021)	(1,222,695)
Defined-benefit post-retirement benefit plans:						
Reclassification adjustment for net amortization of actuarial gain/loss included in net income as a component of net periodic expense (benefit)	1,740	366	1,374	1,482	311	1,171
Total defined-benefit post-retirement benefit plans	1,740	366	1,374	1,482	311	1,171
Total other comprehensive income (loss)	<u>\$ 54,770</u>	<u>\$ 11,503</u>	<u>\$ 43,267</u>	<u>\$ (1,546,234)</u>	<u>\$ (324,710)</u>	<u>\$ (1,221,524)</u>

Activity in accumulated other comprehensive income (loss), net of tax, was as follows:

	Securities Available For Sale	Defined Benefit Plans	Accumulated Other Comprehensive Income
Balance at January 1, 2023	\$ (1,313,791)	\$ (34,503)	\$ (1,348,294)
Other comprehensive income (loss) before reclassifications	41,936	—	41,936
Reclassification of amounts included in net income	(43)	1,374	1,331
Net other comprehensive income (loss) during period	41,893	1,374	43,267
Balance at June 30, 2023	\$ (1,271,898)	\$ (33,129)	\$ (1,305,027)
Balance at January 1, 2022	\$ 380,209	\$ (32,891)	\$ 347,318
Other comprehensive income (loss) before reclassifications	(1,222,695)	—	(1,222,695)
Reclassification of amounts included in net income	—	1,171	1,171
Net other comprehensive income (loss) during period	(1,222,695)	1,171	(1,221,524)
Balance at June 30, 2022	\$ (842,486)	\$ (31,720)	\$ (874,206)

Note 15 – Operating Segments

We are managed under a matrix organizational structure whereby our two primary operating segments, Banking and Frost Wealth Advisors, overlap a regional reporting structure. See our 2022 Form 10-K for additional information regarding our operating segments. Summarized operating results by segment were as follows:

	Banking	Frost Wealth Advisors	Non-Banks	Consolidated
Three months ended:				
June 30, 2023				
Net interest income (expense)	\$ 385,720	\$ 2,090	\$ (2,544)	\$ 385,266
Credit loss expense	9,901	—	—	9,901
Non-interest income	57,808	46,147	(427)	103,528
Non-interest expense	246,927	35,558	2,557	285,042
Income (loss) before income taxes	186,700	12,679	(5,528)	193,851
Income tax expense (benefit)	30,636	2,663	(1,566)	31,733
Net income (loss)	156,064	10,016	(3,962)	162,118
Preferred stock dividends	—	—	1,669	1,669
Net income (loss) available to common shareholders	\$ 156,064	\$ 10,016	\$ (5,631)	\$ 160,449
Revenues from (expenses to) external customers	\$ 443,528	\$ 48,237	\$ (2,971)	\$ 488,794
June 30, 2022				
Net interest income (expense)	\$ 289,186	\$ 958	\$ (1,936)	\$ 288,208
Credit loss expense (benefit)	1	(1)	—	—
Non-interest income	55,397	43,054	(524)	97,927
Non-interest expense	211,044	33,158	2,145	246,347
Income (loss) before income taxes	133,538	10,855	(4,605)	139,788
Income tax expense (benefit)	19,821	2,279	(1,426)	20,674
Net income (loss)	113,717	8,576	(3,179)	119,114
Preferred stock dividends	—	—	1,669	1,669
Net income (loss) available to common shareholders	\$ 113,717	\$ 8,576	\$ (4,848)	\$ 117,445
Revenues from (expenses to) external customers	\$ 344,583	\$ 44,012	\$ (2,460)	\$ 386,135

	Banking	Frost Wealth Advisors	Non-Banks	Consolidated
Six months ended:				
June 30, 2023				
Net interest income (expense)	\$ 785,857	\$ 3,744	\$ (4,515)	\$ 785,086
Credit loss expense (benefit)	19,003	2	—	19,005
Non-interest income	121,451	88,185	(843)	208,793
Non-interest expense	496,794	69,505	3,885	570,184
Income (loss) before income taxes	391,511	22,422	(9,243)	404,690
Income tax expense (benefit)	62,754	4,709	(2,544)	64,919
Net income (loss)	328,757	17,713	(6,699)	339,771
Preferred stock dividends	—	—	3,338	3,338
Net income (loss) available to common shareholders	\$ 328,757	\$ 17,713	\$ (10,037)	\$ 336,433
Revenues from (expenses to) external customers	\$ 907,308	\$ 91,929	\$ (5,358)	\$ 993,879
June 30, 2022				
Net interest income (expense)	\$ 539,305	\$ 1,658	\$ (3,684)	\$ 537,279
Credit loss expense	—	—	—	—
Non-interest income	114,103	86,283	(1,069)	199,317
Non-interest expense	417,582	64,068	3,429	485,079
Income (loss) before income taxes	235,826	23,873	(8,182)	251,517
Income tax expense (benefit)	30,835	5,013	(2,547)	33,301
Net income (loss)	204,991	18,860	(5,635)	218,216
Preferred stock dividends	—	—	3,338	3,338
Net income (loss) available to common shareholders	\$ 204,991	\$ 18,860	\$ (8,973)	\$ 214,878
Revenues from (expenses to) external customers	\$ 653,408	\$ 87,941	\$ (4,753)	\$ 736,596

Note 16 – Fair Value Measurements

The fair value of an asset or liability is the price that would be received to sell that asset or paid to transfer that liability in an orderly transaction occurring in the principal market (or most advantageous market in the absence of a principal market) for such asset or liability. In estimating fair value, we utilize valuation techniques that are consistent with the market approach, the income approach and/or the cost approach. Such valuation techniques are consistently applied. Inputs to valuation techniques include the assumptions that market participants would use in pricing an asset or liability. ASC Topic 820 establishes a three-level fair value hierarchy for valuation inputs that gives the highest priority to quoted prices in active markets for identical assets or liabilities and the lowest priority to unobservable inputs. See our 2022 Form 10-K for additional information regarding the fair value hierarchy and a description of our valuation techniques.

Financial Assets and Financial Liabilities. The tables below summarize financial assets and financial liabilities measured at fair value on a recurring basis as of June 30, 2023 and December 31, 2022, segregated by the level of the valuation inputs within the fair value hierarchy of ASC Topic 820 utilized to measure fair value.

	Level 1 Inputs	Level 2 Inputs	Level 3 Inputs	Total Fair Value
June 30, 2023				
Securities available for sale:				
U.S. Treasury	\$ 5,072,888	\$ —	\$ —	\$ 5,072,888
Residential mortgage-backed securities	—	6,792,775	—	6,792,775
States and political subdivisions	—	5,341,016	—	5,341,016
Other	—	42,578	—	42,578
Trading account securities:				
U.S. Treasury	27,546	—	—	27,546
States and political subdivisions	—	4,971	—	4,971
Derivative assets:				
Interest rate swaps, caps and floors	—	94,362	—	94,362
Commodity swaps and options	—	65,814	—	65,814
Derivative liabilities:				
Interest rate swaps, caps and floors	—	94,291	—	94,291
Commodity swaps and options	—	64,802	—	64,802
December 31, 2022				
Securities available for sale:				
U.S. Treasury	\$ 5,051,587	\$ —	\$ —	\$ 5,051,587
Residential mortgage-backed securities	—	6,376,236	—	6,376,236
States and political subdivisions	—	6,773,355	—	6,773,355
Other	—	42,427	—	42,427
Trading account securities:				
U.S. Treasury	25,879	—	—	25,879
States and political subdivisions	—	2,166	—	2,166
Derivative assets:				
Interest rate swaps, caps and floors	—	86,793	—	86,793
Commodity swaps and options	—	106,685	—	106,685
Foreign currency forward contracts	11	—	—	11
Derivative liabilities:				
Interest rate swaps, caps and floors	—	95,533	—	95,533
Commodity swaps and options	—	105,392	—	105,392
Foreign currency forward contracts	11	—	—	11

Certain financial assets and financial liabilities are measured at fair value on a nonrecurring basis; that is, the instruments are not measured at fair value on an ongoing basis but are subject to fair value adjustments in certain circumstances. Financial assets measured at fair value on a non-recurring basis during the reported periods include certain collateral dependent loans reported at the fair value of the underlying collateral if repayment is expected solely from the collateral.

The following table presents collateral dependent loans that were remeasured and reported at fair value through a specific allocation of the allowance for credit losses on loans based upon the fair value of the underlying collateral during the reported periods.

	Six Months Ended June 30, 2023		Six Months Ended June 30, 2022	
	Level 2	Level 3	Level 2	Level 3
Carrying value before allocations	\$ 19,064	\$ 20,171	\$ 5,454	\$ 3,614
Specific (allocations) reversals of prior allocations	(1,300)	(2,100)	(1,327)	6,877
Fair value	\$ 17,764	\$ 18,071	\$ 4,127	\$ 10,491

Non-Financial Assets and Non-Financial Liabilities. We do not have any non-financial assets or non-financial liabilities measured at fair value on a recurring basis. From time to time, non-financial assets measured at fair value on a non-recurring basis may include certain foreclosed assets which, upon initial recognition, were remeasured and reported at fair value through a charge-off to the allowance for loan losses and certain foreclosed assets which, subsequent to their initial recognition, were remeasured at fair value through a write-down included in other non-interest expense. There were no such fair value measurements during the reported periods.

Financial Instruments Reported at Amortized Cost. The estimated fair values of financial instruments that are reported at amortized cost in our consolidated balance sheets, segregated by the level of the valuation inputs within the fair value hierarchy utilized to measure fair value, were as follows:

	June 30, 2023		December 31, 2022	
	Carrying Amount	Estimated Fair Value	Carrying Amount	Estimated Fair Value
Financial assets:				
Level 2 inputs:				
Cash and cash equivalents	\$ 7,107,336	\$ 7,107,336	\$ 12,028,132	\$ 12,028,132
Securities held to maturity	3,691,220	3,543,929	2,639,083	2,467,865
Cash surrender value of life insurance policies	190,575	190,575	190,188	190,188
Accrued interest receivable	236,967	236,967	243,682	243,682
Level 3 inputs:				
Loans, net	17,512,692	16,933,702	16,927,348	16,343,417
Financial liabilities:				
Level 2 inputs:				
Deposits	40,700,830	40,683,556	43,954,196	43,920,741
Federal funds purchased	13,525	13,525	51,650	51,650
Repurchase agreements	3,569,870	3,569,870	4,660,641	4,660,641
Junior subordinated deferrable interest debentures	123,098	123,712	123,069	123,712
Subordinated notes	99,413	94,571	99,335	97,014
Accrued interest payable	40,523	40,523	18,444	18,444

Under ASC Topic 825, entities may choose to measure eligible financial instruments at fair value at specified election dates. The fair value measurement option (i) may be applied instrument by instrument, with certain exceptions, (ii) is generally irrevocable and (iii) is applied only to entire instruments and not to portions of instruments. Unrealized gains and losses on items for which the fair value measurement option has been elected must be reported in earnings at each subsequent reporting date. During the reported periods, we had no financial instruments measured at fair value under the fair value measurement option.

Note 17 - Accounting Standards Updates

Information about certain recently issued accounting standards updates is presented below. Also refer to Note 20 - Accounting Standards Updates in our 2022 Form 10-K for additional information related to previously issued accounting standards updates.

ASU 2022-02, "Financial Instruments - Credit Losses (Topic 326): Troubled Debt Restructurings and Vintage Disclosures." ASU 2022-02 eliminates the accounting guidance for troubled debt restructurings in Accounting Standards Codification ("ASC") Subtopic 310-40, Receivables - Troubled Debt Restructurings by Creditors, while enhancing disclosure requirements for certain loan refinancings and restructurings by creditors when a borrower is experiencing financial difficulty. Additionally, ASU 2022-02 requires entities to disclose current-period gross write-offs by year of origination for financing receivables and net investments in leases within the scope of ASC Subtopic 3126-20, Financial Instruments - Credit Losses - Measured at Amortized Cost. ASU 2022-02 became effective for us on January 1, 2023. See Note 3 - Loans for the new financial statement disclosures applicable under this update.

ASU 2023-01, "Leases (Topic 842): Common Control Arrangements." ASU 2023-01 requires entities to amortize leasehold improvements associated with common control leases over the useful life to the common control group. ASU 2023-01 also provides certain practical expedients applicable to private companies and not-for-profit organizations. ASU 2023-01 will be effective for us on January 1, 2024, though early adoption is permitted, and its adoption is not expected to have a significant effect on our financial statements.

ASU No. 2023-02, "Investments—Equity Method and Joint Ventures (Topic 323): Accounting for Investments in Tax Credit Structures Using the Proportional Amortization Method." ASU 2023-02 is intended to improve the accounting and disclosures for investments in tax credit structures. ASU 2023-02 allows entities to elect to account for qualifying tax equity investments using the proportional amortization method, regardless of the program giving rise to the related income tax credits. Previously, this method was only available for qualifying tax equity investments in low-income housing tax credit structures. ASU 2023-02 will be effective for us on January 1, 2024, though early adoption is permitted, and its adoption is not expected to have a significant effect on our financial statements.

ASU No. 2023-03, "Presentation of Financial Statements (Topic 205), Income Statement—Reporting Comprehensive Income (Topic 220), Distinguishing Liabilities from Equity (Topic 480), Equity (Topic 505), and Compensation—Stock Compensation (Topic 718): Amendments to SEC Paragraphs Pursuant to SEC Staff Accounting Bulletin No. 120, SEC Staff Announcement at the March 24, 2022 EITF Meeting, and Staff Accounting Bulletin Topic 6.B, Accounting Series Release 280—General Revision of Regulation S-X: Income or Loss Applicable to Common Stock." ASU 2023-03 amends the ASC for SEC updates pursuant to SEC Staff Accounting Bulletin No. 120; SEC Staff Announcement at the March 24, 2022 Emerging Issues Task Force ("EITF") Meeting, and Staff Accounting Bulletin Topic 6.B, Accounting Series Release 280 - General Revision of Regulation S-X: Income or Loss Applicable to Common Stock. These updates were immediately effective and did not have a significant impact on our financial statements.

Item 2. Management's Discussion and Analysis of Financial Condition and Results of Operations

Financial Review

Cullen/Frost Bankers, Inc.

The following discussion should be read in conjunction with our consolidated financial statements, and notes thereto, for the year ended December 31, 2022, and the other information included in the 2022 Form 10-K. Operating results for the three and six months ended June 30, 2023 are not necessarily indicative of the results for the year ending December 31, 2023 or any future period.

Dollar amounts in tables are stated in thousands, except for per share amounts.

Forward-Looking Statements and Factors that Could Affect Future Results

Certain statements contained in this Quarterly Report on Form 10-Q that are not statements of historical fact constitute forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995 (the "Act"), notwithstanding that such statements are not specifically identified as such. In addition, certain statements may be contained in our future filings with the SEC, in press releases, and in oral and written statements made by us or with our approval that are not statements of historical fact and constitute forward-looking statements within the meaning of the Act. Examples of forward-looking statements include, but are not limited to: (i) projections of revenues, expenses, income or loss, earnings or loss per share, the payment or nonpayment of dividends, capital structure and other financial items; (ii) statements of plans, objectives and expectations of Cullen/Frost or its management or Board of Directors, including those relating to products, services or operations; (iii) statements of future economic performance; and (iv) statements of assumptions underlying such statements. Words such as "believes", "anticipates", "expects", "intends", "targeted", "continue", "remain", "will", "should", "may" and other similar expressions are intended to identify forward-looking statements but are not the exclusive means of identifying such statements.

Forward-looking statements involve risks and uncertainties that may cause actual results to differ materially from those in such statements. Factors that could cause actual results to differ from those discussed in the forward-looking statements include, but are not limited to:

- The effects of and changes in trade and monetary and fiscal policies and laws, including the interest rate policies of the Federal Reserve Board.
- Inflation, interest rate, securities market and monetary fluctuations.
- Local, regional, national and international economic conditions and the impact they may have on us and our customers and our assessment of that impact.
- Changes in the financial performance and/or condition of our borrowers.
- Changes in the mix of loan geographies, sectors and types or the level of non-performing assets and charge-offs.
- Changes in estimates of future credit loss reserve requirements based upon the periodic review thereof under relevant regulatory and accounting requirements.
- Changes in our liquidity position.
- Impairment of our goodwill or other intangible assets.
- The timely development and acceptance of new products and services and perceived overall value of these products and services by users.
- Changes in consumer spending, borrowing and saving habits.
- Greater than expected costs or difficulties related to the integration of new products and lines of business.
- Technological changes.
- The cost and effects of cyber incidents or other failures, interruptions or security breaches of our systems or those of our customers or third-party providers.
- Acquisitions and integration of acquired businesses.
- Changes in the reliability of our vendors, internal control systems or information systems.
- Our ability to increase market share and control expenses.
- Our ability to attract and retain qualified employees.
- Changes in our organization, compensation and benefit plans.
- The soundness of other financial institutions.
- Volatility and disruption in national and international financial and commodity markets.
- Changes in the competitive environment in our markets and among banking organizations and other financial service providers.
- Government intervention in the U.S. financial system.
- Political or economic instability.
- Acts of God or of war or terrorism.

- The potential impact of climate change.
- The impact of pandemics, epidemics or any other health-related crisis.
- The costs and effects of legal and regulatory developments, the resolution of legal proceedings or regulatory or other governmental inquiries, the results of regulatory examinations or reviews and the ability to obtain required regulatory approvals.
- The effect of changes in laws and regulations (including laws and regulations concerning taxes, banking, securities and insurance) and their application with which we and our subsidiaries must comply.
- The effect of changes in accounting policies and practices, as may be adopted by the regulatory agencies, as well as the Public Company Accounting Oversight Board, the Financial Accounting Standards Board and other accounting standard setters.
- Our success at managing the risks involved in the foregoing items.

In addition, financial markets and global supply chains may continue to be adversely affected by the current or anticipated impact of military conflict, including the current Russian invasion of Ukraine or other geopolitical events.

Forward-looking statements speak only as of the date on which such statements are made. We do not undertake any obligation to update any forward-looking statement to reflect events or circumstances after the date on which such statement is made, or to reflect the occurrence of unanticipated events.

Application of Critical Accounting Policies and Accounting Estimates

We follow accounting and reporting policies that conform, in all material respects, to accounting principles generally accepted in the United States and to general practices within the financial services industry. The preparation of financial statements in conformity with accounting principles generally accepted in the United States requires management to make estimates and assumptions that affect the amounts reported in the financial statements and accompanying notes. While we base estimates on historical experience, current information and other factors deemed to be relevant, actual results could differ from those estimates.

We consider accounting estimates to be critical to reported financial results if (i) the accounting estimate requires management to make assumptions about matters that are highly uncertain and (ii) different estimates that management reasonably could have used for the accounting estimate in the current period, or changes in the accounting estimate that are reasonably likely to occur from period to period, could have a material impact on our financial statements.

Accounting policies related to the allowance for credit losses on financial instruments including loans and off-balance-sheet credit exposures are considered to be critical as these policies involve considerable subjective judgment and estimation by management. In the case of loans, the allowance for credit losses is a contra-asset valuation account, calculated in accordance with Accounting Standards Codification ("ASC") Topic 326 ("ASC 326") Financial Instruments - Credit Losses, that is deducted from the amortized cost basis of loans to present the net amount expected to be collected. In the case of off-balance-sheet credit exposures, the allowance for credit losses is a liability account, calculated in accordance with ASC 326, reported as a component of accrued interest payable and other liabilities in our consolidated balance sheets. The amount of each allowance account represents management's best estimate of current expected credit losses on these financial instruments considering available information, from internal and external sources, relevant to assessing exposure to credit loss over the contractual term of the instrument. Relevant available information includes historical credit loss experience, current conditions and reasonable and supportable forecasts. While historical credit loss experience provides the basis for the estimation of expected credit losses, adjustments to historical loss information may be made for differences in current portfolio-specific risk characteristics, environmental conditions or other relevant factors. While management utilizes its best judgment and information available, the ultimate adequacy of our allowance accounts is dependent upon a variety of factors beyond our control, including the performance of our portfolios, the economy, changes in interest rates and the view of the regulatory authorities toward classification of assets. Refer to the 2022 Form 10-K for additional information regarding critical accounting policies.

Overview

A discussion of our results of operations is presented below. Certain reclassifications have been made to make prior periods comparable. Taxable-equivalent adjustments are the result of increasing income from tax-free loans and investments by an amount equal to the taxes that would be paid if the income were fully taxable based on a 21% federal tax rate, thus making tax-exempt yields comparable to taxable asset yields.

Results of Operations

Net income available to common shareholders totaled \$160.4 million, or \$2.47 per diluted common share, and \$336.4 million, or \$5.17 per diluted common share, for the three and six months ended June 30, 2023 compared to \$117.4 million, or \$1.81 per diluted common share, and \$214.9 million, or \$3.31 per diluted common share for the three and six months ended June 30, 2022.

Selected data for the comparable periods was as follows:

	Three Months Ended June 30,		Six Months Ended June 30,	
	2023	2022	2023	2022
Taxable-equivalent net interest income	\$ 408,594	\$ 311,377	\$ 834,438	\$ 583,572
Taxable-equivalent adjustment	23,328	23,169	49,352	46,293
Net interest income	385,266	288,208	785,086	537,279
Credit loss expense	9,901	—	19,005	—
Net interest income after credit loss expense	375,365	288,208	766,081	537,279
Non-interest income	103,528	97,927	208,793	199,317
Non-interest expense	285,042	246,347	570,184	485,079
Income before income taxes	193,851	139,788	404,690	251,517
Income taxes	31,733	20,674	64,919	33,301
Net income	162,118	119,114	339,771	218,216
Preferred stock dividends	1,669	1,669	3,338	3,338
Net income available to common shareholders	\$ 160,449	\$ 117,445	\$ 336,433	\$ 214,878
Earnings per common share – basic	\$ 2.47	\$ 1.82	\$ 5.18	\$ 3.32
Earnings per common share – diluted	2.47	1.81	5.17	3.31
Dividends per common share	0.87	0.75	1.74	1.50
Return on average assets	1.30 %	0.92 %	1.35 %	0.85 %
Return on average common equity	19.36	13.88	20.92	11.53
Average shareholders' equity to average assets	7.04	6.93	6.73	7.70

Net income available to common shareholders increased \$43.0 million, or 36.6%, for the three months ended June 30, 2023 and increased \$121.6 million, or 56.6%, for the six months ended June 30, 2023 compared to the same periods in 2022. The increase during the three months ended June 30, 2023 was primarily the result of a \$97.1 million increase in net interest income and a \$5.6 million increase in non-interest income partly offset by a \$38.7 million increase in non-interest expense, an \$11.1 million increase in income tax expense and a \$9.9 million increase in credit loss expense. The increase during the six months ended June 30, 2023 was primarily the result of a \$247.8 million increase in net interest income and a \$9.5 million increase in non-interest income partly offset by a \$85.1 million increase in non-interest expense, a \$31.6 million increase in income tax expense and a \$19.0 million increase in credit loss expense. Details of the changes in the various components of net income are further discussed below.

Net Interest Income

Net interest income is the difference between interest income on earning assets, such as loans and securities, and interest expense on liabilities, such as deposits and borrowings, which are used to fund those assets. Net interest income is our largest source of revenue, representing 79.0% of total revenue during the first six months of 2023. Net interest margin is the ratio of taxable-equivalent net interest income to average earning assets for the period. The level of interest rates and the volume and mix of earning assets and interest-bearing liabilities impact net interest income and net interest margin.

The Federal Reserve influences the general market rates of interest, including the deposit and loan rates offered by many financial institutions. As of June 30, 2023, approximately 43.7% of our loans had a fixed interest rate, while the remaining loans had floating interest rates that were primarily tied to the prime interest rate (approximately 25.2%); or a benchmark developed by the American Financial Exchange, the Secured Overnight Financing Rate (“SOFR”) (approximately 22.5%); or the American Interbank Offered Rate (“AMERIBOR”) (approximately 8.2%). Certain other loans are tied to a benchmark developed by Bloomberg Index Services (“BSBY”) or other indices, however, such loans do not make up a significant portion of our loan portfolio as of June 30, 2023.

Select average market rates for the periods indicated are presented in the table below.

	Three Months Ended June 30,		Six Months Ended June 30,	
	2023	2022	2023	2022
Federal funds target rate upper bound	5.16 %	0.95 %	4.93 %	0.62 %
Effective federal funds rate	4.99	0.77	4.75	0.45
Interest on reserve balances at the Federal Reserve	5.06	0.84	4.82	0.52
Prime	8.16	3.95	7.92	3.62
AMERIBOR Term-30 ⁽¹⁾	5.05	0.87	4.82	0.53
AMERIBOR Term-90 ⁽¹⁾	5.34	1.42	5.11	0.97
1-Month Term SOFR ⁽²⁾	5.04	0.92	4.82	0.54
3-Month Term SOFR ⁽²⁾	5.12	1.31	4.95	0.82
Bloomberg 1-Month Short-Term Bank Yield Index	5.08	0.87	4.83	0.52
Bloomberg 3-Month Short-Term Bank Yield Index	5.31	1.41	5.07	0.94
1-Month LIBOR ⁽³⁾	5.09	1.00	4.85	0.61
3-Month LIBOR ⁽³⁾	5.39	1.51	5.15	1.01

(1) AMERIBOR Term-30 and AMERIBOR Term-90 are published by the American Financial Exchange.

(2) 1-Month Term SOFR and 3-Month Term SOFR market data are the property of Chicago Mercantile Exchange, Inc. or its licensors as applicable. All rights reserved, or otherwise licensed by Chicago Mercantile Exchange, Inc.

(3) 1-Month and 3-Month LIBOR ceased to be published effective June 30, 2023.

As of June 30, 2023, the target range for the federal funds rate was 5.00% to 5.25%. In June 2023, the Federal Reserve released projections whereby the midpoint of the projected appropriate target range for the federal funds rate would rise to 5.6% by the end of 2023 and subsequently decrease to 4.6% by the end of 2024. While there can be no such assurance that any increases or decreases in the federal funds rate will occur, these projections imply up to a 50 basis point increase in the federal funds rate during the remainder of 2023, followed by a 100 basis point decrease in 2024. The target range for the federal funds rate was increased 25 basis points to 5.25% to 5.50% effective July 27, 2023.

We are primarily funded by core deposits, with non-interest-bearing demand deposits historically being a significant source of funds. This lower-cost funding base is expected to have a positive impact on our net interest income and net interest margin in a rising interest rate environment. Nonetheless, our access to and pricing of deposits may be negatively impacted by, among other factors, periods of higher interest rates which could promote increased competition for deposits, including from new financial technology competitors, or provide customers with alternative investment options. See Item 3. Quantitative and Qualitative Disclosures About Market Risk elsewhere in this report for information about our sensitivity to interest rates. Further analysis of the components of our net interest margin is presented below.

The following tables present an analysis of net interest income and net interest spread for the periods indicated, including average outstanding balances for each major category of interest-earning assets and interest-bearing liabilities, the interest earned or paid on such amounts, and the average rate earned or paid on such assets or liabilities, respectively. The tables also set forth the net interest margin on average total interest-earning assets for the same periods. For these computations: (i) average balances are presented on a daily average basis, (ii) information is shown on a taxable-equivalent basis assuming a 21% tax rate, (iii) average loans include loans on non-accrual status, and (iv) average securities include unrealized gains and losses on securities available for sale, while yields are based on average amortized cost.

	Quarter To Date June 30, 2023			Quarter To Date June 30, 2022		
	Average Balance	Interest Income/ Expense	Yield/ Cost	Average Balance	Interest Income/ Expense	Yield/ Cost
Assets:						
Interest-bearing deposits	\$ 6,879,997	\$ 87,748	5.05 %	\$ 13,040,852	\$ 26,371	0.80 %
Federal funds sold	22,549	305	5.35	31,173	99	1.26
Resell agreements	84,767	1,126	5.26	3,027	10	1.32
Securities:						
Taxable	13,781,300	101,960	2.71	10,327,627	56,365	2.04
Tax-exempt	7,496,547	81,889	4.27	7,802,864	79,001	4.04
Total securities	21,277,847	183,849	3.24	18,130,491	135,366	2.87
Loans, net of unearned discounts	17,664,254	292,628	6.64	16,674,489	167,925	4.04
Total Earning Assets and Average Rate Earned	45,929,414	565,656	4.77	47,880,032	329,771	2.71
Cash and due from banks	627,991			646,121		
Allowance for credit losses on loans and securities	(233,156)			(246,976)		
Premises and equipment, net	1,143,809			1,049,494		
Accrued interest and other assets	1,849,438			1,758,932		
Total Assets	\$ 49,317,496			\$ 51,087,603		
Liabilities:						
Non-interest-bearing demand deposits	15,230,736			18,354,651		
Interest-bearing deposits:						
Savings and interest checking	10,861,788	11,159	0.41	12,336,089	1,206	0.04
Money market deposit accounts	11,431,483	76,337	2.68	12,607,969	11,115	0.35
Time accounts	3,482,557	32,770	3.77	1,427,267	2,272	0.64
Total interest-bearing deposits	25,775,828	120,266	1.87	26,371,325	14,593	0.22
Total deposits	41,006,564		1.18	44,725,976		0.13
Federal funds purchased	32,796	412	4.97	35,529	75	0.84
Repurchase agreements	3,718,696	33,114	3.52	1,742,669	1,790	0.41
Junior subordinated deferrable interest debentures	123,092	2,106	6.84	123,035	772	2.51
Subordinated notes	99,398	1,164	4.69	99,242	1,164	4.69
Total Interest-Bearing Funds and Average Rate Paid	29,749,810	157,062	2.11	28,371,800	18,394	0.26
Accrued interest and other liabilities	867,013			821,571		
Total Liabilities	45,847,559			47,548,022		
Shareholders' Equity	3,469,937			3,539,581		
Total Liabilities and Shareholders' Equity	\$ 49,317,496			\$ 51,087,603		
Net interest income		\$ 408,594			\$ 311,377	
Net interest spread			2.66 %			2.45 %
Net interest income to total average earning assets			3.45 %			2.56 %

	Year To Date June 30, 2023			Year To Date June 30, 2022		
	Average Balance	Interest Income/ Expense	Yield/ Cost	Average Balance	Interest Income/ Expense	Yield/ Cost
Assets:						
Interest-bearing deposits	\$ 7,778,508	\$ 186,993	4.78 %	\$ 13,401,664	\$ 32,714	0.49 %
Federal funds sold	43,306	1,063	4.88	22,581	112	0.99
Resell agreements	87,157	2,194	5.01	4,423	14	0.63
Securities:						
Taxable	13,562,966	199,735	2.69	9,667,818	99,423	1.97
Tax-exempt	7,946,474	172,581	4.25	7,983,161	157,900	4.03
Total securities	21,509,440	372,316	3.24	17,650,979	257,323	2.87
Loans, net of unearned discounts	17,492,611	564,309	6.51	16,531,269	318,993	3.89
Total Earning Assets and Average Rate Earned	46,911,022	1,126,875	4.67	47,610,916	609,156	2.56
Cash and due from banks	652,082			648,609		
Allowance for credit losses on loans and securities	(230,345)			(247,883)		
Premises and equipment, net	1,130,798			1,050,111		
Accrued interest and other assets	1,856,116			1,648,876		
Total Assets	<u>\$ 50,319,673</u>			<u>\$ 50,710,629</u>		
Liabilities:						
Non-interest-bearing demand deposits	15,929,635			18,159,023		
Interest-bearing deposits:						
Savings and interest checking	11,259,513	21,497	0.39	12,146,331	1,616	0.03
Money market deposit accounts	11,915,319	151,807	2.57	12,235,442	14,766	0.24
Time accounts	2,772,708	44,951	3.27	1,308,025	3,123	0.48
Total interest-bearing deposits	25,947,540	218,255	1.70	25,689,798	19,505	0.15
Total deposits	41,877,175		1.05	43,848,821		0.09
Federal funds purchased	41,979	995	4.71	31,666	87	0.55
Repurchase agreements	3,963,372	66,765	3.35	1,896,270	2,308	0.24
Junior subordinated deferrable interest debentures	123,085	4,094	6.62	123,028	1,356	2.19
Subordinated notes	99,379	2,328	4.69	99,222	2,328	4.69
Total Interest-Bearing Funds and Average Rate Paid	30,175,355	292,437	1.95	27,839,984	25,584	0.18
Accrued interest and other liabilities	826,835			808,896		
Total Liabilities	46,931,825			46,807,903		
Shareholders' Equity	3,387,848			3,902,726		
Total Liabilities and Shareholders' Equity	<u>\$ 50,319,673</u>			<u>\$ 50,710,629</u>		
Net interest income		\$ 834,438			\$ 583,572	
Net interest spread			2.72 %			2.38 %
Net interest income to total average earning assets			3.46 %			2.45 %

The following table presents the changes in taxable-equivalent net interest income and identifies the changes due to differences in the average volume of earning assets and interest-bearing liabilities and the changes due to changes in the average interest rate on those assets and liabilities. The changes in net interest income due to changes in both average volume and average interest rate have been allocated to the average volume change or the average interest rate change in proportion to the absolute amounts of the change in each.

	Three Months Ended June 30, 2023 vs. June 30, 2022		
	Increase (Decrease) Due to Change in		Total
	Rate	Volume	
Interest-bearing deposits	\$ 78,996	\$ (17,619)	\$ 61,377
Federal funds sold	240	(34)	206
Resell agreements	112	1,004	1,116
Securities:			
Taxable	21,742	23,853	45,595
Tax-exempt	4,474	(1,586)	2,888
Loans, net of unearned discounts	114,172	10,531	124,703
Total earning assets	219,736	16,149	235,885
Savings and interest checking	10,117	(164)	9,953
Money market deposit accounts	66,350	(1,128)	65,222
Time accounts	23,561	6,937	30,498
Federal funds purchased	343	(6)	337
Repurchase agreements	27,251	4,073	31,324
Junior subordinated deferrable interest debentures	1,334	—	1,334
Subordinated notes	—	—	—
Total interest-bearing liabilities	128,956	9,712	138,668
Net change	\$ 90,780	\$ 6,437	\$ 97,217

	Six Months Ended June 30, 2023 vs. June 30, 2022		
	Increase (Decrease) Due to Change in		Total
	Rate	Volume	
Interest-bearing deposits	\$ 173,517	\$ (19,238)	\$ 154,279
Federal funds sold	770	181	951
Resell agreements	591	1,589	2,180
Securities:			
Taxable	43,605	56,707	100,312
Tax-exempt	8,801	5,880	14,681
Loans, net of unearned discounts	225,819	19,497	245,316
Total earning assets	453,103	64,616	517,719
Savings and interest checking	20,025	(144)	19,881
Money market deposit accounts	137,439	(398)	137,041
Time accounts	35,072	6,756	41,828
Federal funds purchased	871	37	908
Repurchase agreements	59,455	5,002	64,457
Junior subordinated deferrable interest debentures	2,737	1	2,738
Subordinated notes	—	—	—
Total interest-bearing liabilities	255,599	11,254	266,853
Net change	\$ 197,504	\$ 53,362	\$ 250,866

Taxable-equivalent net interest income for the three months ended June 30, 2023 increased \$97.2 million, or 31.2%, while taxable-equivalent net interest income for the six months ended June 30, 2023 increased \$250.9 million, or 43.0%, compared to the same periods in 2022. The increase in taxable-equivalent net interest income during the three months ended June 30, 2023 was primarily related to increases in the average yield on loans and, to a lesser extent, the average volume of loans; an increase in the average yield on interest-bearing deposits (primarily amounts held in an interest-bearing account at the Federal Reserve); increases in the average volume of and average yield on taxable securities; and an increase in the average taxable-equivalent yield on tax-exempt securities, among other things. The impact of these items was partly offset by increases in the average costs

of interest-bearing deposit accounts and repurchase agreements, among other things, combined with a decrease in the average volume of interest-bearing deposits (primarily amounts held in an interest-bearing account at the Federal Reserve) and increases in the average volume of time deposit accounts and repurchase agreements, among other things.

The increase in taxable-equivalent net interest income during the six months ended June 30, 2023 was primarily related to increases in the average yield on loans and, to a lesser extent, the average volume of loans; an increase in the average yield on interest-bearing deposits (primarily amounts held in an interest-bearing account at the Federal Reserve); and increases in the average volumes of and the average taxable-equivalent yields on taxable and tax-exempt securities, among other things. The impact of these items was partly offset by increases in the average costs of interest-bearing deposit accounts and repurchase agreements, among other things, combined with a decrease in the average volume of interest-bearing deposits (primarily amounts held in an interest-bearing account at the Federal Reserve) and increases in the average volume of time deposit accounts and repurchase agreements, among other things. As a result of the aforementioned fluctuations, the taxable-equivalent net interest margin increased 89 basis points from 2.56% during the three months ended June 30, 2022 to 3.45% during the three months ended June 30, 2023 while the taxable-equivalent net interest margin increased 101 basis points from 2.45% during the six months ended June 30, 2022 to 3.46% during the six months ended June 30, 2023.

The average volume of interest-earning assets for the three months ended June 30, 2023 decreased \$2.0 billion while the average volume of interest-earning assets for the six months ended June 30, 2023 decreased \$699.9 million compared to the same periods in 2022. The decrease in the average volume of interest-earning assets during the three months ended June 30, 2023 was primarily related to a \$6.2 billion decrease in average interest-bearing deposits (primarily amounts held in an interest-bearing account at the Federal Reserve) and a \$306.3 million decrease in average tax-exempt securities partly offset by a \$3.5 billion increase in average taxable securities and a \$989.8 million increase in average loans. The average taxable-equivalent yield on interest-earning assets increased 206 basis points from 2.71% during the three months ended June 30, 2022 to 4.77% during the three months ended June 30, 2023.

The decrease in the average volume of interest-earning assets during the six months ended June 30, 2023 was primarily related to a \$5.6 billion decrease in average interest-bearing deposits (primarily amounts held in an interest-bearing account at the Federal Reserve) and a \$36.7 million decrease in average tax-exempt securities partly offset by a \$3.9 billion increase in average taxable securities and a \$961.3 million increase in average loans. The average taxable-equivalent yield on interest-earning assets increased 211 basis points from 2.56% during the six months ended June 30, 2022 to 4.67% during the six months ended June 30, 2023. The average taxable-equivalent yield on interest-earning assets during the comparable periods was impacted by the aforementioned changes in market interest rates and changes in the volume and relative mix of interest-earning assets.

The average taxable-equivalent yield on loans increased 260 basis points from 4.04% during the three months ended June 30, 2022 to 6.64% during the three months ended June 30, 2023 while the average taxable-equivalent yield on loans increased 262 basis points from 3.89% during the six months ended June 30, 2022 to 6.51% during the six months ended June 30, 2023. The average taxable-equivalent yields on loans during the three and six months ended June 30, 2023 were positively impacted by recent increases in market interest rates. The average volume of loans for the three months ended June 30, 2023 increased \$989.8 million, or 5.9%, while the average volume of loans for the six months ended June 30, 2023 increased \$961.3 million, or 5.8%, compared to the same periods in 2022. Loans made up approximately 38.5% and 37.3% of average interest-earning assets during the three and six months ended June 30, 2023, compared to 34.8% and 34.7% during the same respective periods in 2022.

The average taxable-equivalent yield on securities was 3.24% during both the three and six months ended June 30, 2023, increasing 37 basis points from 2.87% during both the three and six months ended June 30, 2022. The average yield on taxable securities was 2.71% during the three months ended June 30, 2023, increasing 67 basis points from 2.04% during the same period in 2022 while the average yield on taxable securities was 2.69% during the six months ended June 30, 2023, increasing 72 basis points from 1.97% during the same period in 2022. The average taxable-equivalent yield on tax-exempt securities was 4.27% during the three months ended June 30, 2023, increasing 23 basis points from 4.04% during the same period in 2022 while the average taxable-equivalent yield on tax-exempt securities was 4.25% during the six months ended June 30, 2023, increasing 22 basis points from 4.03% during the same period in 2022.

Tax-exempt securities made up approximately 35.2% and 36.9% of total average securities during the three and six months ended June 30, 2023, compared to 43.0% and 45.2% during the same periods in 2022. The average volume of total securities during the three months ended June 30, 2023 increased \$3.1 billion, or 17.4%, compared to the same period in 2022 while the average volume of total securities during the six months ended June 30, 2023 increased \$3.9 billion, or 21.9%, compared to the same period in 2022. Securities made up approximately 46.3% of average interest-earning assets during the three months ended June 30, 2023 compared to 37.9% during the same period in 2022 while securities made up approximately 45.8% of average interest-earning assets during the six months ended June 30, 2023 compared to 37.1% during the same period in 2022. The

increases during the three and six months ended June 30, 2023 were primarily related to the investment of available funds (primarily from the reinvestment of amounts held in an interest-bearing account at the Federal Reserve) into taxable securities.

Average interest-bearing deposits (primarily amounts held in an interest-bearing account at the Federal Reserve) for the three months ended June 30, 2023 decreased \$6.2 billion, or 47.2%, compared to the same period in 2022, while average interest-bearing deposits (primarily amounts held in an interest-bearing account at the Federal Reserve) for the six months ended June 30, 2023 decreased \$5.6 billion, or 42.0%, compared to the same period in 2022. Interest-bearing deposits (primarily amounts held in an interest-bearing account at the Federal Reserve) made up approximately 15.0% of average interest-earning assets during the three months ended June 30, 2023 compared to 27.2% during the same period in 2022 while interest-bearing deposits (primarily amounts held in an interest-bearing account at the Federal Reserve) made up approximately 16.6% of average interest-earning assets during the six months ended June 30, 2023 compared to 28.1% during the same period in 2022. The decreases during the three and six months ended June 30, 2023 were primarily related to the reinvestment of amounts held in an interest-bearing account at the Federal Reserve into taxable securities, and to a lesser extent, loans combined with decreases in average funding provided by customer deposits (primarily non-interest-bearing). The average yield on interest-bearing deposits (primarily amounts held in an interest-bearing account at the Federal Reserve) was 5.05% and 4.78% during the three and six months ended June 30, 2023, compared to 0.80% and 0.49% during the same respective periods in 2022. The average yields on interest-bearing deposits during the three and six months ended June 30, 2023 were impacted by higher interest rates paid on reserves held at the Federal Reserve, compared to the same respective periods in 2022.

The average rate paid on interest-bearing liabilities was 2.11% during the three months ended June 30, 2023, increasing 185 basis points from 0.26% during the same period in 2022 while the average rate paid on interest-bearing liabilities was 1.95% during the six months ended June 30, 2023, increasing 177 basis points from 0.18% during the same period in 2022. Average deposits decreased \$3.7 billion, or 8.3%, during the three months ended June 30, 2023 compared to the same period in 2022 and included a \$3.1 billion decrease in average non-interest-bearing deposits and a \$95.5 million decrease in average interest-bearing deposits. Average deposits decreased \$2.0 billion, or 4.5%, during the six months ended June 30, 2023 compared to the same period in 2022 and included a \$2.2 billion decrease in average non-interest-bearing deposits partly offset by a \$257.7 million increase in average interest-bearing deposits. The ratio of average interest-bearing deposits to total average deposits was 62.9% and 62.0% during the three and six months ended June 30, 2023 compared to 59.0% and 58.6% during the same respective periods in 2022. The average cost of deposits is primarily impacted by changes in market interest rates as well as changes in the volume and relative mix of interest-bearing deposits. The average cost of interest-bearing deposits and total deposits was 1.87% and 1.18%, respectively, during the three months ended June 30, 2023 compared to 0.22% and 0.13%, respectively, during the same period in 2022. The average cost of interest-bearing deposits and total deposits was 1.70% and 1.05%, respectively, during the six months ended June 30, 2023 compared to 0.15% and 0.09%, respectively, during the same period in 2022. The average cost of deposits during the comparable periods was impacted by increases in the interest rates we pay on our interest-bearing deposit products as a result of the aforementioned increases in market interest rates.

Our net interest spread, which represents the difference between the average rate earned on earning assets and the average rate paid on interest-bearing liabilities, was 2.66% and 2.72% during the three and six months ended June 30, 2023 compared to 2.45% and 2.38% during the same respective periods in 2022. The net interest spread, as well as the net interest margin, will be impacted by future changes in short-term and long-term interest rate levels, as well as the impact from the competitive environment, including from new financial technology competitors, and the availability of alternative investment options. A discussion of the effects of changing interest rates on net interest income is set forth in Item 3. Quantitative and Qualitative Disclosures About Market Risk included elsewhere in this report.

Our hedging policies permit the use of various derivative financial instruments, including interest rate swaps, swaptions, caps and floors, to manage exposure to changes in interest rates. Details of our derivatives and hedging activities are set forth in Note 8 - Derivative Financial Instruments in the accompanying notes to consolidated financial statements included elsewhere in this report. Information regarding the impact of fluctuations in interest rates on our derivative financial instruments is set forth in Item 3. Quantitative and Qualitative Disclosures About Market Risk included elsewhere in this report.

Credit Loss Expense

Credit loss expense is determined by management as the amount to be added to the allowance for credit loss accounts for various types of financial instruments including loans, securities and off-balance-sheet credit exposures after net charge-offs have been deducted to bring the allowances to a level which, in management's best estimate, is necessary to absorb expected credit losses over the lives of the respective financial instruments. The components of credit loss expense were as follows:

	Three Months Ended June 30,		Six Months Ended June 30,	
	2023	2022	2023	2022
Credit loss expense (benefit) related to:				
Loans	\$ 11,933	\$ (4,396)	\$ 24,608	\$ 68
Off-balance-sheet credit exposures	(2,037)	4,396	(5,712)	(68)
Securities held to maturity	5	—	109	—
Total	\$ 9,901	\$ —	\$ 19,005	\$ —

See the section captioned "Allowance for Credit Losses" elsewhere in this discussion for further analysis of credit loss expense related to loans and off-balance-sheet credit exposures.

Non-Interest Income

Total non-interest income for the three and six months ended June 30, 2023 increased \$5.6 million, or 5.7%, and increased \$9.5 million, or 4.8%, respectively, compared to the same periods in 2022. Changes in the various components of non-interest income are discussed in more detail below.

Trust and Investment Management Fees. Trust and investment management fees increased \$1.6 million, or 4.3%, for the three months ended June 30, 2023 and decreased \$896 thousand, or 1.2%, for the six months ended June 30, 2023, compared to the same respective periods in 2022. Investment management fees are the most significant component of trust and investment management fees, making up approximately 78.5% and 79.6% of total trust and investment management fees for the first six months of 2023 and 2022, respectively. The increase in trust and investment management fees during the three months ended June 30, 2023 was primarily due to increases in real estate fees (up \$1.0 million), estate fees (up \$821 thousand) and investment management fees (up \$580 thousand) partly offset by a decrease in oil and gas fees (down \$1.0 million). The decrease in trust and investment management fees during the six months ended June 30, 2023 was primarily due to decreases in investment management fees (down \$1.5 million) and oil and gas fees (down \$1.1 million), partly offset by increases in real estate fees (up \$867 thousand) and estate fees (up \$647 thousand). Investment management fees are generally based on the market value of assets within an account and are thus impacted by volatility in the equity and bond markets. The increase in investment management fees during the three months ended June 30, 2023 was primarily related to an increase in the average volume of assets maintained in accounts, despite a slight decrease in the number of accounts. The increase in the average volume of assets was partly related to slightly higher equity valuations during the second quarter of 2023 relative to the same period in 2022. The decrease in investment management fees during the six months ended June 30, 2023 was partly related to the recognition of certain non-recurring revenues in 2022 as well as lower average equity and bond valuations relative to 2022. The increases in estate fees and real estate fees during the three and six months ended June 30, 2023 were primarily related to increases in transaction volumes. The decreases in oil and gas fees during the three and six months ended June 30, 2023 were primarily related to lower average market prices in 2023 relative to 2022.

At June 30, 2023, trust assets, including both managed assets and custody assets, were primarily composed of equity securities (41.7% of assets), fixed income securities (33.6% of assets), alternative investments (8.7% of assets) and cash equivalents (9.0% of assets). The estimated fair value of these assets was \$44.9 billion (including managed assets of \$22.4 billion and custody assets of \$22.5 billion) at June 30, 2023, compared to \$42.9 billion (including managed assets of \$21.4 billion and custody assets of \$21.5 billion) at December 31, 2022 and \$40.1 billion (including managed assets of \$19.4 billion and custody assets of \$20.6 billion) at June 30, 2022.

Service Charges on Deposit Accounts. Service charges on deposit accounts for the three and six months ended June 30, 2023 decreased \$383 thousand, or 1.6%, and decreased \$1.2 million, or 2.7%, respectively, compared to the same periods in 2022. The decrease during the three months ended June 30, 2023 was primarily related to a decrease in commercial service charges (down \$2.2 million), partly offset by increases in overdraft charges on consumer and commercial accounts (up \$915 thousand and \$534 thousand, respectively) and consumer service charges (up \$330 thousand). The decrease during the six months ended June 30, 2023 was primarily related to a decrease in commercial service charges (down \$5.2 million), partly offset by increases in overdraft charges on consumer and commercial accounts (up \$2.2 million and \$1.2 million, respectively) and consumer service charges (up \$624 thousand). The decrease in commercial service charges during the three and six months ended

June 30, 2023 primarily resulted from a higher average earnings credit rate applied to deposits maintained by treasury management customers. Because average market interest rates were higher during 2023 compared to 2022, deposit balances were more valuable and yielded a higher average earnings credit rate. As a result, customers paid for less of their services through fees rather than with earnings credits applied to their deposit balances. Overdraft charges totaled \$11.0 million (\$8.4 million consumer and \$2.7 million commercial) during the three months ended June 30, 2023 compared to \$9.6 million (\$7.4 million consumer and \$2.1 million commercial) during the same period in 2022. Overdraft charges totaled \$21.6 million (\$16.3 million consumer and \$5.3 million commercial) during the six months ended June 30, 2023 compared to \$18.2 million (\$14.1 million consumer and \$4.1 million commercial) during the same period in 2022. The increases in overdraft charges during the three and six months ended June 30, 2023 were impacted by increases in the volumes of fee assessed overdrafts relative to 2022, in part due to growth in the number of accounts.

Insurance Commissions and Fees. Insurance commissions and fees for the three and six months ended June 30, 2023 increased \$1.2 million, or 9.9%, and increased \$3.5 million, or 12.4%, respectively, compared to the same periods in 2022. The increase during the three months ended June 30, 2023 was primarily the result of an increase in commission income (up \$1.3 million) partly offset by a decrease in contingent income (down \$133 thousand). The increase during the six months ended June 30, 2023 was primarily the result of increases in commission income (up \$2.3 million) and contingent income (up \$1.2 million). The increase in commission income during the three months ended June 30, 2023 was primarily related to increases in commercial lines property and casualty commissions and benefit plan commissions and, to a lesser extent, increases in life insurance commissions and personal lines property and casualty commissions. The increase during the six months ended June 30, 2023 was primarily due to increases in life insurance commissions and benefit plan commissions and, to a lesser extent, commercial and personal lines property and casualty commissions. The increases in commercial and personal lines property and casualty commissions and benefit plan commissions during the three and six months ended June 30, 2023 were primarily related to increases in the underlying exposure bases and increases in rates. The increases in life insurance commissions during the three and six months ended June 30, 2023 were primarily due to increased business volumes.

Contingent income totaled \$445 thousand and \$4.3 million during the three and six months ended June 30, 2023, respectively, compared to \$578 thousand and \$3.0 million during the same respective periods in 2022. Contingent income primarily consists of amounts received from various property and casualty insurance carriers related to portfolio growth and the loss performance of insurance policies previously placed. These performance related contingent payments are seasonal in nature and are mostly received during the first quarter of each year. This performance related contingent income totaled \$3.2 million and \$1.8 million during the six months ended June 30, 2023 and 2022, respectively. The increase in performance related contingent income was primarily related to growth within the portfolio and improvement in the loss performance of insurance policies previously placed. Performance related contingent income in 2022 was impacted by a severe weather event in Texas during 2021 that resulted in significant property and casualty claims and losses. Contingent income also includes amounts received from various benefit plan insurance companies related to the volume of business generated and/or the subsequent retention of such business. This benefit plan related contingent income totaled \$430 thousand and \$1.1 million during the three and six months ended June 30, 2023, respectively, compared to \$385 thousand and \$1.2 million during the same respective periods in 2022.

Interchange and Card Transaction Fees. Interchange fees, or "swipe" fees, are charges that merchants pay to us and other card-issuing banks for processing electronic payment transactions. Interchange and card transaction fees consist of income from debit and credit card usage, point of sale income from PIN-based card transactions and ATM service fees. Interchange and card transaction fees are reported net of related network costs.

Net interchange and card transaction fees for the three and six months ended June 30, 2023 increased \$339 thousand, or 6.9%, and increased \$1.0 million, or 11.0%, respectively, compared to the same periods in 2022 primarily due to increases in transaction volumes partly offset by an increase in network costs. A comparison of gross and net interchange and card transaction fees for the reported periods is presented in the table below.

	Three Months Ended June 30,		Six Months Ended June 30,	
	2023	2022	2023	2022
Income from card transactions	\$ 9,405	\$ 8,308	\$ 18,207	\$ 15,789
ATM service fees	912	867	1,756	1,631
Gross interchange and card transaction fees	10,317	9,175	19,963	17,420
Network costs	5,067	4,264	9,824	8,283
Net interchange and card transaction fees	\$ 5,250	\$ 4,911	\$ 10,139	\$ 9,137

Federal Reserve rules applicable to financial institutions that have assets of \$10 billion or more provide that the maximum permissible interchange fee for an electronic debit transaction is the sum of 21 cents per transaction and 5 basis points multiplied by the value of the transaction. An upward adjustment of no more than 1 cent to an issuer's debit card interchange fee is allowed if the card issuer develops and implements policies and procedures reasonably designed to achieve certain fraud-prevention standards. The Federal Reserve also has rules governing routing and exclusivity that require issuers to offer two unaffiliated networks for routing transactions on each debit or prepaid product.

Other Charges, Commissions and Fees. Other charges, commissions and fees for the three months ended June 30, 2023 increased \$2.2 million, or 22.3%, compared to the same period in 2022. The increase was primarily related to increases in capital markets advisory fees (up \$648 thousand), other service charges (up \$641 thousand), income from the placement of money market accounts (up \$472 thousand), commitment fees on unused lines of credit (up \$456 thousand) and letter of credit fees (up \$294 thousand), among other things, partly offset by a decrease in income from the sale of mutual funds (down \$375 thousand), among other things. Other charges, commissions and fees for the six months ended June 30, 2023 increased \$4.3 million, or 21.9%, compared to the same period in 2022. The increase was primarily related to increases in income from the placement of money market accounts (up \$2.0 million), other service charges (up \$1.2 million), capital markets advisory fees (up \$893 thousand), commitment fees on unused lines of credit (up \$792 thousand), letter of credit fees (up \$480 thousand) and merchant services rebates/bonuses (up \$331 thousand), among other things, partly offset by a decrease in income from the sale of mutual funds (down \$1.2 million), among other things.

Net Gain/Loss on Securities Transactions. During the six months ended June 30, 2023, we sold certain available-for-sale securities with amortized costs totaling \$1.5 billion and realized a net gain of \$54 thousand. Market conditions provided us an opportunity to sell certain lower-yielding securities. The proceeds from these sales enhanced our current liquidity position and will provide us the flexibility to be more opportunistic with the reinvestment of these funds in the future. There were no sales of securities during 2022.

Other Non-Interest Income. Other non-interest income for the three months ended June 30, 2023 increased \$629 thousand, or 6.5%, compared to the same period in 2022. The increase was partly related to increases in income from customer derivative and securities trading transactions (up \$315 thousand) and earnings on the cash surrender value of life insurance (up \$280 thousand), among other things. These items were partly offset by a decrease in public finance underwriting fees (down \$260 thousand), among other things.

Other non-interest income for the six months ended June 30, 2023 increased \$2.8 million, or 14.4%, compared to the same period in 2022. The increase was partly related to increases in sundry and other miscellaneous income (up \$1.2 million), income from customer derivative and securities trading transactions (up \$797 thousand), earnings on the cash surrender value of life insurance (up \$372 thousand), gains on the sale of foreclosed and other assets (up \$325 thousand) and income from customer foreign exchange transactions (up \$281 thousand), among other things. These items were partly offset by a decrease in public finance underwriting fees (down \$1.2 million), among other things. Sundry income during the six months ended June 30, 2023 included \$1.4 million related to a distribution received from a Small Business Investment Company ("SBIC") fund investment, \$839 thousand related to a volume bonus received from Frost Brokerage Services' clearing broker, \$747 thousand related to the recovery of prior write-offs and \$575 thousand related to a partnership interest, among other things, while sundry income during the six months ended June 30, 2022 included \$1.0 million related to the recovery of prior write-offs, \$1.0 million in card related incentives/rebates and \$458 thousand related to a contract fee, among other things. The fluctuations in income from customer derivative and securities trading transactions; income from customer foreign exchange transactions; and income from public finance underwriting fees were primarily related to fluctuations in transaction volumes. The increase in earnings on the cash surrender value of life insurance was related to an increase in market interest rates. The increase in gains on the sale of foreclosed and other assets was primarily related to the sale of foreclosed real estate property.

Non-Interest Expense

Total non-interest expense for the three and six months ended June 30, 2023 increased \$38.7 million, or 15.7%, and increased \$85.1 million, or 17.5%, respectively, compared to the same periods in 2022. Changes in the various components of non-interest expense are discussed below.

Salaries and Wages. Salaries and wages for the three and six months ended June 30, 2023 increased \$16.3 million, or 14.0%, and increased \$35.3 million, or 15.5%, respectively, compared to the same periods in 2022. The increases in salaries and wages were primarily related to increases in salaries due to annual merit and market increases and increases in the number of employees. The increases in the number of employees was partly related to our investments in organic expansion in the Houston and Dallas markets as well as preparations for our mortgage loan product offering. Salaries and wages were also impacted, to a lesser extent, by increases in stock-based compensation and incentive compensation. We are experiencing a competitive labor market which has resulted in and could continue to result in an increase in our staffing costs.

Employee Benefits. Employee benefits expense for the three and six months ended June 30, 2023 increased \$6.1 million, or 29.2%, and increased \$15.8 million, or 35.1%, respectively, compared to the same periods in 2022. The increases were primarily related to increases in 401(k) plan expense (up \$1.4 million and \$5.6 million during the three and six months ended June 30, 2023, respectively), medical benefits expense (up \$1.8 million and \$3.7 million during the three and six months ended June 30, 2023, respectively), and payroll taxes (up \$991 thousand and \$2.9 million during the three and six months ended June 30, 2023, respectively), and decreases in the net periodic benefit related to our defined benefit retirement plan (down \$1.6 million and \$3.2 million, respectively), among other things.

Our defined benefit retirement and restoration plans were frozen in 2001 which has helped to reduce the volatility in retirement plan expense. We nonetheless still have funding obligations related to these plans and could recognize expense related to these plans in future years, which would be dependent on the return earned on plan assets, the level of interest rates and employee turnover. See Note 12 - Defined Benefit Plans for additional information related to our net periodic pension benefit/cost.

Net Occupancy. Net occupancy expense for the three and six months ended June 30, 2023 increased \$3.3 million, or 11.8%, and increased \$6.3 million, or 11.2%, respectively, compared to the same periods in 2022. The increases during the three and six months ended June 30, 2023 were primarily related to increases in lease expense (up \$1.6 million and \$2.4 million, respectively), depreciation on buildings and leasehold improvements (together up \$1.1 million and \$1.8 million, respectively), and utilities expense (up \$284 thousand and \$917 thousand, respectively), among other things. The increases in the aforementioned components of net occupancy expense were impacted, in part, by our expansion within the Houston and Dallas market areas.

Technology, Furniture and Equipment. Technology, furniture and equipment expense for the three and six months ended June 30, 2023 increased \$3.1 million, or 10.4%, and increased \$6.4 million, or 10.9%, respectively, compared to the same periods in 2022. The increases during the three and six months ended June 30, 2023 were primarily related to increases in cloud services expense (up \$2.1 million and \$3.7 million, respectively) and service contracts expense (up \$964 thousand and \$2.0 million, respectively), among other things.

Deposit Insurance. Deposit insurance expense totaled \$6.2 million and \$12.4 million for the three and six months ended June 30, 2023, respectively, compared to \$3.7 million and \$7.4 million for the three and six months ended June 30, 2022, respectively. The increases during the three and six months ended June 30, 2023 were primarily related to an increase in the assessment rate. In October 2022, the Federal Deposit Insurance Corporation ("FDIC") adopted a final rule to increase the initial base deposit insurance assessment rate schedules uniformly by 2 basis points beginning with the first quarterly assessment period of 2023.

In May 2023, the FDIC issued a Notice of Proposed Rulemaking proposing an emergency special assessment to recover losses to the Deposit Insurance Fund ("DIF") incurred as a result of recent bank failures and the FDIC's use of the systemic risk exception to cover certain deposits that were otherwise uninsured. Under the proposal, the special assessment would be based on estimated uninsured deposits as of December 31, 2022 (excluding the first \$5.0 billion) and assessed at a rate of 25 basis points payable over eight quarters beginning in the first quarter of 2024. If this rule is made final as it is proposed, we expect that we will incur a special assessment of approximately \$47.1 million (\$37.2 million after tax). Based on the proposed rule, such amount will be fully-expensed in the period the rule is made final, which is currently expected to be later in 2023. Nonetheless, the proposal could be changed and the timing of accounting recognition is still under consideration. Under the proposed rule, the estimated loss pursuant to the systemic risk determination would be periodically adjusted, and the FDIC would retain the ability to cease collection early, extend the special assessment collection period and impose a final shortfall special assessment on a one-time basis. The extent to which any such future assessment will impact our future deposit insurance expense is currently uncertain.

Other Non-Interest Expense. Other non-interest expense for the three and six months ended June 30, 2023 increased \$7.4 million, or 16.0%, and increased \$16.3 million, or 18.2%, respectively, compared to the same periods in 2022. The increase during the three months ended June 30, 2023 included increases in advertising/promotions expense (up \$2.9 million); professional services expense (up \$2.8 million), which was primarily related to information technology services; travel, meals and entertainment expense (up \$956 thousand); stationery, printing and supplies expense (up \$513 thousand); business development expense (up \$444 thousand); and check card expense (up \$395 thousand), among other things. These items were partly offset by a decrease in sundry and other miscellaneous expenses (down \$1.1 million), among other things. Sundry and other miscellaneous expenses during the three months ended June 30, 2022 included \$446 thousand related to the write-off of certain assets and \$387 thousand related to a settlement and certain operational losses. The increase during the six months ended June 30, 2023 included increases in professional services expense (up \$5.1 million), which was primarily related to information technology services; advertising/promotions expense (up \$4.1 million); travel, meals and entertainment (up \$2.3 million); check card expense (up \$1.3 million); business development expense (up \$1.2 million); and stationery, printing and supplies expense (up \$808 thousand), among other things.

Results of Segment Operations

We are managed under a matrix organizational structure whereby our two primary operating segments, Banking and Frost Wealth Advisors, overlap a regional reporting structure. A third operating segment, Non-Banks, is for the most part the parent holding company, as well as certain other insignificant non-bank subsidiaries of the parent that, for the most part, have little or no activity. A description of each segment, the methodologies used to measure segment financial performance and summarized operating results by segment are described in Note 15 - Operating Segments in the accompanying notes to consolidated financial statements included elsewhere in this report. Segment operating results are discussed in more detail below.

Banking

Net income for the three and six months ended June 30, 2023 increased \$42.3 million, or 37.2%, and increased \$123.8 million, or 60.4%, respectively, compared to the same periods in 2022. The increase during the three months ended June 30, 2023 was primarily the result of a \$96.5 million increase in net interest income and a \$2.4 million increase in non-interest income partly offset by a \$35.9 million increase in non-interest expense, a \$10.8 million increase in income tax expense and a \$9.9 million increase in credit loss expense. The increase during the six months ended June 30, 2023 was primarily the result of a \$246.6 million increase in net interest income and a \$7.3 million increase in non-interest income partly offset by a \$79.2 million increase in non-interest expense, a \$31.9 million increase in income tax expense and a \$19.0 million increase in credit loss expense.

Net interest income for the three and six months ended June 30, 2023 increased \$96.5 million, or 33.4%, and \$246.6 million, or 45.7%, respectively, compared to the same periods in 2022. The increase during the three months ended June 30, 2023 was primarily related to increases in the average yield on loans and, to a lesser extent, the average volume of loans; an increase in the average yield on interest-bearing deposits (primarily amounts held in an interest-bearing account at the Federal Reserve); increases in the average volume of and average yield on taxable securities; and an increase in the average tax equivalent yield on tax-exempt securities, among other things. The impact of these items was partly offset by increases in the average costs of interest-bearing deposit accounts and repurchase agreements, among other things, combined with a decrease in the average volume of interest-bearing deposits (primarily amounts held in an interest-bearing account at the Federal Reserve) and increases in the average volume of time deposit accounts and repurchase agreements, among other things. The increase during the six months ended June 30, 2023 was primarily related to increases in the average yield on loans and, to a lesser extent, the average volume of loans; an increase in the average yield on interest-bearing deposits (primarily amounts held in an interest-bearing account at the Federal Reserve); and increases in the average volumes of and the average taxable-equivalent yields on taxable and tax-exempt securities, among other things. The impact of these items was partly offset by increases in the average costs of interest-bearing deposit accounts and repurchase agreements, among other things, combined with a decrease in the average volume of interest-bearing deposits (primarily amounts held in an interest-bearing account at the Federal Reserve) and increases in the average volume of time deposit accounts and repurchase agreements, among other things. See the analysis of net interest income included in the section captioned "Net Interest Income" included elsewhere in this discussion.

Credit loss expense for the three and six months ended June 30, 2023 totaled \$9.9 million and \$19.0 million, respectively. There was no credit loss expense during the three and six months ended June 30, 2022. See the sections captioned "Credit Loss Expense" and "Allowance for Credit Losses" elsewhere in this discussion for further analysis of credit loss expense related to loans and off-balance-sheet commitments.

Non-interest income for the three months ended June 30, 2023 increased \$2.4 million, or 4.4%, compared to the same period in 2022, while non-interest income for the six months ended June 30, 2023 increased \$7.3 million, or 6.4%, compared to the same period in 2022. The increase during the three months ended June 30, 2023 was primarily due to increases in other charges, commissions and fees and insurance commissions and fees. The increase during the six months ended June 30, 2023 was primarily related to increases in insurance commissions and fees; other charges, commissions and fees and interchange and card transaction fees partly offset by a decrease in service charges on deposit accounts. The increase in insurance commissions and fees during the three months ended June 30, 2023 was primarily related to an increase in commission income, while the increase during the six months ended June 30, 2023 was primarily related to increases in commission income and contingent income. These changes are further discussed below in relation to Frost Insurance Agency. The increases in other charges, commissions and fees during the three and six months ended June 30, 2023 were primarily related to increases in capital markets advisory fees, commitment fees on unused lines of credit, letter of credit fees and merchant services rebates/bonuses, among other things. The increase in interchange and card transaction fees during the six months ended June 30, 2023 was primarily due to an increase in transaction volumes partly offset by an increase in network costs. The decrease in service charges on deposit accounts during the six months ended June 30, 2023 was primarily due to a decrease in commercial service charges, largely due to a higher average earnings credit rate applied to deposits maintained by treasury management customers, partly offset by increases in overdraft charges on consumer and commercial accounts and consumer service charges due to

increases in the volumes of fee assessed overdrafts relative to 2022, in part due to growth in the number of accounts. See the analysis of these categories of non-interest income included in the section captioned “Non-Interest Income” included elsewhere in this discussion.

Non-interest expense for three months ended June 30, 2023 increased \$35.9 million, or 17.0%, while non-interest expense for the six months ended June 30, 2023 increased \$79.2 million, or 19.0%, compared to the same periods in 2022. The increases during the three and six months ended June 30, 2023 were primarily due to increases in salaries and wages; employee benefit expense; other non-interest expense; technology, furniture and equipment expense; net occupancy expense and deposit insurance.

The increases in salaries and wages during the three and six months ended June 30, 2023, were primarily related to increases in salaries due to annual merit and market increases and increases in the number of employees. The increase in the number of employees was partly related to our investments in organic expansion in the Houston and Dallas markets as well as preparations for our mortgage loan product offering. Salaries and wages were also impacted, to a lesser extent, by increases in stock-based compensation and incentive compensation. The increases in employee benefits expense during the three and six months ended June 30, 2023 were primarily related to increases in 401(k) plan expense, medical benefits expense and payroll taxes, and decreases in the net periodic benefit related to our defined benefit retirement plan, among other things. The increases in other non-interest expense during the three and six months ended June 30, 2023 were primarily related to increases in professional services expense; advertising/promotions expense; travel, meals and entertainment; check card expense; business development expense and stationery, printing and supplies expense, among other things. The increases in technology, furniture and equipment expense during the three and six months ended June 30, 2023 were primarily related to increases in cloud services expense and service contracts expense, among other things. The increases in net occupancy during the three and six months ended June 30, 2023 were primarily related to increases in lease expense, depreciation on buildings and leasehold improvements, and utilities expense, among other things. The increases in the aforementioned components of net occupancy expense were impacted, in part, by our expansion within the Houston and Dallas market areas. The increases in deposit insurance during the three and six months ended June 30, 2023 were primarily related to an increase in the assessment rate. See the analysis of these categories of non-interest expense included in the section captioned “Non-Interest Expense” included elsewhere in this discussion.

Frost Insurance Agency, which is included in the Banking operating segment, had gross commission revenues of \$12.9 million and \$32.0 million during the three and six months ended June 30, 2023, respectively, compared to \$11.8 million and \$28.5 million during the same respective periods in 2022. The increase during the three months ended June 30, 2023 was primarily related to an increase in commission income while the increase during the six months ended June 30, 2023 was primarily due to increases in both commission and contingent income. The increases in commission income were primarily related to increases in life insurance commissions, benefit plan commissions, and commercial and personal lines property and casualty commissions. The increases in life insurance commissions were primarily due to increased business volumes while the increases in commercial and personal lines property and casualty commissions were primarily related to increases in the underlying exposure bases and increases in rates. The increase in contingent income during the six months ended June 30, 2023 was primarily related to an increase in performance related contingent payments due to growth within the portfolio and improvement in the loss performance of insurance policies previously placed. See the analysis of insurance commissions and fees included in the section captioned “Non-Interest Income” included elsewhere in this discussion.

Frost Wealth Advisors

Net income for the three and six months ended June 30, 2023 increased \$1.4 million, or 16.8%, and decreased \$1.1 million, or 6.1%, respectively, compared to the same periods in 2022. The increase during the three months ended June 30, 2023 was primarily the result of a \$3.1 million increase in non-interest income and a \$1.1 million increase in net interest income partly offset by a \$2.4 million increase in non-interest expense and a \$384 thousand increase in income tax expense. The decrease during the six months ended June 30, 2023 was primarily the result of a \$5.4 million increase in non-interest expense partly offset by a \$2.1 million increase in net interest income, a \$1.9 million increase in non-interest income and a \$304 thousand decrease in income tax expense.

Net interest income for the three and six months ended June 30, 2023 increased \$1.1 million, or 118.2%, and increased \$2.1 million, or 125.8%, respectively, compared to the same periods in 2022. The increases during the three and six months ended June 30, 2023 were primarily due to increases in the average funds transfer prices allocated to funds provided by Frost Wealth Advisors. See the analysis of net interest income included in the section captioned “Net Interest Income” included elsewhere in this discussion.

Non-interest income for the three and six months ended June 30, 2023 increased \$3.1 million, or 7.2%, and increased \$1.9 million, or 2.2%, respectively, compared to the same periods in 2022. The increase during the three months ended June 30, 2023 was primarily due to increases in trust and investment management fees and other non-interest income. The increase during the six months ended June 30, 2023 was primarily due to increases in other non-interest income and other charges, commissions and fees partly offset by a decrease in trust and investment management fees. Trust and investment management fee income is the most significant income component for Frost Wealth Advisors. Investment management fees are the most significant component of trust and investment management fees, making up approximately 78.5% of total trust and investment management fees for the first six months of 2023. The increase in trust and investment management fees during the three months ended June 30, 2023 was primarily due to increases in real estate fees, estate fees and investment management fees partly offset by a decrease in oil and gas fees. The decrease in trust and investment management fees during the six months ended June 30, 2023 was primarily due to decreases in investment management fees and oil and gas fees partly offset by increases in real estate fees and estate fees. The increase in investment management fees during the three months ended June 30, 2023 was primarily related to an increase in the average volume of assets maintained in accounts, despite a slight decrease in the number of accounts. The decrease in investment management fees during the six months ended June 30, 2023 was partly related to the recognition of certain non-recurring revenues in 2022 as well as lower average equity and bond valuations relative to 2022. The increases in estate fees and real estate fees during the three and six months ended June 30, 2023 were primarily related to increases in transaction volumes. The decreases in oil and gas fees during the three and six months ended June 30, 2023 were primarily related to lower average market prices in 2023 relative to 2022. The increases in other non-interest income during the three and six months ended June 30, 2023 were primarily related to increases in income from customer securities trading transactions and sundry income, primarily related to a volume bonus received from Frost Brokerage Services' clearing broker. The increase in other charges, commissions and fees during the six months ended June 30, 2023 was primarily related to an increase in income from the placement of money market accounts, among other things, partly offset by decreases in income from the sale of mutual funds, among other things. See the analysis of trust and investment management fees and other charges, commissions and fees included in the section captioned "Non-Interest Income" included elsewhere in this discussion.

Non-interest expense for the three and six months ended June 30, 2023 increased \$2.4 million, or 7.2%, and increased \$5.4 million, or 8.5%, respectively, compared to the same periods in 2022. The increases during the three and six months ended June 30, 2023 were primarily due to increases in salaries and wages, other non-interest expense, employee benefits expense and net occupancy expense. The increases in salaries and wages were primarily due to an increase in salaries, due to annual merit and market increases, as well as increases in commission expense. The increases in other non-interest expense during the three and six months ended June 30, 2023 were primarily related to increases in the corporate overhead expense allocation and, to a lesser extent, increases in professional service expense, among other things, partly offset by decreases in sundry expense and research and platform fees, among other things. The increases in employee benefits during the three and six months ended June 30, 2023 were partly related to increases in medical benefits expense and payroll taxes, among other things. The increase during the six months ended June 30, 2023 was also partly related to an increase in 401(k) plan expense. The increases in net occupancy expense during the three and six months ended June 30, 2023 were primarily related to increases in lease expense.

Non-Banks

The Non-Banks operating segment had net losses of \$4.0 million and \$6.7 million during the three and six months ended June 30, 2023, respectively, compared to net loss of \$3.2 million and \$5.6 million during the same respective periods in 2022. The increases in net losses during the three and six months ended June 30, 2023 were primarily due to increases in net interest expense due to an increase in the average rates paid on our long-term borrowings partly offset by increases in interest income received on resell agreements.

Income Taxes

During the three months ended June 30, 2023, we recognized income tax expense of \$31.7 million, for an effective tax rate of 16.4%, compared to \$20.7 million, for an effective tax rate of 14.8%, for the same period in 2022. During the six months ended June 30, 2023, we recognized income tax expense of \$64.9 million, for an effective tax rate of 16.0%, compared to \$33.5 million, for an effective tax rate of 13.2%, for the same period in 2022. The effective income tax rates differed from the U.S. statutory federal income tax rate of 21% during 2023 and 2022 primarily due to the effect of tax-exempt income from securities, loans and life insurance policies and the income tax effects associated with stock-based compensation, among other things, and their relative proportion to total pre-tax net income. The increase in the effective tax rates during 2023 was primarily related to an increase in projected pre-tax net income and, to a lesser extent, increases in disallowed deposit interest expense and deposit insurance premiums and a decrease in discrete tax benefits associated with stock-based compensation, among other things.

Average Balance Sheet

Average assets totaled \$50.3 billion for the six months ended June 30, 2023 representing a decrease of \$391.0 million, or 0.8%, compared to average assets for the same period in 2022. Earning assets decreased \$699.9 million, or 1.5%, during the six months ended June 30, 2023 compared to the same period in 2022. The decrease in earning assets was primarily related to a \$5.6 billion decrease in average interest-bearing deposits (primarily amounts held in an interest-bearing account at the Federal Reserve) and a \$36.7 million decrease in tax-exempt securities partly offset by a \$3.9 billion increase in average taxable securities and a \$961.3 million increase in average loans. Average deposits decreased \$2.0 billion, or 4.5%, during six months ended June 30, 2023 compared to the same period in 2022. The decrease included a \$2.2 billion decrease in non-interest-bearing deposits partly offset by a \$257.7 million increase in interest-bearing deposit accounts. Average non-interest-bearing deposits made up 38.0% and 41.4% of average total deposits during the six months ended June 30, 2023 and 2022, respectively.

Loans

Details of our loan portfolio are presented in Note 3 - Loans in the accompanying notes to consolidated financial statements included elsewhere in this report. Loans increased \$591.3 million, or 3.4%, from \$17.2 billion at December 31, 2022 to \$17.7 billion at June 30, 2023. The majority of our loan portfolio is comprised of commercial and industrial loans, energy loans, and real estate loans. Real estate loans include both commercial and consumer balances. Selected details related to our loan portfolio segments are presented below. Refer to our 2022 Form 10-K for a more detailed discussion of our loan origination and risk management processes.

Commercial and Industrial. Commercial and industrial loans totaled \$5.7 billion at both June 30, 2023 and December 31, 2022. Our commercial and industrial loans are a diverse group of loans to small, medium and large businesses. The purpose of these loans varies from supporting seasonal working capital needs to term financing of equipment. While some short-term loans may be made on an unsecured basis, most are secured by the assets being financed with collateral margins that are consistent with our loan policy guidelines. The commercial and industrial loan portfolio also includes commercial leases and purchased shared national credits ("SNC"s).

Energy. Energy loans include loans to entities and individuals that are engaged in various energy-related activities including (i) the development and production of oil or natural gas, (ii) providing oil and gas field servicing, (iii) providing energy-related transportation services, (iv) providing equipment to support oil and gas drilling, (v) refining petrochemicals, or (vi) trading oil, gas and related commodities. Energy loans increased \$60.8 million, or 6.6%, from \$925.7 million at December 31, 2022 to \$986.6 million at June 30, 2023. While we have recently made efforts to reduce our exposure to energy loans, such loans nonetheless remain one of our largest industry concentrations totaling 5.6% of total loans at June 30, 2023, up from 5.4% of total loans at December 31, 2022. The average loan size, the significance of the portfolio and the specialized nature of the energy industry requires a highly prescriptive underwriting policy. Exceptions to this policy are rarely granted. Due to the large borrowing requirements of this customer base, the energy loan portfolio includes participations and SNCs.

Purchased Shared National Credits. SNCs are participations purchased from upstream financial organizations and tend to be larger in size than our originated portfolio. Our purchased SNC portfolio totaled \$745.7 million at June 30, 2023, decreasing \$44.8 million, or 5.7%, from \$790.5 million at December 31, 2022. At June 30, 2023, 33.6% of outstanding purchased SNCs were related to the construction industry while 19.4% were related to the energy industry, 12.5% were related to the financial services industry and 12.2% were related to the real estate management industry. The remaining purchased SNCs were diversified throughout various other industries, with no other single industry exceeding 10% of the total purchased SNC portfolio. Additionally, almost all of the outstanding balance of purchased SNCs was included in the energy and commercial and industrial portfolio, with the remainder included in the real estate categories. SNC participations are originated in the normal course of business to meet the needs of our customers. As a matter of policy, we generally only participate in SNCs for companies headquartered in or which have significant operations within our market areas. In addition, we must have direct access to the company's management, an existing banking relationship or the expectation of broadening the relationship with other banking products and services within the following 12 to 24 months. SNCs are reviewed at least quarterly for credit quality and business development successes.

Commercial Real Estate. Commercial real estate loans increased \$209.6 million, or 2.6%, from \$8.2 billion at December 31, 2022 to \$8.4 billion at June 30, 2023. Commercial real estate loans represented 79.5% of total real estate loans at June 30, 2023 compared to 81.6% at December 31, 2022. The majority of our commercial real estate loan portfolio consists of commercial real estate mortgages, which includes both permanent and intermediate term loans. These loans are viewed primarily as cash flow loans and secondarily as loans secured by real estate. Consequently, these loans must undergo the analysis and underwriting process of a commercial and industrial loan, as well as that of a real estate loan. At June 30, 2023, approximately 51.0% of the outstanding principal balance of our commercial real estate loans were secured by owner-occupied properties.

Consumer Real Estate and Other Consumer Loans. The consumer real estate loan portfolio increased \$314.4 million, or 17.1%, from \$1.8 billion at December 31, 2022 to \$2.2 billion at June 30, 2023. Combined, home equity loans and lines of credit made up 60.5% and 61.9% of the consumer real estate loan total at June 30, 2023 and December 31, 2022, respectively. We offer home equity loans up to 80% of the estimated value of the personal residence of the borrower, less the value of existing mortgages and home improvement loans. Prior to 2023, we did not generally originate 1-4 family mortgage loans; however, from time to time, we did invest in such loans to meet the needs of our customers or for other regulatory compliance purposes. We began offering 1-4 family mortgage loans to our employees during the first quarter of 2023 and began limited production of 1-4 family mortgage loans for customers in the second quarter of 2023. Our 1-4 family mortgage loan production is intended to be for portfolio investment purposes. Nonetheless, 1-4 family mortgage loans are not a significant component of our consumer real estate portfolio. Consumer and other loans decreased \$33.0 million, or 6.7%, from December 31, 2022. The consumer and other loan portfolio primarily consists of automobile loans, overdrafts, unsecured revolving credit products, personal loans secured by cash and cash equivalents and other similar types of credit facilities.

Paycheck Protection Program. We have originated loans to qualified small businesses under the PPP administered by the SBA under the provisions of the CARES Act. Loans covered by the PPP may be eligible for loan forgiveness for certain costs incurred related to payroll, group health care benefit costs and qualifying mortgage, rent and utility payments. The remaining loan balance after forgiveness of any amounts is still fully guaranteed by the SBA. Refer to the 2022 Form 10-K for additional details.

Accruing Past Due Loans. Accruing past due loans are presented in the following tables. Also see Note 3 - Loans in the accompanying notes to consolidated financial statements included elsewhere in this report.

	Total Loans	Accruing Loans 30-89 Days Past Due		Accruing Loans 90 or More Days Past Due		Total Accruing Past Due Loans	
		Amount	Percent of Loans in Category	Amount	Percent of Loans in Category	Amount	Percent of Loans in Category
June 30, 2023							
Commercial and industrial	\$ 5,726,804	\$ 27,789	0.49 %	\$ 3,025	0.05 %	\$ 30,814	0.54 %
Energy	986,571	2,222	0.23	—	—	2,222	0.23
Paycheck Protection Program	22,333	80	0.36	2,725	12.20	2,805	12.56
Commercial real estate:							
Buildings, land and other	6,924,896	28,443	0.41	568	0.01	29,011	0.42
Construction	1,468,071	669	0.05	118	0.01	787	0.06
Consumer real estate	2,157,916	8,754	0.41	5,039	0.23	13,793	0.64
Consumer and other	459,720	5,153	1.12	336	0.07	5,489	1.19
Total	<u>\$ 17,746,311</u>	<u>\$ 73,110</u>	0.41	<u>\$ 11,811</u>	0.07	<u>\$ 84,921</u>	0.48
Excluding PPP loans	<u>\$ 17,723,978</u>	<u>\$ 73,030</u>	0.41	<u>\$ 9,086</u>	0.05	<u>\$ 82,116</u>	0.46
December 31, 2022							
Commercial and industrial	\$ 5,674,798	\$ 30,769	0.54 %	\$ 5,560	0.10 %	\$ 36,329	0.64 %
Energy	925,729	1,472	0.16	—	—	1,472	0.16
Paycheck Protection Program	34,852	5,321	15.27	13,867	39.79	19,188	55.06
Commercial real estate:							
Buildings, land and other	6,706,078	23,561	0.35	5,664	0.08	29,225	0.43
Construction	1,477,247	—	—	—	—	—	—
Consumer real estate	1,843,539	7,856	0.43	2,398	0.13	10,254	0.56
Consumer and other	492,726	5,155	1.05	311	0.06	5,466	1.11
Total	<u>\$ 17,154,969</u>	<u>\$ 74,134</u>	0.43	<u>\$ 27,800</u>	0.16	<u>\$ 101,934</u>	0.59
Excluding PPP loans	<u>\$ 17,120,117</u>	<u>\$ 68,813</u>	0.40	<u>\$ 13,933</u>	0.08	<u>\$ 82,746</u>	0.48

Accruing past due loans at June 30, 2023 decreased \$17.0 million compared to December 31, 2022. The decrease was primarily related to decreases in past due PPP loans (down \$16.4 million) and past due commercial and industrial loans (down \$5.5 million) partly offset by an increase in past due past due consumer real estate loans (up \$3.5 million). PPP loans are fully guaranteed by the SBA and we expect to collect all amounts due related to these loans. Excluding PPP loans, accruing past due loans decreased \$630 thousand.

Non-Accrual Loans. Non-accrual loans are presented in the table below. Also see in Note 3 - Loans in the accompanying notes to consolidated financial statements included elsewhere in this report.

	June 30, 2023			December 31, 2022		
	Total Loans	Non-Accrual Loans		Total Loans	Non-Accrual Loans	
		Amount	Percent of Loans in Category		Amount	Percent of Loans in Category
Commercial and industrial	\$ 5,726,804	\$ 22,217	0.39 %	\$ 5,674,798	\$ 18,130	0.32 %
Energy	986,571	16,712	1.69	925,729	15,224	1.64
Paycheck Protection Program	22,333	—	—	34,852	—	—
Commercial real estate:						
Buildings, land and other	6,924,896	25,682	0.37	6,706,078	3,552	0.05
Construction	1,468,071	—	—	1,477,247	—	—
Consumer real estate	2,157,916	3,170	0.15	1,843,539	927	0.05
Consumer and other	459,720	—	—	492,726	—	—
Total	\$ 17,746,311	\$ 67,781	0.38	\$ 17,154,969	\$ 37,833	0.22
Allowance for credit losses on loans		\$ 233,619			\$ 227,621	
Ratio of allowance for credit losses on loans to non-accrual loans		344.67 %			601.65 %	

Non-accrual loans at June 30, 2023 increased \$29.9 million from December 31, 2022 primarily due to an increase in non-accrual commercial real estate - buildings, land and other loans, which was mostly related to a single credit relationship; and, to a lesser extent, increases in non-accrual commercial and industrial loans, consumer real estate and energy loans.

Generally, loans are placed on non-accrual status if principal or interest payments become 90 days past due and/or management deems the collectibility of the principal and/or interest to be in question, as well as when required by regulatory requirements. Once interest accruals are discontinued, accrued but uncollected interest is charged to current year operations. Subsequent receipts on non-accrual loans are recorded as a reduction of principal, and interest income is recorded only after principal recovery is reasonably assured. Classification of a loan as non-accrual does not preclude the ultimate collection of loan principal or interest. Non-accrual commercial and industrial loans included one credit relationship in excess of \$5.0 million totaling \$16.0 million at June 30, 2023, while there were no non-accrual commercial and industrial loans in excess of \$5.0 million at December 31, 2022. Non-accrual energy loans included one credit relationship in excess of \$5.0 million totaling \$7.2 million at June 30, 2023. There were two non-accrual energy loan relationships in excess of \$5.0 million with an aggregate balance of \$11.1 million at December 31, 2022. The aggregate balance of these loans totaled \$8.1 million at June 30, 2023 and neither credit relationship exceeded \$5.0 million as of that date. The decreases in the aggregate balance of these credit relationship were related to principal payments made by these borrowers. Non-accrual real estate loans primarily consist of land development, 1-4 family residential construction credit relationships and loans secured by office buildings and religious facilities. There was one non-accrual commercial real estate loan in excess of \$5.0 million totaling \$18.3 million at June 30, 2023, while there were no non-accrual commercial real estate loans in excess of \$5.0 million at December 31, 2022.

Allowance for Credit Losses

In the case of loans and securities, allowances for credit losses are contra-asset valuation accounts, calculated in accordance with Accounting Standards Codification ("ASC") Topic 326 ("ASC 326") Financial Instruments - Credit Losses, that are deducted from the amortized cost basis of these assets to present the net amount expected to be collected. In the case of off-balance-sheet credit exposures, the allowance for credit losses is a liability account, calculated in accordance with ASC 326, reported as a component of accrued interest payable and other liabilities in our consolidated balance sheets. The amount of each allowance account represents management's best estimate of current expected credit losses ("CECL") on these financial instruments considering available information, from internal and external sources, relevant to assessing exposure to credit loss over the contractual term of the instrument. Relevant available information includes historical credit loss experience, current conditions and reasonable and supportable forecasts. While historical credit loss experience provides the basis for the estimation of expected credit losses, adjustments to historical loss information may be made for differences in current portfolio-specific risk characteristics, environmental conditions or other relevant factors. While management utilizes its best judgment and information available, the ultimate adequacy of our allowance accounts is dependent upon a variety of factors beyond our control, including the performance of our portfolios, the economy, changes in interest rates and the view of the regulatory authorities toward classification of assets. See our 2022 Form 10-K for additional information regarding our accounting policies.

related to credit losses. Also see Note 3 - Loans in the accompanying notes to consolidated financial statements for information related to model updates during the first quarter of 2023.

Allowance for Credit Losses - Loans. The table below provides, as of the dates indicated, an allocation of the allowance for loan losses by loan portfolio segment; however, allocation of a portion of the allowance to one segment does not preclude its availability to absorb losses in other segments.

	Amount of Allowance Allocated	Percent of Loans in Each Category to Total Loans	Total Loans	Ratio of Allowance Allocated to Loans in Each Category
June 30, 2023				
Commercial and industrial	\$ 75,166	32.3 %	\$ 5,726,804	1.31 %
Energy	14,929	5.6	986,571	1.51
Paycheck Protection Program	—	0.1	22,333	—
Commercial real estate	120,926	47.3	8,392,967	1.44
Consumer real estate	13,035	12.2	2,157,916	0.60
Consumer and other	9,563	2.5	459,720	2.08
Total	<u>\$ 233,619</u>	<u>100.0 %</u>	<u>\$ 17,746,311</u>	<u>1.32</u>
December 31, 2022				
Commercial and industrial	\$ 104,237	33.1 %	\$ 5,674,798	1.84 %
Energy	18,062	5.4	925,729	1.95
Paycheck Protection Program	—	0.2	34,852	—
Commercial real estate	90,301	47.7	8,183,325	1.10
Consumer real estate	8,004	10.7	1,843,539	0.43
Consumer and other	7,017	2.9	492,726	1.42
Total	<u>\$ 227,621</u>	<u>100.0 %</u>	<u>\$ 17,154,969</u>	<u>1.33</u>

The allowance allocated to commercial and industrial loans totaled \$75.2 million, or 1.31% of total commercial and industrial loans, at June 30, 2023 decreasing \$29.1 million, or 27.9%, compared to \$104.2 million, or 1.84% of total commercial and industrial loans, at December 31, 2022. Modeled expected credit losses decreased \$15.5 million while qualitative factor ("Q-Factor") and other qualitative adjustments related to commercial and industrial loans decreased \$10.0 million. Specific allocations for commercial and industrial loans that were evaluated for expected credit losses on an individual basis decreased \$3.6 million from \$6.1 million at December 31, 2022 to \$2.5 million at June 30, 2023. The decrease in specific allocations for commercial and industrial loans was primarily related to the recognition of charge-offs.

The allowance allocated to energy loans totaled \$14.9 million, or 1.51% of total energy loans, at June 30, 2023 decreasing \$3.1 million, or 17.3%, compared to \$18.1 million, or 1.95% of total energy loans, at December 31, 2022. Modeled expected credit losses related to energy loans decreased \$2.8 million while Q-Factor and other qualitative adjustments related to energy loans increased \$1.3 million. Specific allocations for energy loans that were evaluated for expected credit losses on an individual basis totaled \$2.7 million at June 30, 2023 decreasing \$1.7 million compared to \$4.4 million on December 31, 2022. The decrease in specific allocations for energy loans was related to principal payments received and loans no longer requiring a specific allocation.

The allowance allocated to commercial real estate loans totaled \$120.9 million, or 1.44% of total commercial real estate loans, at June 30, 2023 increasing \$30.6 million, or 33.9%, compared to \$90.3 million, or 1.10% of total commercial real estate loans, at December 31, 2022. Modeled expected credit losses related to commercial real estate loans decreased \$11.5 million while Q-Factor and other qualitative adjustments related to commercial real estate loans increased \$42.6 million. Specific allocations for commercial real estate loans that were evaluated for expected credit losses on an individual basis decreased from \$1.7 million at December 31, 2022 to \$1.3 million at June 30, 2023. The decrease in specific allocations for commercial real estate loans was related to principal payments received and loans no longer requiring a specific allocation partly offset by new specific allocations for new individually assessed loans.

The allowance allocated to consumer real estate loans totaled \$13.0 million, or 0.60% of total consumer real estate loans, at June 30, 2023 increasing \$5.0 million, or 62.9%, compared to \$8.0 million, or 0.43% of total consumer real estate loans, at December 31, 2022. Modeled expected credit losses related to consumer real estate loans increased \$4.7 million while Q-Factor and other qualitative adjustments related to consumer real estate loans increased \$284 thousand.

The allowance allocated to consumer loans totaled \$9.6 million, or 2.08% of total consumer loans, at June 30, 2023 increasing \$2.5 million, or 36.3%, compared to \$7.0 million, or 1.42% of total consumer loans, at December 31, 2022. Modeled expected credit losses related to consumer loans increased \$528 thousand while Q-Factor and other qualitative adjustments increased \$2.0 million, which was primarily due to an increase in the consumer overlay, which is further discussed below.

As more fully described in our 2022 Form 10-K, we measure expected credit losses over the life of each loan utilizing a combination of models which measure probability of default and loss given default, among other things. The measurement of expected credit losses is impacted by loan/borrower attributes and certain macroeconomic variables. Models are adjusted to reflect the current impact of certain macroeconomic variables as well as their expected changes over a reasonable and supportable forecast period.

In estimating expected credit losses as of June 30, 2023, we utilized the Moody's Analytics June 2023 Consensus Scenario (the "June 2023 Consensus Scenario") to forecast the macroeconomic variables used in our models. The June 2023 Consensus Scenario was based on the review of a variety of surveys of baseline forecasts of the U.S. economy. The June 2023 Consensus Scenario projections included, among other things, (i) U.S. Nominal Gross Domestic Product annualized quarterly growth rate of 2.40% during the remainder of 2023 followed by average annualized quarterly growth rates of 3.38% in 2024 and 4.69% through the end of the forecast period in the second quarter of 2025; (ii) average U.S. unemployment rate of 4.12% during the remainder of 2023 followed by average annualized quarterly rates of 4.67% in 2024 and 4.57% through the end of the forecast period in the second quarter of 2025; (iii) average Texas unemployment rate of 4.31% during the remainder of 2023 followed by average annualized quarterly rates of 4.48% in 2024 and 4.31% through the end of the forecast period in the second quarter of 2025; (iv) projected average 10 year Treasury rate of 3.64% during the remainder of 2023, decreasing to 3.57% during 2024 and 3.45% by the end of the forecast period in the second quarter of 2025 and (v) average oil price of \$81.46 per barrel during the remainder of 2023, increasing to \$81.65 per barrel in 2024 and decreasing to \$77.91 per barrel by the end of the forecast period in the second quarter of 2025.

In estimating expected credit losses as of December 31, 2022, we utilized the Moody's Analytics December 2022 Baseline Scenario (the "December 2022 Baseline Scenario") to forecast the macroeconomic variables used in our models. The December 2022 Baseline Scenario was based on the most likely outcome based on prevailing economic conditions and Moody's forecast of the U.S. economy. The December 2022 Baseline Scenario projections included, among other things, (i) U.S. Nominal Gross Domestic Product annualized quarterly growth rate of 2.65% in the first quarter of 2023, followed by annualized quarterly growth rates in the range of 3.62% to 4.50% during the remainder of 2023 and an average annualized growth rate of 4.79% through the end of the forecast period in the fourth quarter of 2024; (ii) U.S. unemployment rate of 3.80% in the first quarter of 2023 and an average quarterly U.S. unemployment rate of 4.06% through the end of the forecast period in the fourth quarter of 2024; (iii) Texas unemployment rate of 4.10% in the first quarter of 2023 and an average quarterly Texas unemployment rate of 4.04% through the end of the forecast period in the fourth quarter of 2024; (iv) projected average 10 year Treasury rate of 4.03% in the first quarter of 2023 and average projected rates of 4.25% during the remainder of 2023 and 3.96% in 2024; and (v) average oil price of \$93 per barrel in the first quarter of 2023 decreasing to \$67 per barrel by the end of the forecast period in the fourth quarter of 2024.

The overall loan portfolio as of June 30, 2023 increased \$591.3 million, or 3.4%, compared to December 31, 2022. This increase included a \$314.4 million, or 17.1%, increase in consumer real estate loans; a \$209.6 million, or 2.6%, increase in commercial real estate loans; a \$60.8 million, or 6.6%, increase in energy loans; and a \$52.0 million, or 0.9%, increase in commercial and industrial loans; partly offset by a \$33.0 million, or 6.7%, decrease in consumer and other loans.

The weighted average risk grade for commercial and industrial loans increased to 6.46 at June 30, 2023 from 6.39 at December 31, 2022. The increase was partly related to an increase in the weighted-average risk grade of pass-grade commercial and industrial loans, which increased to 6.29 at June 30, 2023 from 6.24 at December 31, 2022, and a \$37.0 million increase in higher-risk grade classified loans. Classified loans consist of loans having a risk grade of 11, 12 or 13. The impact of the increase in the volume of classified commercial and industrial loans was partly offset by a decrease in the weighted-average risk grade of such loans from 11.43 at December 31, 2022 to 11.27 at June 30, 2023. The weighted-average risk grade for energy loans increased to 5.96 at June 30, 2023 from 5.67 at December 31, 2022. Pass grade energy loans increased \$65.9 million while the weighted-average risk grade of such loans increased from 5.44 at December 31, 2022 to 5.79 at June 30, 2023. The weighted average risk grade for commercial real estate loans increased to 7.18 at June 30, 2023 from 7.10 at December 31, 2022. Pass grade commercial real estate loans increased \$138.1 million while the weighted-average risk grade of such loans increased from 6.96 at December 31, 2022 to 7.01 June 30, 2023. Commercial real estate loans graded as "watch" and "special mention" decreased \$21.9 million while classified commercial real estate loans increased \$93.4 million.

As noted above, our credit loss models utilized the economic forecasts in the Moody's June 2023 Consensus Scenario for our estimated expected credit losses as of June 30, 2023 and the Moody's December 2022 Baseline Scenario for our estimate of expected credit losses as of December 31, 2022. We qualitatively adjusted the model results based on these scenarios for various risk factors that are not considered within our modeling processes but are nonetheless relevant in assessing the expected credit losses within our loan pools. These qualitative factor, or Q-Factor, adjustments are discussed below.

Q-Factor adjustments are based upon management's judgment and current assessment as to the impact of risks related to changes in lending policies and procedures; economic and business conditions; loan portfolio attributes and credit concentrations; and external factors, among other things, that are not already captured within the modeling inputs, assumptions and other processes. Management assesses the potential impact of such items within a range of severely negative impact to positive impact and adjusts the modeled expected credit loss by an aggregate adjustment percentage based upon the assessment. As a result of this assessment as of June 30, 2023, modeled expected credit losses were adjusted upwards by a weighted-average Q-Factor adjustment of approximately 4.3%, resulting in a \$3.5 million total adjustment, compared to 2.3% at December 31, 2022, which resulted in a \$2.3 million total adjustment. The increase in the Q-Factor adjustment percentage as of June 30, 2023 was largely related to a generally more negative outlook associated with national, regional and local economic and business conditions and developments that affect the collectability of loans; changes in loan portfolio concentrations; changes in the volumes and severity of loan delinquencies; changes in risk grades and adverse classifications; and the potential for deterioration of collateral values, among other things.

We have also provided additional qualitative adjustments, or management overlays, as of June 30, 2023 as management believes there are still significant risks impacting certain categories of our loan portfolio. Q-Factor and other qualitative adjustments as of June 30, 2023 are detailed in the table below.

	Q-Factor Adjustment	Model Overlays	Office Building Overlays	Down-Side Scenario Overlay	Credit Concentration Overlays	Consumer Overlay	Total
Commercial and industrial	\$ 1,625	\$ —	\$ —	\$ 19,207	\$ 5,438	\$ —	\$ 26,270
Energy	201	—	—	—	6,295	—	6,496
Commercial real estate:							
Owner occupied	444	24,078	—	—	493	—	25,015
Non-owner occupied	231	33,308	10,315	—	2,332	—	46,186
Construction	536	27,738	3,944	—	711	—	32,929
Consumer real estate	441	—	—	—	—	—	441
Consumer and other	52	—	—	—	—	4,000	4,052
Total	\$ 3,530	\$ 85,125	\$ 14,259	\$ 19,207	\$ 15,268	\$ 4,000	\$ 141,389

Model overlays are qualitative adjustments to address the effects of risks not captured within our commercial real estate credit loss models. These adjustments are determined based upon minimum reserve ratios for our commercial real estate loans. In the case of our commercial real estate - owner occupied loan portfolio, we determined a minimum reserve ratio is appropriate to address the effect of the model's over-sensitivity to positive changes in certain economic variables. After analysis and benchmarking against peer bank data, we believe the modeled results may be overly optimistic and not appropriately capturing downside risk. As such, we determined that the appropriate forecasted loss rate for our owner-occupied commercial real estate loan portfolio should be more closely aligned with that of our commercial and industrial loan portfolio. In the case of our commercial real estate - non-owner occupied and commercial real estate - construction loan portfolios, we determined minimum reserve ratios are appropriate as we believe the modeled results are not appropriately capturing the downside risk associated with our borrowers' ability to access the capital markets for the sale or refinancing of investor real estate and assets currently under construction. We believe access to capital may be impaired for a significant amount of time. Accordingly, this would require secondary sources of liquidity and capital to support completed projects that may take considerably longer to stabilize than originally underwritten. Furthermore, rapidly rising interest rates have presented a new emerging risk as most non-owner occupied and construction loans are originated with floating interest rates.

Office building overlays are qualitative adjustments to address longer-term concerns over the utilization of commercial office space which could impact the long-term performance of some types of office properties within our commercial real estate loan portfolio. These adjustments are determined based upon minimum reserve ratios for loans within our commercial real estate - non-owner occupied and commercial real estate - construction loan portfolios that have risk grades of 8 or worse.

The down-side scenario overlay is a qualitative adjustment for our commercial and industrial loan portfolio to address the significant risk of economic recession as a result of inflation; rising interest rates; labor shortages; disruption in financial markets and global supply chains; further oil price volatility; and the current or anticipated impact of military conflict, including the current war between Russia and Ukraine, terrorism or other geopolitical events. Factors such as these are outside of our control but nonetheless affect customer income levels and could alter anticipated customer behavior, including borrowing, repayment, investment and deposit practices. To determine this qualitative adjustment, we use an alternative, more pessimistic economic scenario to forecast the macroeconomic variables used in our models. As of June 30, 2023, we used the Moody's Analytics June S3 Alternative Scenario Downside - 90th Percentile. In modeling expected credit losses using this scenario, we also assume each loan within our modeled loan pools is downgraded by one risk grade level. The qualitative adjustment is based upon the amount by which the alternative scenario modeling results exceed those of the primary scenario used in estimating credit loss expense, adjusted based upon management's assessment of the probability that this more pessimistic economic scenario will occur.

Credit concentration overlays are qualitative adjustments based upon statistical analysis to address relationship exposure concentrations within our loan portfolio. Variations in loan portfolio concentrations over time cause expected credit losses within our existing portfolio to differ from historical loss experience. Given that the allowance for credit losses on loans reflects expected credit losses within our loan portfolio and the fact that these expected credit losses are uncertain as to nature, timing and amount, management believes that segments with higher concentration risk are more likely to experience a high loss event. Due to the fact that a significant portion of our loan portfolio is concentrated in large credit relationships and because of large, concentrated credit losses in recent years, management made the qualitative adjustments detailed in the table above to address the risk associated with such a relationship deteriorating to a loss event.

The consumer overlay is a qualitative adjustment for our consumer and other loan portfolio to address the risk associated with the level of unsecured loans within this portfolio and other risk factors. Unsecured consumer loans have an elevated risk of loss in times of economic stress as these loans lack a secondary source of repayment in the form of hard collateral. This adjustment was determined by analyzing our consumer loan charge-off trends as well as those of the general banking industry. Management deemed it appropriate to consider an additional overlay to the modeled forecasted losses for the unsecured consumer portfolio.

As of December 31, 2022, we provided qualitative adjustments, as detailed in the table below. Further information regarding these qualitative adjustments is provided in our 2022 Form 10-K.

	Q-Factor Adjustment	Model Overlays	Office Building Overlays	Down-Side Scenario Overlay	Credit Concentration Overlays	Consumer Overlay	Total
Commercial and industrial	\$ 929	\$ —	\$ —	\$ 29,632	\$ 5,676	\$ —	\$ 36,237
Energy	128	—	—	—	5,020	—	5,148
Commercial real estate:							
Owner occupied	318	19,708	—	—	1,718	—	21,744
Non-owner occupied	95	10,472	16,557	—	487	—	27,611
Construction	660	7,905	3,122	—	530	—	12,217
Consumer real estate	157	—	—	—	—	—	157
Consumer and other	34	—	—	—	—	2,000	2,034
Total	\$ 2,321	\$ 38,085	\$ 19,679	\$ 29,632	\$ 13,431	\$ 2,000	\$ 105,148

Additional information related to credit loss expense and net (charge-offs) recoveries is presented in the tables below. Also see Note 3 - Loans in the accompanying notes to consolidated financial statements included elsewhere in this report.

	Credit Loss Expense (Benefit)	Net (Charge-Offs) Recoveries	Average Loans	Ratio of Annualized Net (Charge-Offs) Recoveries to Average Loans
Three months ended:				
June 30, 2023				
Commercial and industrial	\$ 2,404	\$ (5,703)	\$ 5,716,855	(0.40)%
Energy	(4,433)	171	1,070,183	0.06
Paycheck Protection Program	—	—	26,701	—
Commercial real estate	5,133	100	8,312,310	—
Consumer real estate	3,822	(495)	2,070,475	(0.10)
Consumer and other	5,007	(3,901)	467,730	(3.35)
Total	<u>\$ 11,933</u>	<u>\$ (9,828)</u>	<u>\$ 17,664,254</u>	<u>(0.22)</u>
June 30, 2022				
Commercial and industrial	\$ 942	\$ (698)	\$ 5,531,663	(0.05)%
Energy	427	418	1,040,893	0.16
Paycheck Protection Program	—	—	143,989	—
Commercial real estate	(12,232)	384	7,964,298	0.02
Consumer real estate	583	(88)	1,495,799	(0.02)
Consumer and other	5,884	(2,823)	497,847	(2.27)
Total	<u>\$ (4,396)</u>	<u>\$ (2,807)</u>	<u>\$ 16,674,489</u>	<u>(0.07)</u>
Six months ended:				
June 30, 2023				
Commercial and industrial	\$ (18,280)	\$ (10,791)	\$ 5,685,051	(0.38)%
Energy	(3,467)	334	1,041,099	0.06
Paycheck Protection Program	—	—	29,137	—
Commercial real estate	30,494	131	8,270,722	—
Consumer real estate	5,105	(74)	1,991,302	(0.01)
Consumer and other	10,756	(8,210)	475,300	(3.48)
Total	<u>\$ 24,608</u>	<u>\$ (18,610)</u>	<u>\$ 17,492,611</u>	<u>(0.21)</u>
June 30, 2022				
Commercial and industrial	\$ 18,503	\$ (3,324)	\$ 5,491,632	(0.12)%
Energy	(1,617)	667	1,045,338	0.13
Paycheck Protection Program	—	—	222,773	—
Commercial real estate	(27,841)	11	7,826,540	—
Consumer real estate	557	(288)	1,459,142	(0.04)
Consumer and other	10,466	(6,168)	485,844	(2.56)
Total	<u>\$ 68</u>	<u>\$ (9,102)</u>	<u>\$ 16,531,269</u>	<u>(0.11)</u>

We recorded a net credit loss expense related to loans totaling \$24.6 million for the six months ended June 30, 2023 while we recorded a net credit loss expense totaling \$68 thousand during the same period in 2022. Net credit loss expense/benefit for each portfolio segment reflects the amount needed to adjust the allowance for credit losses allocated to that segment to the level of expected credit losses determined under our allowance methodology after net charge-offs have been recognized.

The net credit loss expense related to loans during the first six months of 2023 primarily reflects an increase in expected credit losses associated with commercial real estate loans, primarily related to increases in the minimum reserve ratios for our commercial real estate - non-owner occupied and construction portfolios. The net credit loss expense related to loans during the first six months of 2023 also reflects charge-off trends related to commercial and industrial loans as well as consumer and other loans (primarily related to overdrafts) and the additional expected credit losses associated with our consumer real estate and consumer and other loan portfolios. The impact of these items was partly offset by a decrease in expected credit losses associated with commercial and industrial loans; primarily related to decreases in modeled expected losses, the down-side scenario overlay and specific allocations; and a decrease in the expected credit losses associated with energy loans; primarily related to decreases in modeled expected losses and specific allocations.

The ratio of the allowance for credit losses on loans to total loans was 1.32% at June 30, 2023 compared to 1.33% at December 31, 2022. Management believes the recorded amount of the allowance for credit losses on loans is appropriate based upon management's best estimate of current expected credit losses within the existing portfolio of loans. Should any of the factors considered by management in making this estimate change, our estimate of current expected credit losses could also change, which could affect the level of future credit loss expense related to loans.

Allowance for Credit Losses - Off-Balance-Sheet Credit Exposures. The allowance for credit losses on off-balance-sheet credit exposures totaled approximately \$52.9 million and \$58.6 million at June 30, 2023 and December 31, 2022, respectively. The level of the allowance for credit losses on off-balance-sheet credit exposures depends upon the volume of outstanding commitments, underlying risk grades, the expected utilization of available funds and forecasted economic conditions impacting our loan portfolio. We recognized a net credit loss benefit related to off-balance-sheet credit exposures totaling \$5.7 million during the six months ended June 30, 2023 compared to a net credit loss benefit of \$68 thousand during the same period in 2022. Our policies and methodology used to estimate the allowance for credit losses on off-balance-sheet credit exposures are further described in our 2022 Form 10-K. This methodology was also impacted by the model updates during the first quarter of 2023 described in Note 3 - Loans in the accompanying notes to consolidated financial statements elsewhere in this report. The overall approximate impact of model updates during the first quarter was a \$19.0 million decrease in modeled expected credit losses for off-balance-sheet credit exposures, though the impact of this decrease was largely offset with a qualitative adjustment similar to the model overlay described above for commercial real estate - construction loans.

Capital and Liquidity

Capital. Shareholders' equity totaled \$3.4 billion and \$3.1 billion at June 30, 2023 and December 31, 2022, respectively. Sources of capital during the six months ended June 30, 2023 included net income of \$339.8 million, other comprehensive income of \$43.3 million, \$9.5 million related to stock-based compensation and \$2.4 million in proceeds from stock option exercises. Uses of capital during the six months ended June 30, 2023 included \$116.4 million of dividends paid on preferred and common stock and \$29.1 million of treasury stock purchases.

Under the Basel III Capital Rules, we have elected to opt-out of the requirement to include most components of accumulated other comprehensive income in regulatory capital. Accordingly, amounts reported as accumulated other comprehensive income/loss do not increase or reduce regulatory capital and are not included in the calculation of our regulatory capital ratios. In connection with the adoption of ASC 326 on January 1, 2020, we also elected to exclude, for a transitional period, the effects of credit loss accounting under CECL in the calculation of our regulatory capital and regulatory capital ratios. Regulatory agencies for banks and bank holding companies utilize capital guidelines designed to measure capital and take into consideration the risk inherent in both on-balance-sheet and off-balance-sheet items. See Note 7 - Capital and Regulatory Matters in the accompanying notes to consolidated financial statements included elsewhere in this report.

We paid a quarterly dividend of \$0.87 per common share during each of the first and second quarters of 2023 and a quarterly dividend of \$0.75 per common share during each of the first and second quarters of 2022. These dividend amounts equate to a common stock dividend payout ratio of 33.6% and 45.1% during the first six months of 2023 and 2022, respectively. Our ability to declare or pay dividends on, or purchase, redeem or otherwise acquire, shares of our capital stock may be impacted by certain restrictions described in Note 7 - Capital and Regulatory Matters in the accompanying notes to consolidated financial statements included elsewhere in this report.

Stock Repurchase Plans. From time to time, our board of directors has authorized stock repurchase plans. In general, stock repurchase plans allow us to proactively manage our capital position and return excess capital to shareholders. Shares purchased under such plans also provide us with shares of common stock necessary to satisfy obligations related to stock compensation awards. For additional details, see Note 7 - Capital and Regulatory Matters in the accompanying notes to consolidated financial statements and Part II, Item 2 - Unregistered Sales of Equity Securities and Use of Proceeds, each included elsewhere in this report.

In August 2022, the Inflation Reduction Act of 2022 (the "IRA") was enacted. Among other things, the IRA imposes a new 1% excise tax on the fair market value of stock repurchased after December 31, 2022 by publicly traded U.S. corporations. With certain exceptions, the value of stock repurchased is determined net of stock issued in the year, including pursuant to compensatory arrangements.

Liquidity. As more fully discussed in our 2022 Form 10-K, our liquidity position is continuously monitored and adjustments are made to the balance between sources and uses of funds as deemed appropriate. Liquidity risk management is an important element in our asset/liability management process. We regularly model liquidity stress scenarios to assess potential liquidity outflows or funding problems resulting from economic disruptions, volatility in the financial markets, unexpected credit events or other significant occurrences deemed problematic by management. These scenarios are incorporated into our contingency funding plan, which provides the basis for the identification of our liquidity needs. Our principal source of funding has been our

customer deposits, supplemented by our short-term and long-term borrowings as well as maturities of securities and loan amortization. As of June 30, 2023, we had approximately \$6.3 billion held in an interest-bearing account at the Federal Reserve. We also have the ability to borrow funds as a member of the Federal Home Loan Bank ("FHLB"). As of June 30, 2023, based upon available, pledgeable collateral, our total borrowing capacity with the FHLB was approximately \$5.2 billion. Furthermore, at June 30, 2023, we had approximately \$14.8 billion in securities that were unencumbered by a pledge and could be used to support additional borrowings, as needed, through repurchase agreements, the Federal Reserve discount window or the Federal Reserve's new Bank Term Funding Program ("BTFP"). The BTFP is a new facility established in response to recent liquidity concerns within the banking industry in part due to recent deposit runs that resulted in a few large bank failures. The BTFP was designed to provide available additional funding to eligible depository institutions in order to help assure that banks have the ability to meet the needs of all their depositors. Under the program, eligible depository institutions can obtain loans of up to one year in length by pledging U.S. Treasuries, agency debt and mortgage-backed securities, and other qualifying assets as collateral. These assets will be valued at par. The BTFP is intended to eliminate the need for depository institutions to quickly sell their securities when they are experiencing stress on their liquidity.

Since Cullen/Frost is a holding company and does not conduct operations, its primary sources of liquidity are dividends upstreamed from Frost Bank and borrowings from outside sources. Banking regulations may limit the amount of dividends that may be paid by Frost Bank. See Note 7 - Capital and Regulatory Matters in the accompanying notes to consolidated financial statements included elsewhere in this report regarding such dividends. At June 30, 2023, Cullen/Frost had liquid assets, primarily consisting of cash on deposit at Frost Bank, totaling \$323.0 million.

Accounting Standards Updates

See Note 17 - Accounting Standards Updates in the accompanying notes to consolidated financial statements included elsewhere in this report for details of recently issued accounting pronouncements and their expected impact on our financial statements.

Item 3. Quantitative and Qualitative Disclosures About Market Risk

The disclosures set forth in this item are qualified by the section captioned "Forward-Looking Statements and Factors that Could Affect Future Results" included in Item 2. Management's Discussion and Analysis of Financial Condition and Results of Operations of this report and other cautionary statements set forth elsewhere in this report.

Refer to the discussion of market risks included in Item 7A. Quantitative and Qualitative Disclosures About Market Risk in the 2022 Form 10-K. There has been no significant change in the types of market risks we face since December 31, 2022.

We utilize an earnings simulation model as the primary quantitative tool in measuring the amount of interest rate risk associated with changing market rates. The model quantifies the effects of various interest rate scenarios on projected net interest income and net income over the next 12 months. The model measures the impact on net interest income relative to a flat-rate case scenario of hypothetical fluctuations in interest rates over the next 12 months. These simulations incorporate assumptions regarding balance sheet growth and mix, pricing and the repricing and maturity characteristics of the existing and projected balance sheet. The impact of interest rate derivatives, such as interest rate swaps, caps and floors, is also included in the model. Other interest rate-related risks such as prepayment, basis and option risk are also considered.

For modeling purposes, as of June 30, 2023, the model simulations projected that 100 and 200 basis point ratable increases in interest rates would result in positive variances in net interest income of 1.5% and 2.9%, respectively, relative to the flat-rate case over the next 12 months, while 100 and 200 basis point ratable decreases in interest rates would result in a negative variances in net interest income of 1.2% and 2.6%, respectively, relative to the flat-rate case over the next 12 months. For modeling purposes, as of December 31, 2022, the model simulations projected that 100 and 200 basis point ratable increases in interest rates would result in positive variances in net interest income of 0.2% and 1.4%, respectively, relative to the flat-rate case over the next 12 months, while 100 and 200 basis point ratable decreases in interest rates would result in a negative variances in net interest income of 0.2% and 1.4%, respectively, relative to the flat-rate case over the next 12 months.

We do not currently pay interest on a significant portion of our commercial demand deposits. Any interest rate that would ultimately be paid on these commercial demand deposits would likely depend upon a variety of factors, some of which are beyond our control. Our June 30, 2023 and December 31, 2022 model simulations did not assume any payment of interest on commercial demand deposits (those not already receiving an earnings credit). Management believes, based on our experience during the last interest rate cycle, that it is less likely we will pay interest on these deposits as rates increase.

The model simulations as of June 30, 2023 indicate that our projected balance sheet is more asset sensitive in comparison to our balance sheet as of December 31, 2022. The increased asset sensitivity was primarily due to a decrease in the expected deposit pricing beta for rate increases on certain types of deposit accounts. The deposit pricing beta is a measure of how much deposit rates will reprice, up or down, given a defined change in market rates. Management believes that the deposit pricing betas used as of June 30, 2023 are more reflective of current expectations.

As of June 30, 2023, the effects of a 200 basis point increase and a 200 basis point decrease in interest rates on our derivative holdings would not result in a significant variance in our net interest income.

The effects of hypothetical fluctuations in interest rates on our securities classified as "trading" under ASC Topic 320, "Investments—Debt and Equity Securities," are not significant, and, as such, separate quantitative disclosure is not presented.

Item 4. Controls and Procedures

As of the end of the period covered by this Quarterly Report on Form 10-Q, an evaluation was carried out by management, with the participation of its Chief Executive Officer and Chief Financial Officer, of the effectiveness of our disclosure controls and procedures (as defined in Rule 13a-15(e) under the Securities Exchange Act of 1934). Based upon that evaluation, the Chief Executive Officer and Chief Financial Officer concluded that the disclosure controls and procedures were effective as of the end of the period covered by this report. No change in our internal control over financial reporting (as defined in Rule 13a-15(f) under the Securities Exchange Act of 1934) occurred during the last fiscal quarter that materially affected, or is reasonably likely to materially affect, our internal control over financial reporting.

Part II. Other Information**Item 1. Legal Proceedings**

We are subject to various claims and legal actions that have arisen in the course of conducting business. Management does not expect the ultimate disposition of these matters to have a material adverse impact on our financial statements.

Item 1A. Risk Factors

There has been no material change in the risk factors disclosed under Item 1A. of our 2022 Form 10-K.

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

The following table provides information with respect to purchases we made or were made on our behalf or any “affiliated purchaser” (as defined in Rule 10b-18(a)(3) under the Securities Exchange Act of 1934), of our common stock during the three months ended June 30, 2023. Dollar amounts in thousands.

Period	Total Number of Shares Purchased	Average Price Paid Per Share	Total Number of Shares Purchased as Part of Publicly Announced Plan	Maximum Number of Shares (or Approximate Dollar Value) That May Yet Be Purchased Under the Plan at the End of the Period
April 1, 2023 to April 30, 2023	—	\$ —	—	\$ 100,000
May 1, 2023 to May 31, 2023	289,149	95.94	288,912	72,258
June 1, 2023 to June 30, 2023	—	—	—	72,258
Total	289,149		288,912	

Item 3. Defaults Upon Senior Securities

None.

Item 4. Mine Safety Disclosures

None.

Item 5. Other Information

Rule 10b5-1 and Non-Rule 10b5-1 Trading Arrangements. None.

Item 6. Exhibits

(a) Exhibits

Exhibit Number	Description
31.1	Rule 13a-14(a).Certification of the Corporation's Chief Executive Officer
31.2	Rule 13a-14(a).Certification of the Corporation's Chief Financial Officer
32.1 ⁽¹⁾	Section 1350.Certification of the Corporation's Chief Executive Officer
32.2 ⁽¹⁾	Section 1350.Certification of the Corporation's Chief Financial Officer
101.INS ⁽²⁾	Inline XBRL Instance Document
101.SCH	Inline XBRL Taxonomy Extension Schema Document
101.CAL	Inline XBRL Taxonomy Extension Calculation Linkbase Document
101.DEF	Inline XBRL Taxonomy Extension Definition Linkbase Document
101.LAB	InlineXBRL Taxonomy Extension Label Linkbase Document
101.PRE	Inline XBRL Taxonomy Extension Presentation Linkbase Document
104 ⁽³⁾	Cover Page Interactive Data File

- (1) This exhibit shall not be deemed “filed” for purposes of Section 18 of the Securities Exchange Act of 1934, or otherwise subject to the liability of that section, and shall not be deemed to be incorporated by reference into any filing under the Securities Act of 1933 or the Securities Exchange Act of 1934.
- (2) The instance document does not appear in the interactive data file because its XBRL tags are embedded within the Inline XBRL document.
- (3) Formatted as Inline XBRL and contained within the Inline XBRL Instance Document in Exhibit 101.

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.

Cullen/Frost Bankers, Inc.
(Registrant)

Date: July 27, 2023

By: /s/ Jerry Salinas
Jerry Salinas
Group Executive Vice President
and Chief Financial Officer
(Duly Authorized Officer, Principal Financial
Officer and Principal Accounting Officer)

**Rule 13a-14(a) Certification
of the Corporation's Chief Executive Officer**

I, Phillip D. Green, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of Cullen/Frost Bankers, Inc.;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
 - (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - (c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - (d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of 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.

July 27, 2023

/s/ Phillip D. Green

Phillip D. Green
Chief Executive Officer

**Rule 13a-14(a) Certification
of the Corporation's Chief Financial Officer**

I, Jerry Salinas, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of Cullen/Frost Bankers, Inc.;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
 - (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - (c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - (d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of 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.

July 27, 2023

/s/ Jerry Salinas

Jerry Salinas
Group Executive Vice President and Chief Financial Officer

**Section 1350 Certification of the
Corporation's Chief Executive Officer**

Pursuant to Subsections (a) and (b) of Section 1350 of Chapter 63 of Title 18 of the United States Code in accordance with Section 906 of the Sarbanes-Oxley Act of 2002, the undersigned, Phillip D. Green, Chief Executive Officer, of Cullen/Frost Bankers, Inc. (the "Corporation"), hereby certifies, to his knowledge, that the Corporation's Quarterly Report on Form 10-Q for the quarter ended June 30, 2023 (the "Report") fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934, and that the information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Corporation.

/s/ Phillip D. Green
Phillip D. Green

July 27, 2023

The forgoing certification is being furnished solely pursuant to Subsections (a) and (b) of Section 1350 of Chapter 63 of Title 18 of the United States Code in accordance with Section 906 of the Sarbanes-Oxley Act of 2002 and shall not be deemed "filed" for purposes of Section 18 of the Securities Exchange Act of 1934, or otherwise subject to the liability of that section, and shall not be deemed to be incorporated by reference into any filing under the Securities Act of 1933 or the Securities Exchange Act of 1934.

**Section 1350 Certification of the
Corporation's Chief Financial Officer**

Pursuant to Subsections (a) and (b) of Section 1350 of Chapter 63 of Title 18 of the United States Code in accordance with Section 906 of the Sarbanes-Oxley Act of 2002, the undersigned, Jerry Salinas, Chief Financial Officer, of Cullen/Frost Bankers, Inc. (the "Corporation"), hereby certifies, to his knowledge, that the Corporation's Quarterly Report on Form 10-Q for the quarter ended June 30, 2023 (the "Report") fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934, and that the information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Corporation.

/s/ Jerry Salinas
Jerry Salinas

July 27, 2023

The forgoing certification is being furnished solely pursuant to Subsections (a) and (b) of Section 1350 of Chapter 63 of Title 18 of the United States Code in accordance with Section 906 of the Sarbanes-Oxley Act of 2002 and shall not be deemed "filed" for purposes of Section 18 of the Securities Exchange Act of 1934, or otherwise subject to the liability of that section, and shall not be deemed to be incorporated by reference into any filing under the Securities Act of 1933 or the Securities Exchange Act of 1934.