

Section 1: 10-K (10-K)

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UNITED STATES SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM 10-K

☒ **Annual Report Pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934**

For the fiscal year ended: **December 31, 2019**

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

(State or other jurisdiction of
incorporation or organization)

74-1751768

(I.R.S. Employer
Identification No.)

111 W. Houston Street, San Antonio, Texas

(Address of principal executive offices)

78205

(Zip code)

(210) 220-4011

(Registrant's telephone number, including area code)

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	CFR	New York Stock Exchange
5.375% Non-Cumulative Perpetual Preferred Stock, Series A	CFR.PRA	New York Stock Exchange

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

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

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

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

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

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

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

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

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

As of June 30, 2019, the last business day of the registrant's most recently completed second fiscal quarter, the aggregate market value of the shares of common stock held by non-affiliates, based upon the closing price per share of the registrant's common stock as reported on The New York Stock Exchange, Inc., was approximately \$5.6 billion.

As of January 29, 2020, there were 62,677,154 shares of the registrant's common stock, \$.01 par value, outstanding.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the Proxy Statement for the 2020 Annual Meeting of Shareholders of Cullen/Frost Bankers, Inc. to be held on April 29, 2020 are incorporated by reference in this Form 10-K in response to Part III, Items 10, 11, 12, 13 and 14.

CULLEN/FROST BANKERS, INC.
ANNUAL REPORT ON FORM 10-K

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PART I

ITEM 1. BUSINESS

The disclosures set forth in this item are qualified by Item 1A. Risk Factors and the section captioned “Forward-Looking Statements and Factors that Could Affect Future Results” in Item 7. 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.

The Corporation

Cullen/Frost Bankers, Inc., a Texas business corporation incorporated in 1977, 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. We offer commercial and consumer banking services, as well as trust and investment management, insurance, brokerage, mutual funds, leasing, treasury management, capital markets advisory and item processing services. At December 31, 2019, Cullen/Frost had consolidated total assets of \$34.0 billion and was one of the largest independent bank holding companies headquartered in the State of Texas.

Our philosophy is to grow and prosper, building long-term relationships based on top quality service, high ethical standards, and safe, sound assets. We operate as a locally-oriented, community-based financial services organization, augmented by experienced, centralized support in select critical areas. Our local market orientation is reflected in our regional management and regional advisory boards, which are comprised of local business persons, professionals and other community representatives that assist our regional management in responding to local banking needs. Despite this local market, community-based focus, we offer many of the products available at much larger money-center financial institutions.

We serve a wide variety of industries including, among others, energy, manufacturing, services, construction, retail, telecommunications, healthcare, military and transportation. Our customer base is similarly diverse. While our loan portfolio has a significant concentration of energy-related loans totaling approximately 11.2% of total loans at December 31, 2019, we are not dependent upon any single industry or customer.

Our operating objectives include expansion, diversification within our markets, growth of our fee-based income, and growth internally and through acquisitions of financial institutions, branches and financial services businesses. We generally seek merger or acquisition partners that are culturally similar and have experienced management and possess either significant market presence or have potential for improved profitability through financial management, economies of scale and expanded services. From time to time, we evaluate merger and acquisition opportunities and conduct due diligence activities related to possible transactions with other financial institutions and financial services companies. As a result, merger or acquisition discussions and, in some cases, negotiations may take place and future mergers or acquisitions involving cash, debt or equity securities may occur. Acquisitions typically involve the payment of a premium over book and market values, and, therefore, some dilution of our tangible book value and net income per common share may occur in connection with any future transaction. Our ability to engage in certain merger or acquisition transactions, whether or not any regulatory approval is required, will be dependent upon our bank regulators’ views at the time as to the capital levels, quality of management and our overall condition and their assessment of a variety of other factors. Certain merger or acquisition transactions, including those involving the acquisition of a depository institution or the assumption of the deposits of any depository institution, require formal approval from various bank regulatory authorities, which will be subject to a variety of factors and considerations.

Although Cullen/Frost is a corporate entity, legally separate and distinct from its affiliates, bank holding companies such as Cullen/Frost are required to act as a source of financial strength for their subsidiary banks. The principal source of Cullen/Frost’s income is dividends from its subsidiaries. There are certain regulatory restrictions on the extent to which these subsidiaries can pay dividends or otherwise supply funds to Cullen/Frost. See the section captioned “Supervision and Regulation” elsewhere in this item for further discussion of these matters.

Cullen/Frost’s executive offices are located at 111 W. Houston Street, San Antonio, Texas 78205, and its telephone number is (210) 220-4011.

Subsidiaries of Cullen/Frost

Frost Bank

Frost Bank, the principal operating subsidiary and sole banking subsidiary of Cullen/Frost, is a Texas-chartered bank primarily engaged in the business of commercial and consumer banking through approximately 142 financial centers across Texas in the Austin, Corpus Christi, Dallas, Fort Worth, Houston, Permian Basin, Rio Grande Valley and San Antonio regions. Frost Bank also operates over 1,200 automated-teller machines (“ATMs”) throughout the State of Texas, approximately half of which are operated in connection with a branding arrangement to be the exclusive cash-machine provider for a convenience store chain in Texas. Frost Bank was originally chartered as a national banking association in 1899, but its origin can be traced to a mercantile partnership organized in 1868. At December 31, 2019, Frost Bank had consolidated total assets of \$34.1 billion and total deposits of \$27.7 billion and was one of the largest commercial banks headquartered in the State of Texas.

Significant services offered by Frost Bank include:

- *Commercial Banking.* Frost Bank provides commercial banking services to corporations and other business clients. Loans are made for a wide variety of general corporate purposes, including financing for industrial and commercial properties and to a lesser extent, financing for interim construction related to industrial and commercial properties, financing for equipment, inventories and accounts receivable, and acquisition financing. We also originate commercial leases and offer treasury management services.
- *Consumer Services.* Frost Bank provides a full range of consumer banking services, including checking accounts, savings programs, ATMs, overdraft facilities, installment and real estate loans, home equity loans and lines of credit, drive-in and night deposit services, safe deposit facilities and brokerage services.
- *International Banking.* Frost Bank provides international banking services to customers residing in or dealing with businesses located in Mexico. These services consist of accepting deposits (generally only in U.S. dollars), making loans (generally only in U.S. dollars), issuing letters of credit, handling foreign collections, transmitting funds, and to a limited extent, dealing in foreign exchange.
- *Correspondent Banking.* Frost Bank acts as correspondent for approximately 184 financial institutions, which are primarily banks in Texas. These banks maintain deposits with Frost Bank, which offers them a full range of services including check clearing, transfer of funds, fixed income security services, and securities custody and clearance services.
- *Trust Services.* Frost Bank provides a wide range of trust, investment, agency and custodial services for individual and corporate clients. These services include the administration of estates and personal trusts, as well as the management of investment accounts for individuals, employee benefit plans and charitable foundations. At December 31, 2019, the estimated fair value of trust assets was \$37.8 billion, including managed assets of \$16.4 billion and custody assets of \$21.4 billion.
- *Capital Markets - Fixed-Income Services.* Frost Bank’s Capital Markets Division supports the transaction needs of fixed-income institutional investors. Services include sales and trading, new issue underwriting, money market trading, advisory services and securities safekeeping and clearance.
- *Global Trade Services.* Frost Bank’s Global Trade Services Division supports international business activities including foreign exchange, international letters of credit and export-import financing, among other things.

Frost Insurance Agency, Inc.

Frost Insurance Agency, Inc. is a wholly-owned subsidiary of Frost Bank that provides insurance brokerage services to individuals and businesses covering corporate and personal property and casualty insurance products, as well as group health and life insurance products.

Frost Brokerage Services, Inc.

Frost Brokerage Services, Inc. (“FBS”) is a wholly-owned subsidiary of Frost Bank that provides brokerage services and performs other transactions or operations related to the sale and purchase of securities of all types. FBS is registered as a fully disclosed introducing broker-dealer under the Securities Exchange Act of 1934 and, as such, does not hold any customer accounts.

Frost Investment Advisors, LLC

Frost Investment Advisors, LLC is a registered investment advisor and a wholly-owned subsidiary of Frost Bank that provides investment management services to Frost-managed mutual funds, institutions and individuals.

Frost Investment Services, LLC

Frost Investment Services, LLC is a registered investment advisor and a wholly-owned subsidiary of Frost Bank that provides investment management services to individuals.

Tri-Frost Corporation

Tri-Frost Corporation is a wholly-owned subsidiary of Frost Bank that primarily holds securities for investment purposes and the receipt of cash flows related to principal and interest on the securities until such time that the securities mature.

Main Plaza Corporation

Main Plaza Corporation is a wholly-owned subsidiary of Cullen/Frost that occasionally makes loans to qualified borrowers. Loans are funded with current cash or borrowings against internal credit lines. Main Plaza also holds severed mineral interests on certain oil producing properties. We receive royalties on these interests based upon production.

Cullen/Frost Capital Trust II and WNB Capital Trust I

Cullen/Frost Capital Trust II ("Trust II") is a Delaware statutory business trust formed in 2004 for the purpose of issuing \$120.0 million in trust preferred securities and lending the proceeds to Cullen/Frost. Cullen/Frost guarantees, on a limited basis, payments of distributions on the trust preferred securities and payments on redemption of the trust preferred securities.

WNB Capital Trust I ("WNB Trust") is a Delaware statutory business trust formed in 2004 for the purpose of issuing \$13.0 million in trust preferred securities and lending the proceeds to WNB Bancshares ("WNB"). Cullen/Frost, as WNB's successor, guarantees, on a limited basis, payments of distributions on the trust preferred securities and payments on redemption of the trust preferred securities.

Trust II and WNB Trust are variable interest entities for which we are not the primary beneficiary. As such, the accounts of Trust II and WNB Trust are not included in our consolidated financial statements. See our accounting policy related to consolidation in Note 1 - Summary of Significant Accounting Policies in the notes to consolidated financial statements included in Item 8. Financial Statements and Supplementary Data elsewhere in this report.

Although the accounts of Trust II and WNB Trust are not included in our consolidated financial statements, the \$120.0 million in trust preferred securities issued by Trust II and the \$13.0 million in trust preferred securities issued by WNB Trust are included in the regulatory capital of Cullen/Frost during the reported periods. See the section captioned "Supervision and Regulation - Capital Requirements" for a discussion of the regulatory capital treatment of our trust preferred securities.

Other Subsidiaries

Cullen/Frost has various other subsidiaries that are not significant to the consolidated entity.

Operating Segments

Our operations are managed along two reportable operating segments consisting of Banking and Frost Wealth Advisors. See the sections captioned "Results of Segment Operations" in Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations and Note 18 - Operating Segments in the notes to consolidated financial statements included in Item 8. Financial Statements and Supplementary Data elsewhere in this report.

Competition

There is significant competition among commercial banks in our market areas. In addition, we also compete with other providers of financial services, such as savings and loan associations, credit unions, consumer finance companies, securities firms, insurance companies, insurance agencies, commercial finance and leasing companies, full service brokerage firms and discount brokerage firms. Some of our competitors have greater resources and, as such, may have higher lending limits and may offer other services that are not provided by us. We generally compete on the basis of customer service and responsiveness to customer needs, available loan and deposit products, the rates of interest charged on loans, the rates of interest paid for funds, and the availability and pricing of trust, brokerage and insurance services.

Supervision and Regulation

Cullen/Frost, Frost Bank and most of its non-banking subsidiaries are subject to extensive regulation under federal and state laws. The regulatory framework is intended primarily for the protection of depositors, federal deposit insurance funds and the banking system as a whole and not for the protection of shareholders and creditors.

Significant elements of the laws and regulations applicable to Cullen/Frost and its subsidiaries are described below. The description is qualified in its entirety by reference to the full text of the statutes, regulations and policies that are described. Also, such statutes, regulations and policies are continually under review by Congress and state legislatures and federal and state regulatory agencies. A change in statutes, regulations or regulatory policies applicable to Cullen/Frost and its subsidiaries could have a material effect on our business, financial condition or our results of operations.

Regulatory Agencies

Cullen/Frost is a legal entity separate and distinct from Frost Bank and its other subsidiaries. As a financial holding company and a bank holding company, Cullen/Frost is regulated under the Bank Holding Company Act of 1956, as amended (“BHC Act”), and it and its subsidiaries are subject to inspection, examination and supervision by the Federal Reserve Board. The BHC Act provides generally for “umbrella” regulation of financial holding companies such as Cullen/Frost by the Federal Reserve Board, and for functional regulation of banking activities by bank regulators, securities activities by securities regulators, and insurance activities by insurance regulators. Cullen/Frost is also under the jurisdiction of the Securities and Exchange Commission (“SEC”) and is subject to the disclosure and regulatory requirements of the Securities Act of 1933, as amended, and the Securities Exchange Act of 1934, as amended, as administered by the SEC. Cullen/Frost’s common stock is listed on the New York Stock Exchange (“NYSE”) under the trading symbol “CFR” and our 5.375% Non-Cumulative Perpetual Preferred Stock, Series A, is listed on the NYSE under the trading symbol “CFRpA.” Accordingly, Cullen/Frost is also subject to the rules of the NYSE for listed companies.

Frost Bank is a Texas state chartered bank and a member of the Federal Reserve System. Accordingly, the Texas Department of Banking and the Federal Reserve Board are the primary regulators of Frost Bank. Deposits at Frost Bank are insured by the Federal Deposit Insurance Corporation (“FDIC”) up to applicable limits.

All member banks of the Federal Reserve System, including Frost Bank, are required to hold stock in the Federal Reserve System’s Reserve Banks in an amount equal to six percent of their capital stock and surplus (half paid to acquire the stock with the remainder held as a cash reserve). Member banks do not have any control over the Federal Reserve System as a result of owning the stock and the stock cannot be sold or traded. The annual dividend rate for member banks with total assets in excess of \$10 billion, including Frost Bank, is tied to 10-year U.S. Treasuries with the maximum dividend rate capped at six percent. The total amount of stock dividends that Frost Bank received from the Federal Reserve totaled \$688 thousand in 2019, \$1.0 million in 2018 and \$807 thousand in 2017.

Most of our non-bank subsidiaries also are subject to regulation by the Federal Reserve Board and other federal and state agencies. Frost Brokerage Services, Inc. is regulated by the SEC, the Financial Industry Regulatory Authority (“FINRA”) and state securities regulators. Frost Investment Advisors, LLC and Frost Investment Services, LLC are subject to the disclosure and regulatory requirements of the Investment Advisors Act of 1940, as administered by the SEC. Our insurance subsidiary is subject to regulation by applicable state insurance regulatory agencies. Other non-bank subsidiaries are subject to both federal and state laws and regulations. Frost Bank and its affiliates are also subject to supervision, regulation, examination and enforcement by the Consumer Financial Protection Bureau (“CFPB”) with respect to consumer protection laws and regulations.

Bank Holding Company Activities

In general, the BHC Act limits the business of bank holding companies to banking, managing or controlling banks and other activities that the Federal Reserve Board has determined to be so closely related to banking as to be a proper incident thereto. In addition, bank holding companies that qualify and elect to be financial holding companies may engage in any activity, or acquire and retain the shares of a company engaged in any activity, that is either (i) financial in nature or incidental to such financial activity (as determined by the Federal Reserve Board in consultation with the Secretary of the Treasury) or (ii) complementary to a financial activity and does not pose a substantial risk to the safety and soundness of depository institutions or the financial system generally (as solely determined by the Federal Reserve Board), without prior approval of the Federal Reserve Board. Activities that are financial in nature include securities underwriting and dealing, insurance underwriting and making merchant banking investments.

To maintain financial holding company status, a financial holding company and all of its depository institution subsidiaries must be “well capitalized” and “well managed.” A depository institution subsidiary is considered to be “well capitalized” if it satisfies the requirements for this status discussed in the section captioned “Capital Adequacy and Prompt Corrective Action,” elsewhere in this item. A depository institution subsidiary is considered “well managed” if it received a composite rating and management rating of at least “satisfactory” in its most recent examination. A financial holding company’s status will also depend upon it maintaining its status as “well capitalized” and “well managed” under applicable Federal Reserve Board regulations. If a financial holding company ceases to meet these capital and management requirements, the Federal Reserve Board’s regulations provide that the financial holding company must enter into an agreement with the Federal Reserve Board to comply with all applicable capital and management requirements. Until the financial holding company returns to compliance, the Federal Reserve Board may impose limitations or conditions on the conduct of its activities, and the company may not commence any of the broader financial activities permissible for financial holding companies or acquire a company engaged in such financial activities without prior approval of the Federal Reserve Board. If the company does not return to compliance within 180 days, the Federal Reserve Board may require divestiture of the holding company’s depository institutions. Bank holding companies and banks must also be both well capitalized and well managed in order to acquire banks located outside their home state.

In order for a financial holding company to commence any new activity permitted by the BHC Act or to acquire a company engaged in any new activity permitted by the BHC Act, each insured depository institution subsidiary of the financial holding company must have received a rating of at least “satisfactory” in its most recent examination under the Community Reinvestment Act. See the section captioned “Community Reinvestment Act” elsewhere in this item.

The Federal Reserve Board has the power to order any bank holding company or its subsidiaries to terminate any activity or to terminate its ownership or control of any subsidiary when the Federal Reserve Board has reasonable grounds to believe that continuation of such activity or such ownership or control constitutes a serious risk to the financial soundness, safety or stability of any bank subsidiary of the bank holding company.

The BHC Act, the Bank Merger Act, the Texas Banking Code and other federal and state statutes regulate acquisitions of commercial banks and their parent holding companies. The BHC Act requires the prior approval of the Federal Reserve Board for the direct or indirect acquisition by a bank holding company of more than 5.0% of the voting shares of a commercial bank or its parent holding company. Under the Bank Merger Act, the prior approval of the Federal Reserve Board or other appropriate bank regulatory authority is required for a member bank to merge with another bank or purchase substantially all of the assets or assume any deposits of another bank. In reviewing applications seeking approval of merger and acquisition transactions, the bank regulatory authorities will consider, among other things, the competitive effect and public benefits of the transactions, the applicant’s managerial and financial resources, the capital position of the combined organization, the risks to the stability of the U.S. banking or financial system (e.g., systemic risk), the applicant’s performance record under the Community Reinvestment Act (see the section captioned “Community Reinvestment Act” elsewhere in this item) and its compliance with fair housing and other consumer protection laws and the effectiveness of the subject organizations in combating money laundering activities.

Dividends and Stock Repurchases

The principal source of Cullen/Frost’s liquidity is dividends from Frost Bank. The prior approval of the Federal Reserve Board is required if the total of all dividends declared by a state-chartered member bank in any calendar year would exceed the sum of the bank’s net profits for that year and its retained net profits for the preceding two calendar years, less any required transfers to surplus or to fund the retirement of preferred stock. Federal law also prohibits a state-chartered, member bank from paying dividends that would be greater than the bank’s undivided profits. Frost

Bank is also subject to limitations under Texas state law regarding the level of dividends that may be paid. Under the foregoing dividend restrictions, and while maintaining its “well capitalized” status, Frost Bank could pay aggregate dividends of approximately \$682.9 million to Cullen/Frost, without obtaining affirmative governmental approvals, at December 31, 2019. This amount is not necessarily indicative of amounts that may be paid or available to be paid in future periods.

In addition, Cullen/Frost and Frost Bank are subject to other regulatory policies and requirements relating to the payment of dividends, including requirements to maintain adequate capital above regulatory minimums. The appropriate federal regulatory authority is authorized to determine under certain circumstances relating to the financial condition of a bank holding company or a bank that the payment of dividends would be an unsafe or unsound practice and to prohibit payment thereof. The appropriate federal regulatory authorities have stated that paying dividends that deplete a bank’s capital base to an inadequate level would be an unsafe and unsound banking practice and that banking organizations should generally pay dividends only out of current operating earnings. In addition, in the current financial and economic environment, the Federal Reserve Board has indicated that bank holding companies should carefully review their dividend policy and has discouraged payment ratios that are at maximum allowable levels unless both asset quality and capital are very strong.

In July 2019, the federal bank regulators adopted final rules (the “Capital Simplifications Rules”) that, among other things, eliminated the standalone prior approval requirement in the Basel III Capital Rules for any repurchase of common stock. In certain circumstances, Cullen/Frost’s repurchases of its common stock may be subject to a prior approval or notice requirement under other regulations, policies or supervisory expectations of the Federal Reserve Board. Any redemption or repurchase of preferred stock or subordinated debt remains subject to the prior approval of the Federal Reserve Board.

Transactions with Affiliates

Transactions between Frost Bank and its subsidiaries, on the one hand, and Cullen/Frost or any other subsidiary, on the other hand, are regulated under federal banking law. The Federal Reserve Act imposes quantitative and qualitative requirements and collateral requirements on covered transactions by Frost Bank with, or for the benefit of, its affiliates, and generally requires those transactions to be on terms at least as favorable to Frost Bank as if the transaction were conducted with an unaffiliated third party. Covered transactions are defined by statute to include a loan or extension of credit, as well as a purchase of securities issued by an affiliate, a purchase of assets (unless otherwise exempted by the Federal Reserve Board) from the affiliate, certain derivative transactions that create a credit exposure to an affiliate, the acceptance of securities issued by the affiliate as collateral for a loan, and the issuance of a guarantee, acceptance or letter of credit on behalf of an affiliate. In general, any such transaction by Frost Bank or its subsidiaries must be limited to certain thresholds on an individual and aggregate basis and, for credit transactions with any affiliate, must be secured by designated amounts of specified collateral.

Federal law also limits a bank’s authority to extend credit to its directors, executive officers and 10% stockholders, as well as to entities controlled by such persons. Among other things, extensions of credit to insiders are required to be made on terms that are substantially the same as, and follow credit underwriting procedures that are not less stringent than, those prevailing for comparable transactions with unaffiliated persons. Also, the terms of such extensions of credit may not involve more than the normal risk of non-repayment or present other unfavorable features and may not exceed certain limitations on the amount of credit extended to such persons individually and in the aggregate.

Source of Strength Doctrine

Federal Reserve Board policy and federal law require bank holding companies to act as a source of financial and managerial strength to their subsidiary banks. Under this requirement, Cullen/Frost is expected to commit resources to support Frost Bank, including at times when Cullen/Frost may not be in a financial position to provide such resources. Any capital loans by a bank holding company to any of its subsidiary banks are subordinate in right of payment to depositors and to certain other indebtedness of such subsidiary banks. In the event of a bank holding company’s bankruptcy, any commitment by the bank holding company to a federal bank regulatory agency to maintain the capital of a subsidiary bank will be assumed by the bankruptcy trustee and entitled to priority of payment.

Capital Requirements

Cullen/Frost and Frost Bank are each required to comply with applicable capital adequacy standards established by the Federal Reserve Board. In July 2013, the federal bank regulators approved final rules (the “Basel III Capital Rules”) implementing the Basel III framework set forth by the Basel Committee on Banking Supervision (the “Basel Committee”) as well as certain provisions of the Dodd-Frank Act.

Since fully phased in on January 1, 2019, the Basel III Capital Rules require Cullen/Frost and Frost Bank to maintain the following:

- A minimum ratio of Common Equity Tier 1 (“CET1”) to risk-weighted assets of at least 4.5%, plus a 2.5% “capital conservation buffer” (resulting in a minimum ratio of CET1 to risk-weighted assets of 7.0%);
- A minimum ratio of Tier 1 capital to risk-weighted assets of at least 6.0%, plus the capital conservation buffer (resulting in a minimum Tier 1 capital ratio of 8.5%);
- A minimum ratio of total capital (Tier 1 capital plus Tier 2 capital) to risk-weighted assets of at least 8.0%, plus the capital conservation buffer (resulting in a minimum total capital ratio of 10.5%); and
- A minimum leverage ratio of 4.0%, calculated as the ratio of Tier 1 capital to average consolidated assets as reported on consolidated financial statements (known as the “leverage ratio”).

Banking institutions that fail to meet the effective minimum ratios once the capital conservation buffer is taken into account, as detailed above, will be subject to constraints on capital distributions, including dividends and share repurchases, and certain discretionary executive compensation. The severity of the constraints depends on the amount of the shortfall and the institution’s “eligible retained income” (that is, four quarter trailing net income, net of distributions and tax effects not reflected in net income).

The Basel III Capital Rules and the Capital Simplification Rules also provide for a number of deductions from and adjustments to CET1. These include, for example, the requirement that certain deferred tax assets and significant investments in non-consolidated financial entities be deducted from CET1 to the extent that any one such category exceeds 25% of CET1. Prior to the adoption of the Capital Simplification Rules in July 2019, amounts were deducted from CET1 to the extent that any one such category exceeded 10% of CET1 or all such items, in the aggregate, exceeded 15% of CET1. The Capital Simplification Rules took effect for Cullen/Frost and Frost Bank as of January 1, 2020. These limitations did not impact our regulatory capital during any of the reported periods.

In addition, under the general risk-based capital rules, the effects of accumulated other comprehensive income items included in capital were excluded for the purposes of determining regulatory capital ratios. Under the Basel III Capital Rules, the effects of certain accumulated other comprehensive income items are not excluded; however, non-advanced approaches banking organizations, including Cullen/Frost and Frost Bank, were able to make a one-time permanent election to continue to exclude these items. Both Cullen/Frost and Frost Bank made this election in order to avoid significant variations in the level of capital depending upon the impact of interest rate fluctuations on the fair value of their available-for-sale securities portfolio. Under the Basel III Capital Rules, trust preferred securities no longer included in our Tier 1 capital may nonetheless be included as a component of Tier 2 capital on a permanent basis without phase-out.

The Basel III Capital Rules prescribe a standardized approach for risk weightings that expanded the risk-weighting categories from the general risk-based capital rules to a much larger and more risk-sensitive number of categories, depending on the nature of the assets, generally ranging from 0% for U.S. government and agency securities, to 600% for certain equity exposures (and higher percentages for certain other types of interests), and resulting in higher risk weights for a variety of asset categories. In November 2019, the federal banking agencies adopted a rule revising the scope of commercial real estate mortgages subject to a 150% risk weight.

In December 2017, the Basel Committee published standards that it described as the finalization of the Basel III post-crisis regulatory reforms (the standards are commonly referred to as “Basel IV”). Among other things, these standards revise the Basel Committee’s standardized approach for credit risk (including by recalibrating risk weights and introducing new capital requirements for certain “unconditionally cancellable commitments,” such as unused credit card lines of credit) and provides a new standardized approach for operational risk capital. Under the Basel framework, these standards will generally be effective on January 1, 2022, with an aggregate output floor phasing in through January 1, 2027. Under the current U.S. capital rules, operational risk capital requirements and a capital floor apply only to advanced approaches institutions, and not to Cullen/Frost or Frost Bank. The impact of Basel IV on us will depend on the manner in which it is implemented by the federal bank regulators.

Liquidity Requirements

The Basel III liquidity framework requires banks and bank holding companies to measure their liquidity against specific liquidity tests. One test, referred to as the liquidity coverage ratio (“LCR”), is designed to ensure that the banking entity maintains an adequate level of unencumbered high-quality liquid assets equal to the entity’s expected net cash outflow for a 30-day time horizon (or, if greater, 25% of its expected total cash outflow) under an acute liquidity stress scenario. The other test, referred to as the net stable funding ratio (“NSFR”), is designed to promote more medium- and long-term funding of the assets and activities of banking entities over a one-year time horizon. Rules applicable to certain large banking organizations have been implemented for LCR and proposed for NSFR; however, based on our asset size, these rules do not currently apply to Cullen/Frost and Frost Bank.

Prompt Corrective Action

The Federal Deposit Insurance Act, as amended (“FDIA”), requires among other things, the federal banking agencies to take “prompt corrective action” in respect of depository institutions that do not meet minimum capital requirements. The FDIA includes the following five capital tiers: “well capitalized,” “adequately capitalized,” “undercapitalized,” “significantly undercapitalized” and “critically undercapitalized.”

A bank will be (i) “well capitalized” if the institution has a total risk-based capital ratio of 10.0% or greater, a CET1 capital ratio of 6.5% or greater, a Tier 1 risk-based capital ratio of 8.0% or greater, and a leverage ratio of 5.0% or greater, and is not subject to any order or written directive by any such regulatory authority to meet and maintain a specific capital level for any capital measure; (ii) “adequately capitalized” if the institution has a total risk-based capital ratio of 8.0% or greater, a CET1 capital ratio of 4.5% or greater, a Tier 1 risk-based capital ratio of 6.0% or greater, and a leverage ratio of 4.0% or greater and is not “well capitalized”; (iii) “undercapitalized” if the institution has a total risk-based capital ratio that is less than 8.0%, a CET1 capital ratio less than 4.5%, a Tier 1 risk-based capital ratio of less than 6.0% or a leverage ratio of less than 4.0%; (iv) “significantly undercapitalized” if the institution has a total risk-based capital ratio of less than 6.0%, a CET1 capital ratio less than 3.0%, a Tier 1 risk-based capital ratio of less than 4.0% or a leverage ratio of less than 3.0%; and (v) “critically undercapitalized” if the institution’s tangible equity is equal to or less than 2.0% of average quarterly tangible assets. An institution may be downgraded to, or deemed to be in, a capital category that is lower than indicated by its capital ratios if it is determined to be in an unsafe or unsound condition or if it receives an unsatisfactory examination rating with respect to certain matters. A bank’s capital category is determined solely for the purpose of applying prompt corrective action regulations, and the capital category may not constitute an accurate representation of the bank’s overall financial condition or prospects for other purposes.

In addition, the FDIA prohibits an insured depository institution from accepting brokered deposits or offering interest rates on any deposits significantly higher than the prevailing rate in the bank’s normal market area or nationally (depending upon where the deposits are solicited), unless it is well capitalized or is adequately capitalized and receives a waiver from the FDIC. A depository institution that is adequately capitalized and accepts brokered deposits under a waiver from the FDIC may not pay an interest rate on any deposit in excess of 75 basis points over certain prevailing market rates.

The FDIA generally prohibits a depository institution from making any capital distributions (including payment of a dividend) or paying any management fee to its parent holding company if the depository institution would thereafter be “undercapitalized.” “Undercapitalized” institutions are subject to growth limitations and are required to submit a capital restoration plan. The agencies may not accept such a plan without determining, among other things, that the plan is based on realistic assumptions and is likely to succeed in restoring the depository institution’s capital. In addition, for a capital restoration plan to be acceptable, the depository institution’s parent holding company must guarantee that the institution will comply with such capital restoration plan. The bank holding company must also provide appropriate assurances of performance. The aggregate liability of the parent holding company is limited to the lesser of (i) an amount equal to 5.0% of the depository institution’s total assets at the time it became undercapitalized and (ii) the amount which is necessary (or would have been necessary) to bring the institution into compliance with all capital standards applicable with respect to such institution as of the time it fails to comply with the plan. If a depository institution fails to submit an acceptable plan, it is treated as if it is “significantly undercapitalized.”

“Significantly undercapitalized” depository institutions may be subject to a number of requirements and restrictions, including orders to sell sufficient voting stock to become “adequately capitalized,” requirements to reduce total assets, and cessation of receipt of deposits from correspondent banks. “Critically undercapitalized” institutions are subject to the appointment of a receiver or conservator.

The appropriate federal banking agency may, under certain circumstances, reclassify a well capitalized insured depository institution as adequately capitalized. The FDIA provides that an institution may be reclassified if the appropriate federal banking agency determines (after notice and opportunity for hearing) that the institution is in an unsafe or unsound condition or deems the institution to be engaging in an unsafe or unsound practice. The appropriate agency is also permitted to require an adequately capitalized or undercapitalized institution to comply with the supervisory provisions as if the institution were in the next lower category (but not treat a significantly undercapitalized institution as critically undercapitalized) based on supervisory information other than the capital levels of the institution.

Cullen/Frost believes that, as of December 31, 2019, its bank subsidiary, Frost Bank, was “well capitalized” based on the aforementioned ratios. For further information regarding the capital ratios and leverage ratio of Cullen/Frost and Frost Bank see the discussion under the section captioned “Capital and Liquidity” included in Item 7. Management’s Discussion and Analysis of Financial Condition and Results of Operations and Note 9 - Capital and Regulatory Matters in the notes to consolidated financial statements included in Item 8. Financial Statements and Supplementary Data, elsewhere in this report.

Safety and Soundness Standards

The FDIA requires the federal bank regulatory agencies to prescribe standards, by regulations or guidelines, relating to internal controls, information systems and internal audit systems, loan documentation, credit underwriting, interest rate risk exposure, asset growth, asset quality, earnings, stock valuation and compensation, fees and benefits, and such other operational and managerial standards as the agencies deem appropriate. Guidelines adopted by the federal bank regulatory agencies establish general standards relating to internal controls and information systems, internal audit systems, loan documentation, credit underwriting, interest rate exposure, asset growth and compensation, fees and benefits. In general, the guidelines require, among other things, appropriate systems and practices to identify and manage the risk and exposures specified in the guidelines. The guidelines prohibit excessive compensation as an unsafe and unsound practice and describe compensation as excessive when the amounts paid are unreasonable or disproportionate to the services performed by an executive officer, employee, director or principal stockholder. In addition, the agencies adopted regulations that authorize, but do not require, an agency to order an institution that has been given notice by an agency that it is not satisfying any of such safety and soundness standards to submit a compliance plan. If, after being so notified, an institution fails to submit an acceptable compliance plan or fails in any material respect to implement an acceptable compliance plan, the agency must issue an order directing action to correct the deficiency and may issue an order directing other actions of the types to which an undercapitalized institution is subject under the “prompt corrective action” provisions of the FDIA. See “Prompt Corrective Action” above. If an institution fails to comply with such an order, the agency may seek to enforce such order in judicial proceedings and to impose civil money penalties.

Deposit Insurance

Substantially all of the deposits of Frost Bank are insured up to applicable limits by the Deposit Insurance Fund (“DIF”) of the FDIC and Frost Bank is subject to deposit insurance assessments to maintain the DIF. Deposit insurance assessments are based on average total assets minus average tangible equity. For larger institutions, such as Frost Bank, the FDIC uses a performance score and a loss-severity score that are used to calculate an initial assessment rate. In calculating these scores, the FDIC uses a bank’s capital level and supervisory ratings and certain financial measures to assess an institution’s ability to withstand asset-related stress and funding-related stress. The FDIC has the ability to make discretionary adjustments to the total score based upon significant risk factors that are not adequately captured in the calculations.

Under the FDIA, the FDIC may terminate deposit insurance upon a finding that the institution has engaged in unsafe and unsound practices, is in an unsafe or unsound condition to continue operations, or has violated any applicable law, regulation, rule, order or condition imposed by the FDIC. In addition, the FDIC is authorized to conduct examinations of and require reporting by FDIC-insured institutions.

Enhanced Prudential Standards

The Federal Reserve Board is required to monitor emerging risks to financial stability and enact enhanced supervision and prudential standards applicable to large bank holding companies and certain non-bank covered companies designated as systemically important by the Financial Stability Oversight Council. The Dodd-Frank Act mandates that certain regulatory requirements applicable to these systemically important financial institutions be more stringent than those applicable to other financial institutions. In 2019, the Federal Reserve Board adopted new rules impacting certain capital and liquidity requirements and other enhanced prudential standards. The final rules assign all domestic bank holding companies with \$100 billion or more in total consolidated assets to one of four categories of tailored regulatory requirements. Cullen/Frost and Frost Bank are generally not impacted by these rules. The enhanced prudential standards rules, as amended in 2019, require publicly traded bank holding companies with \$50 billion or more in total consolidated assets to establish risk committees. Prior to the amendment, the requirement to establish a risk committee was applicable to publicly traded bank holding companies with \$10 billion or more in consolidated assets. Cullen/Frost has established and currently maintains a risk committee.

The Volcker Rule

The so-called Volcker Rule under the Dodd-Frank Act restricts banks and their affiliates from engaging in proprietary trading and investing in and sponsoring hedge funds and private equity funds. The Volcker Rule, which became effective in July 2015 and the implementing regulations of which were amended in 2019 and are subject to further amendment expected in 2020, does not significantly impact the operations of Cullen/Frost and its subsidiaries, as we do not have any engagement in the businesses prohibited by the Volcker Rule.

Depositor Preference

The FDIA provides that, in the event of the “liquidation or other resolution” of an insured depository institution, the claims of depositors of the institution, including the claims of the FDIC as subrogee of insured depositors, and certain claims for administrative expenses of the FDIC as a receiver, will have priority over other general unsecured claims against the institution. If an insured depository institution fails, insured and uninsured depositors, along with the FDIC, will have priority in payment ahead of unsecured, non-deposit creditors, including depositors whose deposits are payable only outside of the United States and the parent bank holding company, with respect to any extensions of credit they have made to such insured depository institution.

Interchange Fees

Under the Durbin Amendment to the Dodd-Frank Act, the Federal Reserve adopted rules establishing standards for assessing whether the interchange fees that may be charged with respect to certain electronic debit transactions are “reasonable and proportional” to the costs incurred by issuers for processing such transactions.

Interchange fees, or “swipe” fees, are charges that merchants pay to us and other card-issuing banks for processing electronic payment transactions. Federal Reserve Board 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 Board also has rules governing routing and exclusivity that require issuers to offer two unaffiliated networks for routing transactions on each debit or prepaid product.

Consumer Financial Protection

We are subject to a number of federal and state consumer protection laws that extensively govern our relationship with our customers. These laws include the Equal Credit Opportunity Act, the Fair Credit Reporting Act, the Truth in Lending Act, the Truth in Savings Act, the Electronic Fund Transfer Act, the Expedited Funds Availability Act, the Home Mortgage Disclosure Act, the Fair Housing Act, the Real Estate Settlement Procedures Act, the Fair Debt Collection Practices Act, the Service Members Civil Relief Act and these laws’ respective state-law counterparts, as well as state usury laws and laws regarding unfair and deceptive acts and practices. These and other federal laws, among other things, require disclosures of the cost of credit and terms of deposit accounts, provide substantive consumer rights, prohibit discrimination in credit transactions, regulate the use of credit report information, provide financial privacy protections, prohibit unfair, deceptive and abusive practices, restrict our ability to raise interest rates and subject us to

substantial regulatory oversight. Violations of applicable consumer protection laws can result in significant potential liability from litigation brought by customers, including actual damages, restitution and attorneys' fees. Federal bank regulators, state attorneys general and state and local consumer protection agencies may also seek to enforce consumer protection requirements and obtain these and other remedies, including regulatory sanctions, customer rescission rights, action by the state and local attorneys general in each jurisdiction in which we operate and civil money penalties. Failure to comply with consumer protection requirements may also result in our failure to obtain any required bank regulatory approval for merger or acquisition transactions we may wish to pursue or our prohibition from engaging in such transactions even if approval is not required.

The Consumer Financial Protection Bureau ("CFPB") is a federal agency responsible for implementing, examining and enforcing compliance with federal consumer protection laws. The CFPB has broad rulemaking authority for a wide range of consumer financial laws that apply to all banks, including, among other things, the authority to prohibit "unfair, deceptive or abusive" acts and practices. Abusive acts or practices are defined as those that materially interfere with a consumer's ability to understand a term or condition of a consumer financial product or service or take unreasonable advantage of a consumer's (i) lack of financial savvy, (ii) inability to protect himself in the selection or use of consumer financial products or services, or (iii) reasonable reliance on a covered entity to act in the consumer's interests. The CFPB can issue cease-and-desist orders against banks and other entities that violate consumer financial laws. The CFPB may also institute a civil action against an entity in violation of federal consumer financial law in order to impose a civil penalty or injunction. The CFPB has examination and enforcement authority over all banks with more than \$10 billion in assets, as well as their affiliates. Banking regulators take into account compliance with consumer protection laws when considering approval of a proposed transaction.

Community Reinvestment Act

The Community Reinvestment Act of 1977 ("CRA") requires depository institutions to assist in meeting the credit needs of their market areas consistent with safe and sound banking practice. Under the CRA, each depository institution is required to help meet the credit needs of its market areas by, among other things, providing credit to low- and moderate-income individuals and communities. Depository institutions are periodically examined for compliance with the CRA and are assigned ratings. In order for a financial holding company to commence any new activity permitted by the BHC Act, or to acquire any company engaged in any new activity permitted by the BHC Act, each insured depository institution subsidiary of the financial holding company must have received a rating of at least "satisfactory" in its most recent examination under the CRA. Furthermore, banking regulators take into account CRA ratings when considering a request for an approval of a proposed transaction. Frost Bank received a rating of "satisfactory" in its most recent CRA examination.

In December 2019, the Federal Deposit Insurance Corporation ("FDIC") and the Office of the Comptroller of the Currency ("OCC") jointly proposed rules that would significantly change existing CRA regulations. The proposed rules are intended to increase bank activity in low- and moderate-income communities where there is significant need for credit, more responsible lending, greater access to banking services, and improvements to critical infrastructure. The proposals change four key areas: (i) clarifying what activities qualify for CRA credit; (ii) updating where activities count for CRA credit; (iii) providing a more transparent and objective method for measuring CRA performance; and (iv) revising CRA-related data collection, record keeping, and reporting. However, the Federal Reserve Board has not joined the proposed rulemaking. As such, we will continue to evaluate the impact of any changes to the regulations implementing the CRA and their impact to our financial condition, results of operations, and/or liquidity.

Financial Privacy

The federal banking regulators adopted rules that limit the ability of banks and other financial institutions to disclose non-public information about consumers to nonaffiliated third parties. These limitations require disclosure of privacy policies to consumers and, in some circumstances, allow consumers to prevent disclosure of certain personal information to a nonaffiliated third party. These regulations affect how consumer information is transmitted through diversified financial companies and conveyed to outside vendors.

Anti-Money Laundering and the USA Patriot Act

A major focus of governmental policy on financial institutions in recent years has been aimed at combating money laundering and terrorist financing. The USA PATRIOT Act of 2001, or the USA Patriot Act, substantially broadened the scope of United States anti-money laundering laws and regulations by imposing significant new compliance and due diligence obligations, creating new crimes and penalties and expanding the extra-territorial jurisdiction of the

United States. Financial institutions are also prohibited from entering into specified financial transactions and account relationships and must use enhanced due diligence procedures in their dealings with certain types of high-risk customers and implement a written customer identification program. Financial institutions must take certain steps to assist government agencies in detecting and preventing money laundering and report certain types of suspicious transactions. Regulatory authorities routinely examine financial institutions for compliance with these obligations, and failure of a financial institution to maintain and implement adequate programs to combat money laundering and terrorist financing, or to comply with all of the relevant laws or regulations, could have serious financial, legal and reputational consequences for the institution, including causing applicable bank regulatory authorities not to approve merger or acquisition transactions when regulatory approval is required or to prohibit such transactions even if approval is not required. Regulatory authorities have imposed cease and desist orders and civil money penalties against institutions found to be violating these obligations.

Office of Foreign Assets Control Regulation

The U.S. Treasury Department's Office of Foreign Assets Control, or OFAC, administers and enforces economic and trade sanctions against targeted foreign countries and regimes, under authority of various laws, including designated foreign countries, nationals and others. OFAC publishes lists of specially designated targets and countries. We are responsible for, among other things, blocking accounts of, and transactions with, such targets and countries, prohibiting unlicensed trade and financial transactions with them and reporting blocked transactions after their occurrence. Failure to comply with these sanctions could have serious financial, legal and reputational consequences, including causing applicable bank regulatory authorities not to approve merger or acquisition transactions when regulatory approval is required or to prohibit such transactions even if approval is not required. Regulatory authorities have imposed cease and desist orders and civil money penalties against institutions found to be violating these obligations.

Incentive Compensation

The Federal Reserve Board reviews, as part of its regular, risk-focused examination process, the incentive compensation arrangements of banking organizations, such as Cullen/Frost, that are not "large, complex banking organizations." These reviews are tailored to each organization based on the scope and complexity of the organization's activities and the prevalence of incentive compensation arrangements. Deficiencies will be incorporated into the organization's supervisory ratings, which can affect the organization's ability to make acquisitions and take other actions. Enforcement actions may be taken against a banking organization if its incentive compensation arrangements, or related risk-management control or governance processes, pose a risk to the organization's safety and soundness and the organization is not taking prompt and effective measures to correct the deficiencies.

In June 2010, the Federal Reserve Board, OCC and FDIC issued comprehensive final guidance on incentive compensation policies intended to ensure that the incentive compensation policies of banking organizations do not undermine the safety and soundness of such organizations by encouraging excessive risk-taking. The guidance, which covers all employees that have the ability to materially affect the risk profile of an organization, either individually or as part of a group, is based upon the key principles that a banking organization's incentive compensation arrangements should (i) provide incentives that do not encourage risk-taking beyond the organization's ability to effectively identify and manage risks, (ii) be compatible with effective internal controls and risk management, and (iii) be supported by strong corporate governance, including active and effective oversight by the organization's board of directors.

In 2016, the U.S. financial regulators, including the Federal Reserve Board and the SEC, proposed revised rules on incentive-based payment arrangements at specified regulated entities having at least \$1 billion in total assets (including Cullen/Frost and Frost Bank), but these proposed rules have not been finalized.

Cybersecurity

In March 2015, federal regulators issued two related statements regarding cybersecurity. One statement indicates that financial institutions should design multiple layers of security controls to establish lines of defense and to ensure that their risk management processes also address the risk posed by compromised customer credentials, including security measures to reliably authenticate customers accessing internet-based services of the financial institution. The other statement indicates that a financial institution's management is expected to maintain sufficient business continuity planning processes to ensure the rapid recovery, resumption and maintenance of the institution's operations after a cyber-attack involving destructive malware. A financial institution is also expected to develop appropriate processes to enable recovery of data and business operations and address rebuilding network capabilities and restoring data if the

institution or its critical service providers fall victim to this type of cyber-attack. If we fail to observe the regulatory guidance, we could be subject to various regulatory sanctions, including financial penalties.

In February 2018, the SEC published interpretive guidance to assist public companies in preparing disclosures about cybersecurity risks and incidents. These SEC guidelines, and any other regulatory guidance, are in addition to notification and disclosure requirements under state and federal banking law and regulations.

State regulators have also been increasingly active in implementing privacy and cybersecurity standards and regulations. Recently, several states have adopted regulations requiring certain financial institutions to implement cybersecurity programs and providing detailed requirements with respect to these programs, including data encryption requirements. Many states, including Texas, have also recently implemented or modified their data breach notification and data privacy requirements. We expect this trend of state-level activity in those areas to continue, and are continually monitoring developments in the states in which our customers are located.

In the ordinary course of business, we rely on electronic communications and information systems to conduct our operations and to store sensitive data. We employ an in-depth, layered, defensive approach that leverages people, processes and technology to manage and maintain cybersecurity controls. We employ a variety of preventative and detective tools to monitor, block, and provide alerts regarding suspicious activity, as well as to report on any suspected advanced persistent threats. Notwithstanding the strength of our defensive measures, the threat from cyber attacks is severe, attacks are sophisticated and increasing in volume, and attackers respond rapidly to changes in defensive measures. While to date, other than as described below, we have not detected a significant compromise, significant data loss or any material financial losses related to cybersecurity attacks, our systems and those of our customers and third-party service providers are under constant threat and it is possible that we could experience a significant event in the future. Risks and exposures related to cybersecurity attacks are expected to remain high for the foreseeable future due to the rapidly evolving nature and sophistication of these threats, as well as due to the expanding use of Internet banking, mobile banking and other technology-based products and services by us and our customers. See Item 1A. Risk Factors for a further discussion of risks related to cybersecurity.

During 2018, we experienced a data security incident that resulted in unauthorized access to a third-party lockbox software program used by certain of our commercial lockbox customers to store digital images. We stopped the identified unauthorized access and consulted with a leading cybersecurity firm. We reported the incident to, and cooperated with, law-enforcement authorities. We contacted each of the affected commercial customers and we supported them in taking appropriate actions. The identified incident did not impact other Frost systems. Out-of-pocket costs incurred related to this incident totaled \$2.1 million and no further costs are expected with respect to this incident.

Future Legislation and Regulation

Congress may enact legislation from time to time that affects the regulation of the financial services industry, and state legislatures may enact legislation from time to time affecting the regulation of financial institutions chartered by or operating in those states. Federal and state regulatory agencies also periodically propose and adopt changes to their regulations or change the manner in which existing regulations are applied. The substance or impact of pending or future legislation or regulation, or the application thereof, cannot be predicted, although any change could impact the regulatory structure under which we or our competitors operate and may significantly increase costs, impede the efficiency of internal business processes, require an increase in regulatory capital, require modifications to our business strategy, and limit our ability to pursue business opportunities in an efficient manner. It could also affect our competitors differently than us, including in a manner that would make them more competitive. A change in statutes, regulations or regulatory policies applicable to Cullen/Frost or any of its subsidiaries could have a material, adverse effect on our business, financial condition and results of operations.

Employees

At December 31, 2019, we employed 4,659 full-time equivalent employees. None of our employees are represented by collective bargaining agreements. We believe our employee relations to be good.

Information About Our Executive Officers

The names, ages as of December 31, 2019, recent business experience and positions or offices held by each of the executive officers of Cullen/Frost are as follows:

Name and Position Held	Age	Recent Business Experience
Phillip D. Green Chairman of the Board, Chief Executive Officer and Director of Cullen/Frost	65	Officer of Frost Bank since July 1980. Group Executive Vice President, Chief Financial Officer of Cullen/Frost from October 1995 to January 2015. President of Cullen/Frost from January 2015 to March 2016. Chairman of the Board and Chief Executive Officer of Cullen/Frost since April 2016.
Patrick B. Frost Director of Cullen/Frost, President of Frost Bank, Group Executive Vice President, Frost Wealth Advisors of Frost Bank and President of Frost Insurance	59	Officer of Frost Bank since 1985. President of Frost Bank from August 1993 to present. Director of Cullen/Frost from May 1997 to present. Group Executive Vice President, Frost Wealth Advisors of Frost Bank from April 2016 to present. President of Frost Insurance since October 2014.
Jerry Salinas Group Executive Vice President, Chief Financial Officer of Cullen/Frost	61	Officer of Frost Bank since March 1986. Senior Executive Vice President, Treasurer of Cullen/Frost from 1997 to January 2015. Group Executive Vice President, Chief Financial Officer of Cullen/Frost since January 2015.
Annette Alonzo Group Executive Vice President, Chief Human Resources Officer of Frost Bank	51	Officer of Frost Bank since 1993. Executive Vice President, Human Resources of Frost Bank from July 2006 to January 2015. Senior Executive Vice President, Human Resources of Frost Bank from January 2015 to July 2015. Group Executive Vice President, Human Resources of Frost Bank from July 2015 to March 2016. Group Executive Vice President, Chief Human Resources Officer of Frost Bank since April 2016.
Robert A. Berman Group Executive Vice President, Research and Strategy of Frost Bank	57	Officer of Frost Bank since January 1989. Group Executive Vice President, Research and Strategy of Frost Bank since May 2001.
Paul H. Bracher President of Cullen/Frost and Group Executive Vice President, Chief Banking Officer of Frost Bank	63	Officer of Frost Bank since January 1982. President, State Regions of Frost Bank from February 2001 to January 2015. Group Executive Vice President, Chief Banking Officer of Frost Bank from January 2015 to present. President of Cullen/Frost since April 2016.
William L. Perotti Group Executive Vice President, Chief Credit Officer of Frost Bank	62	Officer of Frost Bank since December 1982. Group Executive Vice President, Chief Credit Officer of Frost Bank from May 2001 to January 2015. Group Executive Vice President, Chief Risk Officer of Frost Bank from April 2005 to January 2019. Chief Credit Officer of Frost Bank since January 2019.
Carol Severyn Group Executive Vice President, Chief Risk Officer of Frost Bank	55	Officer of Frost Bank since December 1993. Executive Vice President and Auditor of Frost Bank from January 2004 to January 2019. Group Executive Vice President, Chief Risk Officer of Frost Bank since January 2019.
Jimmy Stead Group Executive Vice President, Chief Consumer Banking Officer of Frost Bank	44	Officer of Frost Bank since July 2001. Senior Vice President Electronic Commerce Operations of Frost Bank from October 2007 to December 2015, Executive Vice President, Electronic Commerce Operations of Frost Bank from January 2016 to January 2017. Group Executive Vice President, Chief Consumer Banking Officer of Frost Bank since January 2017.
James L. Waters Group Executive Vice President, General Counsel and Secretary of Cullen/Frost	53	Officer of Frost Bank since March 2018. Group Executive Vice President, General Counsel and Secretary of Cullen/Frost since March 2018. Prior to joining Frost, Mr. Waters was a partner at the law firm Haynes and Boone LLP.
Candace Wolfshohl Group Executive Vice President, Culture and People Development of Frost Bank	59	Officer of Frost Bank since 1989. Executive Vice President, Staff Development of Frost Bank from January 2008 to January 2015. Senior Executive Vice President, Staff Development of Frost Bank from January 2015 to July 2015. Group Executive Vice President, Culture and People Development of Frost Bank since July 2015.

There are no arrangements or understandings between any executive officer of Cullen/Frost and any other person pursuant to which such executive officer was or is to be selected as an officer.

Available Information

Under the Securities Exchange Act of 1934, we are required to file annual, quarterly and current reports, proxy statements and other information with the Securities and Exchange Commission (“SEC”). The SEC maintains a website at <http://www.sec.gov> that contains reports, proxy and information statements, and other information regarding issuers that file electronically with the SEC. We file electronically with the SEC.

We make available, free of charge through our website, our reports on Forms 10-K, 10-Q and 8-K, and amendments to those reports, as soon as reasonably practicable after such reports are filed with or furnished to the SEC. Additionally, we have adopted and posted on our website a code of ethics that applies to our principal executive officer, principal financial officer and principal accounting officer. Our website also includes our corporate governance guidelines and the charters for our audit committee, our compensation and benefits committee, our risk committee, and our corporate governance and nominating committee. The address for our website is <http://www.frostbank.com>. We will provide a printed copy of any of the aforementioned documents to any requesting shareholder.

ITEM 1A. RISK FACTORS

An investment in our common stock is subject to risks inherent to our business. The material risks and uncertainties that management believes affect us are described below. Before making an investment decision, you should carefully consider the risks and uncertainties described below together with all of the other information included or incorporated by reference in this report. The risks and uncertainties described below are not the only ones facing us. Additional risks and uncertainties that management is not aware of or focused on or that management currently deems immaterial may also impair our business operations. This report is qualified in its entirety by these risk factors.

If any of the following risks actually occur, our business, financial condition and results of operations could be materially and adversely affected. If this were to happen, the market price of our common stock could decline significantly, and you could lose all or part of your investment.

Risks Related To Our Business

We are Subject To Risk From Fluctuating Conditions In The Financial Markets and Economic and Political Conditions Generally

Our success depends, to a certain extent, upon local, national and global economic and political conditions, as well as governmental monetary policies. Our financial performance generally, and in particular the ability of borrowers to pay interest on and repay principal of outstanding loans and the value of collateral securing those loans, as well as demand for loans and other products and services we offer, is highly dependent upon the business environment in the markets where we operate, in the State of Texas and in the United States as a whole. A favorable business environment is generally characterized by, among other factors, economic growth, efficient capital markets, low inflation, low unemployment, high business and investor confidence, and strong business earnings. Unfavorable or uncertain economic and market conditions can be caused by a decline in economic growth both in the U.S. and internationally; declines in business activity or investor or business confidence; limitations on the availability of or increases in the cost of credit and capital; increases in inflation or interest rates; high unemployment, oil price volatility; natural disasters; trade policies and tariffs; or a combination of these or other factors. While recent economic conditions in the State of Texas, the United States and worldwide have seen improving trends, there can be no assurance that this improvement will continue. Economic pressure on consumers and uncertainty regarding continuing economic improvement could result in changes in consumer and business spending, borrowing and savings habits. Such conditions could have a material adverse effect on the credit quality of our loans and our business, financial condition and results of operations.

We Are Subject To Lending Risk and Lending Concentration Risk

There are inherent risks associated with our lending activities. These risks include, among other things, the impact of changes in interest rates and changes in the economic conditions in the markets where we operate as well as those across the State of Texas and the United States. Increases in interest rates and/or weakening economic conditions could adversely impact the ability of borrowers to repay outstanding loans or the value of the collateral securing these loans. We are also subject to various laws and regulations that affect our lending activities. Failure to comply with applicable laws and regulations could subject us to regulatory enforcement action that could result in the assessment of significant civil money penalties against us.

As of December 31, 2019, approximately 88.4% of our loan portfolio consisted of commercial and industrial, energy, construction and commercial real estate mortgage loans. These types of loans are generally viewed as having more risk of default and are typically larger than residential real estate loans or consumer loans. Because our loan portfolio contains a significant number of commercial and industrial, energy, construction and commercial real estate loans with relatively large balances, the deterioration of one or a few of these loans could cause a significant increase in non-performing loans. Past increases in non-performing loans have resulted in a net loss of earnings from particular loans, an increase in the provision for loan losses and an increase in loan charge-offs, and these and future instances could have a material adverse effect on our business, financial condition and results of operations.

See the section captioned “Loans” in Item 7. Management’s Discussion and Analysis of Financial Condition and Results of Operations elsewhere in this report for further discussion related to commercial and industrial, energy, construction and commercial real estate loans.

We Are Subject To Interest Rate Risk

Our earnings and cash flows are largely dependent upon our net interest income. Net interest income is the difference between interest income earned on interest-earning assets such as loans and securities and interest expense paid on interest-bearing liabilities such as deposits and borrowed funds. Interest rates are highly sensitive to many factors that are beyond our control, including general economic conditions and policies of various governmental and regulatory agencies and, in particular, the Federal Open Market Committee. Changes in monetary policy, including changes in interest rates, could influence not only the interest we receive on loans and securities and the amount of interest we pay on deposits and borrowings, but such changes could also affect (i) our ability to originate loans and obtain deposits, (ii) the fair value of our financial assets and liabilities, and (iii) the average duration of our mortgage-backed securities portfolio. If the interest rates paid on deposits and other borrowings increase at a faster rate than the interest rates received on loans and other investments, our net interest income, and therefore earnings, could be adversely affected. Earnings could also be adversely affected if the interest rates received on loans and other investments fall more quickly than the interest rates paid on deposits and other borrowings. Any substantial, unexpected, or prolonged change in market interest rates could have a material adverse effect on our business, financial condition and results of operations.

See Item 7. Management’s Discussion and Analysis of Financial Condition and Results of Operations under the section captioned “Net Interest Income” and Item 7A. Quantitative and Qualitative Disclosures About Market Risk elsewhere in this report for further discussion related to interest rate sensitivity and our management of interest rate risk.

We May Be Adversely Impacted By The Transition From LIBOR As A Reference Rate

In 2017, the United Kingdom’s Financial Conduct Authority announced that after 2021 it would no longer compel banks to submit the rates required to calculate the London Interbank Offered Rate (“LIBOR”). This announcement indicates that the continuation of LIBOR on the current basis cannot and will not be guaranteed after 2021. Consequently, at this time, it is not possible to predict whether and to what extent banks will continue to provide submissions for the calculation of LIBOR. Similarly, it is not possible to predict whether LIBOR will continue to be viewed as an acceptable market benchmark, what rate or rates may become accepted alternatives to LIBOR, or what the effect of any such changes in views or alternatives may be on the markets for LIBOR-indexed financial instruments.

In particular, regulators, industry groups and certain committees (e.g., the Alternative Reference Rates Committee) have, among other things, published recommended fall-back language for LIBOR-linked financial instruments, identified recommended alternatives for certain LIBOR rates (e.g., the Secured Overnight Financing Rate as the recommended alternative to U.S. Dollar LIBOR), and proposed implementations of the recommended alternatives in floating rate instruments. At this time, it is not possible to predict whether these specific recommendations and proposals will be broadly accepted, whether they will continue to evolve, and what the effect of their implementation may be on the markets for floating-rate financial instruments.

We have a significant number of loans, derivative contracts, borrowings and other financial instruments with attributes that are either directly or indirectly dependent on LIBOR. The transition from LIBOR could create considerable costs and additional risk. Since proposed alternative rates are calculated differently, payments under contracts referencing new rates will differ from those referencing LIBOR. The transition will change our market risk profiles, requiring changes to risk and pricing models, valuation tools, product design and hedging strategies. Furthermore, failure to adequately manage this transition process with our customers could adversely impact our reputation. Although we are

currently unable to assess what the ultimate impact of the transition from LIBOR will be, failure to adequately manage the transition could have a material adverse effect on our business, financial condition and results of operations.

Our Allowance For Loan Losses May Be Insufficient

We maintain an allowance for loan losses, which is a reserve established through a provision for loan losses charged to expense, which represents management's best estimate of inherent losses that have been incurred within the existing portfolio of loans. The allowance, in the judgment of management, is necessary to reserve for estimated loan losses and risks inherent in the loan portfolio. The level of the allowance reflects management's continuing evaluation of industry concentrations; specific credit risks; loan loss experience; current loan portfolio quality; present economic, political and regulatory conditions and unidentified losses inherent in the current loan portfolio. The determination of the appropriate level of the allowance for loan losses inherently involves a high degree of subjectivity and requires us to make significant estimates of current credit risks and future trends, all of which may undergo material changes. Continuing deterioration in economic conditions affecting borrowers, new information regarding existing loans, identification of additional problem loans and other factors, both within and outside of our control, may require an increase in the allowance for loan losses. In addition, bank regulatory agencies periodically review our allowance for loan losses and may require an increase in the provision for loan losses or the recognition of further loan charge-offs, based on judgments different than those of management. Furthermore, if charge-offs in future periods exceed the allowance for loan losses, we will need additional provisions to increase the allowance for loan losses. Any increases in the allowance for loan losses will result in a decrease in net income and, possibly, capital, and may have a material adverse effect on our business, financial condition and results of operations.

See the section captioned "Allowance for Loan Losses" in Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations elsewhere in this report for further discussion related to our process for determining the appropriate level of the allowance for loan losses.

In addition, the adoption of Accounting Standards Update ("ASU") 2016-13, "Financial Instruments - Credit Losses (Topic 326): Measurement of Credit Losses on Financial Instruments," as amended, on January 1, 2020 will impact our methodology for estimating the allowance for loan losses. See Note 20 - Accounting Standards Updates in the notes to consolidated financial statements included in Item 8. Financial Statements and Supplementary Data elsewhere in this report.

Our Profitability Depends Significantly On Economic Conditions In The State Of Texas

Our success depends primarily on the general economic conditions of the State of Texas and the specific local markets in which we operate. Unlike larger national or other regional banks that are more geographically diversified, we provide banking and financial services to customers across Texas through financial centers in the Austin, Corpus Christi, Dallas, Fort Worth, Houston, Permian Basin, Rio Grande Valley and San Antonio regions. The local economic conditions in these areas have a significant impact on the demand for our products and services as well as the ability of our customers to repay loans, the value of the collateral securing loans and the stability of our deposit funding sources. Moreover, approximately 99.7% of the securities in our municipal bond portfolio were issued by political subdivisions or agencies within the State of Texas. A significant decline in general economic conditions in Texas, whether caused by recession, inflation, unemployment, changes or prolonged stagnation in oil prices, changes in securities markets, acts of terrorism, outbreak of hostilities or other international or domestic occurrences or other factors could impact these local economic conditions and, in turn, have a material adverse effect on our business, financial condition and results of operations.

We Are Subject To Volatility Risk In Crude Oil Prices

As of December 31, 2019, energy loans comprised approximately 11.2% of our loan portfolio. Furthermore, energy production and related industries represent a large part of the economies in some of our primary markets. In recent years, actions by certain members of the Organization of Petroleum Exporting Countries ("OPEC") impacting crude oil production levels have led to increased global oil supplies which has resulted in significant declines in market oil prices. Decreased market oil prices compressed margins for many U.S. and Texas-based oil producers, particularly those that utilize higher-cost production technologies such as hydraulic fracking and horizontal drilling, as well as oilfield service providers, energy equipment manufacturers and transportation suppliers, among others. The price per barrel of crude oil was approximately \$61 at December 31, 2019 up from \$45 at December 31, 2018. We have experienced increased losses within our energy portfolio in recent years as a result of oil price volatility, relative to our historical experience. Though oil prices have increased during 2019, future oil price volatility could have a negative

impact on the U.S. economy and, in particular, the economies of energy-dominant states such as Texas and, accordingly, could have a material adverse effect on our business, financial condition and results of operations.

We Are Subject to Risk Arising From Conditions In The Commercial Real Estate Market

As of December 31, 2019, commercial real estate mortgage loans comprised approximately 31.1% of our loan portfolio. Commercial real estate mortgage loans generally involve a greater degree of credit risk than residential real estate mortgage loans because they typically have larger balances and are more affected by adverse conditions in the economy. Because payments on loans secured by commercial real estate often depend upon the successful operation and management of the properties and the businesses which operate from within them, repayment of such loans may be affected by factors outside the borrower's control, such as adverse conditions in the real estate market or the economy or changes in government regulations. In recent years, commercial real estate markets have been experiencing substantial growth, and increased competitive pressures have contributed significantly to historically low capitalization rates and rising property values. Commercial real estate prices, according to many U.S. commercial real estate indices, are currently above the 2007 peak levels that contributed to the financial crisis. Accordingly, the federal banking regulatory agencies have expressed concerns about weaknesses in the current commercial real estate market. Our failure to have adequate risk management policies, procedures and controls could adversely affect our ability to increase this portfolio going forward and could result in an increased rate of delinquencies in, and increased losses from, this portfolio, which, accordingly, could have a material adverse effect on our business, financial condition and results of operations.

We Are Subject to Risk Arising From The Soundness Of Other Financial Institutions

Financial services institutions are interrelated as a result of trading, clearing, counterparty, or other relationships. We have exposure to many different industries and counterparties, and routinely execute transactions with counterparties in the financial services industry, including commercial banks, brokers and dealers, investment banks, and other institutional clients. Many of these transactions expose us to credit risk in the event of a default by a counterparty or client. In addition, our credit risk may be exacerbated when the collateral held by us cannot be realized upon or is liquidated at prices not sufficient to recover the full amount of the credit or derivative exposure due to us. Any such losses could have a material adverse effect on our business, financial condition and results of operations.

We Operate In A Highly Competitive Industry and Market Area

We face substantial competition in all areas of our operations from a variety of different competitors, many of which are larger and may have more financial resources than us. Such competitors primarily include national, regional, and community banks within the various markets where we operate. We also face competition from many other types of financial institutions, including, without limitation, savings and loans, credit unions, finance companies, brokerage firms, insurance companies and other financial intermediaries. The financial services industry could become even more competitive as a result of legislative, regulatory and technological changes and continued consolidation.

Also, technology and other changes have lowered barriers to entry and made it possible for non-banks to offer products and services traditionally provided by banks. In particular, the activity of financial technology companies ("fintechs") has grown significantly over recent years and is expected to continue to grow. Fintechs have and may continue to offer bank or bank-like products and a number of fintechs have applied for bank or industrial loan charters. In addition, other fintechs have partnered with existing banks to allow them to offer deposit products to their customers.

Additionally, consumers can maintain funds that would have historically been held as bank deposits in brokerage accounts or mutual funds. Consumers can also complete transactions such as paying bills and/or transferring funds directly without the assistance of banks. The process of eliminating banks as intermediaries, known as "disintermediation," could result in the loss of fee income, as well as the loss of customer deposits and the related income generated from those deposits. Further, many of our competitors have fewer regulatory constraints and may have lower cost structures than us. Additionally, due to their size, many competitors may be able to achieve economies of scale and, as a result, may offer a broader range of products and services as well as better pricing for those products and services than we can.

Our ability to compete successfully depends on a number of factors, including, among other things:

- The ability to develop, maintain and build long-term customer relationships based on top quality service, high ethical standards and safe, sound assets.
- The ability to expand within our marketplace and with our market position.

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- The scope, relevance and pricing of products and services offered to meet customer needs and demands.
- The rate at which we introduce new products and services relative to our competitors.
- Customer satisfaction with our level of service.
- Industry and general economic trends.

Failure to perform in any of these areas could significantly weaken our competitive position, which could adversely affect our growth and profitability, which, in turn, could have a material adverse effect on our business, financial condition and results of operations.

We Are Subject To Extensive Government Regulation and Supervision and Related Enforcement Powers and Other Legal Remedies

We, primarily through Cullen/Frost, Frost Bank and certain non-bank subsidiaries, are subject to extensive federal and state regulation and supervision, which vests a significant amount of discretion in the various regulatory authorities. Banking regulations are primarily intended to protect depositors' funds, federal deposit insurance funds and the banking system as a whole, not security holders. These regulations and supervisory guidance affect our lending practices, capital structure, investment practices, dividend policy and growth, among other things. Congress and federal regulatory agencies continually review banking laws, regulations and policies for possible changes. The Dodd-Frank Act, enacted in July 2010, instituted major changes to the banking and financial institutions regulatory regimes. Other changes to statutes, regulations or regulatory policies or supervisory guidance, including changes in interpretation or implementation of statutes, regulations, policies or supervisory guidance, could affect us in substantial and unpredictable ways. Such changes could subject us to additional costs, limit the types of financial services and products we may offer and/or increase the ability of non-banks to offer competing financial services and products, among other things. Failure to comply with laws, regulations, policies or supervisory guidance could result in enforcement and other legal actions by Federal or state authorities, including criminal and civil penalties, the loss of FDIC insurance, the revocation of a banking charter, other sanctions by regulatory agencies, civil money penalties and/or reputational damage. In this regard, government authorities, including the bank regulatory agencies, are pursuing aggressive enforcement actions with respect to compliance and other legal matters involving financial activities, which heightens the risks associated with actual and perceived compliance failures. Directives issued to enforce such actions may be confidential and thus, in some instances, we are not permitted to publicly disclose these actions. Any of the foregoing could have a material adverse effect on our business, financial condition and results of operations.

See the sections captioned "Supervision and Regulation" included in Item 1. Business and Note 9 - Capital and Regulatory Matters in the notes to consolidated financial statements included in Item 8. Financial Statements and Supplementary Data elsewhere in this report.

Our Accounting Estimates and Risk Management Processes Rely On Analytical and Forecasting Models

The processes we use to estimate our inherent loan losses and to measure the fair value of financial instruments, as well as the processes used to estimate the effects of changing interest rates and other market measures on our financial condition and results of operations, depends upon the use of analytical and forecasting models. These models reflect assumptions that may not be accurate, particularly in times of market stress or other unforeseen circumstances. Even if these assumptions are adequate, the models may prove to be inadequate or inaccurate because of other flaws in their design or their implementation. If the models we use for interest rate risk and asset-liability management are inadequate, we may incur increased or unexpected losses upon changes in market interest rates or other market measures. If the models we use for determining our probable loan losses are inadequate, the allowance for loan losses may not be sufficient to support future charge-offs. If the models we use to measure the fair value of financial instruments are inadequate, the fair value of such financial instruments may fluctuate unexpectedly or may not accurately reflect what we could realize upon sale or settlement of such financial instruments. Any such failure in our analytical or forecasting models could have a material adverse effect on our business, financial condition and results of operations.

Changes In Accounting Standards Could Materially Impact Our Financial Statements

From time to time accounting standards setters change the financial accounting and reporting standards that govern the preparation of our financial statements. These changes can be difficult to predict and can materially impact how we record and report our financial condition and results of operations. In some cases, we could be required to apply a new or revised standard retroactively, resulting in changes to previously reported financial results or a cumulative charge to retained earnings. See Note 20 - Accounting Standards Updates in the notes to consolidated financial statements included in Item 8. Financial Statements and Supplementary Data elsewhere in this report for further information regarding pending accounting standards updates.

The Repeal Of Federal Prohibitions On Payment Of Interest On Demand Deposits Could Increase Our Interest Expense

All federal prohibitions on the ability of financial institutions to pay interest on demand deposit accounts were repealed as part of the Dodd-Frank Act beginning on July 21, 2011. As a result, some financial institutions offer interest on demand deposits to compete for customers. We do not yet know what interest rates other institutions may offer as market interest rates increase. Our interest expense will increase and our net interest margin will decrease if we begin offering interest on demand deposits to attract additional customers or maintain current customers, which could have a material adverse effect on our business, financial condition and results of operations.

We May Need To Raise Additional Capital In The Future, and Such Capital May Not Be Available When Needed Or At All

We may need to raise additional capital in the future to provide us with sufficient capital resources and liquidity to meet our commitments and business needs, particularly if our asset quality or earnings were to deteriorate significantly. Our ability to raise additional capital, if needed, will depend on, among other things, conditions in the capital markets at that time, which are outside of our control, and our financial condition. Economic conditions and the loss of confidence in financial institutions may increase our cost of funding and limit access to certain customary sources of capital, including inter-bank borrowings, repurchase agreements and borrowings from the discount window of the Federal Reserve.

We cannot assure that such capital will be available on acceptable terms or at all. Any occurrence that may limit our access to the capital markets, such as a decline in the confidence of debt purchasers, depositors of Frost Bank or counterparties participating in the capital markets, or a downgrade of Cullen/Frost's or Frost Bank's debt ratings, may adversely affect our capital costs and our ability to raise capital and, in turn, our liquidity. Moreover, if we need to raise capital in the future, we may have to do so when many other financial institutions are also seeking to raise capital and would have to compete with those institutions for investors. An inability to raise additional capital on acceptable terms when needed could have a materially adverse effect on our business, financial condition and results of operations.

The Value Of Our Goodwill and Other Intangible Assets May Decline In The Future

As of December 31, 2019, we had \$657.4 million of goodwill and other intangible assets. A significant decline in our expected future cash flows, a significant adverse change in the business climate, slower growth rates or a significant and sustained decline in the price of Cullen/Frost's common stock may necessitate taking charges in the future related to the impairment of our goodwill and other intangible assets. If we were to conclude that a future write-down of goodwill and other intangible assets is necessary, we would record the appropriate charge, which could have a material adverse effect on our business, financial condition and results of operations.

We Are Subject To Risk Arising From Failure Or Circumvention Of Our Controls and Procedures

Our internal controls, disclosure controls and procedures, and corporate governance policies and procedures are based in part on certain assumptions and can provide only reasonable, not absolute, assurances that the objectives of the system are met. Any failure or circumvention of our controls and procedures; failure to comply with regulations related to controls and procedures; and failure to comply with our corporate governance policies and procedures could have a material adverse effect on our reputation, business, financial condition and results of operations.

New Lines Of Business Or New Products and Services May Subject Us To Additional Risks

From time to time, we implement new lines of business or offer new products and services within existing lines of business. There are substantial risks and uncertainties associated with these efforts, particularly in instances where the markets are not fully developed. In developing and marketing new lines of business and/or new products and services we invest significant time and resources. Initial timetables for the introduction and development of new lines of business and/or new products or services may not be achieved and price and profitability targets may not prove feasible. External factors, such as compliance with regulations, competitive alternatives, and shifting market preferences, may also impact the successful implementation of a new line of business or a new product or service. Furthermore, any new line of business and/or new product or service could have a significant impact on the effectiveness of our system of internal controls. Failure to successfully manage these risks in the development and implementation of new lines of business or new products or services could have a material adverse effect on our business, financial condition and results of operations.

Our Reputation and Our Business Are Subject to Negative Publicity Risk

Reputation risk, or the risk to our earnings and capital from negative public opinion, is inherent in our business. Negative public opinion could adversely affect our ability to keep and attract customers and expose us to adverse legal and regulatory consequences. Negative public opinion could result from our actual or alleged conduct in any number of activities, including lending practices, corporate governance, regulatory compliance, mergers and acquisitions, and disclosure, sharing or inadequate protection of customer information, and from actions taken by government regulators and community organizations in response to that conduct. Negative public opinion could also result from adverse news or publicity that impairs the reputation of the financial services industry generally. In addition, our reputation or prospects may be significantly damaged by adverse publicity or negative information regarding us, whether or not true, that may be posted on social media, non-mainstream news services or other parts of the internet, and this risk is magnified by the speed and pervasiveness with which information is disseminated through those channels. Because we conduct most of our business under the “Frost” brand, negative public opinion about one business could affect our other businesses.

Our Business, Financial Condition and Results Of Operations Are Subject To Risk From Changes in Customer Behavior

Individual, economic, political, industry-specific conditions and other factors outside of our control, such as fuel prices, energy costs, real estate values or other factors that affect customer income levels, could alter anticipated customer behavior, including borrowing, repayment, investment and deposit practices. Such a change in these practices could materially adversely affect our ability to anticipate business needs and meet regulatory requirements. Further, difficult economic conditions may negatively affect consumer confidence levels. A decrease in consumer confidence levels would likely aggravate the adverse effects of these difficult market conditions on us, our customers and others in the financial institutions industry.

Cullen/Frost Relies On Dividends From Its Subsidiaries For Most Of Its Revenue

Cullen/Frost is a separate and distinct legal entity from its subsidiaries. It receives substantially all of its revenue from dividends from its subsidiaries. These dividends are the principal source of funds to pay dividends on Cullen/Frost’s common stock and preferred stock and interest and principal on Cullen/Frost’s debt. Various federal and state laws and regulations limit the amount of dividends that Frost Bank and certain non-bank subsidiaries may pay to Cullen/Frost. Also, Cullen/Frost’s right to participate in a distribution of assets upon a subsidiary’s liquidation or reorganization is subject to the prior claims of the subsidiary’s creditors. In the event Frost Bank is unable to pay dividends to Cullen/Frost, Cullen/Frost may not be able to service debt, pay obligations or pay dividends on our common stock or our preferred stock. The inability to receive dividends from Frost Bank could have a material adverse effect on our business, financial condition and results of operations.

See the section captioned “Supervision and Regulation” in Item 1. Business and Note 9 - Capital and Regulatory Matters in the notes to consolidated financial statements included in Item 8. Financial Statements and Supplementary Data elsewhere in this report.

Potential Acquisitions May Disrupt Our Business and Dilute Stockholder Value

We generally seek merger or acquisition partners that are culturally similar and have experienced management and possess either significant market presence or have potential for improved profitability through financial management, economies of scale or expanded services. Acquiring other banks, businesses, or branches involves various risks commonly associated with acquisitions, including, among other things:

- Potential exposure to unknown or contingent liabilities of the target company.
- Exposure to potential asset quality issues of the target company.
- Potential disruption to our business.
- Potential diversion of our management's time and attention.
- The possible loss of key employees and customers of the target company.
- Difficulty in estimating the value of the target company.
- Potential changes in banking or tax laws or regulations that may affect the target company.

Acquisitions typically involve the payment of a premium over book and market values, and, therefore, some dilution of our tangible book value and net income per common share may occur in connection with any future transaction. Furthermore, failure to realize the expected revenue increases, cost savings, increases in geographic or product presence, and/or other projected benefits from an acquisition could have a material adverse effect on our business, financial condition and results of operations.

Acquisitions May Be Delayed, Impeded, Or Prohibited Due To Regulatory Issues

Acquisitions by financial institutions, including us, are subject to approval by a variety of federal and state regulatory agencies (collectively, "regulatory approvals"). The process for obtaining these required regulatory approvals has become substantially more difficult since the global financial crisis, and our ability to engage in certain merger or acquisition transactions depends on the bank regulators' views at the time as to our capital levels, quality of management, and overall condition, in addition to their assessment of a variety of other factors, including our compliance with law. Regulatory approvals could be delayed, impeded, restrictively conditioned or denied due to existing or new regulatory issues we have, or may have, with regulatory agencies, including, without limitation, issues related to Bank Secrecy Act compliance, Community Reinvestment Act issues, fair lending laws, fair housing laws, consumer protection laws, unfair, deceptive, or abusive acts or practices regulations and other similar laws and regulations. We may fail to pursue, evaluate or complete strategic and competitively significant acquisition opportunities as a result of our inability, or perceived or anticipated inability, to obtain regulatory approvals in a timely manner, under reasonable conditions or at all. Difficulties associated with potential acquisitions that may result from these factors could have a material adverse effect on our business, financial condition and results of operations.

We Are Subject To Liquidity Risk

We require liquidity to meet our deposit and debt obligations as they come due. Our access to funding sources in amounts adequate to finance our activities or on terms that are acceptable to us could be impaired by factors that affect us specifically or the financial services industry or economy generally. Factors that could reduce our access to liquidity sources include a downturn in the Texas economy, difficult credit markets or adverse regulatory actions against us. Our access to deposits may also be affected by the liquidity needs of our depositors. In particular, a substantial majority of our liabilities are demand, savings, interest checking and money market deposits, which are payable on demand or upon several days' notice, while by comparison, a substantial portion of our assets are loans, which cannot be called or sold in the same time frame. We may not be able to replace maturing deposits and advances as necessary in the future, especially if a large number of our depositors sought to withdraw their accounts, regardless of the reason. A failure to maintain adequate liquidity could have a material adverse effect on our business, financial condition and results of operations.

We May Not Be Able To Attract and Retain Skilled People

Our success depends, in large part, on our ability to attract and retain key people. Competition for the best people in many activities engaged in by us is intense and we may not be able to hire people or to retain them. We do not currently have employment agreements or non-competition agreements with any of our senior officers. The unexpected loss of services of key personnel could have a material adverse impact on our business, financial condition and results of operations because of their customer relationships, skills, knowledge of our market, years of industry experience

and the difficulty of promptly finding qualified replacement personnel. In addition, the scope and content of U.S. banking regulators' policies on incentive compensation, as well as changes to these policies, could adversely affect our ability to hire, retain and motivate our key employees.

We Are Subject To Government Regulation and Oversight Relating to Data and Privacy Protection

Our business requires the collection and retention of large volumes of customer data, including personally identifiable information in various information systems that we maintain and in those maintained by third parties with whom we contract to provide data services. We also maintain important internal company data such as personally identifiable information about our employees and information relating to our operations. The integrity and protection of that customer and company data is important to us. Our collection of such customer and company data is subject to extensive regulation and oversight. As further discussed below, such customer and company data may be jeopardized from the compromise of customers' personal electronic devices or as a result of a data security breach in our systems or the systems of third parties. Losses due to unauthorized account activity could harm our reputation and may have adverse effects on our business, financial condition and results of operations.

We are subject to laws and regulations relating to the privacy of the information of our clients, employees or others, and any failure to comply with these laws and regulations could expose us to liability and/or reputational damage. As new privacy-related laws and regulations are implemented, the time and resources needed for us to comply with such laws and regulations, as well as our potential liability for non-compliance and reporting obligations in the case of data breaches, may significantly increase.

Our Information Systems May Experience Failure, Interruption Or Breach In Security

In the ordinary course of business, we rely on electronic communications and information systems to conduct our operations and to store sensitive data. Any failure, interruption or breach in security of these systems could result in significant disruption to our operations. Information security breaches and cybersecurity-related incidents include, but are not limited to, attempts to access information, including customer and company information, malicious code, computer viruses and denial of service attacks that could result in unauthorized access, misuse, loss or destruction of data (including confidential customer information), account takeovers, unavailability of service or other events. These types of threats may derive from human error, fraud or malice on the part of external or internal parties, or may result from accidental technological failure. Our technologies, systems, networks and software have been and continue to be subject to cybersecurity threats and attacks, which range from uncoordinated individual attempts to sophisticated and targeted measures directed at us. The risk of a security breach or disruption, particularly through cyber attack or cyber intrusion, has increased as the number, intensity and sophistication of attempted attacks and intrusions from around the world have increased.

Our customers and employees have been, and will continue to be, targeted by parties using fraudulent e-mails and other communications in attempts to misappropriate passwords, bank account information or other personal information or to introduce viruses or other malware through "Trojan horse" programs to our information systems, the information systems of our merchants or third party service providers and/or our customers' computers. Though we endeavor to mitigate these threats through product improvements, use of encryption and authentication technology and customer and employee education, such cyber attacks against us or our merchants and our third party service providers remain a serious issue. Further, to access our products and services our customers use personal electronic devices that are beyond our security control systems. The pervasiveness of cybersecurity incidents in general and the risks of cyber crime are complex and continue to evolve. More generally, publicized information concerning security and cyber-related problems could inhibit the use or growth of electronic or web-based applications or solutions as a means of conducting commercial transactions.

Cloud technologies are also critical to the operation of our systems, and our reliance on cloud technologies is growing. Service disruptions in cloud technologies may lead to delays in accessing, or the loss of, data that is important to our businesses and may hinder our clients' access to our products and services.

Although we make significant efforts to maintain the security and integrity of our information systems and have implemented various measures to manage the risk of a security breach or disruption, there can be no assurance that our security efforts and measures will be effective or that attempted security breaches or disruptions would not be successful or damaging. Even the most well protected information, networks, systems and facilities remain potentially vulnerable because attempted security breaches, particularly cyber attacks and intrusions, or disruptions will occur in the future, and because the techniques used in such attempts are constantly evolving and generally are not recognized until launched

against a target, and in some cases are designed not to be detected and, in fact, may not be detected. Accordingly, we may be unable to anticipate these techniques or to implement adequate security barriers or other preventative measures, and thus it is virtually impossible for us to entirely mitigate this risk. While we maintain specific “cyber” insurance coverage, which would apply in the event of various breach scenarios, the amount of coverage may not be adequate in any particular case. Furthermore, because cyber threat scenarios are inherently difficult to predict and can take many forms, some breaches may not be covered under our cyber insurance coverage. A security breach or other significant disruption of our information systems or those related to our customers, merchants and our third party vendors, including as a result of cyber attacks, could (i) disrupt the proper functioning of our networks and systems and therefore our operations and/or those of certain of our customers; (ii) result in the unauthorized access to, and destruction, loss, theft, misappropriation or release of confidential, sensitive or otherwise valuable information of ours or our customers; (iii) result in a violation of applicable privacy, data breach and other laws, subjecting us to additional regulatory scrutiny and exposing us to civil litigation, governmental fines and possible financial liability; (iv) require significant management attention and resources to remedy the damages that result; or (v) harm our reputation or cause a decrease in the number of customers that choose to do business with us. The occurrence of any of the foregoing could have a material adverse effect on our business, financial condition and results of operations.

Furthermore, notwithstanding the proliferation of technology and technology-based risk and control systems, our businesses ultimately rely on people as our greatest resource, and, from time-to-time, they make mistakes or engage in violations of applicable policies, laws, rules or procedures that are not always caught immediately by our technological processes or by our controls and other procedures, which are intended to prevent and detect such errors or violations. These can include calculation errors, mistakes in addressing emails, errors in software or model development or implementation, or simple errors in judgment, as well as intentional efforts to ignore or circumvent applicable policies, laws, rules or procedures. Human errors, malfeasance and other misconduct, including the intentional misuse of client information in connection with insider trading or for other purposes, even if promptly discovered and remediated, can result in reputational damage, a material adverse effect on our business, financial condition, results of operations and legal risks.

During 2018, we experienced a data security incident that resulted in unauthorized access to a third-party lockbox software program used by certain of our commercial lockbox customers to store digital images. We stopped the identified unauthorized access and consulted with a leading cybersecurity firm. We reported the incident to, and cooperated with, law-enforcement authorities. We contacted each of the affected commercial customers and we supported them in taking appropriate actions. The identified incident did not impact other Frost systems.

Our Operations Rely On Certain External Vendors

We rely on certain external vendors to provide products and services necessary to maintain our day-to-day operations. These third party vendors are sources of operational and informational security risk to us, including risks associated with operational errors, information system interruptions or breaches and unauthorized disclosures of sensitive or confidential client or customer information. If these vendors encounter any of these issues, or if we have difficulty communicating with them, we could be exposed to disruption of operations, loss of service or connectivity to customers, reputational damage, and litigation risk that could have a material adverse effect on our business and, in turn, our financial condition and results of operations.

In addition, our operations are exposed to risk that these vendors will not perform in accordance with the contracted arrangements under service level agreements. Although we have selected these external vendors carefully, we do not control their actions. The failure of an external vendor to perform in accordance with the contracted arrangements under service level agreements, because of changes in the vendor's organizational structure, financial condition, support for existing products and services or strategic focus or for any other reason, could be disruptive to our operations, which could have a material adverse effect on our business and, in turn, our financial condition and results of operations. Replacing these external vendors could also entail significant delay and expense.

We Continually Encounter Technological Change

The financial services industry is continually undergoing rapid technological change with frequent introductions of new technology-driven products and services. The effective use of technology increases efficiency and enables financial institutions to better serve customers and to reduce costs. Our future success depends, in part, upon our ability to address the needs of our customers by using technology to provide products and services that will satisfy customer demands, as well as to create additional efficiencies in our operations. Many of our competitors have substantially greater resources to invest in technological improvements. We may not be able to effectively implement new technology-driven products

and services or be successful in marketing these products and services to our customers. Failure to successfully keep pace with technological change affecting the financial services industry could have a material adverse effect on our business, financial condition and results of operations.

On the other hand, our implementation of certain new technologies, such as those related to artificial intelligence and algorithms, in our business processes may have unintended consequences due to their limitations or our failure to use them effectively, which could also have a material adverse effect on our business, financial condition, results of operations and legal risks.

We Are Subject To Litigation Risk Pertaining To Fiduciary Responsibility

From time to time, customers make claims and take legal action pertaining to our performance of our fiduciary responsibilities. Whether customer claims and legal action related to our performance of our fiduciary responsibilities are founded or unfounded, if such claims and legal actions are not resolved in a manner favorable to us they may result in significant financial liability and/or adversely affect the market perception of us and our products and services as well as impact customer demand for those products and services. Any financial liability or reputational damage could have a material adverse effect on our business, financial condition and results of operations.

We Are Subject To Litigation Risk Pertaining To Intellectual Property

Banking and other financial services companies, including us, rely on technology companies to provide information technology products and services necessary to support day-to-day operations. Technology companies frequently enter into litigation based on allegations of patent infringement or other violations of intellectual property rights. In addition, patent holding companies seek to monetize patents they have purchased or otherwise obtained. Competitors of our vendors, or other individuals or companies, have from time to time claimed to hold intellectual property sold to us by our vendors and we are, and may in the future be, named as defendants in various related litigation. Such claims may increase in the future as the financial services sector becomes more reliant on information technology vendors. The plaintiffs in these actions frequently seek injunctions and substantial damages.

Regardless of the scope or validity of such patents or other intellectual property rights, or the merits of any claims by potential or actual litigants, we may have to engage in protracted litigation. Such litigation is often expensive, time-consuming, disruptive to our operations and distracting to management. If we are found to infringe upon one or more patents or other intellectual property rights, we may be required to pay substantial damages or royalties to a third-party. In certain cases, we may consider entering into licensing agreements for disputed intellectual property, although no assurance can be given that such licenses can be obtained on acceptable terms or that litigation will not occur. These licenses may also significantly increase our operating expenses. If legal matters related to intellectual property claims were resolved against us or settled, we could be required to make payments in amounts that could have a material adverse effect on our business, financial condition and results of operations.

We Are Subject To Environmental Liability Risk Associated With Lending Activities

A significant portion of our loan portfolio is secured by real property. During the ordinary course of business, we foreclose on and take title to properties securing certain loans. In doing so, there is a risk that hazardous or toxic substances could be found on these properties. If hazardous or toxic substances are found, we may be liable for remediation costs, as well as for personal injury and property damage. Environmental laws may require us to incur substantial expenses and may materially reduce the affected property's value or limit our ability to use or sell the affected property. In addition, future laws or more stringent interpretations or enforcement policies with respect to existing laws may increase our exposure to environmental liability. Environmental reviews of real property before initiating foreclosure actions may not be sufficient to detect all potential environmental hazards. The remediation costs and any other financial liabilities associated with an environmental hazard could have a material adverse effect on our business, financial condition and results of operations.

Severe Weather, Natural Disasters, Acts Of War Or Terrorism and Other External Events Could Significantly Impact Our Business

Severe weather, natural disasters, acts of war or terrorism and other adverse external events could have a significant impact on our ability to conduct business. In addition, such events could affect the stability of our deposit base, impair the ability of borrowers to repay outstanding loans, impair the value of collateral securing loans, cause significant property damage, result in loss of revenue and/or cause us to incur additional expenses. The occurrence of any such event in the future could have a material adverse effect on our business, which, in turn, could have a material adverse effect on our business, financial condition and results of operations.

Financial Services Companies Depend On The Accuracy and Completeness Of Information About Customers and Counterparties

In deciding whether to extend credit or enter into other transactions, we rely on information furnished by or on behalf of customers and counterparties, including financial statements, credit reports and other financial information. We also rely on representations of those customers, counterparties or other third parties, such as independent auditors, as to the accuracy and completeness of that information. Reliance on inaccurate or misleading financial statements, credit reports or other financial information could have a material adverse impact on our business, financial condition and results of operations.

Changes In The Federal, State Or Local Tax Laws May Negatively Impact Our Financial Performance

We are subject to changes in tax law that could increase our effective tax rates. These law changes may be retroactive to previous periods and as a result could negatively affect our current and future financial performance. Furthermore, the full impact of the Tax Cuts and Jobs Act, which was enacted on December 22, 2017, on us and our customers remains uncertain, creating uncertainty and risk related to our customers' future demand for credit and our future results. Increased economic activity expected to result from the decrease in federal income tax rates on businesses generally could spur additional economic activity that would encourage additional borrowing. At the same time, some customers may elect to use their additional cash flow from lower taxes to fund their existing levels of activity, decreasing borrowing needs. The elimination of the federal income tax deductibility of business interest expense for a significant number of our customers effectively increases the cost of borrowing and could make equity or hybrid funding relatively more attractive. This could have a long-term negative impact on business customer borrowing. There is no assurance that presently anticipated benefits of federal income tax reform for us will be realized.

We Are Subject To Examinations and Challenges By Tax Authorities

We are subject to federal and applicable state tax regulations. Such tax regulations are often complex and require interpretation and changes in these regulations could negatively impact our results of operations. In the normal course of business, we are routinely subject to examinations and challenges from federal and applicable state tax authorities regarding the amount of taxes due in connection with investments we have made and the businesses in which we have engaged. Recently, federal and state taxing authorities have become increasingly aggressive in challenging tax positions taken by financial institutions. These tax positions may relate to tax compliance, sales and use, franchise, gross receipts, payroll, property and income tax issues, including tax base, apportionment and tax credit planning. The challenges made by tax authorities may result in adjustments to the timing or amount of taxable income or deductions or the allocation of income among tax jurisdictions. If any such challenges are made and are not resolved in our favor, they could have a material adverse effect on our business, financial condition and results of operations.

Risks Associated With Our Common Stock

Our Stock Price Can Be Volatile

Stock price volatility may make it more difficult for you to resell your common stock when you want and at prices you find attractive. Our stock price can fluctuate significantly in response to a variety of factors including, among other things:

- Actual or anticipated variations in quarterly results of operations.
- Recommendations by securities analysts.
- Operating and stock price performance of other companies that investors deem comparable to us.
- News reports relating to trends, concerns and other issues in the financial services industry.

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- Perceptions in the marketplace regarding us and/or our competitors.
- New technology used, or services offered, by competitors.
- The issuance by us of additional securities, including common stock and securities that are convertible into or exchangeable for, or that represent the right to receive, common stock.
- Sales of a large block of shares of our common stock or similar securities in the market after an equity offering, or the perception that such sales could occur.
- Significant acquisitions or business combinations, strategic partnerships, joint ventures or capital commitments by or involving us or our competitors.
- Failure to integrate acquisitions or realize anticipated benefits from acquisitions.
- Changes in government regulations.
- Geopolitical conditions such as acts or threats of terrorism or military conflicts.

General market fluctuations, including real or anticipated changes in the strength of the Texas economy; industry factors and general economic and political conditions and events, such as economic slowdowns or recessions; interest rate changes, oil price volatility or credit loss trends could also cause our stock price to decrease regardless of operating results.

The Trading Volume In Our Common Stock Is Less Than That Of Other Larger Financial Services Companies

Although our common stock is listed for trading on the New York Stock Exchange (NYSE), the trading volume in our common stock is less than that of other, larger financial services companies. A public trading market having the desired characteristics of depth, liquidity and orderliness depends on the presence in the marketplace of willing buyers and sellers of our common stock at any given time. This presence depends on the individual decisions of investors and general economic and market conditions over which we have no control. Given the lower trading volume of our common stock, significant sales of our common stock, or the expectation of these sales, could cause our stock price to fall.

Cullen/Frost May Not Continue To Pay Dividends On Its Common Stock In The Future

Holders of Cullen/Frost common stock are only entitled to receive such dividends as its board of directors may declare out of funds legally available for such payments. Although Cullen/Frost has historically declared cash dividends on its common stock, it is not required to do so and may reduce or eliminate its common stock dividend in the future. This could adversely affect the market price of Cullen/Frost's common stock. Also, Cullen/Frost is a bank holding company, and its ability to declare and pay dividends is dependent on certain federal regulatory considerations, including the guidelines of the Federal Reserve Board regarding capital adequacy and dividends.

As more fully discussed in Note 9 - Capital and Regulatory Matters in the notes to consolidated financial statements included in Item 8. Financial Statements and Supplementary Data elsewhere in this report, our ability to declare or pay dividends on our common stock may also be subject to certain restrictions in the event that we elect to defer the payment of interest on our junior subordinated deferrable interest debentures or do not declare and pay dividends on our Series A Preferred Stock.

An Investment In Our Common Stock Is Not An Insured Deposit

Our common stock is not a bank deposit and, therefore, is not insured against loss by the Federal Deposit Insurance Corporation (FDIC), any other deposit insurance fund or by any other public or private entity. Investment in our common stock is inherently risky for the reasons described in this "Risk Factors" section and elsewhere in this report and is subject to the same market forces that affect the price of common stock in any company. As a result, if you acquire our common stock, you could lose some or all of your investment.

Certain Banking Laws May Have An Anti-Takeover Effect

Provisions of federal banking laws, including regulatory approval requirements, could make it more difficult for a third party to acquire us, even if doing so would be perceived to be beneficial to our shareholders. These provisions effectively inhibit a non-negotiated merger or other business combination, which, in turn, could adversely affect the market price of our common stock.

ITEM 1B. UNRESOLVED STAFF COMMENTS

None

ITEM 2. PROPERTIES

Our headquarters is located in downtown San Antonio, Texas. These facilities, which we lease, house our executive and primary administrative offices, as well as the principal banking headquarters of Frost Bank. We also own or lease other facilities within our primary market areas in the regions of Austin, Corpus Christi, Dallas, Fort Worth, Houston, Permian Basin, Rio Grande Valley and San Antonio. We consider our properties to be suitable and adequate for our present needs.

ITEM 3. 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 effect on our business, financial condition and results of operations.

ITEM 4. MINE SAFETY DISCLOSURES

None

PART II

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

Market for Our Common Stock

Our common stock is traded on the New York Stock Exchange, Inc. ("NYSE") under the symbol "CFR". As of December 31, 2019, there were 62,669,004 shares of our common stock outstanding held by 1,130 holders of record. The closing price per share of common stock on December 31, 2019, the last trading day of our fiscal year, was \$97.78.

Stock-Based Compensation Plans

Information regarding stock-based compensation awards outstanding and available for future grants as of December 31, 2019, segregated between stock-based compensation plans approved by shareholders and stock-based compensation plans not approved by shareholders, is presented in the table below. Additional information regarding stock-based compensation plans is presented in Note 11 - Employee Benefit Plans in the notes to consolidated financial statements included in Item 8. Financial Statements and Supplementary Data elsewhere in this report.

Plan Category	Number of Shares to be Issued Upon Exercise of Outstanding Awards	Weighted-Average Exercise Price of Outstanding Awards	Number of Shares Available for Future Grants
Plans approved by shareholders	2,654,171 ⁽¹⁾	\$ 64.60 ⁽²⁾	1,105,616
Plans not approved by shareholders	—	—	—
Total	2,654,171	64.60	1,105,616

(1) Includes 1,980,866 shares related to stock options, 440,647 shares related to non-vested stock units, 55,370 shares related to director deferred stock units and 177,288 shares related to performance stock units (assuming attainment of the maximum payout rate as set forth by the performance criteria).

(2) Excludes outstanding stock units which are exercised for no consideration.

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 July 24, 2019, 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 202,724 shares at a total cost of \$17.2 million during 2019. Under prior stock repurchase programs, we repurchased 496,307 shares at a total cost of \$50.0 million during 2019, 1,027,292 shares at a total cost of \$100.0 million during 2018 and 1,134,966 shares at a total cost of \$100.0 million during 2017.

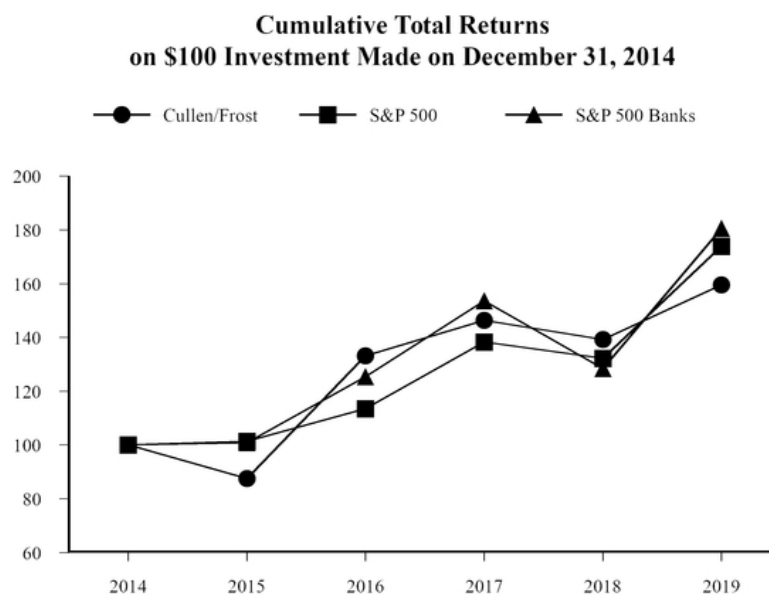
The following table provides information with respect to purchases made by or on behalf of us or any "affiliated purchaser" (as defined in Rule 10b-18(a)(3) under the Securities Exchange Act of 1934), of our common stock during the fourth quarter of 2019.

Period	Total Number of Shares Purchased	Average Price Paid Per Share	Total Number of Shares Purchased as Part of Publicly Announced Plans	Maximum Number (or Approximate Dollar Value) of Shares That May Yet Be Purchased Under the Plans at the End of the Period
October 1, 2019 to October 31, 2019	11,680 ⁽¹⁾	\$ 92.84	—	\$ 82,809
November 1, 2019 to November 30, 2019	—	—	—	82,809
December 1, 2019 to December 31, 2019	—	—	—	82,809
Total	11,680		—	

(1) Repurchases made in connection with the vesting of certain share awards.

Performance Graph

The performance graph below compares the cumulative total shareholder return on Cullen/Frost Common Stock with the cumulative total return on the equity securities of companies included in the Standard & Poor's 500 Stock Index and the Standard and Poor's 500 Bank Index, measured at the last trading day of each year shown. The graph assumes an investment of \$100 on December 31, 2014 and reinvestment of dividends on the date of payment without commissions. The performance graph represents past performance and should not be considered to be an indication of future performance.



	2014	2015	2016	2017	2018	2019
Cullen/Frost	\$ 100.00	\$ 87.56	\$ 133.10	\$ 146.31	\$ 139.22	\$ 159.54
S&P 500	100.00	101.38	113.51	138.29	132.23	173.86
S&P 500 Banks	100.00	100.85	125.36	153.64	128.38	180.55

ITEM 6. SELECTED FINANCIAL DATA

The following consolidated selected financial data is derived from our audited financial statements as of and for the five years ended December 31, 2019. The following consolidated financial data should be read in conjunction with Management's Discussion and Analysis of Financial Condition and Results of Operations and the Consolidated Financial Statements and related notes included elsewhere in this report. Beginning in 2018, a new accounting standard required us to report network costs associated with debit card and ATM transactions netted against the related interchange and debit card fee income from such transactions. Previously, such network costs were reported as a component of other non-interest expense. The operating results of companies acquired during the periods presented are included with our results of operations since their respective dates of acquisition. Dollar amounts, except per share data, and common shares outstanding are in thousands.

	Year Ended December 31,				
	2019	2018	2017	2016	2015
Consolidated Statements of Income					
Interest income:					
Loans, including fees	\$ 741,747	\$ 669,002	\$ 534,804	\$ 458,094	\$ 433,872
Securities	350,924	319,728	315,599	313,943	307,394
Interest-bearing deposits	35,590	56,968	41,608	16,103	8,123
Federal funds sold and resell agreements	5,524	5,500	936	272	107
Total interest income	1,133,785	1,051,198	892,947	788,412	749,496
Interest expense:					
Deposits	99,742	75,337	17,188	7,248	9,024
Federal funds purchased and repurchase agreements	19,675	8,021	1,522	204	167
Junior subordinated deferrable interest debentures	5,706	5,291	3,955	3,281	2,725
Subordinated notes payable and other borrowings	4,657	4,657	3,860	1,343	948
Total interest expense	129,780	93,306	26,525	12,076	12,864
Net interest income	1,004,005	957,892	866,422	776,336	736,632
Provision for loan losses	33,759	21,613	35,460	51,673	51,845
Net interest income after provision for loan losses	970,246	936,279	830,962	724,663	684,787
Non-interest income:					
Trust and investment management fees	126,722	119,391	110,675	104,240	105,512
Service charges on deposit accounts	88,983	85,186	84,182	81,203	81,350
Insurance commissions and fees	52,345	48,967	46,169	47,154	48,926
Interchange and debit card transaction fees	14,873	13,877	23,232	21,369	19,666
Other charges, commissions and fees	37,123	37,231	39,931	39,623	37,551
Net gain (loss) on securities transactions	293	(156)	(4,941)	14,975	69
Other	43,563	46,790	37,222	41,144	35,656
Total non-interest income	363,902	351,286	336,470	349,708	328,730
Non-interest expense:					
Salaries and wages	375,029	350,312	337,068	318,665	310,504
Employee benefits	86,230	77,323	74,575	72,615	69,746
Net occupancy	89,466	76,788	75,971	71,627	65,690
Technology, furniture and equipment	91,995	83,102	74,335	71,208	64,373
Deposit insurance	10,126	16,397	20,128	17,428	14,519
Intangible amortization	1,168	1,424	1,703	2,429	3,325
Other	180,665	173,538	175,289	178,988	165,561
Total non-interest expense	834,679	778,884	759,069	732,960	693,718
Income before income taxes	499,469	508,681	408,363	341,411	319,799
Income taxes	55,870	53,763	44,214	37,150	40,471
Net income	443,599	454,918	364,149	304,261	279,328
Preferred stock dividends	8,063	8,063	8,063	8,063	8,063
Net income available to common shareholders	\$ 435,536	\$ 446,855	\$ 356,086	\$ 296,198	\$ 271,265

	As of or for the Year Ended December 31,				
	2019	2018	2017	2016	2015
Per Common Share Data					
Net income - basic	\$ 6.89	\$ 6.97	\$ 5.56	\$ 4.73	\$ 4.31
Net income - diluted	6.84	6.90	5.51	4.70	4.28
Cash dividends declared and paid	2.80	2.58	2.25	2.15	2.10
Book value	60.11	51.19	49.68	45.03	44.30
Common Shares Outstanding					
Period-end	62,669	62,986	63,476	63,474	61,982
Weighted-average shares - basic	62,742	63,705	63,694	62,376	62,758
Dilutive effect of stock compensation	700	982	968	593	715
Weighted - average shares - diluted	63,442	64,687	64,662	62,969	63,473
Performance Ratios					
Return on average assets	1.36%	1.44%	1.17%	1.03%	0.97%
Return on average common equity	12.24	14.23	11.76	10.16	9.86
Net interest income to average earning assets	3.75	3.64	3.69	3.56	3.45
Dividend pay-out ratio	40.64	37.03	40.49	45.54	48.72
Balance Sheet Data					
Period-end:					
Loans	\$ 14,750,332	\$ 14,099,733	\$ 13,145,665	\$ 11,975,392	\$ 11,486,531
Earning assets	31,280,550	29,894,185	29,595,375	28,025,439	26,431,176
Total assets	34,027,428	32,292,966	31,747,880	30,196,319	28,565,942
Non-interest-bearing demand deposits	10,873,629	10,997,494	11,197,093	10,513,369	10,270,233
Interest-bearing deposits	16,765,935	16,151,710	15,675,296	15,298,206	14,073,362
Total deposits	27,639,564	27,149,204	26,872,389	25,811,575	24,343,595
Long-term debt and other borrowings	235,164	234,950	234,736	236,117	235,939
Shareholders' equity	3,911,668	3,368,917	3,297,863	3,002,528	2,890,343
Average:					
Loans	\$ 14,440,549	\$ 13,617,940	\$ 12,460,148	\$ 11,554,823	\$ 11,267,402
Earning assets	29,600,422	28,899,578	28,359,131	26,717,013	25,954,510
Total assets	32,085,851	31,029,850	30,450,207	28,832,093	28,060,626
Non-interest-bearing demand deposits	10,358,416	10,756,808	10,819,426	10,034,319	10,179,810
Interest-bearing deposits	16,054,861	15,532,258	15,085,492	14,477,525	13,860,948
Total deposits	26,413,277	26,289,066	25,904,918	24,511,844	24,040,758
Long-term debt and other borrowings	235,064	234,850	226,194	236,033	235,856
Shareholders' equity	3,702,039	3,284,376	3,173,264	3,058,896	2,895,192
Asset Quality					
Allowance for loan losses	\$ 132,167	\$ 132,132	\$ 155,364	\$ 153,045	\$ 135,859
Allowance for losses to year-end loans	0.90%	0.94%	1.18%	1.28%	1.18%
Net loan charge-offs	\$ 33,724	\$ 44,845	\$ 33,141	\$ 34,487	\$ 15,528
Net loan charge-offs to average loans	0.23%	0.33%	0.27%	0.30%	0.14%
Non-performing assets	\$ 109,485	\$ 74,914	\$ 157,292	\$ 102,591	\$ 85,722
Non-performing assets to:					
Total loans plus foreclosed assets	0.74%	0.53%	1.20%	0.86%	0.75%
Total assets	0.32	0.23	0.50	0.34	0.30
Consolidated Capital Ratios					
Common equity tier 1 risk-based ratio	12.36%	12.27%	12.42%	12.52%	11.37%
Tier 1 risk-based ratio	12.99	12.94	13.16	13.33	12.38
Total risk-based ratio	14.57	14.64	15.15	14.93	13.85
Leverage ratio	9.28	9.06	8.46	8.14	7.79
Average shareholders' equity to average total assets	11.54	10.58	10.42	10.61	10.32

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The following tables set forth unaudited consolidated selected quarterly statement of operations data for the years ended December 31, 2019 and 2018. Dollar amounts are in thousands, except per share data.

	Year Ended December 31, 2019			
	4th Quarter	3rd Quarter	2nd Quarter	1st Quarter
Interest income	\$ 278,054	\$ 286,273	\$ 288,137	\$ 281,321
Interest expense	26,956	33,266	34,706	34,852
Net interest income	251,098	253,007	253,431	246,469
Provision for loan losses	8,355	8,001	6,400	11,003
Non-interest income ⁽¹⁾	95,255	89,224	82,638	96,785
Non-interest expense	220,806	208,864	203,209	201,800
Income before income taxes	117,192	125,366	126,460	130,451
Income taxes	13,511	13,530	14,874	13,955
Net income	103,681	111,836	111,586	116,496
Preferred stock dividends	2,016	2,016	2,015	2,016
Net income available to common shareholders	\$ 101,665	\$ 109,820	\$ 109,571	\$ 114,480
Net income per common share:				
Basic	\$ 1.61	\$ 1.74	\$ 1.73	\$ 1.80
Diluted	1.60	1.73	1.72	1.79

	Year Ended December 31, 2018			
	4th Quarter	3rd Quarter	2nd Quarter	1st Quarter
Interest income	\$ 281,205	\$ 268,716	\$ 257,951	\$ 243,326
Interest expense	31,996	27,051	20,681	13,578
Net interest income	249,209	241,665	237,270	229,748
Provision for loan losses	3,767	2,650	8,251	6,945
Non-interest income ⁽²⁾	87,118	87,657	85,066	91,445
Non-interest expense	199,697	193,668	188,908	196,611
Income before income taxes	132,863	133,004	125,177	117,637
Income taxes	13,610	15,160	13,836	11,157
Net income	119,253	117,844	111,341	106,480
Preferred stock dividends	2,016	2,016	2,015	2,016
Net income available to common shareholders	\$ 117,237	\$ 115,828	\$ 109,326	\$ 104,464
Net income per common share:				
Basic	\$ 1.84	\$ 1.80	\$ 1.70	\$ 1.63
Diluted	1.82	1.78	1.68	1.61

(1) Includes net gains on securities transactions of \$169 thousand, \$96 thousand and \$28 thousand during the second, third and fourth quarters of 2019, respectively.

(2) Includes net losses on securities transactions of \$19 thousand, \$60 thousand, \$34 thousand and \$43 thousand during the first, second, third and fourth quarters of 2018, respectively.

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

Forward-Looking Statements and Factors that Could Affect Future Results

Certain statements contained in this Annual Report on Form 10-K 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:

- Local, regional, national and international economic conditions and the impact they may have on us and our customers and our assessment of that impact.
- Volatility and disruption in national and international financial and commodity markets.
- Government intervention in the U.S. financial system.
- 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 reserve requirements based upon the periodic review thereof under relevant regulatory and accounting requirements.
- 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.
- The effect of changes in laws and regulations (including laws and regulations concerning taxes, banking, securities and insurance) with which we and our subsidiaries must comply.
- The soundness of other financial institutions.
- Political instability.
- Impairment of our goodwill or other intangible assets.
- Acts of God or of war or terrorism.
- 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, borrowings and savings habits.
- Changes in the financial performance and/or condition of our borrowers.
- Technological changes.
- The cost and effects of failure, interruption, or breach of security of our systems.
- Acquisitions and integration of acquired businesses.
- Our ability to increase market share and control expenses.
- Our ability to attract and retain qualified employees.
- Changes in the competitive environment in our markets and among banking organizations and other financial service providers.
- 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.
- Changes in the reliability of our vendors, internal control systems or information systems.
- Changes in our liquidity position.
- Changes in our organization, compensation and benefit plans.

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- 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.
- Greater than expected costs or difficulties related to the integration of new products and lines of business.
- Our success at managing the risks involved in the foregoing items.

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 loan losses are considered to be critical, as these policies involve considerable subjective judgment and estimation by management. The allowance for loan losses is a reserve established through a provision for loan losses charged to expense, which represents management's best estimate of probable losses that have been incurred within the existing portfolio of loans. The allowance, in the judgment of management, is necessary to reserve for estimated loan losses and risks inherent in the loan portfolio. Our allowance for loan loss methodology includes allowance allocations calculated in accordance with Accounting Standards Codification (ASC) Topic 310, "Receivables" and allowance allocations calculated in accordance with ASC Topic 450, "Contingencies." The level of the allowance reflects management's continuing evaluation of industry concentrations, specific credit risks, loan loss experience, current loan portfolio quality, present economic, political and regulatory conditions and unidentified losses inherent in the current loan portfolio, as well as trends in the foregoing. 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 adequacy 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. See the section captioned "Allowance for Loan Losses" elsewhere in this discussion and Note 3 - Loans in the notes to consolidated financial statements included in Item 8. Financial Statements and Supplementary Data elsewhere in this report for further details of the risk factors considered by management in estimating the necessary level of the allowance for loan losses.

Overview

The following discussion and analysis presents the more significant factors that affected our financial condition as of December 31, 2019 and 2018 and results of operations for each of the years then ended. Refer to Management's Discussion and Analysis of Financial Condition and Results of Operations included in our Annual Report on Form 10-K filed with the SEC on February 6, 2019 (the "[2018 Form 10-K](#)") for a discussion and analysis of the more significant factors that affected periods prior to 2018.

Certain reclassifications have been made to make prior periods comparable. This discussion and analysis should be read in conjunction with our consolidated financial statements, notes thereto and other financial information appearing elsewhere in this report. From time to time, we have acquired various small businesses through our insurance subsidiary. None of these acquisitions had a significant impact on our financial statements. We account for acquisitions using the acquisition method, and as such, the results of operations of acquired companies are included from the date of acquisition.

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, thus making tax-exempt yields comparable to

taxable asset yields. Taxable equivalent adjustments were based upon a 21% income tax in 2019 and 2018 and a 35% income tax rate for prior years.

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

Results of Operations

Net income available to common shareholders totaled \$435.5 million, or \$6.84 diluted per common share, in 2019 compared to \$446.9 million, or \$6.90 diluted per common share, in 2018 and \$356.1 million, or \$5.51 diluted per common share, in 2017.

Selected income statement data, returns on average assets and average equity and dividends per share for the comparable periods were as follows:

	2019	2018	2017
Taxable-equivalent net interest income	\$ 1,100,586	\$ 1,052,564	\$ 1,043,431
Taxable-equivalent adjustment	96,581	94,672	177,009
Net interest income	1,004,005	957,892	866,422
Provision for loan losses	33,759	21,613	35,460
Non-interest income	363,902	351,286	336,470
Non-interest expense	834,679	778,884	759,069
Income before income taxes	499,469	508,681	408,363
Income taxes	55,870	53,763	44,214
Net income	443,599	454,918	364,149
Preferred stock dividends	8,063	8,063	8,063
Net income available to common shareholders	\$ 435,536	\$ 446,855	\$ 356,086
Earnings per common share - basic	\$ 6.89	\$ 6.97	\$ 5.56
Earnings per common share - diluted	6.84	6.90	5.51
Dividends per common share	2.80	2.58	2.25
Return on average assets	1.36%	1.44%	1.17%
Return on average common equity	12.24	14.23	11.76
Average shareholders' equity to average assets	11.54	10.58	10.42

Net income available to common shareholders decreased \$11.3 million for 2019 compared to 2018. The decrease was primarily the result of a \$55.8 million increase in non-interest expense, a \$12.1 million increase in the provision for loan losses and a \$2.1 million increase in income tax expense partly offset by a \$46.1 million increase in net interest income and a \$12.6 million increase in non-interest income.

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 73.4% of total revenue during 2019. 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. Our loan portfolio is significantly affected by changes in the prime interest rate. The prime rate began 2017 at 3.75% and increased 75 basis points (25 basis points in each of March, June and December) to end the year at 4.50%. During 2018, the prime rate increased 100 basis points (25 basis points in each of March, June, September and December) to end the year at 5.50%. During 2019, the prime rate decreased 50 basis points during the third quarter of 2019 (25 basis points in each of August and September) and 25 basis points in October 2019 to end the year at 4.75%. Our loan portfolio is also significantly impacted, by changes in the London Interbank Offered Rate (LIBOR). At December 31, 2019, the one-month and three-month U.S. dollar LIBOR rates were 1.76% and 1.90%, respectively, while at December 31, 2018, the one-month and three-month U.S. dollar LIBOR rates were 2.50% and 2.81% respectively, and at December 31, 2017, the one-month and three-month U.S. dollar LIBOR rates were 1.56%

and 1.69% respectively. The effective federal funds rate, which is the cost of immediately available overnight funds, started 2017 at 0.75% and increased 75 basis points (25 basis points in each of March, June and December) to end the year at 1.50%. During 2018, the effective federal funds rate increased 100 basis points (25 basis points in each of March, June, September and December) to end the year at 2.50%. During 2019, the effective federal funds rate decreased 50 basis points during the third quarter of 2019 (25 basis points in each of August and September) and 25 basis points in October 2019 to end the year at 1.75%.

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. Federal prohibitions on the payment of interest on demand deposits were repealed in 2011. Nonetheless, we have not experienced any significant additional costs as a result. See Item 7A. 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 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. The comparison between 2018 and 2017 includes an additional change factor detailing the effect of the reduction in the U.S. statutory federal income tax rate under the Tax Cuts and Jobs Act, which was enacted on December 22, 2017. See Note 13 - Income Taxes in the accompanying notes to consolidated financial statements elsewhere in this report for information regarding the Tax Cuts and Jobs Act. Our consolidated average balance sheets along with an analysis of taxable-equivalent net interest income are presented in Item 8. Financial Statements and Supplementary Data of this report.

	2019 vs. 2018			2018 vs. 2017			
	Increase (Decrease) Due to Change in			Increase (Decrease) Due to Change in			
	Rate	Volume	Total	Rate	Volume	Tax Rate	Total
Interest-bearing deposits	\$ 7,118	\$ (28,496)	\$ (21,378)	\$ 23,680	\$ (8,320)	\$ —	\$ 15,360
Federal funds sold and resell agreements	450	(426)	24	869	3,695	—	4,564
Securities:							
Taxable	13,909	16,803	30,712	5,131	(11,740)		(6,609)
Tax-exempt	(3,920)	6,123	2,203	(11,283)	28,033	(85,625)	(68,875)
Loans, net of unearned discounts	30,916	42,019	72,935	81,949	53,525	(4,000)	131,474
Total earning assets	48,473	36,023	84,496	100,346	65,193	(89,625)	75,914
Savings and interest checking	(791)	72	(719)	4,005	61	—	4,066
Money market deposit accounts	11,723	686	12,409	46,205	249	—	46,454
Time accounts	8,022	1,835	9,857	4,620	57	—	4,677
Public funds	1,302	1,556	2,858	2,990	(38)	—	2,952
Federal funds purchased and repurchase agreements	9,602	2,052	11,654	6,367	132	—	6,499
Junior subordinated deferrable interest debentures	413	2	415	1,334	2	—	1,336
Subordinated notes payable and other notes	(8)	8	—	408	389	—	797
Total interest-bearing liabilities	30,263	6,211	36,474	65,929	852	—	66,781
Net change	\$ 18,210	\$ 29,812	\$ 48,022	\$ 34,417	\$ 64,341	\$ (89,625)	\$ 9,133

Taxable-equivalent net interest income for 2019 increased \$48.0 million, or 4.6%, compared to 2018. The increase was primarily related to increases in the average yields on loans, taxable securities and interest-bearing deposits combined with increases in the average volumes of loans and both taxable and tax-exempt securities. The impact of these items was partly offset by increases in the average rates paid on and average volumes of interest-bearing deposits and other borrowed funds, a decrease in the average volume of interest bearing deposits (primarily excess reserves held in an interest-bearing account at the Federal Reserve) and a decrease in the average yield on tax-exempt securities.

The average volume of interest-earning assets for 2019 increased \$700.8 million, or 2.4%, compared to 2018. The increase in earning assets included an \$825.9 million increase in average taxable securities, an \$822.6 million increase in average loans and a \$406.1 million increase in average tax-exempt securities partly offset by a \$1.4 billion decrease in average interest-bearing deposits, federal funds sold and resell agreements.

The taxable-equivalent net interest margin increased 11 basis points from 3.64% during 2018 to 3.75% during 2019. The average yield on interest-earning assets increased 24 basis points from 3.96% during 2018 to 4.20% during 2019 and average rate paid on interest-bearing liabilities increased 19 basis points from 0.55% in 2018 to 0.74% in 2019. The average yield on interest-earning assets and the average rate paid on interest-bearing liabilities are primarily impacted by changes in market interest rates as well as changes in the volume and relative mix of the underlying assets and liabilities. The increase in the taxable-equivalent net interest margin was primarily related to increases in the average yields on loans; taxable securities; interest-bearing deposits; and federal funds sold and resell agreements partly offset by increases in the average cost of interest-bearing deposits and other borrowed funds and a decrease in the average yield on tax-exempt securities. The taxable-equivalent net interest margin was also positively impacted by a decrease in the relative proportion of interest-earning assets invested in lower-yielding interest-bearing deposits (primarily excess reserves held in an interest-bearing account at the Federal Reserve).

The average taxable-equivalent yield on loans was 5.17% during 2019 compared to 4.95% during 2018, increasing 22 basis points during 2019 compared to 2018. The average taxable-equivalent yield on loans was positively impacted by higher average market interest rates in 2019 compared to 2018. The average volume of loans increased \$822.6 million, or 6.0%, in 2019 compared to 2018. Loans made up approximately 48.8% of average interest-earning assets during 2019 compared to 47.1% during 2018.

The average taxable-equivalent yield on securities was 3.40% during 2019 compared to 3.38% during 2018. The average taxable-equivalent yield on securities was positively impacted by increases in the average volume of tax-exempt and taxable securities and an increase in the average yield on taxable securities but was negatively impacted by a decrease in the average yield on tax-exempt securities. The average yield on taxable securities was 2.33% during 2019 compared to 2.03% during 2018 while the average yield on tax exempt securities was 4.06% during 2019 compared to 4.11% during 2018. The average taxable-equivalent yield on tax-exempt securities decreased 5 basis points during 2019 compared to 2018, while the average yield on taxable securities increased 30 basis points during 2019 compared to 2018. Tax exempt securities made up approximately 62.0% of total average securities during 2019, compared to 65.0% during 2018. The average volume of total securities increased \$1.2 billion, or 10.2%, during 2019 compared to 2018. Securities made up approximately 44.9% of average interest-earning assets in 2019 compared to 41.7% in 2018.

Average interest-bearing deposits, federal funds sold and resell agreements during 2019 decreased \$1.4 billion, or 42.1%, compared to 2018. Interest-bearing deposits, federal funds sold and resell agreements made up approximately 6.3% of average interest-earning assets during 2019 compared to approximately 11.1% in 2018. The decrease in the average volume of interest-bearing deposits, federal funds sold and resell agreements was primarily due to a decrease in the average volume of our excess reserves held in an interest-bearing account at the Federal Reserve during 2019 compared to 2018 as such funds were invested in higher yielding loans and securities. The combined average yield on federal funds sold and resell agreements and interest-bearing deposits was 2.21% during 2019 and 1.94% during 2018.

The average rate paid on interest-bearing liabilities was 0.74% during 2019, increasing 19 basis points from 0.55% during 2018. Average deposits increased \$124.2 million, or 0.5%, in 2019 compared to 2018. Average interest-bearing deposits increased \$522.6 million in 2019 compared to 2018, while average non-interest-bearing deposits decreased \$398.4 million in 2019 compared to 2018. The ratio of average interest-bearing deposits to total average deposits was 60.8% in 2019 compared to 59.1% in 2018. 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 rate paid on interest-bearing deposits and total deposits was 0.62% and 0.38% in 2019 compared to 0.49% and 0.29% in 2018. The average cost of deposits during 2019 was impacted by higher average interest rates paid on most of our interest-bearing deposit products, particularly during the first half of 2019, as a result of higher average market interest rates and market competition.

Our taxable-equivalent 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 3.46% in 2019 compared to 3.41% in 2018. 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. A discussion of the effects of changing

interest rates on net interest income is set forth in Item 7A. Quantitative and Qualitative Disclosures About Market Risk 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 15 - Derivative Financial Instruments in the accompanying notes to consolidated financial statements elsewhere in this report. Information regarding the impact of fluctuations in interest rates on our derivative financial instruments is set forth in Item 7A. Quantitative and Qualitative Disclosures About Market Risk elsewhere in this report.

Provision for Loan Losses

The provision for loan losses is determined by management as the amount to be added to the allowance for loan losses after net charge-offs have been deducted to bring the allowance to a level which, in management's best estimate, is necessary to absorb inherent losses within the existing loan portfolio. The provision for loan losses totaled \$33.8 million in 2019 compared to \$21.6 million in 2018. See the section captioned "Allowance for Loan Losses" elsewhere in this discussion for further analysis of the provision for loan losses.

Non-Interest Income

The components of non-interest income were as follows:

	2019	2018	2017
Trust and investment management fees	\$ 126,722	\$ 119,391	\$ 110,675
Service charges on deposit accounts	88,983	85,186	84,182
Insurance commissions and fees	52,345	48,967	46,169
Interchange and debit card transaction fees	14,873	13,877	23,232
Other charges, commissions and fees	37,123	37,231	39,931
Net gain (loss) on securities transactions	293	(156)	(4,941)
Other	43,563	46,790	37,222
Total	<u>\$ 363,902</u>	<u>\$ 351,286</u>	<u>\$ 336,470</u>

Total non-interest income for 2019 increased \$12.6 million, or 3.6%, compared to 2018. Changes in the various components of non-interest income are discussed in more detail below.

Trust and Investment Management Fees. Trust and investment management fee income for 2019 increased \$7.3 million, or 6.1%, compared to 2018. Investment fees are the most significant component of trust and investment management fees, making up approximately 82% and 83% of total trust and investment management fees in 2019 and 2018, respectively. Investment and other custodial account fees are generally based on the market value of assets within a trust account. Volatility in the equity and bond markets impacts the market value of trust assets and the related investment fees. The increase in trust and investment management fees during 2019 compared to 2018 was primarily the result of an increase in trust investment fees (up \$5.7 million) due to higher average equity valuations and an increase in the number of accounts. The increase was also partly related to increases in estate fees (up \$740 thousand) and oil and gas fees (up \$711 thousand).

At December 31, 2019, trust assets, including both managed assets and custody assets, were primarily composed of equity securities (50.7% of trust assets), fixed income securities (35.0% of trust assets) and cash equivalents (8.9% of trust assets). The estimated fair value of trust assets was \$37.8 billion (including managed assets of \$16.4 billion and custody assets of \$21.4 billion) at December 31, 2019 compared to \$33.3 billion (including managed assets of \$14.7 billion and custody assets of \$18.7 billion) at December 31, 2018.

Service Charges on Deposit Accounts. Service charges on deposit accounts for 2019 increased \$3.8 million, or 4.5%, compared to 2018. The increase was primarily related to increases in overdraft/insufficient funds charges on consumer and commercial accounts (up \$3.3 million and \$551 thousand, respectively) and, to a lesser extent, commercial service charges (up \$354 thousand) partly offset by a decrease in consumer service charges (down \$421 thousand). Overdraft/insufficient funds charges totaled \$42.3 million during 2019 compared to \$38.4 million during 2018. Overdraft/insufficient funds charges included \$33.1 million and \$29.8 million related to consumer accounts during 2019 and 2018, respectively, and \$9.2 million and \$8.7 million related to commercial accounts during 2019 and 2018, respectively.

The increases in overdraft/insufficient funds charges were partly due to increases in the number of accounts and transaction volumes. Overdraft/insufficient funds charges were also partly impacted by a change in the fee schedule during the second quarter of 2019.

Insurance Commissions and Fees. Insurance commissions and fees for 2019 increased \$3.4 million, or 6.9%, compared to 2018. The increase was related to an increase in commission income (up \$3.6 million) partly offset by a decrease in contingent income (down \$200 thousand). The increase in commission income was primarily related to increases in commissions on commercial lines property and casualty policies, benefit plan commissions and life insurance commissions. The increases in property and casualty commissions and benefit plan commissions were related to increased business volumes and market rates. The increase in life insurance commissions was related to increased business volumes.

Contingent income totaled \$4.1 million in 2019 and \$4.3 million in 2018. Contingent income primarily consists of amounts received from various property and casualty insurance carriers related to 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 \$3.0 million in 2019 and \$3.2 million in 2018. The decrease in performance related contingent income during 2019 was related to lower growth within the portfolio partly offset by the impact of improvement in the loss performance of insurance policies previously placed. 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 \$1.2 million in both 2019 and 2018.

Interchange and Debit 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 debit card transaction fees consist of income from check card usage, point of sale income from PIN-based debit card transactions and ATM service fees. Interchange and debit card transaction fees for 2019 and 2018 are reported on a net basis and totaled \$14.9 million and \$13.9 million, respectively. The increase in interchange and debit card transaction fees during 2019, on a net basis, was primarily related to increases in the number of accounts and transaction volumes. Prior to 2018, interchange and debit card transaction fees were reported on a gross basis. A comparison of gross and net interchange and debit card transaction fees for the reported periods is presented in the table below:

	2019	2018	2017
Income from debit card transactions	\$ 23,665	\$ 21,844	\$ 19,440
ATM service fees	4,131	3,925	3,792
Gross interchange and debit card transaction fees	27,796	25,769	23,232
Network costs	12,923	11,892	11,943
Net interchange and debit card transaction fees	\$ 14,873	\$ 13,877	\$ 11,289

Other Charges, Commissions and Fees. Other charges, commissions and fees for 2019 decreased \$108 thousand, or 0.3%, compared to 2018. The decrease was primarily related to decreases in processing fees (down \$688 thousand), brokerage commissions (down \$424 thousand), income from the sale of annuities and mutual funds (down \$356 thousand and \$190 thousand, respectively) and income from capital markets advisory services (down \$323 thousand), among other things, mostly offset by increases in income from the sale of money market funds (up \$1.4 million) and letter of credit fees (up \$541 thousand), among other things.

Net Gain/Loss on Securities Transactions. During 2019 and 2018 we sold certain available-for-sale U.S Treasury securities with amortized costs totaling \$17.8 billion and \$16.8 billion, respectively. We realized a net gain of \$127 thousand on the 2019 sales and a net loss of \$156 thousand on the 2018 sales. The sales were primarily related to securities purchased and subsequently sold in the same period of their purchase in connection with our tax planning strategies related to the Texas franchise tax. The gross proceeds from the sales of these securities outside of Texas are included in total revenues/receipts from all sources reported for Texas franchise tax purposes, which results in a reduction in the overall percentage of revenues/receipts apportioned to Texas and subjected to taxation under the Texas franchise tax.

Additionally, during the second quarter of 2019, we sold certain available-for-sale U.S. Treasury securities with an amortized cost totaling \$548.9 million and certain available-for-sale municipal securities with an amortized cost totaling \$310.7 million. We realized a net gain of \$166 thousand on those sales. The proceeds from the sales provided short-term liquidity and were subsequently reinvested in other higher yielding securities.

Other Non-Interest Income. Other non-interest income for 2019 decreased \$3.2 million, or 6.9%, compared to 2018. The decrease was primarily related to decreases in sundry and other miscellaneous income (down \$3.4 million); income from derivative and trading activities, primarily customer-related, (down \$1.8 million); and gains on the sale of foreclosed and other assets (down \$624 thousand) partly offset by an increase in public finance underwriting fees (up \$1.9 million), among other things. Sundry income during 2019 included \$2.6 million in VISA check card incentives related to business volumes, \$1.7 million related to settlements, \$1.7 million related to the recovery of prior write-offs and \$278 thousand related to distributions from a private equity investment, among other things, while sundry income for 2018 included \$4.5 million related to the recovery of prior write-offs, \$2.1 million in VISA check card incentives, \$1.7 million related to a distribution from a private equity investment and \$997 thousand related to the settlement of an insurance claim, among other things. The fluctuations in public finance underwriting fees and income from customer derivative and trading activities during 2019 were primarily related to changes in business volumes. Other non-interest income also included gains on the sale of various branch and operational facilities totaling \$6.7 million during 2019 and \$7.0 million during 2018.

Non-Interest Expense

The components of non-interest expense were as follows:

	2019	2018	2017
Salaries and wages	\$ 375,029	\$ 350,312	\$ 337,068
Employee benefits	86,230	77,323	74,575
Net occupancy	89,466	76,788	75,971
Technology, furniture and equipment	91,995	83,102	74,335
Deposit insurance	10,126	16,397	20,128
Intangible amortization	1,168	1,424	1,703
Other	180,665	173,538	175,289
Total	\$ 834,679	\$ 778,884	\$ 759,069

Total non-interest expense for 2019 increased \$55.8 million, or 7.2%, compared to 2018. Changes in the various components of non-interest expense are discussed below.

Salaries and Wages. Salaries and wages increased \$24.7 million, or 7.1%, in 2019 compared to 2018. The increase was primarily related to an increase in salaries, due to an increase in the number of employees and normal annual merit and market increases and, to a lesser extent, an increase in stock compensation.

Employee Benefits. Employee benefits expense for 2019 increased \$8.9 million, or 11.5%, compared to 2018. The increase was primarily due to increases in expenses related to our defined benefit retirement plans (up \$2.3 million), expenses related to our 401(k) plan (up \$2.3 million), medical benefits expense (up \$2.2 million) and payroll taxes (up \$1.4 million).

Our defined benefit retirement and restoration plans were frozen effective as of December 31, 2001 and were replaced by a profit sharing plan (which was merged with and into our 401(k) plan during 2019). Management believes these actions help reduce the volatility in retirement plan expense. However, we still have funding obligations related to the defined benefit and restoration plans and could recognize retirement 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. We recognized a combined net periodic pension expense of \$1.3 million related to our defined benefit retirement and restoration plans in 2019 compared to a combined net periodic pension benefit of \$1.0 million in 2018. Future expense/benefits related to these plans is dependent upon a variety of factors, including the actual return on plan assets. For additional information related to our employee benefit plans, see Note 11 - Employee Benefit Plans in the accompanying notes to consolidated financial statements elsewhere in this report.

Net Occupancy. Net occupancy expense for 2019 increased \$12.7 million, or 16.5%, compared to 2018. The increase was primarily related to increases in lease expense (up \$11.6 million) and depreciation on leasehold improvements (up \$2.0 million) partly offset by a decrease in property taxes (down \$2.1 million). The increase in lease expense was primarily related to the commencement of the lease of our new corporate headquarters building in San Antonio and the renewal of the lease associated with our downtown Austin location. The increase was also partly related to renewals of other leases related to existing facilities and new locations, in part related to our expansion within the Houston market area. The increase in depreciation on leasehold improvements was primarily related to the new headquarters location.

in San Antonio and, to a lesser extent, other new locations. The decrease in property taxes was mostly related to our former headquarters location in downtown San Antonio.

Fluctuations in the foregoing categories of net occupancy expense were primarily related to the commencement of the lease of our new corporate headquarters building in San Antonio and other leases related to existing facilities and our expansion within the Houston market area.

Technology, Furniture and Equipment. Technology, furniture and equipment expense for 2019 increased \$8.9 million, or 10.7%, compared to 2018. The increase was primarily related to an increase in software maintenance/cloud services expense (up \$9.3 million) due to new and renewed software and an increase in volume-based service payments.

Deposit Insurance. Deposit insurance expense totaled \$10.1 million in 2019 compared to \$16.4 million in 2018. The decrease was primarily related to the termination of the quarterly Deposit Insurance Fund surcharge in the fourth quarter of 2018. In August 2016, the Federal Deposit Insurance Corporation ("FDIC") announced that the Deposit Insurance Fund reserve ratio had surpassed 1.15% as of June 30, 2016. As a result, beginning in the third quarter of 2016, the range of initial assessment rates for all institutions was adjusted downward and institutions with \$10 billion or more in assets were assessed a quarterly surcharge. The quarterly surcharge was terminated in the fourth quarter of 2018 as the Deposit Insurance Fund reserve ratio as of September 30, 2018 exceeded the statutory minimum of 1.35% required by the Dodd-Frank Act.

Intangible Amortization. Intangible amortization is primarily related to core deposit intangibles and, to a lesser extent, intangibles related to customer relationships and non-compete agreements. Intangible amortization totaled \$1.2 million in 2019 compared to \$1.4 million in 2018. The decrease was primarily related to the completion of amortization of certain previously recognized intangible assets as well as a reduction in the annual amortization rate of certain previously recognized intangible assets as we use an accelerated amortization approach which results in higher amortization rates during the earlier years of the useful lives of intangible assets. See Note 5 - Goodwill and Other Intangible Assets in the accompanying notes to consolidated financial statements elsewhere in this report.

Other Non-Interest Expense. Other non-interest expense for 2019 increased \$7.1 million, or 4.1%, compared to 2018. The increase included, among other things, increases in advertising/promotions expense, partly related to new sponsorship arrangements (up \$5.5 million); professional services expense (up \$3.3 million) and platform fees related to investment services (up \$2.7 million). The increase from these items was partly offset by a decrease in donations expense, which was impacted by a significant contribution to our charitable foundation in 2018 (down \$4.0 million).

Results of Segment Operations

Our operations are managed along two primary operating segments: Banking and Frost Wealth Advisors. A description of each business and the methodologies used to measure financial performance is described in Note 18 - Operating Segments in the accompanying notes to consolidated financial statements elsewhere in this report. Net income (loss) by operating segment is presented below:

	2019	2018	2017
Banking	\$ 436,416	\$ 445,531	\$ 347,034
Frost Wealth Advisors	19,975	22,090	24,395
Non-Banks	(12,792)	(12,703)	(7,280)
Consolidated net income	\$ 443,599	\$ 454,918	\$ 364,149

Banking

Net income for 2019 decreased \$9.1 million, or 2.0%, compared to 2018. The decrease was primarily the result of a \$45.7 million increase in non-interest expense, a \$12.1 million increase in the provision for loan losses and a \$2.6 million increase in income tax expense partly offset by a \$46.6 million increase in net interest income and a \$4.7 million increase in non-interest income.

Net interest income for 2019 increased \$46.6 million, or 4.8%, compared to 2018. The increase was primarily related to increases in the average yields on loans, taxable securities and interest-bearing deposits combined with increases in the average volumes of loans and both taxable and tax-exempt securities. The impact of these items was partly offset by increases in the average rates paid on and average volumes of interest-bearing deposits and other borrowed funds, a decrease in the average volume of interest bearing deposits (primarily excess reserves held in an interest-bearing

account at the Federal Reserve) and a decrease in the average yield on tax-exempt securities. See the analysis of net interest income included in the section captioned “Net Interest Income” elsewhere in this discussion.

The provision for loan losses for 2019 totaled \$33.8 million compared to \$21.6 million in 2018. See the analysis of the provision for loan losses included in the section captioned “Allowance for Loan Losses” elsewhere in this discussion.

Non-interest income for 2019 increased \$4.7 million, or 2.2%, compared to 2018. The increase was primarily due to increases in service charges on deposit accounts, insurance commissions and fees and interchange and debit card transactions fees partly offset by decreases in other non-interest income and other charges, commissions and fees. The increase in service charges on deposit accounts was primarily related to increases in overdraft/insufficient funds charges on consumer and commercial accounts and, to a lesser extent, commercial service charges partly offset by a decrease in consumer service charges. The increase in insurance commissions and fees was primarily related to increased business volumes and market rates partly offset by a decrease in contingent income. The increase in interchange and debit card transaction fees was primarily related to increased transaction volumes. The decrease in other non-interest income was primarily related to decreases in sundry and other miscellaneous income and income from derivative and trading activities, primarily customer related, and a decrease on gains on the sale of foreclosed and other assets partly offset by an increase in public finance underwriting fees, among other things. The decrease in other charges, commissions and fees was primarily related to decreases in processing fees and income from capital markets advisory services, among other things, partly offset by an increase in letter of credit fees, among other things. 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 2019 increased \$45.7 million, or 6.9%, compared to 2018. The increase was primarily related to increases in salaries and wages; technology, furniture and equipment expense; employee benefits; net occupancy expense; and other non-interest expense partly offset by a decrease in deposit insurance expense.

The increase in salaries and wages was primarily due to an increase in the number of employees and normal annual merit and market increases and, to a lesser extent, an increase in stock compensation. The increase in technology, furniture and equipment expense was primarily related to an increase in software maintenance/cloud services expense. The increase in employee benefits was primarily related to increases in expenses related to our defined benefit retirement plans, expenses related to our 401(k) plan, medical benefits expense and payroll taxes. The increase in net occupancy expense was primarily related to increases in lease expense and depreciation on leasehold improvements partly offset by decreases in property taxes and utilities expense. The increase in other non-interest expense included increases in advertising/promotions expense; professional services expense; and travel, meals and entertainment; among other things, partly offset by decreases in donations expense; sundry and other miscellaneous expense; and losses on the sale of foreclosed and other assets; among other things. The decrease in deposit insurance expense was primarily related to the termination of the quarterly Deposit Insurance Fund surcharge in the fourth quarter of 2018. See the analysis of these categories of non-interest expense included in the section captioned “Non-Interest Expense” included elsewhere in this discussion.

Income tax expense for 2019 increased \$2.6 million, or 4.9%, compared to 2018. See the section captioned “Income Taxes” elsewhere in this discussion.

Frost Insurance Agency, which is included in the Banking operating segment, had gross commission revenues of \$53.1 million during 2019 compared to \$49.6 million during 2018. The increase was primarily related to increases in commissions on commercial lines property and casualty policies; benefit plan commissions; and life insurance commissions. The increases in property and casualty commissions and benefit plan commissions were related to increased business volumes and market rates. The increase in life insurance commissions was related to increased business volumes. 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 2019 decreased \$2.1 million, or 9.6%, compared to 2018. The decrease was primarily due a \$10.5 million increase in non-interest expense partly offset by a \$7.9 million increase in non-interest income.

Non-interest income for 2019 increased \$7.9 million, or 5.7%, compared to 2018. The increase was primarily related to an increase in trust and investment management fees, and to a lesser extent, an increase in other charges, commissions and fees. Trust and investment management fee income is the most significant income component for Frost Wealth

Advisors. Investment fees are the most significant component of trust and investment management fees, making up approximately 82% and 83% of total trust and investment management fees for 2019 and 2018. Investment and other custodial account fees are generally based on the market value of assets within a trust account. Volatility in the equity and bond markets impacts the market value of trust assets and the related investment fees. The increase in trust and investment management fees during 2019 was primarily the result of increases in trust investment fees due to higher average equity valuations and an increase in the number of accounts. The increase was also partly related to increases in estate fees and oil and gas fees. The increase in other charges, commissions and fees was primarily related to an increase in income related to the sale of money market funds partly offset by decreases in brokerage commissions and income from the sale of annuities and mutual funds. See the analysis of trust and investment management fees included in the section captioned “Non-Interest Income” included elsewhere in this discussion.

Non-interest expense for 2019 increased \$10.5 million, or 9.2%, compared to 2018. The increase was primarily related to increases in net occupancy expense, other non-interest expense and salaries and wages. The increase in net occupancy expense was partly related to increases in lease overhead allocations. The increase in other non-interest expense was primarily due to increases in platform fees related to investment services; professional service expense; and travel, meals and entertainment expense, among other things. The increase in salaries and wages was primarily due to an increase in the number of employees and normal annual merit and market increases, as well as increases in incentive compensation.

Non-Banks

The Non-Banks operating segment had a net loss of \$12.8 million for 2019 compared to a net loss of \$12.7 million in 2018. The increased net loss was primarily due to an increase in net interest expense due to increases in the interest rate paid on our long-term borrowings and an increase in other non-interest expense partly offset by decreases in salaries and wages.

Income Taxes

We recognized income tax expense of \$55.9 million, for an effective tax rate of 11.2%, in 2019 compared to \$53.8 million, for an effective tax rate of 10.6%, in 2018. The effective income tax rates differed from the U.S. statutory federal income tax rate of 21% during 2019 and 2018 primarily due to the effect of tax-exempt income from loans, securities and life insurance policies and certain non-deductible expenses as well as the discrete tax effect associated with stock-based compensation. The increase in the effective tax rate during 2019 compared to 2018 was partly related to an increase in the level of non-deductible compensation and a decrease in the net tax benefits associated with stock-based compensation. See Note 13 - Income Taxes in the accompanying notes to consolidated financial statements elsewhere in this report.

Sources and Uses of Funds

The following table illustrates, during the years presented, the mix of our funding sources and the assets in which those funds are invested as a percentage of our average total assets for the period indicated. Average assets totaled \$32.1 billion in 2019 compared to \$31.0 billion in 2018.

	2019	2018	2017
Sources of Funds:			
Deposits:			
Non-interest-bearing	32.3%	34.7%	35.5%
Interest-bearing	50.1	50.1	49.6
Federal funds purchased and repurchase agreements	4.0	3.4	3.2
Long-term debt and other borrowings	0.7	0.8	0.8
Other non-interest-bearing liabilities	1.4	0.5	0.5
Equity capital	11.5	10.5	10.4
Total	100.0%	100.0%	100.0%
Uses of Funds:			
Loans	45.0%	43.9%	40.9%
Securities	41.4	38.9	40.2
Federal funds sold, resell agreements and interest-bearing deposits	5.8	10.3	12.0
Other non-interest-earning assets	7.8	6.9	6.9
Total	100.0%	100.0%	100.0%

Deposits continue to be our primary source of funding. Average deposits increased \$124.2 million, or 0.5%, in 2019 compared to 2018. Non-interest-bearing deposits remain a significant source of funding, which has been a key factor in maintaining our relatively low cost of funds. Average non-interest-bearing deposits totaled 39.2% of total average deposits in 2019 compared to 40.9% in 2018. Federal prohibitions on the payment of interest on demand deposits were repealed in 2011. Nonetheless, we have not experienced any significant additional costs as a result. Should the market dictate, we may increase the interest rates we pay on some or all of our various interest-bearing deposit products. This could lead to a decrease in the relative proportion of non-interest-bearing deposits to total deposits.

We primarily invest funds in loans and securities. Average securities increased \$1.2 billion, or 10.2%, in 2019 compared to 2018 while average loans increased \$822.6 million, or 6.0%, in 2019 compared to 2018. Average federal funds sold and resell agreements and interest-bearing deposits decreased \$1.4 billion, or 42.1%, in 2019 compared to 2018.

Loans

Year-end loans, including leases net of unearned discounts, consisted of the following:

	2019	Percentage of Total	2018	2017	2016	2015
Commercial and industrial	\$ 5,187,466	35.2%	\$ 5,111,957	\$ 4,792,388	\$ 4,344,000	\$ 4,120,522
Energy:						
Production	1,348,900	9.2	1,309,314	1,182,326	971,767	1,249,678
Service	192,996	1.3	168,775	171,795	221,213	272,934
Other	110,986	0.7	124,509	144,972	193,081	235,583
Total energy	1,652,882	11.2	1,602,598	1,499,093	1,386,061	1,758,195
Commercial real estate:						
Commercial mortgages	4,594,113	31.1	4,121,966	3,887,742	3,481,157	3,285,041
Construction	1,312,659	8.9	1,267,717	1,066,696	1,043,261	720,695
Land	289,467	2.0	306,755	331,986	311,030	286,991
Total commercial real estate	6,196,239	42.0	5,696,438	5,286,424	4,835,448	4,292,727
Consumer real estate:						
Home equity loans	375,596	2.6	353,924	355,342	345,130	340,528
Home equity lines of credit	354,671	2.4	337,168	291,950	264,862	233,525
Other	464,146	3.1	427,898	376,002	326,793	306,696
Total consumer real estate	1,194,413	8.1	1,118,990	1,023,294	936,785	880,749
Total real estate	7,390,652	50.1	6,815,428	6,309,718	5,772,233	5,173,476
Consumer and other	519,332	3.5	569,750	544,466	473,098	434,338
Total loans	\$ 14,750,332	100.0%	\$ 14,099,733	\$ 13,145,665	\$ 11,975,392	\$ 11,486,531

Overview. Year-end total loans increased \$650.6 million, or 4.6%, during 2019 compared to 2018. The majority of our loan portfolio is comprised of commercial and industrial loans, energy loans and real estate loans. Commercial and industrial loans made up 35.2% and 36.3% of total loans at December 31, 2019 and 2018 while energy loans made up 11.2% and 11.4% of total loans at both December 31, 2019 and 2018 and real estate loans made up 50.1% and 48.3% of total loans at December 31, 2019 and 2018. Energy loans include commercial and industrial loans, leases and real estate loans to borrowers in the energy industry. Real estate loans include both commercial and consumer balances.

Loan Origination/Risk Management. We have certain lending policies and procedures in place that are designed to maximize loan income within an acceptable level of risk. Management reviews and approves these policies and procedures on a regular basis. A reporting system supplements the review process by providing management with frequent reports related to loan production, loan quality, concentrations of credit, loan delinquencies and non-performing and potential problem loans. Diversification in the loan portfolio is a means of managing risk associated with fluctuations in economic conditions.

Commercial and industrial loans are underwritten after evaluating and understanding the borrower's ability to operate profitably and prudently expand its business. Underwriting standards are designed to promote relationship banking rather than transactional banking. Once it is determined that the borrower's management possesses sound ethics and solid business acumen, our management examines current and projected cash flows to determine the ability of the borrower to repay their obligations as agreed. Commercial and industrial loans are primarily made based on the identified cash flows of the borrower and secondarily on the underlying collateral provided by the borrower. The cash flows of borrowers, however, may not be as expected and the collateral securing these loans may fluctuate in value. Most commercial and industrial loans are secured by the assets being financed or other business assets such as accounts receivable or inventory and may incorporate a personal guarantee; however, some short-term loans may be made on an unsecured basis. In the case of loans secured by accounts receivable, the availability of funds for the repayment of these loans may be substantially dependent on the ability of the borrower to collect amounts due from its customers.

Our energy loan portfolio includes loans for production, energy services and other energy loans, which includes private clients, transportation and equipment providers, manufacturers, refiners and traders. The origination process for energy loans is similar to that of commercial and industrial loans. Because, however, of the average loan size, the significance of the portfolio and the specialized nature of the energy industry, our energy lending requires a highly prescriptive underwriting policy. Production loans are secured by proven, developed and producing reserves. Loan

proceeds are used for the development and drilling of additional wells, the acquisition of additional production, and/or the acquisition of additional properties to be developed and drilled. Our customers in this sector are generally large, independent, private owner-producers or large corporate producers. These borrowers typically have large capital requirements for drilling and acquisitions, and as such, loans in this portfolio are generally greater than \$10 million. Production loans are collateralized by the oil and gas interests of the borrower. Collateral values are determined by the risk-adjusted and limited discounted future net revenue of the reserves. Our valuations take into consideration geographic and reservoir differentials as well as cost structures associated with each borrower. Collateral is calculated at least semi-annually using third party engineer-prepared reserve studies. These reserve studies are conducted using a discount factor and base case assumptions for the current and future value of oil and gas. To qualify as collateral, typically reserves must be proven, developed and producing. For certain borrowers, collateral may include up to 20% proven, non-producing reserves. Loan commitments are limited to 65% of estimated reserve value. Cash flows must be sufficient to amortize the loan commitment within 120% of the half-life of the underlying reserves. Loan commitments generally must also be 100% covered by the risk-adjusted and limited discounted future net revenue of the reserves when stressed at 75% of our base case price assumptions. In addition, the ratio of the borrower's debt to earnings before interest, taxes, depreciation and amortization ("EBITDA") should generally not exceed 350%.

Oil and gas service, transportation, and equipment providers are economically aligned due to their reliance on drilling and active oil and gas development. Income for these borrowers is highly dependent on the level of drilling activity and rig utilization, both of which are driven by the current and future outlook for the price of oil and gas. We mitigate the credit risk in this sector through conservative concentration limits and guidelines on the profile of eligible borrowers. Guidelines require that the companies have extensive experience through several industry cycles, and that they be supported by financially competent and committed guarantors who provide a significant secondary source of repayment. Borrowers in this sector are typically privately-owned, middle-market companies with annual sales of less than \$100 million. The services provided by companies in this sector are highly diversified, and include down-hole testing and maintenance, providing and threading drilling pipe, hydraulic fracturing services or equipment, seismic testing and equipment and other direct or indirect providers to the oil and gas production sector.

Our private client portfolio primarily consists of loans to wealthy individuals and their related oil and gas exploration and production entities, where the oil and gas producing reserves are not considered to be the primary source of repayment. These borrowers and guarantors typically have significant sources of wealth including significant liquid assets and/or cash flow from other investments which can fully repay the loans. The credit structures of these loans are generally similar to those of energy production loans, described above, with respect to the valuation of the reserves taken as collateral and the repayment structures.

Although no balances were outstanding at December 31, 2019 and 2018, in prior years, we have had a small portfolio of loans to refiners where our credit involvement with these customers was through purchases of shared national credit syndications. These borrowers refine crude oil into gasoline, diesel, jet fuel, asphalt and other petrochemicals and are not dependent on drilling or development. All of the borrowers in this portfolio are very large public companies that are important employers in several of our major markets. These borrowers, for the most part, have been long-term customers and we have a strong relationship with these companies and their executive management. There is no new customer origination process for this segment and any outstanding balances are expected to only reflect the needs of these existing relationships.

We also have a small portfolio of loans to energy trading companies that serve as intermediaries that buy and sell oil, gas, other petrochemicals, and ethanol. These companies are not dependent on drilling or development. As a general policy, we do not lend to energy traders; however, we have made an exception to this policy for certain customers based upon their underlying business models which minimize risk as commodities are bought only to fill existing orders (back-to-back trading). As such, the commodity price risk and sale risk are eliminated. There is no new customer origination process for this segment and any outstanding balances are expected to only reflect the needs of these existing relationships.

Commercial real estate loans are subject to underwriting standards and processes similar to commercial and industrial loans, in addition to those of real estate loans. These loans are viewed primarily as cash flow loans and secondarily as loans secured by real estate. Commercial real estate lending typically involves higher loan principal amounts and the repayment of these loans is generally largely dependent on the successful operation of the property securing the loan or the business conducted on the property securing the loan. Commercial real estate loans may be more adversely affected by conditions in the real estate markets or in the general economy. The properties securing our commercial real estate portfolio are diverse in terms of type and geographic location within Texas. This diversity helps reduce our exposure to adverse economic events that affect any single market or industry. Management monitors and evaluates

commercial real estate loans based on collateral, geography and risk grade criteria. As a general rule, we avoid financing single-purpose projects unless other underwriting factors are present to help mitigate risk. We also utilize third-party experts to provide insight and guidance about economic conditions and trends affecting market areas we serve. In addition, management tracks the level of owner-occupied commercial real estate loans versus non-owner occupied loans. At December 31, 2019, approximately 43% of the outstanding principal balance of our commercial real estate loans were secured by owner-occupied properties.

With respect to loans to developers and builders that are secured by non-owner occupied properties that we may originate from time to time, we generally require the borrower to have had an existing relationship with us and have a proven record of success. Construction loans are underwritten utilizing feasibility studies, independent appraisal reviews, sensitivity analysis of absorption and lease rates and financial analysis of the developers and property owners. Construction loans are generally based upon estimates of costs and value associated with the completed project. These estimates may be inaccurate. Construction loans often involve the disbursement of substantial funds with repayment substantially dependent on the success of the ultimate project. Sources of repayment for these types of loans may be pre-committed permanent loans from approved long-term lenders, sales of developed property or an interim loan commitment from us until permanent financing is obtained. These loans are closely monitored by on-site inspections and are considered to have higher risks than other real estate loans due to their ultimate repayment being sensitive to interest rate changes, governmental regulation of real property, general economic conditions and the availability of long-term financing.

We originate consumer loans utilizing a computer-based credit scoring analysis to supplement the underwriting process. To monitor and manage consumer loan risk, policies and procedures are developed and modified, as needed, jointly by line and staff personnel. This activity, coupled with relatively small loan amounts that are spread across many individual borrowers, minimizes risk. Additionally, trend and outlook reports are reviewed by management on a regular basis. Underwriting standards for home equity loans are heavily influenced by statutory requirements, which include, but are not limited to, loan-to-value limitations, collection remedies, the number of such loans a borrower can have at one time and documentation requirements.

We maintain an independent loan review department that reviews and validates the credit risk program on a periodic basis. Results of these reviews are presented to management and the appropriate committees of our board of directors. The loan review process complements and reinforces the risk identification and assessment decisions made by lenders and credit personnel, as well as our policies and procedures.

Commercial and Industrial. Commercial and industrial loans increased \$75.5 million, or 1.5%, during 2019 compared to 2018. 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 the commercial lease and purchased shared national credits.

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 \$50.3 million, or 3.1%, during 2019 compared to 2018. 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 purchased shared national credits.

Industry Concentrations. As of December 31, 2019 and 2018, other than energy loans, there were no concentrations of loans within any single industry in excess of 10% of total loans, as segregated by Standard Industrial Classification code (“SIC code”). The SIC code system is a federally designed standard industrial numbering system used by us to categorize loans by the borrower’s type of business. The following table summarizes the industry concentrations of our loan portfolio, as segregated by SIC code. Industry concentrations, stated as a percentage of year-end total loans as of December 31, 2019 and 2018, are presented below:

	2019	2018
Industry concentrations:		
Energy	11.2%	11.4%
Public finance	5.1	5.4
Medical services	3.9	4.0
Automobile dealers	3.8	2.9
General and specific trade contractors	3.4	3.4
Manufacturing, other	3.1	2.9
Building materials and contractors	3.1	3.2
Services	2.3	2.1
Religion	2.3	2.5
Investor	2.2	2.1
Financial services, consumer credit	2.0	2.3
All other	57.6	57.8
Total loans	100.0%	100.0%

Large Credit Relationships. The market areas served by us include three of the top ten most populated cities in the United States. These market areas are also home to a significant number of Fortune 500 companies. As a result, we originate and maintain large credit relationships with numerous commercial customers in the ordinary course of business. We consider large credit relationships to be those with commitments equal to or in excess of \$10.0 million, excluding treasury management lines exposure, prior to any portion being sold. Large relationships also include loan participations purchased if the credit relationship with the agent is equal to or in excess of \$10.0 million. In addition to our normal policies and procedures related to the origination of large credits, one of our Regional Credit Committees must approve all new credit facilities which are part of large credit relationships and renewals of such credit facilities with exposures between \$20.0 million and \$30.0 million. Our Central Credit Committee must approve all new credit facilities which are part of large credit relationships and renewals of such credit facilities with exposures that exceed \$30.0 million. The Regional and Central Credit Committees meet regularly to review large credit relationship activity and discuss the current pipeline, among other things.

The following table provides additional information on our large credit relationships outstanding at year-end.

	2019			2018		
	Number of Relationships	Period-End Balances		Number of Relationships	Period-End Balances	
		Committed	Outstanding		Committed	Outstanding
Committed amount:						
\$20.0 million and greater	261	\$ 11,855,203	\$ 6,657,382	247	\$ 10,815,882	\$ 6,236,133
\$10.0 million to \$19.9 million	179	2,451,804	1,451,453	165	2,296,908	1,395,082
Average amount:						
\$20.0 million and greater		45,422	25,507		43,789	25,248
\$10.0 million to \$19.9 million		13,697	8,109		13,921	8,455

Purchased Shared National Credits (“SNCs”). Purchased SNCs are participations purchased from upstream financial organizations and tend to be larger in size than our originated portfolio. Our purchased SNC portfolio totaled \$948.8 million at December 31, 2019 increasing \$191.3 million, or 25.2%, from \$757.5 million at December 31, 2018. At December 31, 2019, 45.6% of outstanding purchased SNCs were related to the energy industry, 17.7% of outstanding purchased SNCs were related to the construction industry and 10.5% of outstanding purchased SNCs were related to the financial services 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 portfolios, 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.

The following table provides additional information about certain credits within our purchased SNCs portfolio as of year-end.

	2019			2018		
	Number of Relationships	Period-End Balances		Number of Relationships	Period-End Balances	
		Committed	Outstanding		Committed	Outstanding
Committed amount:						
\$20.0 million and greater	43	\$ 1,619,398	\$ 804,608	38	\$ 1,431,117	\$ 605,402
\$10.0 million to \$19.9 million	19	269,974	136,541	18	268,974	149,233
Average amount:						
\$20.0 million and greater		37,660	18,712		37,661	15,932
\$10.0 million to \$19.9 million		14,209	7,186		14,943	8,291

Real Estate Loans. Real estate loans increased \$575.2 million, or 8.4%, during 2019 compared to 2018. Real estate loans include both commercial and consumer balances. Commercial real estate loans totaled \$6.2 billion, or 83.8% of total real estate loans, at December 31, 2019 and \$5.7 billion, or 83.6% of total real estate loans, at December 31, 2018. The majority of this portfolio consists of commercial real estate mortgages, which includes both permanent and intermediate term loans. Loans secured by owner-occupied properties make up a significant portion of our commercial real estate portfolio. 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.

The following tables summarize our commercial real estate loan portfolio, including commercial real estate loans reported as a component of our energy loan portfolio segment, as segregated by (i) the type of property securing the credit and (ii) the geographic region in which the loans were originated. Property type concentrations are stated as a percentage of year-end total commercial real estate loans as of December 31, 2019 and 2018:

	2019	2018
Property type:		
Office building	21.0%	20.9%
Office/warehouse	17.2	16.1
Multifamily	9.9	9.2
Retail	8.1	8.4
Non-farm/non-residential	6.5	5.8
Dealerships	5.3	4.9
Medical offices and services	4.8	4.7
Religious	3.5	4.0
Hotel	3.4	2.6
Strip centers	3.3	3.4
1-4 family construction	2.6	3.2
All other	14.4	16.8
Total commercial real estate loans	100.0%	100.0%

	2019	2018
Geographic region:		
San Antonio	27.8%	26.2%
Houston	24.1	23.8
Fort Worth	16.3	16.1
Dallas	14.0	15.4
Austin	9.8	9.1
Rio Grande Valley	3.6	4.8
Permian Basin	2.7	2.7
Corpus Christi	1.7	1.9
Total commercial real estate loans	100.0%	100.0%

Consumer Loans. The consumer loan portfolio at December 31, 2019 increased \$25.0 million, or 1.5%, from December 31, 2018. As the following table illustrates, the consumer loan portfolio has two distinct segments, including consumer real estate and consumer and other.

	2019	2018
Consumer real estate:		
Home equity loans	\$ 375,596	\$ 353,924
Home equity lines of credit	354,671	337,168
Other	464,146	427,898
Total consumer real estate	1,194,413	1,118,990
Consumer and other	519,332	569,750
Total consumer loans	\$ 1,713,745	\$ 1,688,740

Consumer real estate loans at December 31, 2019 increased \$75.4 million, or 6.7%, from December 31, 2018. Combined, home equity loans and lines of credit made up 61.1% and 61.8% of the consumer real estate loan total at December 31, 2019 and 2018, 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. In general, we do not originate 1-4 family mortgage loans; however, from time to time, we may invest in such loans to meet the needs of our customers. Under the Tax Cuts and Jobs Act enacted on December 22, 2017, interest on home equity loans and lines of credit is no longer deductible. This change could adversely impact the level of originations and outstanding volumes of home equity loans and lines of credit in the future. The consumer and other loan portfolio at December 31, 2019 decreased \$50.4 million, or 8.8%, from December 31, 2018. This portfolio primarily consists of automobile loans, unsecured revolving credit products, personal loans secured by cash and cash equivalents, and other similar types of credit facilities.

Foreign Loans. We make 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 December 31, 2019 or 2018.

Maturities and Sensitivities of Loans to Changes in Interest Rates. The following table presents the maturity distribution of our commercial and industrial loans, energy loans and commercial real estate loans at December 31, 2019. The table also presents the portion of loans that have fixed interest rates or variable interest rates that fluctuate over the life of the loans in accordance with changes in an interest rate index such as the prime rate or LIBOR.

	Due in One Year or Less	After One, but Within Five Years	After Five Years	Total
Commercial and industrial	\$ 2,066,527	\$ 2,240,596	\$ 880,343	\$ 5,187,466
Energy	995,548	643,061	14,273	1,652,882
Commercial real estate:				
Buildings, land and other	507,956	2,311,538	2,064,086	4,883,580
Construction	351,449	817,411	143,799	1,312,659
Total	<u>\$ 3,921,480</u>	<u>\$ 6,012,606</u>	<u>\$ 3,102,501</u>	<u>\$ 13,036,587</u>
Loans with fixed interest rates	\$ 427,676	\$ 1,830,400	\$ 1,767,077	\$ 4,025,153
Loans with floating interest rates	3,493,804	4,182,206	1,335,424	9,011,434
Total	<u>\$ 3,921,480</u>	<u>\$ 6,012,606</u>	<u>\$ 3,102,501</u>	<u>\$ 13,036,587</u>

We generally structure commercial loans with shorter-term maturities in order to match our funding sources and to enable us to effectively manage the loan portfolio by providing the flexibility to respond to liquidity needs, changes in interest rates and changes in underwriting standards and loan structures, among other things. Due to the shorter-term nature of such loans, from time to time and in the ordinary course of business, we will renew/extend maturing lines of credit or refinance existing loans at their maturity dates. Some loans may renew multiple times in a given year as a result of general customer practice and need. These renewals, extensions and refinancings are made in the ordinary course of business for customers that meet our normal level of credit standards. Such borrowers typically request renewals to support their on-going working capital needs to finance their operations. Such borrowers are not experiencing financial difficulties and generally could obtain similar financing from another financial institution. In connection with each renewal, extension or refinancing, we may require a principal reduction, adjust the rate of interest and/or modify the structure and other terms to reflect the current market pricing/structuring for such loans or to maintain competitiveness with other financial institutions. In such cases, we do not generally grant concessions, and, except for those reported in Note 3 - Loans, any such renewals, extensions or refinancings that occurred during the reported periods were not deemed to be troubled debt restructurings pursuant to applicable accounting guidance. Loans exceeding \$1.0 million undergo a complete underwriting process at each renewal.

Non-Performing Assets and Potential Problem Loans

Non-Performing Assets. Year-end non-performing assets and accruing past due loans were as follows:

	2019	2018	2017	2016	2015
Non-accrual loans:					
Commercial and industrial	\$ 26,038	\$ 9,239	\$ 46,186	\$ 31,475	\$ 25,111
Energy	65,761	46,932	94,302	57,571	21,180
Commercial real estate	9,577	15,268	7,589	8,550	35,088
Consumer real estate	922	892	2,109	2,130	1,862
Consumer and other	5	1,408	128	425	226
Total non-accrual loans	102,303	73,739	150,314	100,151	83,467
Restructured loans	6,098	—	4,862	—	—
Foreclosed assets:					
Real estate	1,084	1,175	2,116	2,440	2,255
Other	—	—	—	—	—
Total foreclosed assets	1,084	1,175	2,116	2,440	2,255
Total non-performing assets	\$ 109,485	\$ 74,914	\$ 157,292	\$ 102,591	\$ 85,722
Ratio of non-performing assets to:					
Total loans and foreclosed assets	0.74%	0.53%	1.20%	0.86%	0.75%
Total assets	0.32	0.23	0.50	0.34	0.30
Accruing past due loans:					
30 to 89 days past due	\$ 50,784	\$ 59,595	\$ 93,428	\$ 55,456	\$ 59,480
90 or more days past due	7,421	20,468	14,432	24,864	8,108
Total accruing past due loans	\$ 58,205	\$ 80,063	\$ 107,860	\$ 80,320	\$ 67,588
Ratio of accruing past due loans to total loans:					
30 to 89 days past due	0.34%	0.42%	0.71%	0.46%	0.52%
90 or more days past due	0.05	0.15	0.11	0.21	0.07
Total accruing past due loans	0.39%	0.57%	0.82%	0.67%	0.59%

Non-performing assets include non-accrual loans, restructured loans and foreclosed assets. Non-performing assets at December 31, 2019 increased \$34.6 million compared to December 31, 2018 reflecting increases in non-accrual commercial and industrial loans and non-accrual energy loans and restructured loans partly offset by a decrease in non-accrual commercial real estate loans. Non-accrual commercial and industrial loans included one credit relationship in excess of \$5.0 million totaling \$8.4 million at December 31, 2019. This credit relationship was first reported as a potential problem loan during the third quarter of 2019. There were no non-accrual commercial and industrial loans in excess of \$5.0 million at December 31, 2018. Non-accrual energy loans included two credit relationships in excess of \$5 million totaling \$61.7 million at December 31, 2019. This included a single credit relationship totaling \$34.0 million that was classified as non-accrual during the third quarter of 2019. The other credit relationship, which totaled \$27.7 million at December 31, 2019, was previously reported as non-accrual with an aggregate balance of \$37.6 million at December 31, 2018. We charged off \$7.5 million related to this credit relationship during 2019. Non-accrual energy loans at December 31, 2018 included one other credit relationship in excess of \$5 million totaling \$6.4 million. 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 were no non-accrual commercial real estate loans in excess of \$5.0 million at December 31, 2019. Non-accrual commercial real estate loans included one relationship in excess of \$5.0 million totaling \$12.2 million at December 31, 2018. This credit relationship was sold during the second quarter of 2019.

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.

Foreclosed assets represent property acquired as the result of borrower defaults on loans. Foreclosed assets are recorded at estimated fair value, less estimated selling costs, at the time of foreclosure. Write-downs occurring at foreclosure are charged against the allowance for loan losses. Regulatory guidelines require us to reevaluate the fair value of foreclosed assets on at least an annual basis. Our policy is to comply with the regulatory guidelines. Write-downs are provided for subsequent declines in value and are included in other non-interest expense along with other expenses related to maintaining the properties. There were no write-downs of foreclosed assets in 2019 while write-downs totaled \$473 thousand and \$16 thousand during 2018 and 2017, respectively. There were no significant concentrations of any properties, to which the aforementioned write-downs relate, in any single geographic region.

Accruing past due loans at December 31, 2019 decreased \$21.9 million compared to December 31, 2018. The decrease was primarily related to decreases in past due commercial real estate loans (down \$9.8 million) and past due commercial and industrial loans (down \$7.7 million).

Potential problem loans consist of loans that are performing in accordance with contractual terms but for which management has concerns about the ability of an obligor to continue to comply with repayment terms because of the obligor's potential operating or financial difficulties. Management monitors these loans closely and reviews their performance on a regular basis. At December 31, 2019 and 2018, we had \$46.8 million and \$63.4 million in loans of this type which are not included in any one of the non-accrual, restructured or 90 days past due loan categories. At December 31, 2019, potential problem loans consisted of ten credit relationships. Of the total outstanding balance at December 31, 2019, 23.8% was related to the restaurant industry, 23.2% was related to the energy industry, 15.4% was related to the real estate industry and 12.9% was related to building contractors. Weakness in these organizations' operating performance and financial condition, among other factors, have caused us to heighten the attention given to these credits. As such, all of the loans identified as potential problem loans at December 31, 2019 were graded as "substandard - accrual" (risk grade 11). Potential problem loans impact the allocation of our allowance for loan losses as a result of our risk grade based allocation methodology. See Note 3 - Loans in the accompanying consolidated financial statements for details regarding our allowance allocation methodology.

Allowance For Loan Losses

The allowance for loan losses is a reserve established through a provision for loan losses charged to expense, which represents management's best estimate of inherent losses that have been incurred within the existing portfolio of loans. The allowance, in the judgment of management, is necessary to reserve for estimated loan losses and risks inherent in the loan portfolio. Our allowance for loan losses consists of: (i) specific valuation allowances determined in accordance with ASC Topic 310, "Receivables," based on probable losses on specific loans; (ii) historical valuation allowances determined in accordance with ASC Topic 450, "Contingencies," based on historical loan loss experience for similar loans with similar characteristics and trends, adjusted, as necessary, to reflect the impact of current conditions; (iii) general valuation allowances determined in accordance with ASC Topic 450 based on various risk factors that are internal to us; and (iv) macroeconomic valuation allowances determined in accordance with ASC Topic 450 based upon management's assessment of current and expected economic conditions, trends and other quantitative and qualitative portfolio risk factors that are external to us or that are not otherwise captured in our allowance modeling process but could impact the credit risk or inherent losses within our loan portfolio segments.

Our model for the determination of the allowance for loan losses is largely prescriptive, based on policy, and calculated using quantitative data related to our loan portfolio. This calculation yields the minimum level of allowance required ("minimum calculated need"). In that the model is constructed to address aspects of the loan portfolio quantitatively as they move over time (both good and bad), the model output of the minimum calculated need will move directionally with the overall health of the portfolio and inherent losses in the portfolio at any period end. While the model inherently captures loan portfolio characteristics and actions such as risk grade migration, required specific reserves, net charge-offs, among other things, the model contains a degree of imprecision arising from various items and portfolio risk factors that are not and cannot be incorporated in to the model but nonetheless have an impact on the overall level of allowance deemed appropriate by management. To adequately address this imprecision, our methodology to determine the allowance for loan losses provides for additional reserves in excess of the minimum calculated need. This process entails the application of management judgment related to various non-model items and portfolio risk factors not addressed by the quantitative model but reflective of inherent losses in the portfolio. These additional reserves, which are reported as a component of our macroeconomic valuation allowances, are determined at the portfolio level and allocated as reserves for general economic risk to our various portfolio segments based upon management judgment.

On January 1, 2020, we adopted a new accounting standard which replaces the “incurred loss” model for measuring credit losses discussed above with a new “expected loss” model. See Note 20 - Accounting Standard Updates in the notes to consolidated financial statements included in Item 8. Financial Statements and Supplementary Data elsewhere in this report for additional details.

The table below provides an allocation of the year-end allowance for loan losses by loan type; however, allocation of a portion of the allowance to one category of loans does not preclude its availability to absorb losses in other categories. See Note 3 - Loans in the accompanying notes to consolidated financial statements elsewhere in this report for further details regarding our methodology for estimating the appropriate level of the allowance for loan losses and the amounts allocated to specific portfolio segments.

	2019		2018		2017		2016		2015	
	Allowance for Loan Losses	Percentage of Loans in each Category to Total Loans	Allowance for Loan Losses	Percentage of Loans in each Category to Total Loans	Allowance for Loan Losses	Percentage of Loans in each Category to Total Loans	Allowance for Loan Losses	Percentage of Loans in each Category to Total Loans	Allowance for Loan Losses	Percentage of Loans in each Category to Total Loans
Commercial and industrial	\$ 51,593	35.2%	\$ 48,580	36.3%	\$ 59,614	36.4%	\$ 52,915	36.3%	\$ 42,993	35.9%
Energy	37,382	11.2	29,052	11.4	51,528	11.4	60,653	11.6	54,696	15.3
Commercial real estate	31,037	42.0	38,777	40.4	30,948	40.2	30,213	40.4	24,313	37.4
Consumer real estate	4,113	8.1	6,103	7.9	5,657	7.8	4,238	7.8	4,659	7.6
Consumer and other	8,042	3.5	9,620	4.0	7,617	4.2	5,026	3.9	9,198	3.8
Total	<u>\$ 132,167</u>	<u>100.0%</u>	<u>\$ 132,132</u>	<u>100.0%</u>	<u>\$ 155,364</u>	<u>100.0%</u>	<u>\$ 153,045</u>	<u>100.0%</u>	<u>\$ 135,859</u>	<u>100.0%</u>

Allocation of the Allowance for Loan Losses at December 31, 2019 vs. December 31, 2018

The reserve allocated to commercial and industrial loans at December 31, 2019 increased \$3.0 million compared to December 31, 2018. The increase was primarily due to increases in specific valuation allowances and historical valuation allowances partly offset by a decrease in macroeconomic valuation allowances. Specific valuation allowances for commercial and industrial loans increased \$5.3 million from \$2.6 million at December 31, 2018 to \$7.8 million at December 31, 2019. The increase included new specific valuation allowances totaling \$5.6 million on three credit relationships which had an aggregate outstanding balance totaling \$14.0 million at December 31, 2019. Historical valuation allowances increased \$3.7 million from \$25.4 million at December 31, 2018 to \$29.0 million at December 31, 2019. The increase was primarily related to an increase in the volume of non-classified loans graded “watch” (risk grade 9). Classified loans consist of loans having a risk grade of 11, 12 or 13. Classified commercial and industrial loans totaled \$79.9 million at December 31, 2019 compared to \$78.9 million at December 31, 2018. The weighted-average risk grade of commercial and industrial loans was 6.44 at December 31, 2019 compared to 6.30 at December 31, 2018. Commercial loan net charge-offs totaled \$10.1 million during 2019 compared to \$22.4 million during 2018. Charge-offs in 2018 included \$15.3 million related to four credit relationships. Macroeconomic valuation allowances for commercial and industrial loans decreased \$5.7 million from \$10.6 million at December 31, 2018 to \$4.9 million at December 31, 2019. The decrease was primarily related to a decrease in the general macroeconomic risk allocation (down \$5.3 million), as further discussed below, and a decrease in the environmental risk adjustment (down \$454 thousand) as a result of a decrease in the environmental adjustment factor.

The reserve allocated to energy loans at December 31, 2019 increased \$8.3 million compared to December 31, 2018. As a result, reserves allocated to energy loans as a percentage of total energy loans totaled 2.26% at December 31, 2019 compared to 1.81% at December 31, 2018. This increase was primarily related to increases in specific valuation allowances and, to a lesser extent, macroeconomic valuation allowances, partly offset by decreases in historical valuation allowances and general valuation allowances. Specific valuation allowances for energy loans totaled \$20.2 million at December 31, 2019 and related to three credit relationships totaling \$62.5 million while specific valuation allowances for energy loans totaled \$9.7 million at December 31, 2018 and related to four credit relationships totaling \$39.9 million. Macroeconomic valuation allowances related to energy loans increased \$397 thousand from \$3.7 million at December 31, 2018 to \$4.1 million at December 31, 2019, primarily due to an increase in the general macroeconomic risk allocation (up \$1.0 million), as further discussed below, partly offset by a decrease in the environmental risk

adjustment (down \$590 thousand) as a result of decreases in the environmental adjustment factor and the historical loss valuation allowances to which the environmental risk adjustment factor is applied. Historical valuation allowances decreased \$1.8 million from \$9.7 million at December 31, 2018 to \$7.9 million at December 31, 2019. The decrease was partly related to decreases in the historical loss allocation factors for both non-classified energy loans and classified energy loans. The decrease was also partly related to decreases in the volume of classified energy loans graded as "substandard - accrual" (risk grade 11) (down \$10.7 million) and non-classified energy loans graded as "watch" (risk grade 9) (down \$3.4 million) partly offset by increases in the volume of non-classified energy loans graded as "pass" (risk grades below 9) (up \$36.6 million) and "special mention" (risk grade 10) (up \$8.9 million). Total classified energy loans increased \$8.2 million from \$72.4 million at December 31, 2018 to \$80.5 million at December 31, 2019. The weighted-average risk grade of energy loans increased to 6.39 at December 31, 2019 from 6.22 at December 31, 2018. Energy loan net charge-offs totaled \$6.1 million during 2019 compared to net charge-offs of \$13.1 million during 2018. Charge-offs in 2019 included \$7.5 million related to a single credit relationship. We also charged-off \$6.0 million related to this credit relationship in 2018 as well as \$7.3 million related to two other credit relationships. General valuation allowances decreased \$818 thousand from \$6.0 million at December 31, 2018 \$5.2 million at December 31, 2019. The decrease was primarily related to a decrease in the allocation for highly-leveraged transactions and an increase in the adjustment for recoveries partly offset by an increase in the allocation for excess concentrations.

The reserve allocated to commercial real estate loans at December 31, 2019 decreased \$7.7 million compared to December 31, 2018. The decrease was primarily related to decreases in macroeconomic valuation allowances and specific valuation allowances partly offset by an increase in historical valuation allowances. Macroeconomic valuation allowances decreased \$6.5 million from \$11.0 million at December 31, 2018 to \$4.5 million at December 31, 2019. The decrease was primarily related to a decrease in the general macroeconomic risk allocation (down \$5.7 million), as further discussed below, and a decrease in the environmental risk adjustment (down \$796 thousand), primarily resulting from a decrease in the environmental risk adjustment factor. Specific valuation allowances for commercial real estate loans totaled \$383 thousand at December 31, 2019 decreasing \$2.2 million from \$2.6 million at December 31, 2018. Specific valuation allowances for commercial real estate loans at December 31, 2019 related to two credit relationships totaling \$2.4 million. Specific valuation allowances at December 31, 2018 primarily related to a single credit relationship totaling \$12.2 million. This relationship was sold during the second quarter of 2019. We recognized net charge-offs totaling \$266 thousand in connection with the sale. Historical valuation allowances related to commercial real estate loans increased \$1.1 million from \$20.8 million at December 31, 2018 to \$21.9 million at December 31, 2019. Non-classified commercial real estate loans increased \$523.3 million from \$5.6 billion at December 31, 2018 to \$6.1 billion at December 31, 2019 while classified commercial real estate loans decreased \$23.5 million from \$118.3 million at December 31, 2018 to \$94.8 million at December 31, 2019. The weighted-average risk grade of commercial real estate loans was 7.07 at December 31, 2019 and 7.05 at December 31, 2018. General valuation allowances for commercial real estate loans decreased \$165 thousand from \$4.4 million at December 31, 2018 to \$4.2 million at December 31, 2019.

The reserve allocated to consumer real estate loans at December 31, 2019 decreased \$2.0 million compared to December 31, 2018. This decrease was primarily due to a \$1.1 million decrease in the general macroeconomic risk allocation, as further discussed below, and a \$767 thousand decrease in general valuation allowances, which was primarily related to an increase in the adjustment for recoveries combined with a decrease in the allocation for loans not reviewed by concurrence.

The reserve allocated to consumer and other loans at December 31, 2019 decreased \$1.6 million compared to December 31, 2018. The decrease was primarily related to decreases in specific valuation allowances (down \$1.4 million), macroeconomic valuation allowances (down \$497 thousand) and general valuation allowances (down \$396 thousand) partly offset by an increase in historical valuation allowances (up \$717 thousand). Specific allocations at December 31, 2018 included \$1.4 million related to a single credit relationship of the same amount. The decrease in macroeconomic valuation allowances was primarily related to a decrease in the general macroeconomic risk allocation, as further discussed below, and a decrease in the environmental risk adjustment due to a decrease in the environmental risk adjustment factor. The decrease in general valuation allowances was primarily related to an increase in the adjustment for recoveries combined with a decrease in the allocation for loans not reviewed by concurrence. The increase in historical valuation allowances was primarily due to an increase in the historical loss allocation factor combined with an increase in the volume of consumer loans.

As discussed above, under our allowance methodology, we allocate additional reserves for general macroeconomic risk in excess of our minimum calculated need calculated using our allowance model. These additional reserves are based upon management's assessment of current and expected economic conditions, trends and other quantitative and

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qualitative portfolio risk factors that are external to us or that are not otherwise captured in our allowance modeling process but impact the credit risk or inherent losses within our loan portfolio segments. These additional reserves are allocated to our various portfolio segments based upon management judgment.

Activity in the allowance for loan losses is presented in the following table.

	2019	2018	2017	2016	2015
Balance of allowance for loan losses at beginning of year	\$ 132,132	\$ 155,364	\$ 153,045	\$ 135,859	\$ 99,542
Provision for loan losses	33,759	21,613	35,460	51,673	51,845
Charge-offs:					
Commercial and industrial	(14,117)	(26,076)	(20,619)	(15,910)	(11,092)
Energy	(7,500)	(13,940)	(10,595)	(18,644)	(6,000)
Commercial real estate	(1,025)	(619)	(86)	(82)	(657)
Consumer real estate	(3,665)	(2,143)	(925)	(814)	(577)
Consumer and other	(24,725)	(17,197)	(15,579)	(12,878)	(11,246)
Total charge-offs	(51,032)	(59,975)	(47,804)	(48,328)	(29,572)
Recoveries:					
Commercial and industrial	3,986	3,688	3,166	3,651	4,557
Energy	1,442	819	586	56	3
Commercial real estate	219	369	832	918	989
Consumer real estate	1,208	605	419	557	486
Consumer and other	10,453	9,649	9,660	8,659	8,009
Total recoveries	17,308	15,130	14,663	13,841	14,044
Net charge-offs	(33,724)	(44,845)	(33,141)	(34,487)	(15,528)
Balance at end of year	\$ 132,167	\$ 132,132	\$ 155,364	\$ 153,045	\$ 135,859
Net loan charge-offs to average loans	0.23%	0.33%	0.27%	0.30%	0.14%
Allowance for loan losses to year-end loans	0.90	0.94	1.18	1.28	1.18
Allowance for loan losses to year-end non-accrual loans	129.19	179.19	103.36	152.81	162.77
Average loans	\$ 14,440,549	\$ 13,617,940	\$ 12,460,148	\$ 11,554,823	\$ 11,267,402
Year-end loans	14,750,332	14,099,733	13,145,665	11,975,392	11,486,531
Year-end non-accrual loans	102,303	73,739	150,314	100,151	83,467

The provision for loan losses reflects loan quality trends, including the levels of and trends related to non-accrual loans, past due loans, potential problem loans, classified and criticized loans and net charge-offs or recoveries, among other factors. The provision for loan losses also reflects the totality of actions taken on all loans for a particular period. In other words, the amount of the provision reflects not only the necessary increases in the allowance for loan losses related to newly identified criticized loans, but it also reflects actions taken related to other loans including, among other things, any necessary increases or decreases in required allowances for specific loans or loan pools.

The provision for loan losses increased \$12.1 million, or 56.2%, in 2019 compared to 2018. The provision for loan losses during 2019 primarily reflects the level of net charge-offs and specific valuation allowances as well as the impact of the overall growth in the loan portfolio since December 31, 2018. Net charge-offs totaled \$33.7 million during 2019 compared to \$44.8 million during 2018. Specific valuation allowances totaled \$28.5 million at December 31, 2019 compared to \$16.2 million at December 31, 2018. Classified energy, commercial and industrial and commercial real estate loans totaled \$255.2 million at December 31, 2019 compared to \$269.6 million at December 31, 2018. The overall weighted-average risk grade of our energy, commercial and industrial and commercial real estate loan portfolios was 6.73 at December 31, 2019 compared to 6.63 at December 31, 2018.

The ratio of the allowance for loan losses to total loans was 0.90% at December 31, 2019 compared to 0.94% at December 31, 2018. Management believes the recorded amount of the allowance for loan losses is appropriate based upon management's best estimate of probable losses that have been incurred within the existing portfolio of loans. Should any of the factors considered by management in evaluating the appropriate level of the allowance for loan losses

change, our estimate of probable loan losses could also change, which could affect the level of future provisions for loan losses.

Securities

Year-end securities were as follows:

	2019		2018		2017	
	Amount	Percentage of Total	Amount	Percentage of Total	Amount	Percentage of Total
Held to maturity:						
Residential mortgage-backed securities	\$ 530,861	4.0%	\$ 2,737	—%	\$ 3,610	—%
States and political subdivisions	1,497,644	11.2	1,101,820	8.8	1,428,488	12.0
Other	1,500	—	1,500	—	—	—
Total	2,030,005	15.2	1,106,057	8.8	1,432,098	12.0
Available for sale:						
U.S. Treasury	1,948,133	14.6	3,427,689	27.4	3,445,153	28.8
Residential mortgage-backed securities	2,207,594	16.6	829,740	6.6	665,086	5.6
States and political subdivisions	7,070,997	53.1	7,087,202	56.6	6,336,209	53.1
Other	42,867	0.3	42,690	0.4	42,561	0.3
Total	11,269,591	84.6	11,387,321	91.0	10,489,009	87.8
Trading:						
U.S. Treasury	24,298	0.2	21,928	0.2	19,210	0.2
States and political subdivisions	—	—	2,158	—	1,888	—
Total	24,298	0.2	24,086	0.2	21,098	0.2
Total securities	\$ 13,323,894	100.0%	\$ 12,517,464	100.0%	\$ 11,942,205	100.0%

The following tables summarize the maturity distribution schedule with corresponding weighted-average yields of securities held to maturity and securities available for sale as of December 31, 2019. Weighted-average yields have been computed on a fully taxable-equivalent basis using a tax rate of 21%. 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	
	Amount	Weighted Average Yield	Amount	Weighted Average Yield	Amount	Weighted Average Yield	Amount	Weighted Average Yield	Amount	Weighted Average Yield
Held to maturity:										
Residential mortgage- backed securities	\$ —	—%	\$ 386	3.58%	\$ 517,112	2.28%	\$ 13,363	2.68%	\$ 530,861	2.29%
States and political subdivisions	11,273	4.23	165,519	3.33	527,907	3.14	792,945	3.57	1,497,644	3.40
Other	1,500	2.57	—	—	—	—	—	—	1,500	2.57
Total	\$ 12,773	4.04	\$ 165,905	3.33	\$ 1,045,019	2.71	\$ 806,308	3.55	\$ 2,030,005	3.11
Available for sale:										
U.S. Treasury	\$ 348,885	1.53%	\$ 1,102,170	2.26%	\$ —	—%	\$ 497,078	2.27%	\$ 1,948,133	2.13%
Residential mortgage- backed securities	385	5.23	77,332	2.37	11,791	4.06	2,118,086	3.11	2,207,594	3.09
States and political subdivisions	160,519	3.01	241,865	3.20	478,800	3.52	6,189,813	3.74	7,070,997	3.69
Other	—	—	—	—	—	—	—	—	42,867	—
Total	\$ 509,789	2.00	\$ 1,421,367	2.43	\$ 490,591	3.53	\$ 8,804,977	3.51	\$ 11,269,591	3.29

Securities are classified as held to maturity and carried at amortized cost when management has the positive intent and ability to hold them to maturity. Securities are classified as available for sale when they might be sold before

maturity. Securities available for sale are carried at fair value, with unrealized holding gains and losses reported in other comprehensive income, net of tax. The remaining securities are classified as trading. Trading securities are held primarily for sale in the near term and are carried at their fair values, with unrealized gains and losses included immediately in other income. Management determines the appropriate classification of securities at the time of purchase. Securities with limited marketability, such as stock in the Federal Reserve Bank and the Federal Home Loan Bank, are carried at cost.

All mortgage-backed securities included in the above tables were issued by U.S. government agencies and corporations. At December 31, 2019, approximately 99.7% of the securities in our municipal bond portfolio were issued by the State of Texas or political subdivisions or agencies within the State of Texas, of which approximately 69.1% are either guaranteed by the Texas Permanent School Fund, which has a “triple-A” insurer financial strength rating, or secured by U.S. Treasury securities via defeasance of the debt by the issuers. At December 31, 2019, we held general obligation bonds issued by the State of Texas with an aggregate amortized cost of \$998.4 million and an aggregate fair value of \$1.1 billion. Such amounts were in excess of 10% of our shareholders’ equity at December 31, 2019. At such date, all of these securities were considered “high grade” or better by various credit rating agencies. At December 31, 2019, there were no other holdings of any one issuer, other than the U.S. government and its agencies, in an amount greater than 10% of our shareholders’ equity.

The average taxable-equivalent yield on the securities portfolio based on a 21% tax rate was 3.40% in 2019 compared to 3.38% in 2018. Tax-exempt municipal securities totaled 62.0% of average securities in 2019 compared to 65.0% in 2018. The average yield on taxable securities was 2.33% in 2019 compared to 2.03% in 2018, while the average taxable-equivalent yield on tax-exempt securities was 4.06% in 2019 compared to 4.11% in 2018. See the section captioned “Net Interest Income” elsewhere in this discussion. The overall growth in the securities portfolio in 2019 was primarily funded by the reinvestment of excess reserves held in an interest-bearing account at the Federal Reserve.

Deposits

The table below presents the daily average balances of deposits by type and weighted-average rates paid thereon during the years presented:

	2019		2018		2017	
	Average Balance	Average Rate Paid	Average Balance	Average Rate Paid	Average Balance	Average Rate Paid
Non-interest-bearing demand deposits:						
Commercial and individual	\$ 9,829,635		\$ 10,164,396		\$ 10,155,502	
Correspondent banks	213,442		205,727		245,759	
Public funds	315,339		386,685		418,165	
Total	10,358,416		10,756,808		10,819,426	
Interest-bearing deposits:						
Private accounts:						
Savings and interest checking	6,777,473	0.07%	6,667,695	0.08%	6,376,855	0.02%
Money market accounts	7,738,654	0.93	7,645,624	0.77	7,502,494	0.17
Time accounts of \$100,000 or more	647,215	1.73	474,472	0.87	446,695	0.26
Time accounts under \$100,000	342,692	1.49	325,624	0.71	329,245	0.18
Public funds	548,827	1.31	418,843	1.04	430,203	0.33
Total	16,054,861	0.62	15,532,258	0.49	15,085,492	0.11
Total deposits	\$ 26,413,277	0.38	\$ 26,289,066	0.29	\$ 25,904,918	0.07

Average deposits increased \$124.2 million, or 0.5%, in 2019 compared to 2018. The most significant volume growth during 2019 compared to 2018 was in time, interest-bearing public funds, savings and interest checking and money market deposits. This growth was mostly offset by decreases in the volume of non-interest bearing commercial and individual deposits as well as non-interest bearing public funds deposits. The ratio of average interest-bearing deposits to total average deposits was 60.8% in 2019 compared to 59.1% in 2018. The average cost of interest-bearing deposits and total deposits was 0.62% and 0.38% during 2019 compared to 0.49% and 0.29% during 2018. The increase in the average cost of interest-bearing deposits in 2019 as compared to 2018 was related to higher average interest rates paid on most of our interest-bearing deposit products, particularly during the first half of 2019, as a result of higher average market interest rates.

The following table presents the proportion of each component of average non-interest-bearing deposits to the total of such non-interest-bearing deposits during the years presented:

	2019	2018	2017
Commercial and individual	94.9%	94.5%	93.8%
Correspondent banks	2.1	1.9	2.3
Public funds	3.0	3.6	3.9
Total	100.0%	100.0%	100.0%

Average non-interest-bearing deposits decreased \$398.4 million, or 3.7%, in 2019 compared to 2018. The decrease was primarily due to a \$334.8 million, or 3.3%, decrease in average commercial and individual deposits and a \$71.3 million, or 18.5%, decrease in average public fund deposits partly offset by a \$7.7 million, or 3.8%, increase in average correspondent bank deposits.

The following table presents the proportion of each component of average interest-bearing deposits to the total of such interest-bearing deposits during the years presented:

	2019	2018	2017
Private accounts:			
Savings and interest checking	42.2%	42.9%	42.3%
Money market accounts	48.2	49.2	49.7
Time accounts of \$100,000 or more	4.1	3.1	2.9
Time accounts under \$100,000	2.1	2.1	2.2
Public funds	3.4	2.7	2.9
Total	100.0%	100.0%	100.0%

Total average interest-bearing deposits increased \$522.6 million, or 3.4%, in 2019 compared to 2018 primarily due to a \$189.8 million, or 23.7%, increase in average time deposits, a \$130.0 million, or 31.0%, increase in average public funds deposits, a \$109.8 million, or 1.6%, increase in average savings and interest checking deposits and a \$93.0 million, or 1.2%, increase in average money market deposits.

From time to time, we have obtained interest-bearing deposits through brokered transactions including participation in the Certificate of Deposit Account Registry Service (“CDARS”). Brokered deposits were not significant during the reported periods.

Geographic Concentrations. The following table summarizes our average total deposit portfolio, as segregated by the geographic region from which the deposit accounts were originated. Certain accounts, such as correspondent bank deposits and deposits allocated to certain statewide operational units, are recorded at the statewide level.

	2019	Percent of Total	2018	Percent of Total	2017	Percent of Total
San Antonio	\$ 7,981,160	30.2%	\$ 7,846,388	29.9%	\$ 7,890,139	30.5%
Fort Worth	4,699,142	17.8	4,813,424	18.3	4,784,241	18.5
Houston	4,467,132	16.9	4,578,782	17.4	4,544,448	17.5
Austin	3,285,637	12.5	3,175,030	12.1	3,089,645	11.9
Dallas	2,160,684	8.2	2,157,648	8.2	2,048,712	7.9
Corpus Christi	1,465,586	5.6	1,483,365	5.6	1,458,044	5.6
Permian Basin	1,326,517	5.0	1,232,892	4.7	1,218,402	4.7
Rio Grande Valley	747,713	2.8	744,952	2.8	775,646	3.0
Statewide	279,706	1.0	256,585	1.0	95,641	0.4
Total	\$ 26,413,277	100.0%	\$ 26,289,066	100.0%	\$ 25,904,918	100.0%

Foreign Deposits. Mexico has historically been considered a part of the natural trade territory of our banking offices. Accordingly, U.S. dollar-denominated foreign deposits from sources within Mexico have traditionally been a significant source of funding. Average deposits from foreign sources, primarily Mexico, totaled \$774.0 million in 2019 and \$737.6 million in 2018.

Short-Term Borrowings

Our primary source of short-term borrowings is federal funds purchased from correspondent banks and repurchase agreements in our natural trade territory, as well as from upstream banks. Federal funds purchased and repurchase agreements totaled \$1.7 billion, \$1.4 billion and \$1.1 billion at December 31, 2019, 2018 and 2017. The maximum amount of these borrowings outstanding at any month-end was \$1.7 billion in 2019, \$1.4 billion in 2018 and \$1.1 billion in 2017. The weighted-average interest rate on federal funds purchased and repurchase agreements was 0.81% at December 31, 2019, 1.33% at December 31, 2018 and 0.23% at December 31, 2017.

The following table presents our average net funding position during the years indicated:

	2019		2018		2017	
	Average Balance	Average Rate	Average Balance	Average Rate	Average Balance	Average Rate
Federal funds sold and resell agreements	\$ 245,613	2.25%	\$ 265,085	2.07%	\$ 73,140	1.28%
Federal funds purchased and repurchase agreements	(1,283,381)	1.53	(1,054,915)	0.76	(978,571)	0.16
Net funds position	<u>\$ (1,037,768)</u>		<u>\$ (789,830)</u>		<u>\$ (905,431)</u>	

The net funds purchased position increased \$247.9 million in 2019 compared to 2018. Average interest-bearing deposits (primarily excess reserves held in an interest-bearing account at the Federal Reserve) totaled \$1.6 billion in 2019 compared to \$3.0 billion in 2018 and \$3.6 billion in 2017. During the reported periods, we have maintained excess liquid funds in interest-bearing deposits with the Federal Reserve rather than federal funds sold in order to capitalize on higher available yields.

Off Balance Sheet Arrangements, Commitments, Guarantees, and Contractual Obligations

The following table summarizes our contractual obligations and other commitments to make future payments as of December 31, 2019. Payments for borrowings do not include interest. Payments related to leases are based on actual payments specified in the underlying contracts. Loan commitments and standby letters of credit are presented at contractual amounts; however, since many of these commitments are expected to expire unused or only partially used, the total amounts of these commitments do not necessarily reflect future cash requirements.

	Payments Due by Period				
	Less than 1 Year	1-3 Years	3-5 Years	More than 5 Years	Total
Contractual obligations:					
Subordinated notes payable	\$ —	\$ —	\$ —	\$ 100,000	\$ 100,000
Junior subordinated deferrable interest debentures	—	—	—	137,115	137,115
Operating leases	28,225	58,988	51,893	283,300	422,406
Deposits with stated maturity dates	891,005	217,591	—	—	1,108,596
	919,230	276,579	51,893	520,415	1,768,117
Other commitments:					
Commitments to extend credit	3,641,886	3,490,284	1,044,979	1,128,894	9,306,043
Standby letters of credit	187,176	67,559	5,008	844	260,587
	3,829,062	3,557,843	1,049,987	1,129,738	9,566,630
Total contractual obligations and other commitments	<u>\$ 4,748,292</u>	<u>\$ 3,834,422</u>	<u>\$ 1,101,880</u>	<u>\$ 1,650,153</u>	<u>\$ 11,334,747</u>

Financial Instruments with Off-Balance-Sheet Risk. In the normal course of business, we enter into various transactions, which, in accordance with accounting principles generally accepted in the United States, are not included in our consolidated balance sheets. We enter into these transactions to meet the financing needs of our customers. 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. We also hold certain assets which are not included in our consolidated balance sheets including assets held in fiduciary or custodial capacity on behalf of our trust customers.

Commitments to Extend Credit. We enter into contractual commitments to extend credit, normally with fixed expiration dates or termination clauses, at specified rates and for specific purposes. Substantially all of our commitments to extend credit are contingent upon customers maintaining specific credit standards at the time of loan funding. Commitments to extend credit outstanding at December 31, 2019 are included in the table above.

Standby Letters of Credit. Standby letters of credit are written conditional commitments issued by us to guarantee the performance of a customer to a third party. In the event the customer does not perform in accordance with the terms of the agreement with the third party, we would be required to fund the commitment. The maximum potential amount of future payments we could be required to make is represented by the contractual amount of the commitment. If the commitment is funded, we would be entitled to seek recovery from the customer. Our policies generally require that standby letter of credit arrangements contain security and debt covenants similar to those contained in loan agreements. Standby letters of credit outstanding at December 31, 2019 are included in the table above.

Trust Accounts. We also hold certain assets in fiduciary or custodial capacity on behalf of our trust customers. The estimated fair value of trust assets was approximately \$37.8 billion (including managed assets of \$16.4 billion and custody assets of \$21.4 billion) at December 31, 2019. These assets were primarily composed of equity securities (50.7% of trust assets), fixed income securities (35.0% of trust assets) and cash equivalents (8.9% of trust assets).

Capital and Liquidity

Capital. Shareholders' equity totaled \$3.9 billion at December 31, 2019 and \$3.4 billion at December 31, 2018. In addition to net income of \$443.6 million, other sources of capital during 2019 included other comprehensive income, net of tax, of \$331.0 million, \$20.8 million in proceeds from stock option exercises and \$15.9 million related to stock-based compensation. Uses of capital during 2019 included \$185.1 million of dividends paid on preferred and common stock, \$68.8 million of treasury stock purchases and \$14.7 million related to the cumulative effect of a new accounting principle adopted during the first quarter of 2019. See Note 1 - Summary of Significant Accounting Policies.

The accumulated other comprehensive income/loss component of shareholders' equity totaled a net, after-tax, unrealized gain of \$267.4 million at December 31, 2019 compared to a net, after-tax, unrealized loss of \$63.6 million at December 31, 2018. The change was primarily due to a \$329.4 million net after-tax change in the net unrealized gain/loss on securities available for sale and securities transferred to held to maturity.

Under the Basel III Capital Rules, we 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 related to securities available for sale, effective cash flow hedges and defined benefit post-retirement benefit plans do not increase or reduce regulatory capital and are not included in the calculation of risk-based capital and leverage 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 9 - Capital and Regulatory Matters in the accompanying notes to consolidated financial statements elsewhere in this report.

We paid quarterly dividends of \$0.67, \$0.71, \$0.71 and \$0.71 per common share during the first, second, third and fourth quarters of 2019, respectively, and quarterly dividends of \$0.57, \$0.67, \$0.67 and \$0.67 per common share during the first, second, third and fourth quarters of 2018, respectively. This equates to a dividend payout ratio of 40.6% in 2019 and 37.0% in 2018. Under the terms of the junior subordinated deferrable interest debentures that Cullen/Frost has issued to Cullen/Frost Capital Trust II and WNB Capital Trust I, we have the right at any time during the term of the debentures to defer the payment of interest any time or from time to time for an extension period not exceeding 20 consecutive quarterly periods with respect to each extension period. Our ability to declare or pay dividends on, or purchase, redeem or otherwise acquire, shares of our capital stock is subject to certain restrictions during any such extension period. Under the terms of the Series A Preferred Stock, our ability to 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 A Preferred Stock is subject to certain restrictions in the event that we do not declare and pay dividends on the Series A Preferred Stock for the most recent dividend period.

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 July 24, 2019, 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 202,724 shares at a total cost of \$17.2 million during 2019. Under prior stock repurchase programs, we repurchased 496,307 shares at a total cost of \$50.0 million during 2019 and 1,027,292 shares at a total cost of \$100.0 million during 2018. See Part II, Item 5 - Market for Registrant's Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities, elsewhere in this report.

Liquidity. Liquidity measures the ability to meet current and future cash flow needs as they become due. The liquidity of a financial institution reflects its ability to meet loan requests, to accommodate possible outflows in deposits and to take advantage of interest rate market opportunities. The ability of a financial institution to meet its current financial obligations is a function of its balance sheet structure, its ability to liquidate assets and its access to alternative sources of funds. The objective of our liquidity management is to manage cash flow and liquidity reserves so that they are adequate to fund our operations and to meet obligations and other commitments on a timely basis and at a reasonable cost. We seek to achieve this objective and ensure that funding needs are met by maintaining an appropriate level of liquid funds through asset/liability management, which includes managing the mix and time to maturity of financial assets and financial liabilities on our balance sheet. Our liquidity position is enhanced by our ability to raise additional funds as needed in the wholesale markets.

Asset liquidity is provided by liquid assets which are readily marketable or pledgeable or which will mature in the near future. Liquid assets include cash, interest-bearing deposits in banks, securities available for sale, maturities and cash flow from securities held to maturity, and federal funds sold and resell agreements.

Liability liquidity is provided by access to funding sources which include core deposits and correspondent banks in our natural trade area that maintain accounts with and sell federal funds to Frost Bank, as well as federal funds purchased and repurchase agreements from upstream banks and deposits obtained through financial intermediaries.

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. As of December 31, 2019, management is not aware of any events that are reasonably likely to have a material adverse effect on our liquidity, capital resources or operations. In addition, management is not aware of any regulatory recommendations regarding liquidity that would have a material adverse effect on us.

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 9 - Capital and Regulatory Matters in the accompanying notes to consolidated financial statements elsewhere in this report regarding such dividends. At December 31, 2019, Cullen/Frost had liquid assets, including cash and resell agreements, totaling \$267.1 million.

Impact of Inflation and Changing Prices

Our financial statements included herein have been prepared in accordance with accounting principles generally accepted in the United States ("GAAP"). GAAP presently requires us to measure financial position and operating results primarily in terms of historic dollars. Changes in the relative value of money due to inflation or recession are generally not considered. The primary effect of inflation on our operations is reflected in increased operating costs. In management's opinion, changes in interest rates affect the financial condition of a financial institution to a far greater degree than changes in the inflation rate. While interest rates are greatly influenced by changes in the inflation rate, they do not necessarily change at the same rate or in the same magnitude as the inflation rate. Interest rates are highly

sensitive to many factors that are beyond our control, including changes in the expected rate of inflation, the influence of general and local economic conditions and the monetary and fiscal policies of the United States government, its agencies and various other governmental regulatory authorities, among other things, as further discussed in the next section.

Regulatory and Economic Policies

Our business and earnings are affected by general and local economic conditions and by the monetary and fiscal policies of the United States government, its agencies and various other governmental regulatory authorities, among other things. The Federal Reserve Board regulates the supply of money in order to influence general economic conditions. Among the instruments of monetary policy historically available to the Federal Reserve Board are (i) conducting open market operations in United States government obligations, (ii) changing the discount rate on financial institution borrowings, (iii) imposing or changing reserve requirements against financial institution deposits, and (iv) restricting certain borrowings and imposing or changing reserve requirements against certain borrowings by financial institutions and their affiliates. These methods are used in varying degrees and combinations to affect directly the availability of bank loans and deposits, as well as the interest rates charged on loans and paid on deposits. For that reason alone, the policies of the Federal Reserve Board have a material effect on our earnings.

Governmental policies have had a significant effect on the operating results of commercial banks in the past and are expected to continue to do so in the future; however, we cannot accurately predict the nature, timing or extent of any effect such policies may have on our future business and earnings.

Accounting Standards Updates

See Note 20 - Accounting Standards Updates in the accompanying notes to consolidated financial statements elsewhere in this report for details of recently issued accounting pronouncements and their expected impact on our financial statements.

ITEM 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

The disclosures set forth in this item are qualified by Item 1A. Risk Factors and the section captioned "Forward-Looking Statements and Factors that Could Affect Future Results" included in Item 7. 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.

Market risk refers to the risk of loss arising from adverse changes in interest rates, foreign currency exchange rates, commodity prices, and other relevant market rates and prices, such as equity prices. The risk of loss can be assessed from the perspective of adverse changes in fair values, cash flows, and future earnings. Due to the nature of our operations, we are primarily exposed to interest rate risk and, to a lesser extent, liquidity risk.

Interest rate risk on our balance sheets consists of reprice, option, and basis risks. Reprice risk results from differences in the maturity, or repricing, of asset and liability portfolios. Option risk arises from "embedded options" present in many financial instruments such as loan prepayment options, deposit early withdrawal options and interest rate options. These options allow customers opportunities to benefit when market interest rates change, which typically results in higher costs or lower revenue for us. Basis risk refers to the potential for changes in the underlying relationship between market rates and indices, which subsequently result in a narrowing of the profit spread on an earning asset or liability. Basis risk is also present in administered rate liabilities, such as savings accounts, negotiable order of withdrawal accounts, and money market accounts where historical pricing relationships to market rates may change due to the level or directional change in market interest rates.

We seek to avoid fluctuations in our net interest margin and to maximize net interest income within acceptable levels of risk through periods of changing interest rates. Accordingly, our interest rate sensitivity and liquidity are monitored on an ongoing basis by our Asset and Liability Committee ("ALCO"), which oversees market risk management and establishes risk measures, limits and policy guidelines for managing the amount of interest rate risk and its effect on net interest income and capital. A variety of measures are used to provide for a comprehensive view of the magnitude of interest rate risk, the distribution of risk, the level of risk over time and the exposure to changes in certain interest rate relationships.

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.

ALCO continuously monitors and manages the balance between interest rate-sensitive assets and liabilities. The objective is to manage the impact of fluctuating market rates on net interest income within acceptable levels. In order to meet this objective, management may lengthen or shorten the duration of assets or liabilities or enter into derivative contracts to mitigate potential market risk.

For modeling purposes, as of December 31, 2019, 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 1.0% and 2.6%, respectively, relative to the flat-rate case over the next 12 months, while 100 and 175 basis point ratable decreases in interest rates would result in negative variances in net interest income of 1.9% and 6.4%, respectively, relative to the flat-rate case over the next 12 months. The December 31, 2019 model simulations for increased interest rates were impacted by the assumption, for modeling purposes, that we will begin to pay interest on commercial demand deposits (those not already receiving an earnings credit rate) in the first quarter of 2020, as further discussed below. As of December 31, 2018, 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 0.3% and 1.5%, 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 negative variances in net interest income of 2.7% and 7.5%, respectively, relative to the flat-rate case over the next 12 months. The December 31, 2018 model simulations for increased interest rates were impacted by the assumption, for modeling purposes, that we would begin to pay interest on commercial demand deposits (those not already receiving an earnings credit rate) in the first quarter of 2019, as further discussed below. The likelihood of a decrease in interest rates beyond 175 basis points as of December 31, 2019 was considered to be remote given prevailing interest rate levels.

The model simulations as of December 31, 2019 indicate that our projected balance sheet is more asset sensitive in comparison to our balance sheet as of December 31, 2018. The shift to a more asset sensitive position was primarily due to a decrease in the assumed interest rate paid on projected commercial demand deposits (those not already receiving an earnings credit rate), as further discussed below. The impact of this change in assumptions was partly offset by the effect of a decrease in the relative proportion of interest-bearing deposits and federal funds sold to projected average interest-earning assets. Interest-bearing deposits and federal funds sold are more immediately impacted by changes in interest rates in comparison to our other categories of earning assets.

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 modeling simulation as of December 31, 2019 assumed a moderate pricing structure with regards to interest payments on commercial demand deposits (those not already receiving an earnings credit) with interest payments assumed to begin in the first quarter of 2020. This moderate pricing structure on commercial demand deposits assumes a deposit pricing beta of 25%. The pricing beta is a measure of how much deposit rates reprice, up or down, given a defined change in market rates. Our modeling simulation as of December 31, 2018 assumed a much more aggressive pricing structure with regards to interest payments for commercial demand deposits (those not already receiving an earnings credit) with interest payments assumed to begin in the first quarter of 2019. We modified our assumed pricing structure during 2019 compared to 2018 based upon our market observations during the most recent interest rate cycle.

As of December 31, 2019, the effects of a 200 basis point increase and a 175 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 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

Report of Independent Registered Public Accounting Firm

To the Shareholders and the Board of Directors of
Cullen/Frost Bankers, Incorporated

Opinion on the Financial Statements

We have audited the accompanying consolidated balance sheets of Cullen/Frost Bankers, Inc. (the Company) as of December 31, 2019 and 2018, and the related consolidated statements of income, comprehensive income, changes in shareholders' equity and cash flows for each of the three years in the period ended December 31, 2019, and the related notes (collectively referred to as the consolidated financial statements). In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Company at December 31, 2019 and 2018, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2019, in conformity with U.S. generally accepted accounting principles.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the Company's internal control over financial reporting as of December 31, 2019, based on criteria established in Internal Control-Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework) and our report dated February 4, 2020 expressed an unqualified opinion thereon.

Basis for Opinion

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

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

Critical Audit Matter

The critical audit matter communicated below is a matter arising from the current period audit of the financial statements that was communicated or required to be communicated to the audit committee and that: (1) relates to accounts or disclosures that are material to the financial statements and (2) involved our especially challenging, subjective or complex judgments. The communication of the critical audit matter does not alter in any way our opinion on the consolidated financial statements, taken as a whole, and we are not, by communicating the critical audit matter below, providing a separate opinion on the critical audit matter or on the account or disclosures to which it relates.

Allowance for Loan Losses

Description of the Matter

The Company's loan portfolio totaled \$14.8 billion as of December 31, 2019 and the associated allowance for loan losses (ALL) was \$132.2 million. As discussed in Notes 1 and 3 to the consolidated financial statements, the ALL is established to absorb inherent losses that have been incurred within the existing portfolio of loans. Management's estimate of inherent losses within the loan portfolio is established using quantitative, as well as qualitative, considerations. The Company's methodology to determine the ALL considers quantitative calculations including: specific valuation allowances determined in accordance with ASC Topic 310 based on probable losses on

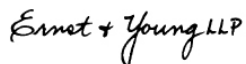
specific loans, historical valuation allowances determined in accordance with ASC topic 450 based on historical loan loss experience for similar loans with similar characteristics and trends, adjusted, as necessary, to reflect the impact of current conditions, and general valuation allowances determined in accordance with ASC Topic 450 based on various risk factors that are internal to the Company. The Company's ALL methodology also includes qualitative amounts that include macroeconomic valuation allowances based on general economic conditions and other risk factors to the Company. The Company's methodology for determining the appropriate ALL considers the imprecision inherent in the application of quantitative portions of the ALL. The components of the macroeconomic valuation allowances include an environmental risk adjustment factor, consideration for distressed industries, and current economic trends and other factors.

Auditing management's estimate of the ALL involved a high degree of subjectivity due to the nature of the macroeconomic valuation allowances included in the ALL. Management's identification and measurement of the macroeconomic valuation allowances is highly judgmental and could have a significant effect on the ALL.

How We Addressed the Matter in Our Audit

We obtained an understanding of the Company's process for establishing the ALL, including the macroeconomic valuation allowances of the ALL. We evaluated the design and tested the operating effectiveness of related controls over the reliability and accuracy of data used to calculate and estimate the various components of the ALL, the accuracy of the calculation of the ALL, management's review and approval of methodologies used to establish the ALL, analysis of changes in various components of the ALL relative to changes in the Company's loan portfolio and economy and evaluation of the overall reasonableness and appropriateness of the ALL. In doing so, we tested the operating effectiveness of review and approval controls in the Company's governance process designed to identify and assess the macroeconomic valuation allowances which is meant to measure inherent loan losses associated with factors not captured fully in the other components of the ALL.

To test the reasonableness of the macroeconomic valuation allowances, we performed audit procedures that included, among others testing the appropriateness of the methodologies used by the Company to estimate the ALL, testing the completeness and accuracy of data and information used by the Company in estimating the components of the ALL, evaluating the appropriateness of assumptions used in estimating the macroeconomic valuation allowances, analyzing the changes in assumptions and various components of the ALL relative to changes in the Company's loan portfolio and the economy and evaluating the appropriateness and level of the macroeconomic valuation allowances. For example, specific to the macroeconomic valuation allowances, we 1) evaluated the inherent limitations of the Company's quantitative components of the ALL and hence the need for and levels of the macroeconomic valuation allowances; 2) analyzed the changes, assumptions and adjustments made to the macroeconomic valuation allowances; and 3) evaluated the appropriateness and completeness of risk factors used in determining the amount of the macroeconomic valuation allowances. We also evaluated the data and information utilized by management to estimate the macroeconomic valuation allowances by independently obtaining internal and external data and information to assess the appropriateness of the data and information used by management and to consider the existence of new and potentially contradictory information used. In addition, we evaluated the overall ALL amount, inclusive of the adjustments for the macroeconomic valuation allowances, and whether the amount appropriately reflects losses incurred in the loan portfolio as of the consolidated balance sheet date by comparing the overall ALL to those established by similar banking institutions with similar loan portfolios. We also reviewed subsequent events and transactions and considered whether they corroborate or contradict the Company's conclusion.

The logo for Ernst & Young LLP, featuring the company name in a stylized, handwritten-style font.

We have served as the Company's auditor since 1969.
San Antonio, Texas
February 4, 2020

**Cullen/Frost Bankers, Inc.
Consolidated Balance Sheets**

(Dollars in thousands, except per share amounts)

	December 31,	
	2019	2018
Assets:		
Cash and due from banks	\$ 581,857	\$ 678,791
Interest-bearing deposits	2,849,950	2,641,971
Federal funds sold and resell agreements	356,374	635,017
Total cash and cash equivalents	3,788,181	3,955,779
Securities held to maturity, at amortized cost	2,030,005	1,106,057
Securities available for sale, at estimated fair value	11,269,591	11,387,321
Trading account securities	24,298	24,086
Loans, net of unearned discounts	14,750,332	14,099,733
Less: Allowance for loan losses	(132,167)	(132,132)
Net loans	14,618,165	13,967,601
Premises and equipment, net	1,011,947	552,330
Goodwill	654,952	654,952
Other intangible assets, net	2,481	3,649
Cash surrender value of life insurance policies	187,156	183,473
Accrued interest receivable and other assets	440,652	457,718
Total assets	<u>\$ 34,027,428</u>	<u>\$ 32,292,966</u>
Liabilities:		
Deposits:		
Non-interest-bearing demand deposits	\$ 10,873,629	\$ 10,997,494
Interest-bearing deposits	16,765,935	16,151,710
Total deposits	27,639,564	27,149,204
Federal funds purchased and repurchase agreements	1,695,342	1,367,548
Junior subordinated deferrable interest debentures, net of unamortized issuance costs	136,299	136,242
Subordinated notes, net of unamortized issuance costs	98,865	98,708
Accrued interest payable and other liabilities	545,690	172,347
Total liabilities	30,115,760	28,924,049
Shareholders' Equity:		
Preferred stock, par value \$0.01 per share; 10,000,000 shares authorized; 6,000,000 Series A shares (\$25 liquidation preference) issued in both 2019 and 2018	144,486	144,486
Common stock, par value \$0.01 per share; 210,000,000 shares authorized; 64,236,306 shares issued in both 2019 and 2018	642	642
Additional paid-in capital	983,250	967,304
Retained earnings	2,667,534	2,440,002
Accumulated other comprehensive income, net of tax	267,370	(63,600)
Treasury stock, at cost; 1,567,302 shares in 2019 and 1,250,464 in 2018.	(151,614)	(119,917)
Total shareholders' equity	3,911,668	3,368,917
Total liabilities and shareholders' equity	<u>\$ 34,027,428</u>	<u>\$ 32,292,966</u>

See accompanying Notes to Consolidated Financial Statements.

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

	Year Ended December 31,		
	2019	2018	2017
Interest income:			
Loans, including fees	\$ 741,747	\$ 669,002	\$ 534,804
Securities:			
Taxable	117,082	86,370	92,979
Tax-exempt	233,842	233,358	222,620
Interest-bearing deposits	35,590	56,968	41,608
Federal funds sold and resell agreements	5,524	5,500	936
Total interest income	1,133,785	1,051,198	892,947
Interest expense:			
Deposits	99,742	75,337	17,188
Federal funds purchased and repurchase agreements	19,675	8,021	1,522
Junior subordinated deferrable interest debentures	5,706	5,291	3,955
Other long-term borrowings	4,657	4,657	3,860
Total interest expense	129,780	93,306	26,525
Net interest income	1,004,005	957,892	866,422
Provision for loan losses	33,759	21,613	35,460
Net interest income after provision for loan losses	970,246	936,279	830,962
Non-interest income:			
Trust and investment management fees	126,722	119,391	110,675
Service charges on deposit accounts	88,983	85,186	84,182
Insurance commissions and fees	52,345	48,967	46,169
Interchange and debit card transaction fees	14,873	13,877	23,232
Other charges, commissions and fees	37,123	37,231	39,931
Net gain (loss) on securities transactions	293	(156)	(4,941)
Other	43,563	46,790	37,222
Total non-interest income	363,902	351,286	336,470
Non-interest expense:			
Salaries and wages	375,029	350,312	337,068
Employee benefits	86,230	77,323	74,575
Net occupancy	89,466	76,788	75,971
Technology, furniture and equipment	91,995	83,102	74,335
Deposit insurance	10,126	16,397	20,128
Intangible amortization	1,168	1,424	1,703
Other	180,665	173,538	175,289
Total non-interest expense	834,679	778,884	759,069
Income before income taxes	499,469	508,681	408,363
Income taxes	55,870	53,763	44,214
Net income	443,599	454,918	364,149
Preferred stock dividends	8,063	8,063	8,063
Net income available to common shareholders	\$ 435,536	\$ 446,855	\$ 356,086
Earnings per common share:			
Basic	\$ 6.89	\$ 6.97	\$ 5.56
Diluted	6.84	6.90	5.51

See accompanying Notes to Consolidated Financial Statements.

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

	Year Ended December 31,		
	2019	2018	2017
Net income	\$ 443,599	\$ 454,918	\$ 364,149
Other comprehensive income (loss), before tax:			
Securities available for sale and transferred securities:			
Change in net unrealized gain/loss during the period	418,556	(182,340)	157,016
Change in net unrealized gain on securities transferred to held to maturity	(1,292)	(8,818)	(16,193)
Reclassification adjustment for net (gains) losses included in net income	(293)	156	4,941
Total securities available for sale and transferred securities	416,971	(191,002)	145,764
Defined-benefit post-retirement benefit plans:			
Change in the net actuarial gain/loss	(3,644)	(7,225)	(597)
Reclassification adjustment for net amortization of actuarial gain/loss included in net income as a component of net periodic cost (benefit)	5,623	5,002	5,429
Total defined-benefit post-retirement benefit plans	1,979	(2,223)	4,832
Other comprehensive income (loss), before tax	418,950	(193,225)	150,596
Deferred tax expense (benefit)	87,980	(40,578)	46,461
Other comprehensive income (loss), net of tax	330,970	(152,647)	104,135
Comprehensive income	\$ 774,569	\$ 302,271	\$ 468,284

See accompanying Notes to Consolidated Financial Statements.

Cullen/Frost Bankers, Inc.
Consolidated Statement 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
Balance at January 1, 2017	\$ 144,486	\$ 637	\$ 906,732	\$ 1,985,569	\$ (24,623)	\$ (10,273)	\$ 3,002,528
Net income	—	—	—	364,149	—	—	364,149
Other comprehensive income, net of tax	—	—	—	—	104,135	—	104,135
Stock option exercises/stock unit conversions (1,150,920 shares)	—	5	33,616	(10,414)	—	44,539	67,746
Stock-based compensation expense recognized in earnings	—	—	13,013	—	—	—	13,013
Purchase of treasury stock (1,149,555 shares)	—	—	—	—	—	(101,473)	(101,473)
Cash dividends - preferred stock (approximately \$1.34 per share)	—	—	—	(8,063)	—	—	(8,063)
Cash dividends - common stock (\$2.25 per share)	—	—	—	(144,172)	—	—	(144,172)
Balance at December 31, 2017	144,486	642	953,361	2,187,069	79,512	(67,207)	3,297,863
Cumulative effect of accounting change	—	—	—	(2,285)	—	—	(2,285)
Adjusted beginning balance	144,486	642	953,361	2,184,784	79,512	(67,207)	3,295,578
Net income	—	—	—	454,918	—	—	454,918
Other comprehensive income, net of tax	—	—	—	—	(152,647)	—	(152,647)
Reclassification of certain income tax effects related to the change in the U.S. statutory federal income tax rate under the Tax Cuts and Jobs Act	—	—	—	(9,535)	9,535	—	—
Stock option exercises/stock unit conversions (548,238 shares)	—	—	—	(16,653)	—	48,300	31,647
Stock-based compensation expense recognized in earnings	—	—	13,943	—	—	—	13,943
Purchase of treasury stock (1,037,982 shares)	—	—	—	—	—	(101,010)	(101,010)
Cash dividends – preferred stock (approximately \$1.34 per share)	—	—	—	(8,063)	—	—	(8,063)
Cash dividends – common stock (\$2.58 per share)	—	—	—	(165,449)	—	—	(165,449)
Balance at December 31, 2018	144,486	642	967,304	2,440,002	(63,600)	(119,917)	3,368,917
Cumulative effect of accounting change	—	—	—	(14,672)	—	—	(14,672)
Adjusted beginning balance	144,486	642	967,304	2,425,330	(63,600)	(119,917)	3,354,245
Net income	—	—	—	443,599	—	—	443,599
Other comprehensive income, net of tax	—	—	—	—	330,970	—	330,970
Stock option exercises/stock unit conversions (399,244 shares)	—	—	—	(16,326)	—	37,096	20,770
Stock-based compensation expense recognized in earnings	—	—	15,946	—	—	—	15,946
Purchase of treasury stock (716,062 shares)	—	—	—	—	—	(68,793)	(68,793)
Cash dividends – preferred stock (approximately \$1.34 per share)	—	—	—	(8,063)	—	—	(8,063)
Cash dividends – common stock (\$2.80 per share)	—	—	—	(177,006)	—	—	(177,006)
Balance at December 31, 2019	\$ 144,486	\$ 642	\$ 983,250	\$ 2,667,534	\$ 267,370	\$ (151,614)	\$ 3,911,668

See accompanying Notes to Consolidated Financial Statements

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

	Year Ended December 31,		
	2019	2018	2017
Operating Activities:			
Net income	\$ 443,599	\$ 454,918	\$ 364,149
Adjustments to reconcile net income to net cash from operating activities:			
Provision for loan losses	33,759	21,613	35,460
Deferred tax expense (benefit)	7,614	52,923	(14,493)
Accretion of loan discounts	(15,197)	(14,341)	(16,062)
Securities premium amortization (discount accretion), net	115,558	100,528	89,933
Net (gain) loss on securities transactions	(293)	156	4,941
Depreciation and amortization	54,091	50,172	47,812
Net (gain) loss on sale/write-down of assets/foreclosed assets	(5,712)	(5,272)	(4,697)
Stock-based compensation	15,946	13,943	13,013
Net tax benefit from stock-based compensation	2,447	3,865	9,062
Earnings on life insurance policies	(3,683)	(3,380)	(3,190)
Net change in:			
Trading account securities	(212)	(2,658)	(3,842)
Lease right-of-use assets	20,124	—	—
Accrued interest receivable and other assets	(15,570)	(85,898)	(55,179)
Accrued interest payable and other liabilities	(18,381)	(24,181)	71,172
Net cash from operating activities	634,090	562,388	538,079
Investing Activities:			
Securities held to maturity:			
Purchases	(649,326)	(1,500)	—
Maturities, calls and principal repayments	81,762	300,632	783,176
Securities available for sale:			
Purchases	(23,306,694)	(18,191,057)	(13,529,192)
Sales	18,660,147	16,806,062	11,963,359
Maturities, calls and principal repayments	4,694,927	221,906	1,328,143
Proceeds from sale of loans	24,036	21,318	—
Net change in loans	(693,587)	(1,008,789)	(1,187,631)
Benefits received on life insurance policies	—	384	597
Proceeds from sales of premises and equipment	8,038	13,628	4,525
Purchases of premises and equipment	(206,716)	(79,270)	(34,089)
Proceeds from sales of repossessed properties	663	3,366	517
Net cash from investing activities	(1,386,750)	(1,913,320)	(670,595)
Financing Activities:			
Net change in deposits	490,360	276,815	1,060,814
Net change in short-term borrowings	327,794	219,724	170,832
Proceeds from issuance of subordinated notes	—	—	98,434
Principal payments on subordinated notes	—	—	(100,000)
Proceeds from stock option exercises	20,770	31,647	67,746
Purchase of treasury stock	(68,793)	(101,010)	(101,473)
Cash dividends paid on preferred stock	(8,063)	(8,063)	(8,063)
Cash dividends paid on common stock	(177,006)	(165,449)	(144,172)
Net cash from financing activities	585,062	253,664	1,044,118
Net change in cash and cash equivalents	(167,598)	(1,097,268)	911,602
Cash and cash equivalents at beginning of year	3,955,779	5,053,047	4,141,445
Cash and cash equivalents at end of year	\$ 3,788,181	\$ 3,955,779	\$ 5,053,047

See accompanying Notes to Consolidated Financial Statements.

Cullen/Frost Bankers, Inc.

Notes To Consolidated Financial Statements

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

Note 1 - Summary of 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 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.

We determine whether we have a controlling financial interest in an entity by first evaluating whether the entity is a voting interest entity or a variable interest entity (“VIE”) under accounting principles generally accepted in the United States. Voting interest entities are entities in which the total equity investment at risk is sufficient to enable the entity to finance itself independently and provides the equity holders with the obligation to absorb losses, the right to receive residual returns and the right to make decisions about the entity’s activities. We consolidate voting interest entities in which we have all, or at least a majority of, the voting interest. As defined in applicable accounting standards, VIEs are entities that lack one or more of the characteristics of a voting interest entity. A controlling financial interest in a VIE is present when an enterprise has both the power to direct the activities of the VIE that most significantly impact the VIE’s economic performance and an obligation to absorb losses or the right to receive benefits that could potentially be significant to the VIE. The enterprise with a controlling financial interest, known as the primary beneficiary, consolidates the VIE. Our wholly owned subsidiaries Cullen/Frost Capital Trust II and WNB Capital Trust I are VIEs for which we are not the primary beneficiary. Accordingly, the accounts of these trusts are not included in our consolidated financial statements.

Acquisitions are accounted for using the purchase method with the operating results of the acquired companies included with our results of operations since their respective dates of acquisition.

We have evaluated subsequent events for potential recognition and/or disclosure through the date these consolidated financial statements were issued.

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.

Concentrations and Restrictions on Cash and Cash Equivalents. We maintain deposits with other financial institutions in amounts that exceed federal deposit insurance coverage. Furthermore, federal funds sold are essentially uncollateralized loans to other financial institutions. Management regularly evaluates the credit risk associated with the counterparties to these transactions and believes that we are not exposed to any significant credit risks on cash and cash equivalents.

We were required to have \$918.0 million and \$447.9 million of cash on hand or on deposit with the Federal Reserve Bank to meet regulatory reserve and clearing requirements at December 31, 2019 and 2018. Additionally, as of December 31, 2019 and 2018, we had \$37.5 million and \$10.0 million in cash collateral on deposit with other financial institution counterparties to interest rate swap transactions.

Cash Flow Reporting. Cash and cash equivalents include cash, deposits with other financial institutions that have an initial maturity of less than 90 days when acquired by us, federal funds sold and resell agreements. Net cash flows are reported for loans, deposit transactions and short-term borrowings. Additional cash flow information was as follows:

	Year Ended December 31,		
	2019	2018	2017
Cash paid for interest	\$ 124,781	\$ 89,270	\$ 24,371
Cash paid for income tax	45,352	5,112	56,359
Significant non-cash transactions:			
Transfer of securities from available for sale to held to maturity	377,812	—	—
Unsettled purchases/sales of securities	—	330	37,481
Loans foreclosed and transferred to other real estate owned and foreclosed assets	1,348	2,899	279
Loans to facilitate the sale of other real estate owned	847	—	—
Lease right-of-use assets obtained in exchange for lessee operating lease liabilities	319,286	—	—

Repurchase/Resell Agreements. We purchase certain securities under agreements to resell. The amounts advanced under these agreements represent short-term loans and are reflected as assets in the accompanying consolidated balance sheets. The securities underlying these agreements are book-entry securities. We also sell certain securities under agreements to repurchase. The agreements are treated as collateralized financing transactions and the obligations to repurchase securities sold are reflected as a liability in the accompanying consolidated balance sheets. The dollar amount of the securities underlying the agreements remains in the asset accounts.

Securities. Securities are classified as held to maturity and carried at amortized cost when management has the positive intent and ability to hold them until maturity. Securities to be held for indefinite periods of time are classified as available for sale and carried at fair value, with the unrealized holding gains and losses reported as a component of other comprehensive income, net of tax. Securities held for resale in anticipation of short-term market movements are classified as trading and are carried at fair value, with changes in unrealized holding gains and losses included in income. Management determines the appropriate classification of securities at the time of purchase. Securities with limited marketability, such as stock in the Federal Reserve Bank and the Federal Home Loan Bank, are carried at cost.

Interest income on securities includes amortization of purchase premiums and discounts. Premiums and discounts on securities are generally amortized using the interest method with a constant effective yield without anticipating prepayments, except for mortgage-backed securities where prepayments are anticipated. Premiums on callable securities are amortized to their earliest call date. Prior to the adoption of a new accounting standard in 2019, as further discussed below, premiums on callable securities were amortized to their respective maturity dates unless such securities were included in pools for the purposes of assessing prepayment expectations.

Realized gains and losses are derived from the amortized cost of the security sold. Declines in the fair value of held-to-maturity and available-for-sale securities below their cost that are deemed to be other than temporary are reflected in earnings as realized losses. In estimating other-than-temporary impairment losses, management considers, among other things, (i) the length of time and the extent to which the fair value has been less than cost, (ii) the financial condition and near-term prospects of the issuer and (iii) the intent and our ability to retain our investment in the issuer for a period of time sufficient to allow for any anticipated recovery in fair value.

Loans. Loans are reported at the principal balance outstanding net of unearned discounts. Interest income on loans is reported on the level-yield method and includes amortization of deferred loan fees and costs over the loan term. Net loan commitment fees or costs for commitment periods greater than one year are deferred and amortized into fee income or other expense on a straight-line basis over the commitment period. Income on direct financing leases is recognized on a basis that achieves a constant periodic rate of return on the outstanding investment. Further information regarding our accounting policies related to past due loans, non-accrual loans, impaired loans and troubled-debt restructurings is presented in Note 3 - Loans.

Allowance for Loan Losses. The allowance for loan losses is a reserve established through a provision for loan losses charged to expense, which represents management's best estimate of inherent losses that have been incurred within the existing portfolio of loans. The allowance, in the judgment of management, is necessary to reserve for estimated loan losses inherent in the loan portfolio. The allowance for loan losses includes allowance allocations calculated in

accordance with Financial Accounting Standards Board (“FASB”) Accounting Standards Codification (“ASC”) Topic 310, “Receivables” and allowance allocations calculated in accordance with ASC Topic 450, “Contingencies.” Further information regarding our policies and methodology used to estimate the allowance for loan losses is presented in Note 3 - Loans.

Premises and Equipment. Land is carried at cost. Building and improvements, and furniture and equipment are carried at cost, less accumulated depreciation, computed principally by the straight-line method based on the estimated useful lives of the related property. Leasehold improvements are generally depreciated over the lesser of the term of the respective leases or the estimated useful lives of the improvements.

We lease certain office facilities and office equipment under operating leases. We also own certain office facilities which we lease to outside parties under operating lessor leases; however, such leases are not significant. In 2019, we adopted certain accounting standard updates related to accounting for leases as further discussed below. Under the new standards, for operating leases other than those considered to be short-term, we recognize lease right-of-use assets and related lease liabilities. Such amounts are reported as components of premises and equipment and accrued interest payable and other liabilities, respectively, on our accompanying consolidated balance sheet. We do not recognize short-term operating leases on our balance sheet. A short-term operating lease has an original term of 12 months or less and does not have a purchase option that is likely to be exercised.

In recognizing lease right-of-use assets and related lease liabilities, we account for lease and non-lease components (such as taxes, insurance, and common area maintenance costs) separately as such amounts are generally readily determinable under our lease contracts. Lease payments over the expected term are discounted using our incremental borrowing rate referenced to the Federal Home Loan Bank Secure Connect advance rates for borrowings of similar term. We also consider renewal and termination options in the determination of the term of the lease. If it is reasonably certain that a renewal or termination option will be exercised, the effects of such options are included in the determination of the expected lease term. Generally, we cannot be reasonably certain about whether or not we will renew a lease until such time the lease is within the last two years of the existing lease term. However, renewal options related to our regional headquarters facilities or operations centers are evaluated on a case-by-case basis, typically in advance of such time frame. When we are reasonably certain that a renewal option will be exercised, we measure/remeasure the right-of-use asset and related lease liability using the lease payments specified for the renewal period or, if such amounts are unspecified, we generally assume an increase (evaluated on a case-by-case basis in light of prevailing market conditions) in the lease payment over the final period of the existing lease term.

Foreclosed Assets. Assets acquired through or instead of loan foreclosure are held for sale and are initially recorded at fair value less estimated selling costs when acquired, establishing a new cost basis. Costs after acquisition are generally expensed. If the fair value of the asset declines, a write-down is recorded through expense. The valuation of foreclosed assets is subjective in nature and may be adjusted in the future because of changes in economic conditions. Foreclosed assets are included in other assets in the accompanying consolidated balance sheets and totaled \$1.1 million and \$1.2 million at December 31, 2019 and 2018.

Goodwill. Goodwill represents the excess of the cost of businesses acquired over the fair value of the net assets acquired. Goodwill is assigned to reporting units and tested for impairment at least annually on October 1st, or on an interim basis if an event occurs or circumstances change that would more likely than not reduce the fair value of the reporting unit below its carrying value. See Note 5 - Goodwill and Other Intangible Assets.

Intangibles and Other Long-Lived Assets. Intangible assets are acquired assets that lack physical substance but can be distinguished from goodwill because of contractual or other legal rights or because the asset is capable of being sold or exchanged either on its own or in combination with a related contract, asset, or liability. Our intangible assets relate to core deposits, non-compete agreements and customer relationships. Intangible assets with definite useful lives are amortized on an accelerated basis over their estimated life. Intangible assets with indefinite useful lives are not amortized until their lives are determined to be definite. Intangible assets, premises and equipment and other long-lived assets are tested for impairment whenever events or changes in circumstances indicate the carrying amount of the assets may not be recoverable from future undiscounted cash flows. If impaired, the assets are recorded at fair value. See Note 5 - Goodwill and Other Intangible Assets.

Revenue Recognition. In general, for revenue not associated with financial instruments, guarantees and lease contracts, we apply the following steps when recognizing revenue from contracts with customers: (i) identify the contract, (ii) identify the performance obligations, (iii) determine the transaction price, (iv) allocate the transaction price to the performance obligations and (v) recognize revenue when a performance obligation is satisfied. Our contracts

with customers are generally short term in nature, typically due within one year or less or cancellable by us or our customer upon a short notice period. Performance obligations for our customer contracts are generally satisfied at a single point in time, typically when the transaction is complete, or over time. For performance obligations satisfied over time, we primarily use the output method, directly measuring the value of the products/services transferred to the customer, to determine when performance obligations have been satisfied. We typically receive payment from customers and recognize revenue concurrent with the satisfaction of our performance obligations. In most cases, this occurs within a single financial reporting period. For payments received in advance of the satisfaction of performance obligations, revenue recognition is deferred until such time as the performance obligations have been satisfied. In cases where we have not received payment despite satisfaction of our performance obligations, we accrue an estimate of the amount due in the period our performance obligations have been satisfied. For contracts with variable components, only amounts for which collection is probable are accrued. We generally act in a principal capacity, on our own behalf, in most of our contracts with customers. In such transactions, we recognize revenue and the related costs to provide our services on a gross basis in our financial statements. In some cases, we act in an agent capacity, deriving revenue through assisting other entities in transactions with our customers. In such transactions, we recognize revenue and the related costs to provide our services on a net basis in our financial statements. These transactions recognized on a net basis primarily relate to insurance and brokerage commissions and fees derived from our customers' use of various interchange and ATM/debit card networks.

Share-Based Payments. Compensation expense for stock options, non-vested stock awards/stock units and deferred stock units is based on the fair value of the award on the measurement date, which, for us, is the date of the grant and is recognized ratably over the service period of the award. Compensation expense for performance stock units is based on the fair value of the award on the measurement date, which, for us, is the date of the grant and is recognized over the service period of the award based upon the probable number of units expected to vest. The fair value of stock options is estimated using a binomial lattice-based valuation model. The fair value of non-vested stock awards/stock units and deferred stock units is generally the market price of our stock on the date of grant. The fair value of performance stock units is generally the market price of our stock on the date of grant discounted by the present value of the dividends expected to be paid on our common stock during the service period of the award because dividend equivalent payments on performance stock units are deferred until such time that the units vest and shares are issued. The impact of forfeitures of share-based payment awards on compensation expense is recognized as forfeitures occur.

Advertising Costs. Advertising costs are expensed as incurred.

Income Taxes. Income tax expense is the total of the current year income tax due or refundable and the change in deferred tax assets and liabilities (excluding deferred tax assets and liabilities related to business combinations or components of other comprehensive income). Deferred tax assets and liabilities are the expected future tax amounts for the temporary differences between carrying amounts and tax bases of assets and liabilities, computed using enacted tax rates. A valuation allowance, if needed, reduces deferred tax assets to the expected amount most likely to be realized. Realization of deferred tax assets is dependent upon the generation of a sufficient level of future taxable income. Although realization is not assured, management believes it is more likely than not that all of the deferred tax assets will be realized. Interest and/or penalties related to income taxes are reported as a component of income tax expense. The income tax effects related to settlements of share-based payment awards are reported in earnings as an increase (or decrease) to income tax expense (see Note 13 - Income Taxes).

We file a consolidated income tax return with our subsidiaries. Federal income tax expense or benefit has been allocated to subsidiaries on a separate return basis.

Basic and Diluted Earnings Per Common Share. Earnings per common share is computed using the two-class method prescribed under ASC Topic 260, "Earnings Per Share." ASC Topic 260 provides that unvested share-based payment awards that contain nonforfeitable rights to dividends or dividend equivalents (whether paid or unpaid) are participating securities and shall be included in the computation of earnings per share pursuant to the two-class method. We have determined that our outstanding non-vested stock awards/stock units and deferred stock units are participating securities.

Under the two-class method, basic earnings per common share is computed by dividing net earnings allocated to common stock by the weighted-average number of common shares outstanding during the applicable period, excluding outstanding participating securities. Diluted earnings per common share is computed using the weighted-average number of shares determined for the basic earnings per common share computation plus the dilutive effect of stock compensation using the treasury stock method. A reconciliation of the weighted-average shares used in calculating

basic earnings per common share and the weighted average common shares used in calculating diluted earnings per common share for the reported periods is provided in Note 10 - Earnings Per Common Share.

Comprehensive Income. Comprehensive income includes all changes in shareholders' equity during a period, except those resulting from transactions with shareholders. Besides net income, other components of our comprehensive income include the after tax effect of changes in the net unrealized gain/loss on securities available for sale, changes in the net unrealized gain on securities transferred to held to maturity and changes in the net actuarial gain/loss on defined benefit post-retirement benefit plans. See Note 14 - Other Comprehensive Income (Loss).

Derivative Financial Instruments. Our hedging policies permit the use of various derivative financial instruments to manage interest rate risk or to hedge specified assets and liabilities. All derivatives are recorded at fair value on our balance sheet. Derivatives executed with the same counterparty are generally subject to master netting arrangements, however, fair value amounts recognized for derivatives and fair value amounts recognized for the right/obligation to reclaim/return cash collateral are not offset for financial reporting purposes. We may be required to recognize certain contracts and commitments as derivatives when the characteristics of those contracts and commitments meet the definition of a derivative.

To qualify for hedge accounting, derivatives must be highly effective at reducing the risk associated with the exposure being hedged and must be designated as a hedge at the inception of the derivative contract. We consider a hedge to be highly effective if the change in fair value of the derivative hedging instrument is within 80% to 125% of the opposite change in the fair value of the hedged item attributable to the hedged risk. If derivative instruments are designated as hedges of fair values, and such hedges are highly effective, both the change in the fair value of the hedge and the hedged item are included in current earnings. Fair value adjustments related to cash flow hedges are recorded in other comprehensive income and are reclassified to earnings when the hedged transaction is reflected in earnings. Ineffective portions of hedges are reflected in earnings as they occur. Actual cash receipts and/or payments and related accruals on derivatives related to hedges are recorded as adjustments to the interest income or interest expense associated with the hedged item. During the life of the hedge, we formally assess whether derivatives designated as hedging instruments continue to be highly effective in offsetting changes in the fair value or cash flows of hedged items. If it is determined that a hedge has ceased to be highly effective, we will discontinue hedge accounting prospectively. At such time, previous adjustments to the carrying value of the hedged item are reversed into current earnings and the derivative instrument is reclassified to a trading position recorded at fair value.

Fair Value Measurements. In general, fair values of financial instruments are based upon quoted market prices, where available. If such quoted market prices are not available, fair value is based upon internally developed models that primarily use, as inputs, observable market-based parameters. Valuation adjustments may be made to ensure that financial instruments are recorded at fair value. These adjustments may include amounts to reflect counterparty credit quality and our creditworthiness, among other things, as well as unobservable parameters. Any such valuation adjustments are applied consistently over time. See Note 17 - Fair Value Measurements.

Transfers of Financial Assets. Transfers of financial assets are accounted for as sales when control over the assets has been surrendered. Control over transferred assets is deemed to be surrendered when (i) the assets have been isolated from us, (ii) the transferee obtains the right (free of conditions that constrain it from taking advantage of that right) to pledge or exchange the transferred assets, and (iii) we do not maintain effective control over the transferred assets through an agreement to repurchase them before their maturity.

Loss Contingencies. Loss contingencies, including claims and legal actions arising in the ordinary course of business are recorded as liabilities when the likelihood of loss is probable and an amount or range of loss can be reasonably estimated.

Trust Assets. Assets of our trust department, other than cash on deposit at Frost Bank, are not included in the accompanying financial statements because they are not our assets.

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

On January 1, 2019, we adopted certain accounting standard updates related to accounting for leases, primarily Accounting Standards Update ("ASU") 2016-02 "Leases (Topic 842)" and subsequent updates. Among other things, these updates require lessees to recognize a lease liability, measured on a discounted basis, related to the lessee's obligation to make lease payments arising under a lease contract; and a right-of-use asset related to the lessee's right

to use, or control the use of, a specified asset for the lease term. The updates did not significantly change lease accounting requirements applicable to lessors and did not significantly impact our financial statements in relation to contracts whereby we act as a lessor. We adopted the updates using a modified-retrospective transition approach and recognized right-of-use lease assets and related lease liabilities totaling \$170.5 million and \$174.4 million, respectively, as of January 1, 2019. We elected to apply certain practical adoption expedients provided under the updates whereby we did not reassess (i) whether any expired or existing contracts are or contain leases, (ii) the lease classification for any expired or existing leases and (iii) initial direct costs for any existing leases. We did not elect to apply the recognition requirements of the updates to any short-term leases. See Note 4 - Premises and Equipment and Lease Commitments.

On January 1, 2019, we also adopted ASU 2017-08 "Receivables - Nonrefundable Fees and Other Costs (Subtopic 310-20) - Premium Amortization on Purchased Callable Debt Securities." ASU 2017-08 shortens the amortization period for certain callable debt securities held at a premium to require such premiums to be amortized to the earliest call date unless applicable guidance related to certain pools of securities is applied to consider estimated prepayments. Under prior guidance, entities were generally required to amortize premiums on individual, non-pooled callable debt securities as a yield adjustment over the contractual life of the security. ASU 2017-08 does not change the accounting for callable debt securities held at a discount. Upon adoption, using a modified retrospective transition adoption approach, we recognized a cumulative effect reduction to retained earnings totaling \$14.7 million. Premium amortization expense for 2019 was approximately \$5.2 million higher than what would have been the case had we continued to amortize the affected securities to their respective maturity dates.

On January 1, 2018, we adopted ASU 2018-02, "Income Statement - Reporting Comprehensive Income (Topic 220) - Reclassification of Certain Tax Effects from Accumulated Other Comprehensive Income." In accordance with ASU 2018-02, we elected to reclassify certain income tax effects related to the change in the U.S. statutory federal income tax rate under the Tax Cuts and Jobs Act, which was enacted on December 22, 2017 (see Note 13 - Income Taxes), from accumulated other comprehensive income to retained earnings. Such amounts, which totaled \$9.5 million, related to a net actuarial loss on defined benefit post-retirement plans and unrealized gains on securities available for sale and securities transferred to held to maturity. See Note 14 - Other Comprehensive Income (Loss). Notwithstanding this election made in accordance with ASU 2018-02, our policy is to release such income tax effects only when the entire portfolio to which the underlying transactions relate is liquidated, sold or extinguished.

On January 1, 2018, we also adopted, ASU 2014-09, "Revenue from Contracts with Customers (Topic 606)." Using a modified retrospective transition approach for contracts that were not complete as of our adoption, we recognized a cumulative effect reduction to beginning retained earnings totaling \$2.3 million. The amount was related to certain revenue streams within trust and investment management fees. Additionally, based on our underlying contracts, ASU 2014-09 requires us to report network costs associated with debit card and ATM transactions netted against the related fee income from such transactions. Previously, such network costs were reported as a component of other non-interest expense. For 2019 and 2018, gross interchange and debit card transaction fees totaled \$27.8 million and \$25.8 million, respectively, while related network costs totaled \$12.9 million and \$11.9 million, respectively. On a net basis, we reported \$14.9 million and \$13.9 million as interchange and debit card transaction fees in the accompanying Consolidated Statement of Income for 2019 and 2018, respectively. For 2017, we reported interchange and debit card transaction fees totaling \$23.2 million on a gross basis in the accompanying Consolidated Statement of Income while related network cost totaling \$11.9 million was reported as a component of other non-interest expense. ASU 2014-09 also required us to change the way we recognize certain recurring revenue streams reported as components of trust and investment management fees, insurance commissions and fees and other categories of non-interest income, however, such changes were not significant to our financial statements.

Note 2 - Securities

Securities. Year-end securities held to maturity and available for sale consisted of the following:

	2019				2018			
	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Estimated Fair Value	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Estimated Fair Value
Held to Maturity:								
Residential mortgage-backed securities	\$ 530,861	\$ 22	\$ 9,365	\$ 521,518	\$ 2,737	\$ 8	\$ 85	\$ 2,660
States and political subdivisions	1,497,644	28,909	896	1,525,657	1,101,820	11,525	552	1,112,793
Other	1,500	—	—	1,500	1,500	—	—	1,500
Total	\$ 2,030,005	\$ 28,931	\$ 10,261	\$ 2,048,675	\$ 1,106,057	\$ 11,533	\$ 637	\$ 1,116,953
Available for Sale:								
U.S. Treasury	\$ 1,941,283	\$ 18,934	\$ 12,084	\$ 1,948,133	\$ 3,455,417	\$ 1,772	\$ 29,500	\$ 3,427,689
Residential mortgage-backed securities	2,176,275	32,608	1,289	2,207,594	823,208	13,079	6,547	829,740
States and political subdivisions	6,717,344	353,857	204	7,070,997	7,089,132	70,760	72,690	7,087,202
Other	42,867	—	—	42,867	42,690	—	—	42,690
Total	\$ 10,877,769	\$ 405,399	\$ 13,577	\$ 11,269,591	\$ 11,410,447	\$ 85,611	\$ 108,737	\$ 11,387,321

All mortgage-backed securities included in the above table were issued by U.S. government agencies and corporations. At December 31, 2019, approximately 99.7% of the securities in our municipal bond portfolio were issued by the State of Texas or political subdivisions or agencies within the State of Texas, of which approximately 69.1% are either guaranteed by the Texas Permanent School Fund, which has a “triple-A” insurer financial strength rating, or are secured by U.S. Treasury securities via defeasance of the debt by the issuers. 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 securities pledged to secure public funds, trust deposits, repurchase agreements and for other purposes, as required or permitted by law was \$3.9 billion at December 31, 2019 and \$3.8 billion December 31, 2018.

From time to time, we have reclassified certain securities from available for sale to held to maturity. During 2019, we reclassified securities with an aggregate fair value of \$377.8 million and an aggregate net unrealized gain of \$3.3 million (\$2.6 million, net of tax) on the date of the transfer. The net unamortized, unrealized gain remaining on transferred securities, including those transferred in 2019 and in years prior, included in accumulated other comprehensive income in the accompanying balance sheet totaled \$4.8 million (\$3.8 million, net of tax) at December 31, 2019 and \$2.7 million (\$2.2 million, net of tax) at December 31, 2018. 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.

Unrealized Losses. Year-end securities with unrealized losses, segregated by length of impairment, were as follows:

	Less than 12 Months		More than 12 Months		Total	
	Estimated Fair Value	Unrealized Losses	Estimated Fair Value	Unrealized Losses	Estimated Fair Value	Unrealized Losses
2019						
Held to Maturity:						
Residential mortgage-backed securities	\$ 519,099	\$ 9,361	\$ 408	\$ 4	\$ 519,507	\$ 9,365
States and political subdivisions	371,434	896	—	—	371,434	896
Total	\$ 890,533	\$ 10,257	\$ 408	\$ 4	\$ 890,941	\$ 10,261
Available for Sale:						
U.S. Treasury	\$ 636,999	\$ 12,070	\$ 199,980	\$ 14	\$ 836,979	\$ 12,084
Residential mortgage-backed securities	276,249	782	31,456	507	307,705	1,289
States and political subdivisions	59,678	204	—	—	59,678	204
Total	\$ 972,926	\$ 13,056	\$ 231,436	\$ 521	\$ 1,204,362	\$ 13,577

	Less than 12 Months		More than 12 Months		Total	
	Estimated Fair Value	Unrealized Losses	Estimated Fair Value	Unrealized Losses	Estimated Fair Value	Unrealized Losses
2018						
Held to Maturity:						
Residential mortgage-backed securities	\$ —	\$ —	\$ 2,034	\$ 85	\$ 2,034	\$ 85
States and political subdivisions	205,686	541	5,952	11	211,638	552
Total	\$ 205,686	\$ 541	\$ 7,986	\$ 96	\$ 213,672	\$ 637
Available for Sale:						
U.S. Treasury	\$ —	\$ —	\$ 3,139,639	\$ 29,500	\$ 3,139,639	\$ 29,500
Residential mortgage-backed securities	152,682	205	213,982	6,342	366,664	6,547
States and political subdivisions	1,136,322	7,026	2,058,048	65,664	3,194,370	72,690
Total	\$ 1,289,004	\$ 7,231	\$ 5,411,669	\$ 101,506	\$ 6,700,673	\$ 108,737

Declines in the fair value of held-to-maturity and available-for-sale securities below their cost that are deemed to be other than temporary are reflected in earnings as realized losses to the extent the impairment is related to credit losses. The amount of the impairment related to other factors is recognized in other comprehensive income. In estimating other-than-temporary impairment losses, management considers, among other things, (i) the length of time and the extent to which the fair value has been less than cost, (ii) the financial condition and near-term prospects of the issuer, and (iii) the intent and our ability to retain our investment in the issuer for a period of time sufficient to allow for any anticipated recovery in cost.

Management has the ability and intent to hold the securities classified as held to maturity in the table above until they mature, at which time we expect to receive full value for the securities. Furthermore, as of December 31, 2019, 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. Any 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. Management does not believe any of the securities are impaired due to reasons of credit quality. Accordingly, as of December 31, 2019, management believes the impairments detailed in the table above are temporary and no impairment loss has been realized in our consolidated income statement.

Contractual Maturities. The amortized cost and estimated fair value of securities, excluding trading securities, at December 31, 2019 are presented below by contractual maturity. Expected maturities may differ from contractual maturities because issuers may have the right to call or prepay obligations. Residential mortgage-backed securities and equity securities are shown separately since they are not due at a single maturity date.

	Held to Maturity		Available for Sale	
	Amortized Cost	Estimated Fair Value	Amortized Cost	Estimated Fair Value
Due in one year or less	\$ 12,773	\$ 12,847	\$ 508,575	\$ 509,404
Due after one year through five years	165,519	169,970	1,317,774	1,344,035
Due after five years through ten years	527,907	541,249	451,885	478,800
Due after ten years	792,945	803,091	6,380,393	6,686,891
Residential mortgage-backed securities	530,861	521,518	2,176,275	2,207,594
Equity securities	—	—	42,867	42,867
Total	\$ 2,030,005	\$ 2,048,675	\$ 10,877,769	\$ 11,269,591

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

	2019	2018	2017
Proceeds from sales	\$ 18,660,147	\$ 16,806,062	\$ 11,963,359
Gross realized gains	930	3	1
Gross realized losses	(637)	(159)	(4,942)
Tax benefit (expense) related to securities gains/losses	(62)	33	1,729

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

	2019	2018	2017
Premium amortization	\$ (120,785)	\$ (108,483)	\$ (97,841)
Discount accretion	5,227	7,955	7,908
Net (premium amortization) discount accretion	\$ (115,558)	\$ (100,528)	\$ (89,933)

Trading Account Securities. Year-end trading account securities, at estimated fair value, were as follows:

	2019	2018
U.S. Treasury	\$ 24,298	\$ 21,928
States and political subdivisions	—	2,158
Total	\$ 24,298	\$ 24,086

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

	2019	2018	2017
Net gain on sales transactions	\$ 2,173	\$ 1,816	\$ 1,408
Net mark-to-market gains (losses)	(176)	105	(43)
Net gain on trading account securities	\$ 1,997	\$ 1,921	\$ 1,365

Note 3 - Loans

Year-end loans, including leases net of unearned discounts, consisted of the following:

	2019	2018
Commercial and industrial	\$ 5,187,466	\$ 5,111,957
Energy:		
Production	1,348,900	1,309,314
Service	192,996	168,775
Other	110,986	124,509
Total energy	1,652,882	1,602,598
Commercial real estate:		
Commercial mortgages	4,594,113	4,121,966
Construction	1,312,659	1,267,717
Land	289,467	306,755
Total commercial real estate	6,196,239	5,696,438
Consumer real estate:		
Home equity loans	375,596	353,924
Home equity lines of credit	354,671	337,168
Other	464,146	427,898
Total consumer real estate	1,194,413	1,118,990
Total real estate	7,390,652	6,815,428
Consumer and other	519,332	569,750
Total loans	\$ 14,750,332	\$ 14,099,733

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 December 31, 2019 and 2018, there were no concentrations of loans related to any single industry in excess of 10% of total loans other than energy loans, which totaled 11.2% and 11.4% of total loans at such dates, respectively. Unfunded commitments to extend credit and standby letters of credit issued to customers in the energy industry totaled \$1.2 billion and \$75.5 million, respectively, as of December 31, 2019.

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 December 31, 2019 or 2018.

Overdrafts. Deposit account overdrafts reported as loans totaled \$9.0 million and \$8.5 million at December 31, 2019 and 2018.

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”). Activity in related party loans during 2019 is presented in the following table. Other changes were primarily related to changes in related-party status.

Balance outstanding at December 31, 2018	\$ 256,056
Principal additions	304,407
Principal reductions	(257,687)
Other changes	(4,248)
Balance outstanding at December 31, 2019	\$ 298,528

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. In determining whether or not a borrower may be unable to meet payment obligations for each class of loans, we consider the borrower’s debt service capacity through the analysis of current financial information, if available, and/or current information with regards to our collateral position. Regulatory provisions would typically require the placement of a loan on non-accrual status if (i) principal or interest has been in default for a period

of 90 days or more unless the loan is both well secured and in the process of collection or (ii) full payment of principal and interest is not expected. Loans may be placed on non-accrual status regardless of whether or not such loans are considered past due. When interest accrual is discontinued, all unpaid accrued interest is reversed. Interest income on non-accrual loans is recognized only to the extent that cash payments are received in excess of principal due. A loan may be returned to accrual status when all the principal and interest amounts contractually due are brought current and future principal and interest amounts contractually due are reasonably assured, which is typically evidenced by a sustained period (at least six months) of repayment performance by the borrower.

Year-end non-accrual loans, segregated by class of loans, were as follows:

	2019	2018
Commercial and industrial	\$ 26,038	\$ 9,239
Energy	65,761	46,932
Commercial real estate:		
Buildings, land and other	8,912	15,268
Construction	665	—
Consumer real estate	922	892
Consumer and other	5	1,408
Total	\$ 102,303	\$ 73,739

Had non-accrual loans performed in accordance with their original contract terms, we would have recognized additional interest income, net of tax, of approximately \$3.9 million in 2019, \$5.2 million in 2018 and \$3.7 million in 2017.

An age analysis of past due loans (including both accruing and non-accruing loans), segregated by class of loans, as of December 31, 2019 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	\$ 25,474	\$ 21,268	\$ 46,742	\$ 5,140,724	\$ 5,187,466	\$ 3,430
Energy	6,136	62,566	68,702	1,584,180	1,652,882	85
Commercial real estate:						
Buildings, land and other	12,384	2,725	15,109	4,868,471	4,883,580	967
Construction	195	1,066	1,261	1,311,398	1,312,659	402
Consumer real estate	7,442	2,129	9,571	1,184,842	1,194,413	1,425
Consumer and other	4,476	1,112	5,588	513,744	519,332	1,112
Total	\$ 56,107	\$ 90,866	\$ 146,973	\$ 14,603,359	\$ 14,750,332	\$ 7,421

Impaired Loans. Loans are considered impaired when, based on current information and events, it is probable we will be unable to collect all amounts due in accordance with the original contractual terms of the loan agreement, including scheduled principal and interest payments. Impairment is evaluated in total for smaller-balance loans of a similar nature and on an individual loan basis for other loans. If a loan is impaired, a specific valuation allowance is allocated, if necessary, so that the loan is reported net, at the present value of estimated future cash flows using the loan's existing rate or at the fair value of collateral if repayment is expected solely from the collateral. Interest payments on impaired loans are typically applied to principal unless collectibility of the principal amount is reasonably assured, in which case interest is recognized on a cash basis. Impaired loans, or portions thereof, are charged off when deemed uncollectible.

Regulatory guidelines require us to reevaluate the fair value of collateral supporting impaired collateral dependent loans on at least an annual basis. While our policy is to comply with the regulatory guidelines, our general practice is to reevaluate the fair value of collateral supporting impaired collateral dependent loans on a quarterly basis. Thus, appraisals are generally not considered to be outdated, and we typically do not make any adjustments to the appraised values. The fair value of collateral supporting impaired collateral dependent loans is evaluated by our internal appraisal services using a methodology that is consistent with the Uniform Standards of Professional Appraisal Practice. The fair value of collateral supporting impaired collateral dependent construction loans is based on an "as is" valuation.

Year-end impaired loans are set forth in the following table. No interest income was recognized on impaired loans subsequent to their classification as impaired.

	Unpaid Contractual Principal Balance	Recorded Investment With No Allowance	Recorded Investment With Allowance	Total Recorded Investment	Related Allowance	Average Recorded Investment
2019						
Commercial and industrial	\$ 30,909	\$ 11,588	\$ 12,772	\$ 24,360	\$ 7,849	\$ 14,913
Energy	87,103	2,764	62,480	65,244	20,246	53,563
Commercial real estate:						
Buildings, land and other	9,252	6,255	2,354	8,609	383	13,690
Construction	697	665	—	665	—	354
Consumer real estate	570	570	—	570	—	547
Consumer and other	5	—	5	5	5	1,285
Total	<u>\$ 128,536</u>	<u>\$ 21,842</u>	<u>\$ 77,611</u>	<u>\$ 99,453</u>	<u>\$ 28,483</u>	<u>\$ 84,352</u>
2018						
Commercial and industrial	\$ 9,094	\$ 2,842	\$ 4,287	\$ 7,129	\$ 2,558	\$ 18,246
Energy	67,900	6,817	39,890	46,707	9,671	75,453
Commercial real estate:						
Buildings, land and other	15,774	2,168	12,517	14,685	2,599	12,799
Construction	—	—	—	—	—	—
Consumer real estate	293	293	—	293	—	704
Consumer and other	1,475	—	1,407	1,407	1,407	925
Total	<u>\$ 94,536</u>	<u>\$ 12,120</u>	<u>\$ 58,101</u>	<u>\$ 70,221</u>	<u>\$ 16,235</u>	<u>\$ 108,127</u>
2017						
Commercial and industrial	\$ 60,781	\$ 28,038	\$ 15,722	\$ 43,760	\$ 7,553	\$ 30,073
Energy	99,606	33,080	61,162	94,242	13,267	76,492
Commercial real estate:						
Buildings, land and other	10,795	6,394	—	6,394	—	6,164
Construction	—	—	—	—	—	—
Consumer real estate	1,214	1,214	—	1,214	—	1,167
Consumer and other	—	—	—	—	—	11
Total	<u>\$ 172,396</u>	<u>\$ 68,726</u>	<u>\$ 76,884</u>	<u>\$ 145,610</u>	<u>\$ 20,820</u>	<u>\$ 113,907</u>

Troubled Debt Restructurings. The restructuring of a loan is considered a “troubled debt restructuring” if both (i) the borrower is experiencing financial difficulties and (ii) the creditor has granted a concession. Concessions may include interest rate reductions or below market interest rates, principal forgiveness, restructuring amortization schedules, reductions in collateral and other actions intended to minimize potential losses. Troubled debt restructurings that occurred during 2019, 2018 and 2017 are set forth in the following table.

	2019		2018		2017	
	Balance at Restructure	Balance at Year-end	Balance at Restructure	Balance at Year-end	Balance at Restructure	Balance at Year-end
Commercial and industrial	\$ 3,845	\$ 2,161	\$ 2,203	\$ —	\$ 4,026	\$ 3,766
Energy	—	—	13,708	—	56,096	54,330
Commercial real estate:						
Buildings, land and other	9,457	9,393	—	—	—	—
Construction	—	—	—	—	388	388
Consumer real estate	124	120	—	—	—	—
	<u>\$ 13,426</u>	<u>\$ 11,674</u>	<u>\$ 15,911</u>	<u>\$ —</u>	<u>\$ 60,510</u>	<u>\$ 58,484</u>

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Loan modifications are typically related to extending amortization periods, converting loans to interest only for a limited period of time, deferral of interest payments, waiver of certain covenants, consolidating notes and/or reducing collateral or interest rates. The modifications during the reported periods did not significantly impact our determination of the allowance for loan losses.

Additional information related to restructured loans was as follows:

	2019	2018	2017
Restructured loans past due in excess of 90 days at period-end:			
Number of loans	4	—	1
Dollar amount of loans	\$ 3,340	\$ —	\$ 43,137
Restructured loans on non-accrual status at period end	5,576	—	53,622
Charge-offs of restructured loans:			
Recognized in connection with restructuring	—	—	—
Recognized on previously restructured loans	1,500	7,650	9,951
Proceeds from sale of restructured loans	—	15,750	—

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 (see details above) (iv) net charge-offs, (v) non-performing loans (see details above) and (vi) 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 as follows:

- *Grades 1, 2 and 3* - These grades include loans to very high credit quality borrowers of investment or near investment grade. These borrowers are generally publicly traded (grades 1 and 2), have significant capital strength, moderate leverage, stable earnings and growth, and readily available financing alternatives. Smaller entities, regardless of strength, would generally not fit in these grades.
- *Grades 4 and 5* - These grades include loans to borrowers of solid credit quality with moderate risk. Borrowers in these grades are differentiated from higher grades on the basis of size (capital and/or revenue), leverage, asset quality and the stability of the industry or market area.
- *Grades 6, 7 and 8* - These grades include “pass grade” loans to borrowers of acceptable credit quality and risk. Such borrowers are differentiated from Grades 4 and 5 in terms of size, secondary sources of repayment or they are of lesser stature in other key credit metrics in that they may be over-leveraged, under capitalized, inconsistent in performance or in an industry or an economic area that is known to have a higher level of risk, volatility, or susceptibility to weaknesses in the economy.
- *Grade 9* - This grade includes loans on management’s “watch list” and is intended to be utilized on a temporary basis for pass grade borrowers where a significant risk-modifying action is anticipated in the near term.
- *Grade 10* - This grade is for “Other Assets Especially Mentioned” in accordance with regulatory guidelines. This grade is intended to be temporary and includes loans to borrowers whose credit quality has clearly deteriorated and are at risk of further decline unless active measures are taken to correct the situation.
- *Grade 11* - This grade includes “Substandard” loans, in accordance with regulatory guidelines, for which the accrual of interest has not been stopped. By definition under regulatory guidelines, a “Substandard” loan has defined weaknesses which make payment default or principal exposure likely, but not yet certain. Such loans are apt to be dependent upon collateral liquidation, a secondary source of repayment or an event outside of the normal course of business.
- *Grade 12* - This grade includes “Substandard” loans, in accordance with regulatory guidelines, for which the accrual of interest has been stopped. This grade includes loans where interest is more than 120 days past due and not fully secured and loans where a specific valuation allowance may be necessary, but generally does not exceed 30% of the principal balance.

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- **Grade 13** - This grade includes “Doubtful” loans in accordance with regulatory guidelines. Such loans are placed on non-accrual status and may be dependent upon collateral having a value that is difficult to determine or upon some near-term event which lacks certainty. Additionally, these loans generally have a specific valuation allowance in excess of 30% of the principal balance.
- **Grade 14** - This grade includes “Loss” loans in accordance with regulatory guidelines. Such loans are to be charged-off or charged-down when payment is acknowledged to be uncertain or when the timing or value of payments cannot be determined. “Loss” is not intended to imply that the loan or some portion of it will never be paid, nor does it in any way imply that there has been a forgiveness of debt.

In monitoring credit quality trends in the context of assessing the appropriate level of the allowance for loan losses, 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 tables present weighted average risk grades for all commercial loans by class.

	December 31, 2019		December 31, 2018	
	Weighted Average Risk Grade	Loans	Weighted Average Risk Grade	Loans
Commercial and industrial				
Risk grades 1-8	6.17	\$ 4,788,857	6.12	\$ 4,862,275
Risk grade 9	9.00	247,212	9.00	112,431
Risk grade 10	10.00	71,472	10.00	58,328
Risk grade 11	11.00	53,887	11.00	69,684
Risk grade 12	12.00	18,189	12.00	6,681
Risk grade 13	13.00	7,849	13.00	2,558
Total	6.44	\$ 5,187,466	6.30	\$ 5,111,957
Energy				
Risk grades 1-8	5.90	\$ 1,488,301	5.76	\$ 1,451,673
Risk grade 9	9.00	32,163	9.00	35,565
Risk grade 10	10.00	51,898	10.00	43,001
Risk grade 11	11.00	14,760	11.00	25,427
Risk grade 12	12.00	45,514	12.00	37,261
Risk grade 13	13.00	20,246	13.00	9,671
Total	6.39	\$ 1,652,882	6.22	\$ 1,602,598
Commercial real estate:				
Buildings, land and other				
Risk grades 1-8	6.78	\$ 4,523,271	6.76	\$ 4,143,264
Risk grade 9	9.00	163,714	9.00	109,660
Risk grade 10	10.00	103,626	10.00	62,353
Risk grade 11	11.00	84,057	11.00	98,176
Risk grade 12	12.00	8,529	12.00	12,669
Risk grade 13	13.00	383	13.00	2,599
Total	7.01	\$ 4,883,580	6.98	\$ 4,428,721
Construction				
Risk grades 1-8	7.25	\$ 1,274,098	7.13	\$ 1,177,260
Risk grade 9	9.00	21,509	9.00	60,754
Risk grade 10	10.00	15,243	10.00	24,877
Risk grade 11	11.00	1,144	11.00	4,826
Risk grade 12	12.00	665	12.00	—
Risk grade 13	13.00	—	13.00	—
Total	7.31	\$ 1,312,659	7.29	\$ 1,267,717

We have established maximum loan to value standards to be applied during the origination process of commercial and consumer real estate loans. We do not subsequently monitor loan-to-value ratios (either individually or on a weighted-average basis) for loans that are subsequently considered to be of a pass grade (grades 9 or better) and/or current with respect to principal and interest payments. As stated above, when an individual commercial real estate loan has a calculated risk grade of 10 or higher, a special assets officer analyzes the loan to determine whether the loan is impaired. At that time, we reassess the loan to value position in the loan. If the loan is determined to be impaired and collateral dependent, specific allocations of the allowance for loan losses are made for the amount of any collateral deficiency. If a collateral deficiency is ultimately deemed to be uncollectible, the amount is charged-off. These loans and related assessments of collateral position are monitored on an individual, case-by-case basis. We do not monitor loan-to-value ratios on a weighted-average portfolio-basis for commercial real estate loans having a calculated risk grade of 10 or higher as excess collateral from one borrower cannot be used to offset a collateral deficit for another borrower. When an individual consumer real estate loan becomes past due by more than 10 days, the assigned relationship manager will begin collection efforts. We only reassess the loan to value position in a consumer real estate loan if, during the course of the collections process, it is determined that the loan has become impaired and collateral dependent, and any collateral deficiency is recognized as a charge-off to the allowance for loan losses. Accordingly, we do not monitor loan-to-value ratios on a weighted-average basis for collateral dependent consumer real estate loans.

Generally, a commercial loan, or a portion thereof, is charged-off immediately when it is determined, through the analysis of any available current financial information with regards to the borrower, that the borrower is incapable of servicing unsecured debt, there is little or no prospect for near term improvement and no realistic strengthening action of significance is pending or, in the case of secured debt, when it is determined, through analysis of current information with regards to our collateral position, that amounts due from the borrower are in excess of the calculated current fair value of the collateral. Notwithstanding the foregoing, generally, commercial loans that become past due 180 cumulative days are charged-off. Generally, a consumer loan, or a portion thereof, is charged-off in accordance with regulatory guidelines which provide that such loans be charged-off when we become aware of the loss, such as from a triggering event that may include new information about a borrower's intent/ability to repay the loan, bankruptcy, fraud or death, among other things, but in any event the charge-off must be taken within specified delinquency time frames. Such delinquency time frames state that closed-end retail loans (loans with pre-defined maturity dates, such as real estate mortgages, home equity loans and consumer installment loans) that become past due 120 cumulative days and open-end retail loans (loans that roll-over at the end of each term, such as home equity lines of credit) that become past due 180 cumulative days should be classified as a loss and charged-off.

Net (charge-offs)/recoveries, segregated by class of loan, were as follows:

	2019	2018	2017
Commercial and industrial	\$ (10,131)	\$ (22,388)	\$ (17,453)
Energy	(6,058)	(13,121)	(10,009)
Commercial real estate:			
Buildings, land and other	(830)	(263)	735
Construction	24	13	11
Consumer real estate	(2,457)	(1,538)	(506)
Consumer and other	(14,272)	(7,548)	(5,919)
Total	<u>\$ (33,724)</u>	<u>\$ (44,845)</u>	<u>\$ (33,141)</u>

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 is a single summary statistic that is designed to signal the likelihood of the Texas economy's transition from expansion to recession and vice versa. Management believes this index provides a reliable indication of the direction of overall credit quality. The TLI is a composite of the following eight leading indicators: (i) Texas Value of the Dollar, (ii) U.S. Leading Index, (iii) real oil prices (iv) well permits, (v) initial claims for unemployment insurance, (vi) Texas Stock Index, (vii) Help-Wanted Index and (viii) average weekly hours worked in manufacturing. The TLI totaled 128.8 at November 30, 2019 (most recent date available) and 126.4 at December 31, 2018. A higher TLI value implies more favorable economic conditions.

Allowance for Loan Losses. The allowance for loan losses is a reserve established through a provision for loan losses charged to expense, which represents management's best estimate of inherent losses that have been incurred within the existing portfolio of loans. The allowance, in the judgment of management, is necessary to reserve for estimated loan losses and risks inherent in the loan portfolio. Our allowance for loan loss methodology follows the accounting guidance set forth in U.S. generally accepted accounting principles and the Interagency Policy Statement on the Allowance for Loan and Lease Losses, which was jointly issued by U.S. bank regulatory agencies. In that regard, our allowance for loan losses includes allowance allocations calculated in accordance with ASC Topic 310, "Receivables" and allowance allocations calculated in accordance with ASC Topic 450, "Contingencies." Accordingly, the methodology is based on historical loss experience by type of credit and internal risk grade, specific homogeneous risk pools and specific loss allocations, with adjustments for current events and conditions. Our process for determining the appropriate level of the allowance for loan losses is designed to account for credit deterioration as it occurs. The provision for loan losses reflects loan quality trends, including the levels of and trends related to non-accrual loans, past due loans, potential problem loans, criticized loans and net charge-offs or recoveries, among other factors. The provision for loan losses also reflects the totality of actions taken on all loans for a particular period. In other words, the amount of the provision reflects not only the necessary increases in the allowance for loan losses related to newly identified criticized loans, but it also reflects actions taken related to other loans including, among other things, any necessary increases or decreases in required allowances for specific loans or loan pools.

The level of the allowance reflects management's continuing evaluation of industry concentrations, specific credit risks, loan loss and recovery experience, current loan portfolio quality, present economic, political and regulatory conditions and unidentified losses inherent in the current loan portfolio. 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 determination of the appropriate level of the allowance is dependent upon a variety of factors beyond our control, including, among other things, the performance of our loan portfolio, the economy, changes in interest rates and the view of the regulatory authorities toward loan classifications. We monitor whether or not the allowance for loan loss allocation model, as a whole, calculates an appropriate level of allowance for loan losses that moves in direct correlation to the general macroeconomic and loan portfolio conditions we experience over time.

Our allowance for loan losses consists of: (i) specific valuation allowances determined in accordance with ASC Topic 310 based on probable losses on specific loans; (ii) historical valuation allowances determined in accordance with ASC Topic 450 based on historical loan loss experience for similar loans with similar characteristics and trends, adjusted, as necessary, to reflect the impact of current conditions; (iii) general valuation allowances determined in accordance with ASC Topic 450 based on various risk factors that are internal to us; and (iv) macroeconomic valuation allowances determined in accordance with ASC Topic 450 based on general economic conditions and other risk factors that are external to us.

The allowances established for probable losses on specific loans are based on a regular analysis and evaluation of problem loans. Loans are classified based on an internal credit risk grading process that evaluates, among other things: (i) the obligor's ability to repay; (ii) the underlying collateral, if any; and (iii) the economic environment and industry in which the borrower operates. This analysis is performed at the relationship manager level for all commercial loans. When a loan has a calculated grade of 10 or higher, a special assets officer analyzes the loan to determine whether the loan is impaired and, if impaired, the need to specifically allocate a portion of the allowance for loan losses to the loan. Specific valuation allowances are determined by analyzing the borrower's ability to repay amounts owed, collateral deficiencies, the relative risk grade of the loan and economic conditions affecting the borrower's industry, among other things.

Historical valuation allowances are calculated based on the historical gross loss experience of specific types of loans and the internal risk grade of such loans. We calculate historical gross loss ratios for pools of similar loans with similar characteristics based on the proportion of actual charge-offs experienced to the total population of loans in the pool. The historical gross loss ratios are periodically (no less than annually) updated based on actual charge-off experience. A historical valuation allowance is established for each pool of similar loans based upon the product of the historical gross loss ratio and the total dollar amount of the loans in the pool. Our pools of similar loans include similarly risk-graded groups of commercial and industrial loans, energy loans, commercial real estate loans, consumer real estate loans, consumer and other loans and overdrafts.

General valuation allowances include allocations for groups of similar loans with similar risk characteristics that exceed certain concentration limits established by management and/or our board of directors. Concentration risk limits have been established, among other things, for certain industry concentrations, large balance and highly leveraged credit relationships that exceed specified risk grades and loans originated with policy exceptions that exceed specified risk grades. Additionally, general valuation allowances are provided for loans that did not undergo a separate, independent concurrence review during the underwriting process (generally those loans under \$1.0 million at origination). Our allowance methodology for general valuation allowances also includes a reduction factor for recoveries of prior charge-offs to compensate for the fact that historical loss allocations are based upon gross charge-offs rather than net. The adjustment for recoveries is based on the lower of annualized, year-to-date gross recoveries or the total gross recoveries by loan portfolio segment for the preceding four quarters, adjusted, when necessary, for expected future trends in recoveries.

The components of the macroeconomic valuation allowance include (i) reserves allocated as a result of applying an environmental risk adjustment factor to the base historical loss allocation, (ii) reserves allocated for loans to borrowers in distressed industries and (iii) reserves allocated based upon current economic trends and other quantitative and qualitative factors that could impact our loan portfolio segments. The aggregate sum of these components for each portfolio segment reflects management's assessment of current and expected economic conditions and other external factors that impact the inherent credit quality of loans in that portfolio segment.

The environmental adjustment factor is based upon a more qualitative analysis of risk and is calculated through a survey of senior officers who are involved in credit making decisions at a corporate-wide and/or regional level. On a quarterly basis, survey participants rate the degree of various risks utilizing a numeric scale that translates to varying grades of high, moderate or low levels of risk. The results are then input into a risk-weighting matrix to determine an appropriate environmental risk adjustment factor. The various risks that may be considered in the determination of the environmental adjustment factor include, among other things, (i) the experience, ability and effectiveness of the bank's lending management and staff; (ii) the effectiveness of our loan policies, procedures and internal controls; (iii) changes in asset quality; (iv) the impact of legislative and governmental influences affecting industry sectors; (v) the effectiveness of the internal loan review function; (vi) the impact of competition on loan structuring and pricing; and (vii) the impact of rising interest rates on portfolio risk. In periods where the surveyed risks are perceived to be higher, the risk-weighting matrix will generally result in a higher environmental adjustment factor, which, in turn will result in higher levels of macroeconomic valuation allowance allocations. The opposite holds true in periods where the surveyed risks are perceived to be lower.

Macroeconomic valuation allowances also include amounts allocated for loans to borrowers in distressed industries within our commercial loan portfolio segments. To determine the amount of the allocation for our commercial and industrial and commercial real estate loan portfolio segments, management calculates the weighted-average risk grade for all loans to borrowers in distressed industries by loan portfolio segment. A multiple is then applied to the amount by which the weighted-average risk grade for loans to borrowers in distressed industries exceeds the weighted-average risk grade for all pass-grade loans within the loan portfolio segment to derive an allocation factor for loans to borrowers in distressed industries. The amount of the allocation for each loan portfolio segment is the product of this allocation factor and the outstanding balance of pass-grade loans within the identified distressed industries that have a risk grade of 6 or higher. Management identifies potential distressed industries by analyzing industry trends related to delinquencies, classifications and charge-offs as well as individual borrower financial information.

The aforementioned methodology for allocating reserves for distressed industries within commercial and industrial and commercial real estate loan portfolio segments does not translate to our energy loan portfolio segment as the segment is made up of a single industry. For energy loans, management analyzes current economic trends, commodity prices and various other quantitative and qualitative factors that impact the inherent credit quality of our energy loan portfolio segment. If, based upon this analysis, management concludes that the prevailing conditions could have an adverse impact on the credit quality of our energy loan portfolio, management performs a sensitivity stress test on individual loans within our energy loan portfolio. The sensitivity stress test includes a commodity price shock to 75% of the commodity price deck. We also assess the financial strength of individual borrowers, the quality of collateral, the relative experience of the individual borrowers and their ability to withstand an economic downturn. The sensitivity stress test allows us to identify potential credit issues during periods of economic uncertainty. Reserve allocations resulting from the sensitivity stress test are calculated by hypothetically increasing the risk grades for affected borrowers and applying our allowance methodology to determine the incremental reserves that would be required.

Macroeconomic valuation allowances may also include additional reserves allocated based upon management's assessment of current and expected economic conditions, trends and other quantitative and qualitative portfolio risk factors that are external to us or that are not otherwise captured in our allowance modeling process but could impact the credit risk or inherent losses within our loan portfolio segments. Additional reserves are allocated when, based upon this assessment, management believes that there are inherent credit risks for a given portfolio segment that have not yet materialized through the migration of loan risk grades and, therefore, have not yet impacted our historical or general valuation allowances.

The following table presents details of the allowance for loan losses, segregated by loan portfolio segment.

	Commercial and Industrial	Energy	Commercial Real Estate	Consumer Real Estate	Consumer and Other	Total
December 31, 2019						
Historical valuation allowances	\$ 29,015	\$ 7,873	\$ 21,947	\$ 2,690	\$ 7,562	\$ 69,087
Specific valuation allowances	7,849	20,246	383	—	5	28,483
General valuation allowances	9,840	5,196	4,201	904	(409)	19,732
Macroeconomic valuation allowances	4,889	4,067	4,506	519	884	14,865
Total	<u>\$ 51,593</u>	<u>\$ 37,382</u>	<u>\$ 31,037</u>	<u>\$ 4,113</u>	<u>\$ 8,042</u>	<u>\$ 132,167</u>
December 31, 2018						
Historical valuation allowances	\$ 25,351	\$ 9,697	\$ 20,817	\$ 2,688	\$ 6,845	\$ 65,398
Specific valuation allowances	2,558	9,671	2,599	—	1,407	16,235
General valuation allowances	10,062	6,014	4,366	1,671	(13)	22,100
Macroeconomic valuation allowances	10,609	3,670	10,995	1,744	1,381	28,399
Total	<u>\$ 48,580</u>	<u>\$ 29,052</u>	<u>\$ 38,777</u>	<u>\$ 6,103</u>	<u>\$ 9,620</u>	<u>\$ 132,132</u>

We monitor whether or not the allowance for loan loss allocation model, as a whole, calculates an appropriate level of allowance for loan losses that moves in direct correlation to the general macroeconomic and loan portfolio conditions we experience over time. In assessing the general macroeconomic trends/conditions, we analyze trends in the components of the TLI, as well as any available information related to regional, national and international economic conditions and events and the impact such conditions and events may have on us and our customers. With regard to assessing loan portfolio conditions, we analyze trends in weighted-average portfolio risk-grades, classified and non-performing loans and charge-off activity. In periods where general macroeconomic and loan portfolio conditions are in a deteriorating trend or remain at deteriorated levels, based on historical trends, we would expect to see the allowance for loan loss allocation model, as a whole, calculate higher levels of required allowances than in periods where general macroeconomic and loan portfolio conditions are in an improving trend or remain at an elevated level, based on historical trends.

Our recorded investment in loans related to each balance in the allowance for loan losses by portfolio segment and detailed on the basis of the impairment methodology we used was as follows:

	Commercial and Industrial	Energy	Commercial Real Estate	Consumer Real Estate	Consumer and Other	Total
December 31, 2019						
Individually evaluated	\$ 24,360	\$ 65,244	\$ 9,274	\$ 570	\$ 5	\$ 99,453
Collectively evaluated	5,163,106	1,587,638	6,186,965	1,193,843	519,327	14,650,879
Total	<u>\$ 5,187,466</u>	<u>\$ 1,652,882</u>	<u>\$ 6,196,239</u>	<u>\$ 1,194,413</u>	<u>\$ 519,332</u>	<u>\$ 14,750,332</u>
December 31, 2018						
Individually evaluated	\$ 7,129	\$ 46,707	\$ 14,685	\$ 293	\$ 1,407	\$ 70,221
Collectively evaluated	5,104,828	1,555,891	5,681,753	1,118,697	568,343	14,029,512
Total	<u>\$ 5,111,957</u>	<u>\$ 1,602,598</u>	<u>\$ 5,696,438</u>	<u>\$ 1,118,990</u>	<u>\$ 569,750</u>	<u>\$ 14,099,733</u>

The following table details activity in the allowance for loan losses by portfolio segment for 2019, 2018 and 2017. Allocation of a portion of the allowance to one category of loans does not preclude its availability to absorb losses in other categories.

	Commercial and Industrial	Energy	Commercial Real Estate	Consumer Real Estate	Consumer and Other	Total
2019						
Beginning balance	\$ 48,580	\$ 29,052	\$ 38,777	\$ 6,103	\$ 9,620	\$ 132,132
Provision for loan losses	13,144	14,388	(6,934)	467	12,694	33,759
Charge-offs	(14,117)	(7,500)	(1,025)	(3,665)	(24,725)	(51,032)
Recoveries	3,986	1,442	219	1,208	10,453	17,308
Net charge-offs	(10,131)	(6,058)	(806)	(2,457)	(14,272)	(33,724)
Ending balance	<u>\$ 51,593</u>	<u>\$ 37,382</u>	<u>\$ 31,037</u>	<u>\$ 4,113</u>	<u>\$ 8,042</u>	<u>\$ 132,167</u>
Allocated to loans:						
Individually evaluated for impairment	\$ 7,849	\$ 20,246	\$ 383	\$ —	\$ 5	\$ 28,483
Collectively evaluated for impairment	43,744	17,136	30,654	4,113	8,037	103,684
Ending balance	<u>\$ 51,593</u>	<u>\$ 37,382</u>	<u>\$ 31,037</u>	<u>\$ 4,113</u>	<u>\$ 8,042</u>	<u>\$ 132,167</u>
2018						
Beginning balance	\$ 59,614	\$ 51,528	\$ 30,948	\$ 5,657	\$ 7,617	\$ 155,364
Provision for loan losses	11,354	(9,355)	8,079	1,984	9,551	21,613
Charge-offs	(26,076)	(13,940)	(619)	(2,143)	(17,197)	(59,975)
Recoveries	3,688	819	369	605	9,649	15,130
Net charge-offs	(22,388)	(13,121)	(250)	(1,538)	(7,548)	(44,845)
Ending balance	<u>\$ 48,580</u>	<u>\$ 29,052</u>	<u>\$ 38,777</u>	<u>\$ 6,103</u>	<u>\$ 9,620</u>	<u>\$ 132,132</u>
Allocated to loans:						
Individually evaluated for impairment	\$ 2,558	\$ 9,671	\$ 2,599	\$ —	\$ 1,407	\$ 16,235
Collectively evaluated for impairment	46,022	19,381	36,178	6,103	8,213	115,897
Ending balance	<u>\$ 48,580</u>	<u>\$ 29,052</u>	<u>\$ 38,777</u>	<u>\$ 6,103</u>	<u>\$ 9,620</u>	<u>\$ 132,132</u>
2017						
Beginning balance	\$ 52,915	\$ 60,653	\$ 30,213	\$ 4,238	\$ 5,026	\$ 153,045
Provision for loan losses	24,152	884	(11)	1,925	8,510	35,460
Charge-offs	(20,619)	(10,595)	(86)	(925)	(15,579)	(47,804)
Recoveries	3,166	586	832	419	9,660	14,663
Net charge-offs	(17,453)	(10,009)	746	(506)	(5,919)	(33,141)
Ending balance	<u>\$ 59,614</u>	<u>\$ 51,528</u>	<u>\$ 30,948</u>	<u>\$ 5,657</u>	<u>\$ 7,617</u>	<u>\$ 155,364</u>
Allocated to loans:						
Individually evaluated for impairment	\$ 7,553	\$ 13,267	\$ —	\$ —	\$ —	\$ 20,820
Collectively evaluated for impairment	52,061	38,261	30,948	5,657	7,617	134,544
Ending balance	<u>\$ 59,614</u>	<u>\$ 51,528</u>	<u>\$ 30,948</u>	<u>\$ 5,657</u>	<u>\$ 7,617</u>	<u>\$ 155,364</u>

Note 4 - Premises and Equipment and Lease Commitments

Year-end premises and equipment were as follows:

	2019	2018
Land	\$ 112,818	\$ 104,045
Buildings	441,404	373,276
Technology, furniture and equipment	226,925	196,871
Leasehold improvements	156,144	83,320
Construction and projects in progress	44,251	45,456
Lease right-of-use assets	297,736	—
	1,279,278	802,968
Less accumulated depreciation and amortization	(267,331)	(250,638)
Total premises and equipment, net	\$ 1,011,947	\$ 552,330

Depreciation of premises and equipment totaled \$41.0 million in 2019, \$37.2 million 2018 and \$36.3 million in 2017. Amortization of lease right of use-assets totaled \$27.6 million in 2019.

Lease Commitments. We lease certain office facilities and office equipment under operating leases. Rent expense for all operating leases totaled \$42.1 million in 2019, \$31.1 million in 2018 and \$30.5 million in 2017. On January 1, 2019, we adopted a new accounting standard which required the recognition of certain operating leases on our balance sheet as lease right-of-use assets (reported as component of premises and equipment) and related lease liabilities (reported as a component of accrued interest payable and other liabilities). See Note 1 - Summary of Significant Accounting Policies. Rent expense includes amounts related to items that are not included in the determination of lease right-of-use assets including expenses related to short-term leases totaling \$4.6 million in 2019 and non-lease components such as taxes, insurance, and common area maintenance costs totaling \$9.9 million in 2019.

Lease payments under operating leases that were applied to our operating lease liability totaled \$27.5 million during 2019. The following table reconciles future undiscounted lease payments due under non-cancelable operating leases (those amounts subject to recognition) to the aggregate operating lessee lease liability as of December 31, 2019:

Future lease payments	
2020	\$ 28,225
2021	30,813
2022	28,175
2023	26,661
2024	25,232
Thereafter	283,300
Total undiscounted operating lease liability	422,406
Imputed interest	98,718
Total operating lease liability included in the accompanying balance sheet	\$ 323,688
Weighted-average lease term in years	16.49
Weighted-average discount rate	3.17%

We lease certain buildings and branch facilities from various entities which are controlled by or affiliated with certain directors. Payments related to these leases totaled \$5.9 million in 2019, \$464 thousand in 2018 and \$1.4 million in 2017. The increase in these lease payments during 2019 compared to 2018 was primarily related to the commencement of the lease of our new headquarters building during the second quarter of 2019. We recognized a right-of-use asset totaling \$121.7 million and a related lease liability totaling \$121.7 million in connection with this lease. The lease was a separate agreement under a comprehensive development agreement between us, the City of San Antonio and a third party controlled by one of our directors. We sold our old headquarters building to the City of San Antonio in 2016 and leased it back during the construction period of our new headquarters building. A portion of the gain from the sale of our old headquarters building was deferred and amortized to income over the term of the lease, which ended in the second quarter of 2019. Amortization of the deferred gain totaled \$1.4 million in 2019, \$2.8 million in 2018 and \$2.9 million in 2017.

Note 5 - Goodwill and Other Intangible Assets

Goodwill. Year-end goodwill was as follows:

	2019	2018
Goodwill	\$ 654,952	\$ 654,952

Other Intangible Assets. Year-end other intangible assets were as follows:

	Gross Intangible Assets	Accumulated Amortization	Net Intangible Assets
2019			
Core deposits	\$ 9,300	\$ (7,257)	\$ 2,043
Customer relationships	3,388	(2,950)	438
	<u>\$ 12,688</u>	<u>\$ (10,207)</u>	<u>\$ 2,481</u>
2018			
Core deposits	\$ 9,300	\$ (6,341)	\$ 2,959
Customer relationships	4,206	(3,534)	672
Non-compete agreements	74	(56)	18
	<u>\$ 13,580</u>	<u>\$ (9,931)</u>	<u>\$ 3,649</u>

Other intangible assets are amortized on an accelerated basis over their estimated lives, which range from 5 to 10 years. Amortization expense related to intangible assets totaled \$1.2 million in 2019, \$1.4 million in 2018, and \$1.7 million in 2017. The estimated aggregate future amortization expense for intangible assets remaining as of December 31, 2019 is as follows:

2020	\$ 918
2021	697
2022	481
2023	282
2024	87
Thereafter	<u>16</u>
	<u>\$ 2,481</u>

Note 6 - Deposits

Year-end deposits were as follows:

	2019	2018
Non-interest-bearing demand deposits:		
Commercial and individual	\$ 10,212,265	\$ 10,305,850
Correspondent banks	246,181	235,748
Public funds	415,183	455,896
Total non-interest-bearing demand deposits	10,873,629	10,997,494
Interest-bearing deposits:		
Private accounts:		
Savings and interest checking	7,147,327	6,977,813
Money market accounts	7,888,433	7,777,470
Time accounts of \$100,000 or more	736,481	526,789
Time accounts under \$100,000	347,418	331,511
Total private accounts	16,119,659	15,613,583
Public funds:		
Savings and interest checking	548,399	473,754
Money market accounts	73,180	59,953
Time accounts of \$100,000 or more	24,672	4,332
Time accounts under \$100,000	25	88
Total public funds	646,276	538,127
Total interest-bearing deposits	16,765,935	16,151,710
Total deposits	\$ 27,639,564	\$ 27,149,204

The following table presents additional information about our year-end deposits:

	2019	2018
Deposits from the Certificate of Deposit Account Registry Service (CDARS)	\$ 361	\$ —
Deposits from foreign sources (primarily Mexico)	805,828	752,658
Deposits not covered by deposit insurance	13,115,796	13,111,210
Deposits from certain directors, executive officers and their affiliates	197,919	199,321

Scheduled maturities of time deposits, including both private and public funds, at December 31, 2019 were as follows:

2020	\$ 891,005
2021	217,591
	<u>\$ 1,108,596</u>

Scheduled maturities of time deposits in amounts of \$100,000 or more, including both private and public funds, at December 31, 2019, were as follows:

Due within 3 months or less	\$ 191,563
Due after 3 months and within 6 months	140,654
Due after 6 months and within 12 months	271,209
Due after 12 months	157,727
	<u>\$ 761,153</u>

Note 7 - Borrowed Funds

Federal Funds Purchased and Securities Sold Under Agreements to Repurchase. Federal funds purchased are short-term borrowings that typically mature within one to ninety days. Federal funds purchased totaled \$27.2 million and \$7.3 million at December 31, 2019 and 2018. Securities sold under agreements to repurchase are secured short-term borrowings that typically mature overnight or within thirty to ninety days. Securities sold under agreements to repurchase are stated at the amount of cash received in connection with the transaction. We may be required to provide additional collateral based on the fair value of the underlying securities. Securities sold under agreements to repurchase totaled \$1.7 billion and \$1.4 billion at December 31, 2019 and 2018.

Subordinated Notes Payable. In March 2017, we issued \$100 million of 4.50% subordinated notes that mature on March 17, 2027. The notes, which qualify as Tier 2 capital for Cullen/Frost, bear interest at the rate of 4.50% per annum, payable semi-annually on each March 17 and September 17. The notes are unsecured and subordinated in right of payment to the payment of our existing and future senior indebtedness and structurally subordinated to all existing and future indebtedness of our subsidiaries. Unamortized debt issuance costs related to these notes, totaled approximately \$1.1 million and \$1.3 million December 31, 2019 and 2018. Proceeds from sale of the notes were used for general corporate purposes.

Our \$100 million of 5.75% fixed-to-floating rate subordinated notes originally issued in February 2007 matured and were redeemed on February 15, 2017. The notes qualified as Tier 2 capital for Cullen/Frost under the capital rules in effect prior to 2015. Prior to February 2012, the notes had a fixed interest rate of 5.75% per annum, after which the notes bore interest at a rate per annum equal to three-month LIBOR for the related interest period plus 0.53% (1.43% at December 31, 2016), paid quarterly.

Junior Subordinated Deferrable Interest Debentures. At December 31, 2019 and 2018, we had \$123.7 million of junior subordinated deferrable interest debentures issued to Cullen/Frost Capital Trust II ("Trust II"), a wholly owned Delaware statutory business trust. Unamortized debt issuance costs related to Trust II totaled \$816 thousand and \$873 thousand at December 31, 2019 and 2018. At December 31, 2019 and 2018, we also had \$13.4 million of junior subordinated deferrable interest debentures issued to WNB Capital Trust I ("WNB Trust"), a wholly owned Delaware statutory business trust acquired in connection with the acquisition of WNB Bancshares, Inc. ("WNB") in 2014. Trust II and WNB Trust are variable interest entities for which we are not the primary beneficiary. As such, the accounts of Trust II and WNB Trust are not included in our consolidated financial statements. See Note 1 - Summary of Significant Accounting Policies for additional information about our consolidation policy. Details of our transactions with the capital trust are presented below.

Trust II was formed in 2004 for the purpose of issuing \$120.0 million of floating rate (three-month LIBOR plus a margin of 1.55%) trust preferred securities, which represent beneficial interests in the assets of the trust. The trust preferred securities will mature on March 1, 2034 and are currently redeemable with the approval of the Federal Reserve Board in whole or in part at our option. Distributions on the trust preferred securities are payable quarterly in arrears on March 1, June 1, September 1 and December 1 of each year. Trust II also issued \$3.7 million of common equity securities to Cullen/Frost. The proceeds of the offering of the trust preferred securities and common equity securities were used to purchase \$123.7 million of floating rate (three-month LIBOR plus a margin of 1.55%, which was equal to 3.46% and 4.29% at December 31, 2019 and 2018) junior subordinated deferrable interest debentures issued by us, which have terms substantially similar to the trust preferred securities.

WNB Trust was formed in 2004 by WNB for the purpose of issuing \$13.0 million of floating rate (three-month LIBOR plus a margin of 2.35%) trust preferred securities, which represent beneficial interests in the assets of the trust. The trust preferred securities will mature on July 23, 2034 and are currently redeemable with the approval of the Federal Reserve Board in whole or in part at our option. Distributions on the trust preferred securities are payable quarterly in arrears on January 23, April 23, July 23 and October 23 of each year. WNB Trust also issued \$403 thousand of common equity securities to WNB. The proceeds of the offering of the trust preferred securities and common equity securities were used to purchase \$13.4 million of floating rate (three-month LIBOR plus a margin of 2.35%, which was equal to 4.28% and 4.83% at December 31, 2019 and 2018) junior subordinated deferrable interest debentures issued by WNB, which have terms substantially similar to the trust preferred securities.

We have the right at any time during the term of the debentures issued to Trust II and WNB Trust to defer payments 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. Under the terms of the debentures, in the event that under certain circumstances there is an event of default under the debentures or 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.

Payments of distributions on the trust preferred securities and payments on redemption of the trust preferred securities are guaranteed by us on a limited basis. We are obligated by agreement to pay any costs, expenses or liabilities of Trust II and WNB Trust other than those arising under the trust preferred securities. Our obligations under the junior subordinated debentures, the related indentures, the trust agreements establishing the trusts, the guarantees and the agreements as to expenses and liabilities, in the aggregate, constitute a full and unconditional guarantee by us of Trust II's and WNB Trust's obligations under the trust preferred securities.

Although the accounts of Trust II and WNB Trust are not included in our consolidated financial statements, the \$120.0 million in trust preferred securities issued by Trust II and the \$13.0 million in trust preferred securities issued by WNB Trust are included in the capital of Cullen/Frost for regulatory capital purposes as of December 31, 2019 and 2018. See Note 9 - Capital and Regulatory Matters.

Note 8 - 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. 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.

We enter into contractual commitments to extend credit, normally with fixed expiration dates or termination clauses, at specified rates and for specific purposes. Substantially all of our commitments to extend credit are contingent upon customers maintaining specific credit standards at the time of loan funding. Standby letters of credit are written conditional commitments we issued to guarantee the performance of a customer to a third party. In the event the customer does not perform in accordance with the terms of the agreement with the third party, we would be required to fund the commitment. The maximum potential amount of future payments we could be required to make is represented by the contractual amount of the commitment. If the commitment were funded, we would be entitled to seek recovery from the customer. Our policies generally require that standby letter of credit arrangements contain security and debt covenants similar to those contained in loan agreements.

We consider the fees collected in connection with the issuance of standby letters of credit to be representative of the fair value of our obligation undertaken in issuing the guarantee. In accordance with applicable accounting standards related to guarantees, we defer fees collected in connection with the issuance of standby letters of credit. The fees are then recognized in income proportionately over the life of the standby letter of credit agreement. The deferred standby letter of credit fees represent the fair value of our potential obligations under the standby letter of credit guarantees.

Year-end financial instruments with off-balance-sheet risk were as follows:

	2019	2018
Commitments to extend credit	\$ 9,306,043	\$ 8,369,721
Standby letters of credit	260,587	271,575
Deferred standby letter of credit fees	1,276	2,069

Credit Card Guarantees. We guarantee the credit card debt of certain customers to the merchant bank that issues the cards. At December 31, 2019 and 2018, the guarantees totaled approximately \$8.5 million and \$8.1 million, of which amounts, \$1.3 million and \$1.4 million were fully collateralized.

Change in Control Agreements. We have change-in-control agreements with certain executive officers. Under these agreements, each covered person could receive, upon the effectiveness of a change-in-control, two to three times (depending on the person) his or her base compensation plus the target bonus established for the year, and any unpaid base salary and pro rata target bonus for the year in which the termination occurs, including vacation pay. Additionally, the executive's insurance benefits will continue for two to three full years after the termination and all long-term incentive awards will immediately vest.

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 9 - 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.

The Basel III Capital Rules, a new comprehensive capital framework for U.S. banking organizations, became effective for Cullen/Frost and Frost Bank on January 1, 2015 (subject to a phase-in period for certain provisions). Quantitative measures established by the Basel III Capital Rules designed to ensure capital adequacy require the maintenance of minimum amounts and ratios (set forth in the table below) of Common Equity Tier 1 capital, Tier 1 capital and Total capital (as defined in the regulations) to risk-weighted assets (as defined), and of Tier 1 capital to adjusted quarterly average assets (as defined).

Cullen/Frost's and Frost Bank's Common Equity Tier 1 capital 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 Common Equity Tier 1. Common Equity Tier 1 for both Cullen/Frost and Frost Bank is reduced by, goodwill and other intangible assets, net of associated deferred tax liabilities, and subject to transition provisions. Frost Bank's Common Equity Tier 1 is also reduced by its equity investment in its financial subsidiary, Frost Insurance Agency ("FIA").

Tier 1 capital includes Common Equity Tier 1 capital and Additional Tier 1 capital. For Cullen/Frost, Additional Tier 1 capital at December 31, 2019 and 2018 included \$144.5 million of 5.375% non-cumulative perpetual preferred stock. Frost Bank did not have any Additional Tier 1 capital beyond Common Equity Tier 1 at December 31, 2019 or 2018.

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 allowance for loan losses. Tier 2 capital for Cullen/Frost also includes trust preferred securities that were excluded from Tier 1 capital and qualified subordinated debt. At both December 31, 2019 and 2018, Cullen/Frost's Tier 2 capital included \$133.0 million of trust preferred securities. At both December 31, 2019 and 2018, Tier 2 Capital for Cullen/Frost also included \$100.0 million related to the permissible portion of our aggregate \$100 million of 4.50% subordinated notes. The permissible portion of qualified subordinated notes decreases 20% per year during the final five years of the term of the notes.

The Common Equity Tier 1, Tier 1 and Total capital ratios are calculated by dividing the respective capital amounts by risk-weighted assets. Risk-weighted assets are calculated based on regulatory requirements and include total assets, with certain exclusions, allocated by risk weight category, and certain off-balance-sheet items, among other things. The leverage ratio is calculated by dividing Tier 1 capital by adjusted quarterly average total assets, which exclude goodwill and other intangible assets, among other things.

Fully phased in on January 1, 2019, the Basel III Capital Rules require Cullen/Frost and Frost Bank to maintain (i) a minimum ratio of Common Equity Tier 1 capital to risk-weighted assets of at least 4.5%, plus a 2.5% "capital conservation buffer" (which is added to the 4.5% Common Equity Tier 1 capital ratio, effectively resulting in a minimum ratio of Common Equity Tier 1 capital to risk-weighted assets of at least 7.0%), (ii) a minimum ratio of Tier 1 capital to risk-weighted assets of at least 6.0%, plus the capital conservation buffer (which is added to the 6.0% Tier 1 capital ratio, effectively resulting in a minimum Tier 1 capital ratio of 8.5%), (iii) a minimum ratio of Total capital (that is, Tier 1 plus Tier 2) to risk-weighted assets of at least 8.0%, plus the capital conservation buffer (which is added to the 8.0% total capital ratio, effectively resulting in a minimum total capital ratio of 10.5%) and (iv) a minimum leverage ratio of 4.0%, calculated as the ratio of Tier 1 capital to average quarterly assets.

The implementation of the capital conservation buffer began on January 1, 2016 at the 0.625% level and was phased in over a four-year period (increasing by that amount on each subsequent January 1, until it reached 2.5% on January 1, 2019). The Basel III Capital Rules also provide for a "countercyclical capital buffer" that is applicable to only certain covered institutions and does not have any current applicability to Cullen/Frost or Frost Bank. The capital conservation

buffer is designed to absorb losses during periods of economic stress and, as detailed above, effectively increases the minimum required risk-weighted capital ratios. Banking institutions with a ratio of Common Equity Tier 1 capital to risk-weighted assets below the effective minimum (4.5% plus the capital conservation buffer and, if applicable, the countercyclical capital buffer) will face constraints on dividends, equity repurchases and compensation based on the amount of the shortfall and the institution's "eligible retained income" (that is, four quarter trailing net income, net of distributions and tax effects not reflected in net income).

The following table presents actual and required capital ratios as of December 31, 2019 and December 31, 2018 for Cullen/Frost and Frost Bank under the Basel III Capital Rules. The minimum required capital amounts presented include the minimum required capital levels as of December 31, 2019 and December 31, 2018 based on the phase-in provisions of the Basel III Capital Rules and the minimum required capital levels as of January 1, 2019 when the Basel III Capital Rules have been fully phased-in. 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.

	Actual		Minimum Capital Required - Basel III Fully Phased-In		Required to be Considered Well Capitalized	
	Capital Amount	Ratio	Capital Amount	Ratio	Capital Amount	Ratio
2019						
Common Equity Tier 1 to Risk-Weighted Assets						
Cullen/Frost	\$ 2,857,250	12.36%	\$ 1,617,886	7.00%	\$ 1,502,323	6.50%
Frost Bank	2,958,326	12.82	1,615,206	7.00	1,499,834	6.50
Tier 1 Capital to Risk-Weighted Assets						
Cullen/Frost	3,001,736	12.99	1,964,576	8.50	1,849,013	8.00
Frost Bank	2,958,326	12.82	1,961,322	8.50	1,845,950	8.00
Total Capital to Risk-Weighted Assets						
Cullen/Frost	3,367,403	14.57	2,426,829	10.50	2,311,266	10.00
Frost Bank	3,090,993	13.40	2,422,809	10.50	2,307,438	10.00
Leverage Ratio						
Cullen/Frost	3,001,736	9.28	1,293,188	4.00	1,616,485	5.00
Frost Bank	2,958,326	9.15	1,292,743	4.00	1,615,929	5.00

	Actual		Minimum Capital Required - Basel III Phase-In Schedule		Minimum Capital Required - Basel III Fully Phased-In		Required to be Considered Well Capitalized	
	Capital Amount	Ratio	Capital Amount	Ratio	Capital Amount	Ratio	Capital Amount	Ratio
2018								
Common Equity Tier 1 to Risk-Weighted Assets								
Cullen/Frost	\$ 2,642,475	12.27%	\$ 1,372,573	6.375%	\$ 1,507,139	7.00%	\$ 1,399,486	6.50%
Frost Bank	2,743,973	12.78	1,368,701	6.375	1,502,887	7.00	1,395,538	6.50
Tier 1 Capital to Risk-Weighted Assets								
Cullen/Frost	2,786,961	12.94	1,695,532	7.875	1,830,098	8.50	1,722,445	8.00
Frost Bank	2,743,973	12.78	1,690,748	7.875	1,824,934	8.50	1,717,585	8.00
Total Capital to Risk-Weighted Assets								
Cullen/Frost	3,152,593	14.64	2,126,143	9.875	2,260,709	10.50	2,153,056	10.00
Frost Bank	2,876,605	13.40	2,120,144	9.875	2,254,331	10.50	2,146,982	10.00
Leverage Ratio								
Cullen/Frost	2,786,961	9.06	1,231,028	4.00	1,231,028	4.00	1,538,785	5.00
Frost Bank	2,743,973	8.93	1,229,650	4.00	1,229,650	4.00	1,537,062	5.00

Management believes that, as of December 31, 2019, Cullen/Frost and its bank subsidiary, Frost Bank, were "well capitalized" based on the ratios presented above.

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 December 31, 2019, that Cullen/Frost and Frost Bank meet all capital adequacy requirements to which they are subject.

Preferred Stock. On February 15, 2013, we issued and sold 6,000,000 shares, or \$150.0 million in aggregate liquidation preference, of our 5.375% Non-Cumulative Perpetual Preferred Stock, Series A, par value \$0.01 and liquidation preference \$25 per share (“Series A Preferred Stock”). Dividends on the Series A Preferred stock, if declared, accrue and are payable quarterly, in arrears, at a rate of 5.375%. The Series A 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 A Preferred Stock, after deducting underwriting discount and commissions, and the payment of expenses, were approximately \$144.5 million. The net proceeds from the offering were used to fund the repurchase of common 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 July 24, 2019, 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 202,724 shares at a total cost of \$17.2 million during 2019. Under a prior stock repurchase programs, we repurchased 496,307 shares at a total cost of \$50.0 million during 2019, 1,027,292 shares at a total cost of \$100.0 million during 2018 and 1,134,966 shares at a total cost of \$100.0 million during 2017. Under the Basel III Capital Rules, Cullen/Frost may not repurchase its common stock (or repurchase or redeem any of its preferred stock or subordinated notes) 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 December 31, 2019, Frost Bank could pay aggregate dividends of up to \$682.9 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 and WNB Capital Trust I, 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 A Preferred Stock, in the event that we do not declare and pay dividends on the Series A 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 A Preferred Stock.

Note 10 - Earnings Per Common Share

Earnings Per Common Share. Earnings per common share is computed using the two-class method. Basic earnings per common share is computed by dividing net earnings allocated to common stock by the weighted-average number of common shares outstanding during the applicable period, excluding outstanding participating securities. Participating securities include non-vested stock awards/stock units, deferred stock units and performance stock units (during the performance period), though no actual shares of common stock related to any type of stock unit have been issued. Non-vested stock awards/stock units and deferred stock units are considered participating securities because holders of these securities receive non-forfeitable dividends at the same rate as holders of our common stock. Holders of performance stock units receive dividend equivalent payments for dividends paid during the performance period at the vesting date of the award based upon the number of units that ultimately vest. Diluted earnings per common share is computed

using the weighted-average number of shares determined for the basic earnings per common share computation plus the dilutive effect of stock compensation using the treasury stock method.

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.

	2019	2018	2017
Net Income	\$ 443,599	\$ 454,918	\$ 364,149
Less: Preferred stock dividends	8,063	8,063	8,063
Net income available to common shareholders	435,536	446,855	356,086
Less: Earnings allocated to participating securities	3,687	3,169	2,016
Net earnings allocated to common stock	\$ 431,849	\$ 443,686	\$ 354,070
Distributed earnings allocated to common stock	\$ 175,540	\$ 164,268	\$ 143,356
Undistributed earnings allocated to common stock	256,309	279,418	210,714
Net earnings allocated to common stock	\$ 431,849	\$ 443,686	\$ 354,070
Weighted-average shares outstanding for basic earnings per common share	62,741,769	63,704,508	63,693,927
Dilutive effect of stock compensation	700,101	982,208	968,161
Weighted-average shares outstanding for diluted earnings per common share	63,441,870	64,686,716	64,662,088

Note 11 - Employee Benefit Plans

Retirement Plans

Profit Sharing Plans. Prior to 2019, we maintained a qualified defined contribution profit sharing plan that covered employees who had completed at least one year of service and were age 21 or older. The Plan was merged with and into our 401(k) plan effective January 1, 2019, as further discussed below. Expense related to this plan totaled \$11.9 million in 2018 and \$11.6 million in 2017.

We continue to maintain a separate non-qualified profit sharing plan for certain employees whose participation in the qualified profit sharing plan was limited. The plan offers such employees an alternative means of receiving comparable benefits. Expense related to this plan totaled \$930 thousand in 2019, \$568 thousand in 2018 and \$1.1 million in 2017.

Retirement Plan and Restoration Plan. We maintain a non-contributory defined benefit plan (the “Retirement Plan”) that was frozen as of December 31, 2001. The plan provides pension and death benefits to substantially all employees who were at least 21 years of age and had completed at least one year of service prior to December 31, 2001. Defined benefits are provided based on an employee’s final average compensation and years of service at the time the plan was frozen and age at retirement. The freezing of the plan provides that future salary increases will not be considered. Our funding policy is to contribute yearly, at least the amount necessary to satisfy the funding standards of the Employee Retirement Income Security Act (“ERISA”).

Our Restoration of Retirement Income Plan (the “Restoration Plan”) provides benefits for eligible employees that are in excess of the limits under Section 415 of the Internal Revenue Code of 1986, as amended, that apply to the Retirement Plan. The Restoration Plan is designed to comply with the requirements of ERISA. The entire cost of the plan, which was also frozen as of December 31, 2001, is supported by our contributions.

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We use a December 31 measurement date for our defined benefit plans. Combined activity in our defined benefit pension plans was as follows:

	2019	2018	2017
Change in plan assets:			
Fair value of plan assets at beginning of year	\$ 152,820	\$ 168,450	\$ 157,214
Actual return on plan assets	29,945	(7,739)	23,518
Employer contributions	1,163	1,077	1,049
Benefits paid	(9,755)	(8,968)	(13,331)
Fair value of plan assets at end of year	174,173	152,820	168,450
Change in benefit obligation:			
Benefit obligation at beginning of year	167,107	182,607	176,751
Interest cost	6,472	5,898	6,189
Actuarial (gain) loss	22,817	(12,430)	12,998
Benefits paid	(9,755)	(8,968)	(13,331)
Benefit obligation at end of year	186,641	167,107	182,607
Funded status of the plan at end of year and accrued benefit (liability) recognized	\$ (12,468)	\$ (14,287)	\$ (14,157)
Accumulated benefit obligation at end of year	\$ 186,641	\$ 167,107	\$ 182,607

Certain disaggregated information related to our defined benefit pension plans as of year-end was as follows:

	Retirement Plan		Restoration Plan	
	2019	2018	2019	2018
Projected benefit obligation	\$ 170,541	\$ 152,035	\$ 16,100	\$ 15,072
Accumulated benefit obligation	170,541	152,035	16,100	15,072
Fair value of plan assets	174,173	152,820	—	—
Funded status of the plan at end of year and accrued benefit (liability) recognized	3,632	785	(16,100)	(15,072)

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

	2019	2018	2017
Expected return on plan assets, net of expenses	\$ (10,772)	\$ (11,916)	\$ (11,117)
Interest cost on projected benefit obligation	6,472	5,898	6,189
Net amortization and deferral	5,623	5,002	5,429
Net periodic expense (benefit)	\$ 1,323	\$ (1,016)	\$ 501

Amounts related to our defined benefit pension plans recognized as a component of other comprehensive income were as follows:

	2019	2018	2017
Net actuarial gain (loss)	\$ 1,979	\$ (2,223)	\$ 4,832
Deferred tax (expense) benefit	(416)	466	(1,774)
Other comprehensive income (loss), net of tax	\$ 1,563	\$ (1,757)	\$ 3,058

Amounts recognized as a component of accumulated other comprehensive loss as of year-end that have not been recognized as a component of the combined net period benefit cost of our defined benefit pension plans are presented in the following table. We expect to recognize approximately \$5.3 million of the net actuarial loss reported in the following table as of December 31, 2019 as a component of net periodic benefit cost during 2020.

	2019	2018
Net actuarial loss	\$ (57,964)	\$ (60,123)
Deferred tax benefit	12,210	12,626
Amounts included in accumulated other comprehensive income/loss, net of tax	(45,934)	(47,497)

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The weighted-average assumptions used to determine the benefit obligations as of the end of the years indicated and the net periodic benefit cost for the years indicated are presented in the table below. Because the plans were frozen, increases in compensation are not considered after 2001.

	2019	2018	2017
Benefit obligations:			
Discount rate	3.20%	4.36%	3.68%
Net periodic benefit cost:			
Discount rate	4.36%	3.68%	4.24%
Expected return on plan assets	7.25	7.25	7.25

Management uses an asset allocation optimization model to analyze the potential risks and rewards associated with various asset allocation strategies on a quarterly basis. As of December 31, 2019, management's investment objective for our defined benefit plans is to achieve long-term growth. This strategy provides for a target asset allocation of approximately 64% invested in equity securities, approximately 32% invested in fixed income debt securities with any remainder invested in cash or short-term cash equivalents. The asset allocation optimization process provides portfolio allocations which best represent the potential risk associated with a given asset allocation over a full market cycle. This is used to help management determine an appropriate mix of assets in order to achieve the plan's long term investment goals. The plan assets are reviewed annually to determine if the obligations can be met with the current investment mix and funding strategy.

The major categories of assets in our Retirement Plan as of year-end are presented in the following table. Assets are segregated by the level of the valuation inputs within the fair value hierarchy established by ASC Topic 820 "Fair Value Measurements and Disclosures," utilized to measure fair value (see Note 17 - Fair Value Measurements). Our Restoration Plan is unfunded.

	2019	2018
Level 1:		
Mutual funds	\$ 172,773	\$ 152,477
Cash and cash equivalents	1,400	343
Total fair value of plan assets	\$ 174,173	\$ 152,820

Mutual funds include various equity, fixed-income and blended funds with varying investment strategies. Approximately 68% of mutual fund investments consist of equity investments as of December 31, 2019. The investment objective of equity funds is long-term capital appreciation with current income. The remaining mutual fund investments consist of U.S. fixed-income securities, including investment-grade U.S. Treasury securities, U.S. government agency securities and mortgage-backed securities, corporate bonds and notes and collateralized mortgage obligations. The investment objective of fixed-income funds is to maximize investment return while preserving investment principal. U.S. government agency securities include obligations of Ginnie Mae. Our investment strategies prohibit selling assets short and the use of derivatives. Additionally, our defined benefit plans do not directly invest in real estate, commodities, or private investments.

The asset allocation optimization model is used to estimate the expected long-term rate of return for a given asset allocation strategy. Expectations of returns for each asset class are based on comprehensive reviews of historical data and economic/financial market theory. During periods with volatile interest rates and equity security prices, the model may call for changes in the allocation of plan investments to achieve desired returns. Management assumed a long-term rate of return of 7.25% in the determination of the net periodic benefit cost for 2019. The expected long-term rate of return on assets was selected from within the reasonable range of rates determined by historical real returns, net of inflation, for the asset classes covered by the plan's investment policy and projections of inflation over the long-term period during which benefits are payable to plan participants.

As of December 31, 2019, expected future benefit payments related to our defined benefit plans were as follows:

2020	\$	10,662
2021		10,968
2022		11,177
2023		11,423
2024		11,578
2025 through 2029		57,122
	\$	<u>112,930</u>

We expect to contribute \$1.2 million to the defined benefit plans during 2020.

Savings Plans

401(k) Plan and Thrift Incentive Plan. We maintain a 401(k) stock purchase plan that permits each participant to make before-tax contributions in an amount not less than 2% and not exceeding 50% of eligible compensation and subject to dollar limits from Internal Revenue Service regulations. We match 100% of the employee's contributions to the plan based on the amount of each participant's contributions up to a maximum of 6% of eligible compensation. Eligible employees must complete 30 days of service in order to enroll and vest in our matching contributions immediately. Our matching contribution is initially invested in the Cullen/Frost common stock fund. However, employees may immediately reallocate our matching portion, as well as invest their individual contribution, to any of a variety of investment alternatives offered under the 401(k) Plan. In 2019, we merged our qualified profit sharing plan with and into the 401(k) plan. All profit contributions to the plan are made at our discretion and may be made without regard to current or accumulated profits. Contributions are allocated to eligible participants uniformly, based upon compensation, age and other factors. Plan participants self-direct the investment of allocated contributions by choosing from a menu of investment options. Profit sharing contributions are subject to withdrawal restrictions and participants vest in their allocated contributions after three years of service. Expense related to the plan totaled \$28.9 million (\$16.3 million matching contributions and \$12.6 million profit sharing) in 2019, \$15.0 million in 2018, and \$14.3 million in 2017.

We maintain a thrift incentive stock purchase plan to offer certain employees whose participation in the 401(k) plan is limited an alternative means of receiving comparable benefits. Expense related to this plan was not significant during 2019, 2018 and 2017.

Stock Compensation Plans

We have three active stock compensation plans (the 2005 Omnibus Incentive Plan, the 2007 Outside Directors Incentive Plan and the 2015 Omnibus Incentive Plan). All of the plans have been approved by our shareholders. During 2015, the 2015 Omnibus Incentive Plan ("2015 Plan") was established to replace both the 2005 Omnibus Incentive Plan ("2005 Plan") and the 2007 Outside Directors Incentive Plan (the "2007 Directors Plan"). All remaining shares authorized for grant under the superseded 2005 Plan and 2007 Directors Plan were transferred to the 2015 Plan. Our stock compensation plans were established to (i) motivate superior performance by means of performance-related incentives, (ii) encourage and provide for the acquisition of an ownership interest in our company by employees and non-employee directors and (iii) enable us to attract and retain qualified and competent persons as employees and to serve as members of our board of directors.

Under the 2015 Plan, we may grant, among other things, nonqualified stock options, incentive stock options, stock awards, stock appreciation rights, restricted stock units, performance share units or any combination thereof to certain employees and non-employee directors. Any of the authorized shares may be used for any type of award allowable under the Plan. The Compensation and Benefits Committee ("Committee") of our Board of Directors has sole authority to (i) establish the awards to be issued, (ii) select the employees and non-employee directors to receive awards, and (iii) approve the terms and conditions of each award contract. Each award under the stock plans is evidenced by an award agreement that specifies the award price, the duration of the award, the number of shares to which the award pertains, and such other provisions as the Committee determines. For stock options, the option price for each grant is at least equal to the fair market value of a share of Cullen/Frost's common stock on the date of grant. Options granted expire at such time as the Committee determines at the date of grant and in no event does the exercise period exceed a maximum of ten years. As defined in the plans, outstanding awards may immediately vest upon a change-in-control

of Cullen/Frost and, in the case of awards granted under the 2015 Plan, subsequent termination resulting from the change in control.

A combined summary of activity in our active stock plans is presented in the table. Performance stock units outstanding are presented assuming attainment of the maximum payout rate as set forth by the performance criteria. The target award level for performance stock units granted in 2019, 2018 and 2017 was 34,317, 30,466 and 24,162, respectively. As of December 31, 2019, there were 1,105,616 shares remaining available for grant for future awards.

	Director Deferred Stock Units Outstanding		Non-Vested Stock Awards/Stock Units Outstanding		Performance Stock Units Outstanding		Stock Options Outstanding	
	Number of Units	Weighted-Average Fair Value at Grant	Number of Shares/Units	Weighted-Average Fair Value at Grant	Number of Units	Weighted-Average Fair Value at Grant	Number of Shares	Weighted-Average Exercise Price
January 1, 2017	53,659	\$ 61.48	256,850	\$ 73.43	43,860	\$ 69.70	4,089,028	\$ 62.67
Authorized	—	—	—	—	—	—	—	—
Granted	5,447	95.37	99,833	98.90	36,246	92.27	—	—
Exercised/vested	(6,098)	62.29	(39,740)	71.59	—	—	(1,118,122)	60.59
Forfeited/expired	—	—	(4,287)	79.52	—	—	(53,764)	69.78
December 31, 2017	53,008	64.87	312,656	81.71	80,106	79.91	2,917,142	63.34
Authorized	—	—	—	—	—	—	—	—
Granted	6,576	109.58	109,847	94.81	45,703	87.18	—	—
Exercised/vested	(10,674)	63.68	(32,050)	78.92	—	—	(513,134)	61.68
Forfeited/expired	—	—	(6,656)	87.60	—	—	(52,000)	70.42
December 31, 2018	48,910	71.14	383,797	85.59	125,809	82.55	2,352,008	63.55
Authorized	—	—	—	—	—	—	—	—
Granted	7,592	102.70	127,091	93.46	51,479	85.74	—	—
Exercised/vested	(1,132)	106.03	(53,990)	65.11	—	—	(359,892)	57.71
Forfeited/expired	—	—	(16,251)	89.71	—	—	(11,250)	65.11
December 31, 2019	55,370	\$ 74.76	440,647	\$ 90.22	177,288	\$ 83.48	1,980,866	\$ 64.60

Options awarded to employees generally have a ten-year life and vest in equal annual installments over a four-year period. Non-vested stock awards/stock units awarded to employees generally have a four-year-cliff vesting period. Deferred stock units awarded to non-employee directors generally have immediate vesting. Upon retirement from our board of directors, non-employee directors will receive one share of our common stock for each deferred stock unit held. Outstanding non-vested stock units and deferred stock units receive equivalent dividend payments as such dividends are declared on our common stock.

Performance stock units represent shares potentially issuable in the future. Issuance is based upon the measure of our achievement of relative return on assets over a three-year performance period compared to an identified peer group's achievement of relative return on assets over the same three-year performance period. The ultimate number of shares issuable under each performance award is the product of the award target and the award payout percentage for the given level of achievement. The level of achievement is measured as the percentile rank of relative return on assets among the peer group. The award payout percentages by level of achievement are as follows: (i) less than 25th percentile pays out at 0% of target, (ii) 25th percentile pays out at 50% of target, (iii) 50th percentile pays out at 100% of target and (iv) 75th percentile or more pays out at 150% of target. Achievement between the aforementioned percentiles will result in an award payout percentage determined based on straight-line interpolation between the percentiles. Performance stock units are eligible to receive equivalent dividend payments as such dividends are declared on our common stock during the performance period. Equivalent dividend payments are based upon the ultimate number of shares issued under each performance award and are deferred until such time that the units vest and shares are issued.

Other information regarding options outstanding and exercisable as of December 31, 2019 is as follows:

				Options Outstanding			Options Exercisable	
Range of Exercise Prices				Number of Shares	Weighted-Average Exercise Price	Weighted-Average Remaining Contractual Life in Years	Number of Shares	Weighted-Average Exercise Price
\$	45.01	to	\$ 50.00	238,055	\$ 48.00	1.82	238,055	\$ 48.00
	50.01	to	55.00	464,009	53.75	2.04	464,009	53.75
	65.01	to	70.00	526,096	65.11	5.67	526,096	65.11
	70.01	to	75.00	275,654	71.39	3.80	275,654	71.39
	75.01	to	80.00	477,052	78.95	4.71	477,052	78.95
Total				1,980,866	64.60	3.87	1,980,866	64.60
Total intrinsic value				\$ 65,725			\$ 65,725	

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:

	2019	2018	2017
New shares issued from available authorized shares	—	—	603,842
Issued from available treasury stock	399,224	548,238	547,078
Total	399,224	548,238	1,150,920
Proceeds from stock option exercises	\$ 20,770	\$ 31,647	\$ 67,746
Intrinsic value of stock options exercised	13,713	23,292	38,275
Fair value of stock awards/units vested	5,192	4,212	4,578

Stock-based Compensation Expense. 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 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.

	2019	2018	2017
Stock options	\$ 1,185	\$ 3,652	\$ 6,230
Non-vested stock awards/stock units	9,339	6,983	4,992
Deferred stock-units	780	721	519
Performance stock units	4,642	2,587	1,272
Total	\$ 15,946	\$ 13,943	\$ 13,013
Income tax benefit	\$ 2,359	\$ 2,831	\$ 4,555

Unrecognized stock-based compensation expense and the weighted-average period over which the expense is expected to be recognized at December 31, 2019 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.

	Unrecognized Expense	Weighted-Average Number of Years for Expense Recognition
Non-vested stock awards/stock units	\$ 18,882	2.81
Performance stock units	6,299	2.11
Total	<u>\$ 25,181</u>	

Valuation of Stock-Based Compensation. For the purposes of recognizing stock-based compensation expense, the fair value of non-vested stock awards/stock units and deferred stock units is generally the market price of the stock on the measurement date, which, for us, is the date of the award. The fair value of performance stock units is determined in a similar manner except that the market price of the stock on the measurement date is discounted by the present value of the dividends expected to be paid on our common stock during the service period of the award because dividend equivalent payments on performance stock units are deferred until such time that the units vest and shares are issued. In applying this discount to the market price of our stock on the measurement date, we assumed we would pay a flat quarterly dividend during the service period equal to our most recent dividend payment, which was \$0.71, \$0.67 and \$0.57 in 2019, 2018, and 2017 respectively discounted at a weighted-average risk-free rate of 1.65%, 2.95% and 1.73% in 2019, 2018, and 2017 respectively.

The fair value of employee stock options granted is estimated on the measurement date, which, for us, is the date of grant. The fair value of stock options is estimated using a binomial lattice-based valuation model that takes into account employee exercise patterns based on changes in our stock price and other variables, and allows for the use of dynamic assumptions about interest rates and expected volatility. No stock options have been granted since 2015.

Note 12 - Other Non-Interest Income and Expense

Other non-interest income and expense totals are presented in the following tables. Components of these totals exceeding 1% of the aggregate of total net interest income and total non-interest income for any of the years presented are stated separately.

	2019	2018	2017
Other non-interest income:			
Other	\$ 43,563	\$ 46,790	\$ 37,222
Total	<u>\$ 43,563</u>	<u>\$ 46,790</u>	<u>\$ 37,222</u>
Other non-interest expense:			
Professional services	\$ 39,238	\$ 35,941	\$ 27,968
Advertising, promotions and public relations	38,001	32,514	29,337
Travel/meals and entertainment	16,459	15,030	15,066
Check card expense	5,947	4,744	16,501
Other	81,020	85,309	86,417
Total	<u>\$ 180,665</u>	<u>\$ 173,538</u>	<u>\$ 175,289</u>

As discussed in Note 1 - Summary of Significant Accounting Policies, a new accounting standard adopted in 2018 requires us to report network costs associated with debit card and ATM transactions netted against the related fee income from such transactions. Previously, such network costs were reported as a component of check card expense and included in other non-interest expense. In 2019 and 2018, network costs totaling \$12.9 million and \$11.9 million are reported as a component of interchange and debit card transaction fees in the accompanying Consolidated Statement of Income rather than as a component of check card expense in the table above. For 2017, network costs totaling \$11.9 million were reported as a component of check card expense in the table above.

In the ordinary course of business, we transact with certain directors and/or their affiliates. Payments for services provided totaled \$567 thousand in 2019, \$568 thousand in 2018 and \$833 thousand in 2017.

Note 13 - Income Taxes

Tax Cuts and Jobs Act. The Tax Cuts and Jobs Act was enacted on December 22, 2017. Among other things, the new law (i) established a new, flat corporate federal statutory income tax rate of 21%, (ii) eliminated the corporate alternative minimum tax and allowed the use of any such carryforwards to offset regular tax liability for any taxable year, (iii) limited the deduction for net interest expense incurred by U.S. corporations, (iv) allowed businesses to immediately expense, for tax purposes, the cost of new investments in certain qualified depreciable assets, (v) eliminated or reduced certain deductions related to meals and entertainment expenses, (vi) modified the limitation on excessive employee remuneration to eliminate the exception for performance-based compensation and clarified the definition of a covered employee and (vii) limited the deductibility of deposit insurance premiums. The Tax Cuts and Jobs Act also significantly changes U.S. tax law related to foreign operations, however, such changes do not currently impact us.

Income Taxes. Income tax expense was as follows:

	2019	2018	2017
Current income tax expense	\$ 48,256	\$ 840	\$ 58,707
Deferred income tax expense (benefit)	7,614	52,923	(14,493)
Income tax expense, as reported	<u>\$ 55,870</u>	<u>\$ 53,763</u>	<u>\$ 44,214</u>
Effective tax rate	<u>11.2%</u>	<u>10.6%</u>	<u>10.8%</u>

A reconciliation between reported income tax expense and the amounts computed by applying the U.S. federal statutory income tax rate of 21% in 2019 and 2018 and 35% in 2017 to income before income taxes is presented in the following table.

	2019	2018	2017
Income tax expense computed at the statutory rate	\$ 104,888	\$ 106,823	\$ 142,927
Effect of tax-exempt interest	(49,166)	(49,700)	(81,034)
Tax benefit on dividends paid in our 401k plan	(1,743)	(1,551)	(2,372)
Bank owned life insurance income	(774)	(710)	(1,116)
Non-deductible compensation	1,708	210	158
Non-deductible FDIC premiums	1,267	1,771	—
Non-deductible meals and entertainment	1,299	1,193	983
Net tax benefit from stock-based compensation	(2,447)	(3,865)	(9,062)
Deferred tax adjustment related to reduction in U.S. federal statutory income tax rate	—	(231)	(4,047)
Correction for prior year tax-exempt interest	—	—	(2,906)
Other	838	(177)	683
Income tax expense, as reported	<u>\$ 55,870</u>	<u>\$ 53,763</u>	<u>\$ 44,214</u>

Income tax expense for 2017 was impacted by the adjustment of our deferred tax assets and liabilities related to the reduction in the U.S. federal statutory income tax rate to 21% under the Tax Cuts and Jobs Act. As a result of the new law, and as detailed in the table above, we recognized a provisional net tax benefit totaling \$4.0 million in 2017 and an additional net tax benefit resulting from a finalization of those calculations totaling \$231 thousand in 2018. Income tax expense for 2017 was also impacted by the correction of an over-accrual of taxes that resulted from incorrectly classifying certain tax-exempt loans as taxable for federal income tax purposes since 2013. As a result, we recognized tax benefits of \$2.9 million in 2017 related to the 2013 through 2016 tax years, as detailed in the table above. 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.

Year-end deferred taxes are presented in the table below. Deferred taxes are based on the U.S. statutory federal income tax rate of 21%.

	2019	2018
Deferred tax assets:		
Lease liabilities under operating leases	\$ 67,975	\$ —
Allowance for loan losses	27,755	27,748
Net actuarial loss on defined benefit post-retirement benefit plans	12,210	12,626
Stock-based compensation	11,211	10,622
Bonus accrual	5,055	4,586
Net unrealized loss on securities available for sale and transferred securities	—	4,283
Deferred loan and lease origination fees	2,254	2,153
Other	2,163	4,761
Total gross deferred tax assets	128,623	66,779
Deferred tax liabilities:		
Net unrealized gain on securities available for sale and transferred securities	(83,281)	—
Right-of-use assets under operating leases	(63,463)	—
Premises and equipment	(29,730)	(23,859)
Intangible assets	(12,642)	(10,726)
Defined benefit post-retirement benefit plans	(9,419)	(9,452)
Partnership interests	(2,894)	—
Leases	(1,572)	(1,709)
Other	(1,440)	(1,257)
Total gross deferred tax liabilities	(204,441)	(47,003)
Net deferred tax asset (liability)	\$ (75,818)	\$ 19,776

No valuation allowance for deferred tax assets was recorded at December 31, 2019 and 2018 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. There were no unrecognized tax benefits during any of 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 2016.

Note 14 - Other Comprehensive Income (Loss)

The tax effects allocated to each component of other comprehensive income (loss) were as follows:

	Before Tax Amount	Tax Expense, (Benefit)	Net of Tax Amount
2019			
Securities available for sale and transferred securities:			
Change in net unrealized gain/loss during the period	\$ 418,556	\$ 87,897	\$ 330,659
Change in net unrealized gain on securities transferred to held to maturity	(1,292)	(271)	(1,021)
Reclassification adjustment for net (gains) losses included in net income	(293)	(62)	(231)
Total securities available for sale and transferred securities	416,971	87,564	329,407
Defined-benefit post-retirement benefit plans:			
Change in the net actuarial gain/loss	(3,644)	(765)	(2,879)
Reclassification adjustment for net amortization of actuarial gain/loss included in net income as a component of net periodic cost (benefit)	5,623	1,181	4,442
Total defined-benefit post-retirement benefit plans	1,979	416	1,563
Total other comprehensive income (loss)	<u>\$ 418,950</u>	<u>\$ 87,980</u>	<u>\$ 330,970</u>
2018			
Securities available for sale and transferred securities:			
Change in net unrealized gain/loss during the period	\$ (182,340)	\$ (38,292)	\$ (144,048)
Change in net unrealized gain on securities transferred to held to maturity	(8,818)	(1,853)	(6,965)
Reclassification adjustment for net (gains) losses included in net income	156	33	123
Total securities available for sale and transferred securities	(191,002)	(40,112)	(150,890)
Defined-benefit post-retirement benefit plans:			
Change in the net actuarial gain/loss	(7,225)	(1,517)	(5,708)
Reclassification adjustment for net amortization of actuarial gain/loss included in net income as a component of net periodic cost (benefit)	5,002	1,051	3,951
Total defined-benefit post-retirement benefit plans	(2,223)	(466)	(1,757)
Total other comprehensive income (loss)	<u>\$ (193,225)</u>	<u>\$ (40,578)</u>	<u>\$ (152,647)</u>
2017			
Securities available for sale and transferred securities:			
Change in net unrealized gain/loss during the period	\$ 157,016	\$ 48,626	\$ 108,390
Change in net unrealized gain on securities transferred to held to maturity	(16,193)	(5,668)	(10,525)
Reclassification adjustment for net (gains) losses included in net income	4,941	1,729	3,212
Total securities available for sale and transferred securities	145,764	44,687	101,077
Defined-benefit post-retirement benefit plans:			
Change in the net actuarial gain/loss	(597)	(126)	(471)
Reclassification adjustment for net amortization of actuarial gain/loss included in net income as a component of net periodic cost (benefit)	5,429	1,900	3,529
Total defined-benefit post-retirement benefit plans	4,832	1,774	3,058
Total other comprehensive income (loss)	<u>\$ 150,596</u>	<u>\$ 46,461</u>	<u>\$ 104,135</u>

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

	Securities Available For Sale	Defined Benefit Plans	Accumulated Other Comprehensive Income
Balance January 1, 2019	\$ (16,103)	\$ (47,497)	\$ (63,600)
Other comprehensive income (loss) before reclassification	329,638	(2,879)	326,759
Reclassification of amounts included in net income	(231)	4,442	4,211
Net other comprehensive income (loss) during period	329,407	1,563	330,970
Balance December 31, 2019	<u>\$ 313,304</u>	<u>\$ (45,934)</u>	<u>\$ 267,370</u>
Balance January 1, 2018	\$ 117,230	\$ (37,718)	\$ 79,512
Other comprehensive income (loss) before reclassification	(151,013)	(5,708)	(156,721)
Reclassification of amounts included in net income	123	3,951	4,074
Net other comprehensive income (loss) during period	(150,890)	(1,757)	(152,647)
Reclassification of certain income tax effects related to the change in the U.S. statutory federal income tax rate under the Tax Cuts and Jobs Act to retained earnings	17,557	(8,022)	9,535
Balance December 31, 2018	<u>\$ (16,103)</u>	<u>\$ (47,497)</u>	<u>\$ (63,600)</u>
Balance January 1, 2017	\$ 16,153	\$ (40,776)	\$ (24,623)
Other comprehensive income (loss) before reclassification	97,865	(471)	97,394
Reclassification of amounts included in net income	3,212	3,529	6,741
Net other comprehensive income (loss) during period	101,077	3,058	104,135
Balance December 31, 2017	<u>\$ 117,230</u>	<u>\$ (37,718)</u>	<u>\$ 79,512</u>

Note 15 - 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 interest rate swaps, caps and floors to mitigate exposure to interest rate risk and to facilitate the needs of our customers. Our objectives for utilizing these derivative instruments are described below:

We have entered into certain interest rate swap contracts that are matched to specific fixed-rate commercial loans or leases that we have entered into with our customers. These contracts have been designated as hedging instruments to hedge the risk of changes in the fair value of the underlying commercial loan/lease due to changes in interest rates. The related contracts are structured so that the notional amounts reduce over time to generally match the expected amortization of the underlying loan/lease.

We have entered into certain interest rate swap, cap and floor contracts that are not designated as hedging instruments. These derivative contracts relate to transactions in which we enter into an interest rate swap, cap and/or floor with a customer while at the same time entering into an offsetting interest rate swap, cap and/or floor with a third-party financial institution. In connection with each swap transaction, we agree to pay interest to the customer on a notional amount at a variable interest rate and receive interest from the customer on a similar notional amount at a fixed interest rate. At the same time, we agree to pay a third-party financial institution the same fixed interest rate on the same notional amount and receive the same variable interest rate on the same notional amount. The transaction allows our customer to effectively convert a variable rate loan to a fixed rate. Because we act as an intermediary for our customer, 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.

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The notional amounts and estimated fair values of interest rate derivative contracts outstanding at December 31, 2019 and 2018 are presented in the following table. The fair values of interest rate derivative contracts are estimated utilizing internal valuation models 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 December 31, 2019 and 2018.

	December 31, 2019		December 31, 2018	
	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	\$ 2,545	\$ 6	\$ 10,941	\$ 207
Loan/lease interest rate swaps - liabilities	6,000	(138)	3,885	(199)
Non-hedging interest rate derivatives:				
Financial institution counterparties:				
Loan/lease interest rate swaps - assets	122,788	67	496,887	2,384
Loan/lease interest rate swaps - liabilities	1,002,860	(19,483)	691,143	(8,921)
Loan/lease interest rate caps - assets	107,835	266	122,791	509
Customer counterparties:				
Loan/lease interest rate swaps - assets	1,002,860	43,857	691,143	16,706
Loan/lease interest rate swaps - liabilities	122,788	(310)	496,887	(8,891)
Loan/lease interest rate caps - liabilities	107,835	(266)	122,791	(509)

The weighted-average rates paid and received for interest rate swaps outstanding at December 31, 2019 were as follows:

	Weighted-Average	
	Interest Rate Paid	Interest Rate Received
Interest rate swaps:		
Fair value hedge loan/lease interest rate swaps	2.66%	1.75%
Non-hedging interest rate swaps - financial institution counterparties	4.12	3.45
Non-hedging interest rate swaps - customer counterparties	3.45	4.12

The weighted-average strike rate for outstanding interest rate caps was 3.14% at December 31, 2019.

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 models with observable market data inputs to value our commodity derivative positions.

		December 31, 2019		December 31, 2018	
	Notional Units	Notional Amount	Estimated Fair Value	Notional Amount	Estimated Fair Value
Financial institution counterparties:					
Oil - assets	Barrels	1,214	\$ 2,796	2,416	\$ 24,332
Oil - liabilities	Barrels	2,148	(6,916)	415	(646)
Natural gas - assets	MMBTUs	8,295	2,131	5,745	417
Natural gas - liabilities	MMBTUs	2,689	(70)	9,314	(1,272)
Customer counterparties:					
Oil - assets	Barrels	2,172	7,208	415	646
Oil - liabilities	Barrels	1,190	(2,652)	2,416	(24,009)
Natural gas - assets	MMBTUs	2,689	83	10,236	1,373
Natural gas - liabilities	MMBTUs	8,295	(2,039)	4,823	(393)

Foreign Currency Derivatives. We enter into foreign currency forward 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 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 contracts were as follows:

		December 31, 2019		December 31, 2018	
	Notional Currency	Notional Amount	Estimated Fair Value	Notional Amount	Estimated Fair Value
Financial institution counterparties:					
Forward contracts - liabilities	CAD	4,593	\$ (33)	11,003	\$ (13)
Forward contracts - liabilities	GBP	—	—	142	(2)
Forward contracts - liabilities	MXN	—	—	3,015	(132)
Customer counterparties:					
Forward contracts - assets	CAD	4,583	45	10,979	40
Forward contracts - assets	GBP	—	—	145	4
Forward contracts - assets	MXN	—	—	3,000	149

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:

	2019	2018	2017
Commercial loan/lease interest rate swaps:			
Amount of gain (loss) included in interest income on loans	\$ 86	\$ 25	\$ (726)
Amount of (gain) loss included in other non-interest expense	—	(1)	(14)

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-hedging interest rate, commodity, foreign currency and other derivative instruments are presented in the table below.

	2019	2018	2017
Non-hedging interest rate derivatives:			
Other non-interest income	\$ 2,005	\$ 4,112	\$ 3,123
Other non-interest expense	(1)	—	1
Non-hedging commodity derivatives:			
Other non-interest income	503	795	440
Non-hedging foreign currency derivatives:			
Other non-interest income	51	246	300
Non-hedging other derivatives:			
Other non-interest income	750	—	—

Counterparty Credit Risk. Derivative contracts involve the risk of dealing with both bank customers and institutional derivative counterparties and their ability to meet contractual terms. Institutional counterparties must have an investment grade credit rating and be approved by our Asset/Liability Management Committee. Our credit exposure on interest rate swaps is limited to the net favorable value and interest payments of all swaps by each counterparty, while our credit exposure on commodity swaps/options and foreign currency forward contracts is limited to the net favorable value of all contracts by each counterparty. Credit exposure may be reduced by the amount of collateral pledged by the counterparty. There are no credit-risk-related contingent features associated with any of our derivative contracts. Certain derivative contracts with upstream financial institution counterparties may be terminated with respect to a party in the transaction, if such party does not have at least a minimum level rating assigned to either its senior unsecured long-term debt or its deposit obligations by certain third-party rating agencies.

Our credit exposure relating to interest rate swaps, commodity swaps/options and foreign currency forward contracts with bank customers was approximately \$47.1 million at December 31, 2019. 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 swaps, commodity swaps/options and foreign currency forward contracts with upstream financial institution counterparties was approximately \$16.1 million at December 31, 2019. This amount was primarily related to excess collateral we posted to counterparties. Collateral levels for upstream financial institution counterparties are monitored and adjusted as necessary. See Note 16 – Balance Sheet Offsetting and Repurchase Agreements for additional information regarding our credit exposure with upstream financial institution counterparties. At December 31, 2019 we had \$37.5 million in cash collateral related to derivative contracts on deposit with other financial institution counterparties.

Note 16 - 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 December 31, 2019 is presented in the following tables.

		Gross Amount Recognized		Gross Amount Offset		Net Amount Recognized
December 31, 2019						
Financial assets:						
Derivatives:						
Loan/lease interest rate swaps and caps	\$	339	\$	—	\$	339
Commodity swaps and options		4,927		—		4,927
Total derivatives		5,266		—		5,266
Resell agreements		31,299		—		31,299
Total	\$	36,565	\$	—	\$	36,565
Financial liabilities:						
Derivatives:						
Loan/lease interest rate swaps	\$	19,621	\$	—	\$	19,621
Commodity swaps and options		6,986		—		6,986
Foreign currency forward contracts		33		—		33
Total derivatives		26,640		—		26,640
Repurchase agreements		1,668,142		—		1,668,142
Total	\$	1,694,782	\$	—	\$	1,694,782
			Gross Amounts Not Offset			
	Net Amount Recognized		Financial Instruments	Collateral		Net Amount
December 31, 2019						
Financial assets:						
Derivatives:						
Counterparty A	\$	39	\$	(39)	\$	—
Counterparty B		1,650		(1,650)		—
Counterparty C		1		(1)		—
Other counterparties		3,576		(3,546)		30
Total derivatives		5,266		(5,236)		30
Resell agreements		31,299		—		—
Total	\$	36,565	\$	(5,236)	\$	30
Financial liabilities:						
Derivatives:						
Counterparty A	\$	5,192	\$	(39)	\$	(5,153)
Counterparty B		7,424		(1,650)		(5,774)
Counterparty C		135		(1)		(134)
Other counterparties		13,889		(3,546)		(10,343)
Total derivatives		26,640		(5,236)		(21,404)
Repurchase agreements		1,668,142		—		(1,668,142)
Total	\$	1,694,782	\$	(5,236)	\$	(1,689,546)

Information about financial instruments that are eligible for offset in the consolidated balance sheet as of December 31, 2018 is presented in the following tables.

	Gross Amount Recognized	Gross Amount Offset	Net Amount Recognized
December 31, 2018			
Financial assets:			
Derivatives:			
Loan/lease interest rate swaps and caps	\$ 3,100	\$ —	\$ 3,100
Commodity swaps and options	24,749	—	24,749
Total derivatives	27,849	—	27,849
Resell agreements	11,642	—	11,642
Total	<u>\$ 39,491</u>	<u>\$ —</u>	<u>\$ 39,491</u>
Financial liabilities:			
Derivatives:			
Loan/lease interest rate swaps	\$ 9,120	\$ —	\$ 9,120
Commodity swaps and options	1,918	—	1,918
Foreign currency forward contracts	147	—	147
Total derivatives	11,185	—	11,185
Repurchase agreements	1,360,298	—	1,360,298
Total	<u>\$ 1,371,483</u>	<u>\$ —</u>	<u>\$ 1,371,483</u>

	Net Amount Recognized	Gross Amounts Not Offset		Net Amount
		Financial Instruments	Collateral	
December 31, 2018				
Financial assets:				
Derivatives:				
Counterparty A	\$ 598	\$ (598)	\$ —	\$ —
Counterparty B	7,255	(3,380)	(3,875)	—
Counterparty C	81	(81)	—	—
Other counterparties	19,915	(2,084)	(17,776)	55
Total derivatives	27,849	(6,143)	(21,651)	55
Resell agreements	11,642	—	(11,642)	—
Total	<u>\$ 39,491</u>	<u>\$ (6,143)</u>	<u>\$ (33,293)</u>	<u>\$ 55</u>
Financial liabilities:				
Derivatives:				
Counterparty A	\$ 4,293	\$ (598)	\$ (3,651)	\$ 44
Counterparty B	3,380	(3,380)	—	—
Counterparty C	326	(81)	(245)	—
Other counterparties	3,186	(2,084)	(725)	377
Total derivatives	11,185	(6,143)	(4,621)	421
Repurchase agreements	1,360,298	—	(1,360,298)	—
Total	<u>\$ 1,371,483</u>	<u>\$ (6,143)</u>	<u>\$ (1,364,919)</u>	<u>\$ 421</u>

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 December 31, 2019 and December 31, 2018 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	
December 31, 2019						
Repurchase agreements:						
U.S. Treasury	\$ 435,904	\$ —	\$ —	\$ —	\$ 435,904	
Residential mortgage-backed securities	1,232,238	—	—	—	1,232,238	
Total borrowings	<u>\$ 1,668,142</u>	<u>\$ —</u>	<u>\$ —</u>	<u>\$ —</u>	<u>\$ 1,668,142</u>	
Gross amount of recognized liabilities for repurchase agreements					<u>\$ 1,668,142</u>	
Amounts related to agreements not included in offsetting disclosures above					<u>\$ —</u>	
December 31, 2018						
Repurchase agreements:						
U.S. Treasury	\$ 1,334,063	\$ —	\$ —	\$ —	\$ 1,334,063	
Residential mortgage-backed securities	26,235	—	—	—	26,235	
Total borrowings	<u>\$ 1,360,298</u>	<u>\$ —</u>	<u>\$ —</u>	<u>\$ —</u>	<u>\$ 1,360,298</u>	
Gross amount of recognized liabilities for repurchase agreements					<u>\$ 1,360,298</u>	
Amounts related to agreements not included in offsetting disclosures above					<u>\$ —</u>	

Note 17 - 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 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. The fair value hierarchy is as follows:

- **Level 1 Inputs** - Unadjusted quoted prices in active markets for identical assets or liabilities that the reporting entity has the ability to access at the measurement date.
- **Level 2 Inputs** - Inputs other than quoted prices included in Level 1 that are observable for the asset or liability, either directly or indirectly. These might include quoted prices for similar assets or liabilities in active markets, quoted prices for identical or similar assets or liabilities in markets that are not active, inputs other than quoted prices that are observable for the asset or liability (such as interest rates, volatilities, prepayment speeds, credit risks, etc.) or inputs that are derived principally from or corroborated by market data by correlation or other means.
- **Level 3 Inputs** - Unobservable inputs for determining the fair values of assets or liabilities that reflect an entity's own assumptions about the assumptions that market participants would use in pricing the assets or liabilities.

In general, fair value is based upon quoted market prices, where available. If such quoted market prices are not available, fair value is based upon internally developed models that primarily use, as inputs, observable market-based parameters. Valuation adjustments may be made to ensure that financial instruments are recorded at fair value. These

adjustments may include amounts to reflect counterparty credit quality and our creditworthiness, among other things, as well as unobservable parameters. Any such valuation adjustments are applied consistently over time. Our valuation methodologies may produce a fair value calculation that may not be indicative of net realizable value or reflective of future fair values. While management believes our valuation methodologies are appropriate and consistent with other market participants, the use of different methodologies or assumptions to determine the fair value of certain financial instruments could result in a different estimate of fair value at the reporting date. Furthermore, the reported fair value amounts have not been comprehensively revalued since the presentation dates, and therefore, estimates of fair value after the balance sheet date may differ significantly from the amounts presented herein. A more detailed description of the valuation methodologies used for assets and liabilities measured at fair value is set forth below. Transfers between levels of the fair value hierarchy are recognized on the actual date of the event or circumstances that caused the transfer, which generally coincides with our monthly and/or quarterly valuation process.

Financial Assets and Financial Liabilities: Financial assets and financial liabilities measured at fair value on a recurring basis include the following:

Securities Available for Sale. U.S. Treasury securities are reported at fair value utilizing Level 1 inputs. Other securities classified as available for sale are reported at fair value utilizing Level 2 inputs. For these securities, we obtain fair value measurements from an independent pricing service. The fair value measurements consider observable data that may include dealer quotes, market spreads, cash flows, the U.S. Treasury yield curve, live trading levels, trade execution data, market consensus prepayment speeds, credit information and the bond's terms and conditions, among other things.

We review the prices supplied by the independent pricing service, as well as their underlying pricing methodologies, for reasonableness and to ensure such prices are aligned with traditional pricing matrices. In general, we do not purchase investment portfolio securities that are esoteric or that have a complicated structure. Our entire portfolio consists of traditional investments, nearly all of which are U.S. Treasury obligations, federal agency bullet or mortgage pass-through securities, or general obligation or revenue based municipal bonds. Pricing for such instruments is fairly generic and is easily obtained. From time to time, we will validate prices supplied by the independent pricing service by comparison to prices obtained from third-party sources or derived using internal models.

Trading Securities. U.S. Treasury securities and exchange-listed common stock are reported at fair value utilizing Level 1 inputs. Other securities classified as trading are reported at fair value utilizing Level 2 inputs in the same manner as described above for securities available for sale.

Derivatives. Derivatives are generally reported at fair value utilizing Level 2 inputs, except for foreign currency contracts, which are reported at fair value utilizing Level 1 inputs. We obtain dealer quotations and utilize internally developed valuation models to value commodity swaps/options. We utilize internally developed valuation models and/or third-party models with observable market data inputs to validate the valuations provided by the dealers. Though there has never been a significant discrepancy in the valuations, should such a significant discrepancy arise, we would obtain price verification from a third-party dealer. We utilize internal valuation models with observable market data inputs to estimate fair values of customer interest rate swaps, caps and floors. We also obtain dealer quotations for these derivatives for comparative purposes to assess the reasonableness of the model valuations. In cases where significant credit valuation adjustments are incorporated into the estimation of fair value, reported amounts are considered to have been derived utilizing Level 3 inputs.

For purposes of potential valuation adjustments to our derivative positions, we evaluate the credit risk of our counterparties as well as ours. Accordingly, we have considered factors such as the likelihood of our default and the default of our counterparties, our net exposures and remaining contractual life, among other things, in determining if any fair value adjustments related to credit risk are required. Counterparty exposure is evaluated by netting positions that are subject to master netting arrangements, as well as considering the amount of collateral securing the position. We review our counterparty exposure on a regular basis, and, when necessary, appropriate business actions are taken to adjust the exposure. We also utilize this approach to estimate our own credit risk on derivative liability positions. To date, we have not realized any significant losses due to a counterparty's inability to pay any net uncollateralized position. The change in value of derivative assets and derivative liabilities attributable to credit risk was not significant during the reported periods.

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The following tables summarize financial assets and financial liabilities measured at fair value on a recurring basis as of December 31, 2019 and 2018, segregated by the level of the valuation inputs within the fair value hierarchy utilized to measure fair value:

	Level 1 Inputs	Level 2 Inputs	Level 3 Inputs	Total Fair Value
2019				
Securities available for sale:				
U.S. Treasury	\$ 1,948,133	\$ —	\$ —	\$ 1,948,133
Residential mortgage-backed securities	—	2,207,594	—	2,207,594
States and political subdivisions	—	7,070,997	—	7,070,997
Other	—	42,867	—	42,867
Trading account securities:				
U.S. Treasury	24,298	—	—	24,298
Derivative assets:				
Interest rate swaps, caps and floors	—	44,196	—	44,196
Commodity swaps and options	—	12,218	—	12,218
Foreign currency forward contracts	45	—	—	45
Derivative liabilities:				
Interest rate swaps, caps and floors	—	20,197	—	20,197
Commodity swaps and options	—	11,677	—	11,677
Foreign currency forward contracts	33	—	—	33
2018				
Securities available for sale:				
U.S. Treasury	\$ 3,427,689	\$ —	\$ —	\$ 3,427,689
Residential mortgage-backed securities	—	829,740	—	829,740
States and political subdivisions	—	7,087,202	—	7,087,202
Other	—	42,690	—	42,690
Trading account securities:				
U.S. Treasury	21,928	—	—	21,928
States and political subdivisions	—	2,158	—	2,158
Derivative assets:				
Interest rate swaps, caps and floors	—	19,806	—	19,806
Commodity swaps and options	—	26,768	—	26,768
Foreign currency forward contracts	193	—	—	193
Derivative liabilities:				
Interest rate swaps, caps and floors	—	18,520	—	18,520
Commodity swaps and options	—	26,320	—	26,320
Foreign currency forward contracts	147	—	—	147

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 (for example, when there is evidence of impairment). Financial assets measured at fair value on a non-recurring basis during the reported periods include certain impaired loans reported at the fair value of the underlying collateral if repayment is expected solely from the collateral. Collateral values are estimated using Level 2 inputs based on observable market data, typically in the case of real estate collateral, or Level 3 inputs based on customized discounting criteria, typically in the case of non-real estate collateral such as inventory, oil and gas reserves, accounts receivable, equipment or other business assets.

The following table presents impaired loans that were remeasured and reported at fair value through a specific valuation allowance allocation of the allowance for loan losses based upon the fair value of the underlying collateral:

	2019	2018	2017
Level 2			
Carrying value of impaired loans before allocations	\$ 2,354	\$ 12,517	\$ —
Specific valuation allowance allocations	(383)	(2,599)	—
Fair value	<u>\$ 1,971</u>	<u>\$ 9,918</u>	<u>\$ —</u>
Level 3			
Carrying value of impaired loans before allocations	\$ 65,176	\$ 22,688	\$ 75,435
Specific valuation allowance allocations	(18,019)	9,260	(19,533)
Fair value	<u>\$ 47,157</u>	<u>\$ 31,948</u>	<u>\$ 55,902</u>

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. Certain non-financial assets measured at fair value on a non-recurring basis include foreclosed assets (upon initial recognition or subsequent impairment), non-financial assets and non-financial liabilities measured at fair value in the second step of a goodwill impairment test, and intangible assets and other non-financial long-lived assets measured at fair value for impairment assessment. Non-financial assets measured at fair value on a non-recurring basis during the reported periods 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. The fair value of a foreclosed asset is estimated using Level 2 inputs based on observable market data or Level 3 inputs based on customized discounting criteria. During the reported periods, all fair value measurements for foreclosed assets utilized Level 2 inputs.

The following table presents foreclosed assets that were remeasured and reported at fair value:

	2019	2018	2017
Foreclosed assets remeasured at initial recognition:			
Carrying value of foreclosed assets prior to remeasurement	\$ 1,348	\$ 2,899	\$ 279
Charge-offs recognized in the allowance for loan losses	(76)	—	—
Fair value	<u>\$ 1,272</u>	<u>\$ 2,899</u>	<u>\$ 279</u>
Foreclosed assets remeasured subsequent to initial recognition:			
Carrying value of foreclosed assets prior to remeasurement	\$ —	\$ 1,823	\$ 89
Write-downs included in other non-interest expense	—	(473)	(16)
Fair value	<u>\$ —</u>	<u>\$ 1,350</u>	<u>\$ 73</u>

Charge-offs recognized upon loan foreclosures are generally offset by general or specific allocations of the allowance for loan losses and generally do not, and did not during the reported periods, significantly impact our provision for loan losses. Regulatory guidelines require us to reevaluate the fair value of other real estate owned on at least an annual basis. While our policy is to comply with the regulatory guidelines, our general practice is to reevaluate the fair value of collateral supporting impaired collateral dependent loans on a quarterly basis. Thus, appraisals are generally not considered to be outdated, and we typically do not make any adjustments to the appraised values.

ASC Topic 825, “Financial Instruments,” requires disclosure of the fair value of financial assets and financial liabilities, including those financial assets and financial liabilities that are not measured and reported at fair value on a recurring basis or non-recurring basis. The estimated fair value approximates carrying value for cash and cash equivalents, accrued interest and the cash surrender value of life insurance policies. The methodologies for other financial assets and financial liabilities that are not measured and reported at fair value on a recurring basis or non-recurring basis are discussed below:

Loans. The estimated fair value approximates carrying value for variable-rate loans that reprice frequently and with no significant change in credit risk. The fair value of fixed-rate loans and variable-rate loans which reprice on an infrequent basis is estimated by discounting future cash flows using the current interest rates at which similar loans with similar terms would be made to borrowers of similar credit quality. An overall valuation adjustment is made for specific credit risks as well as general portfolio credit risk.

Deposits. The estimated fair value approximates carrying value for demand deposits. The fair value of fixed-rate deposit liabilities with defined maturities is estimated by discounting future cash flows using the interest rates currently offered for deposits of similar remaining maturities. The estimated fair value of deposits does not take into account the value of our long-term relationships with depositors, commonly known as core deposit intangibles, which are separate intangible assets, and not considered financial instruments. Nonetheless, we would likely realize a core deposit premium if our deposit portfolio were sold in the principal market for such deposits.

Borrowed Funds. The estimated fair value approximates carrying value for short-term borrowings. The fair value of long-term fixed-rate borrowings is estimated using quoted market prices, if available, or by discounting future cash flows using current interest rates for similar financial instruments. The estimated fair value approximates carrying value for variable-rate junior subordinated deferrable interest debentures that reprice quarterly.

Loan Commitments, Standby and Commercial Letters of Credit. Our lending commitments have variable interest rates and “escape” clauses if the customer’s credit quality deteriorates. Therefore, the fair values of these items are not significant and are not included in the following table.

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

	December 31, 2019		December 31, 2018	
	Carrying Amount	Estimated Fair Value	Carrying Amount	Estimated Fair Value
Financial assets:				
Level 2 inputs:				
Cash and cash equivalents	\$ 3,788,181	\$ 3,788,181	\$ 3,955,779	\$ 3,955,779
Securities held to maturity	2,030,005	2,048,675	1,106,057	1,116,953
Cash surrender value of life insurance policies	187,156	187,156	183,473	183,473
Accrued interest receivable	183,850	183,850	188,989	188,989
Level 3 inputs:				
Loans, net	14,618,165	14,654,615	13,967,601	13,933,239
Financial liabilities:				
Level 2 inputs:				
Deposits	27,639,564	27,641,255	27,149,204	27,143,572
Federal funds purchased and repurchase agreements	1,695,342	1,695,342	1,367,548	1,367,548
Junior subordinated deferrable interest debentures	136,299	137,115	136,242	137,115
Subordinated notes payable and other borrowings	98,865	89,077	98,708	98,458
Accrued interest payable	12,393	12,393	7,394	7,394

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 18 - 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. The regions are primarily based upon geographic location and include Austin, Corpus Christi, Dallas, Fort Worth, Houston, Permian Basin, Rio Grande Valley, San Antonio and Statewide. We are primarily managed based on the line of business structure. In that regard, all regions have the same lines of business, which have the same product and service offerings, have similar types and classes of customers and utilize similar service delivery methods. Pricing guidelines for products and services are the same across all regions. The regional reporting structure is primarily a means to scale the lines of business to provide a local, community focus for customer relations and business development.

Banking and Frost Wealth Advisors are delineated by the products and services that each segment offers. The Banking operating segment includes both commercial and consumer banking services and Frost Insurance Agency. Commercial banking services are provided to corporations and other business clients and include a wide array of lending and cash management products. Consumer banking services include direct lending and depository services. Frost Insurance Agency provides insurance brokerage services to individuals and businesses covering corporate and personal property and casualty products, as well as group health and life insurance products. The Frost Wealth Advisors operating segment includes fee-based services within private trust, retirement services, and financial management services, including personal wealth management and securities brokerage services. 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. The parent company's principal activities include the direct and indirect ownership of our banking and non-banking subsidiaries and the issuance of debt and equity. Our principal source of revenue is dividends from our subsidiaries.

The accounting policies of each reportable segment are the same as those of our consolidated entity except for the following items, which impact the Banking and Frost Wealth Advisors segments: (i) expenses for consolidated back-office operations and general overhead-type expenses such as executive administration, accounting and internal audit are allocated to operating segments based on estimated uses of those services, (ii) income tax expense for the individual segments is calculated essentially at the statutory rate, and (iii) the parent company records the tax expense or benefit necessary to reconcile to the consolidated total.

We use a match-funded transfer pricing process to assess operating segment performance. The process helps us to (i) identify the cost or opportunity value of funds within each business segment, (ii) measure the profitability of a particular business segment by relating appropriate costs to revenues, (iii) evaluate each business segment in a manner consistent with its economic impact on consolidated earnings, and (iv) enhance asset and liability pricing decisions.

Financial results by operating segment are detailed below. Certain prior period amounts have been reclassified to conform to the current presentation. Frost Wealth Advisors excludes off balance sheet managed and custody assets with a total fair value of \$37.8 billion, \$33.3 billion and \$32.8 billion at December 31, 2019, 2018 and 2017.

	Banking	Frost Wealth Advisors	Non-Banks	Consolidated
2019				
Net interest income (expense)	\$ 1,010,368	\$ 4,001	\$ (10,364)	\$ 1,004,005
Provision for loan losses	33,758	1	—	33,759
Non-interest income	218,447	145,905	(450)	363,902
Non-interest expense	703,121	124,622	6,936	834,679
Income (loss) before income taxes	491,936	25,283	(17,750)	499,469
Income tax expense (benefit)	55,520	5,308	(4,958)	55,870
Net income (loss)	436,416	19,975	(12,792)	443,599
Preferred stock dividends	—	—	8,063	8,063
Net income (loss) available to common shareholders	\$ 436,416	\$ 19,975	\$ (20,855)	\$ 435,536
Revenues from (expenses to) external customers	\$ 1,228,815	\$ 149,906	\$ (10,814)	\$ 1,367,907
Average assets (in millions)	\$ 32,019	\$ 56	\$ 11	\$ 32,086

	Banking	Frost Wealth Advisors	Non-Banks	Consolidated
2018				
Net interest income (expense)	\$ 963,757	\$ 4,083	\$ (9,948)	\$ 957,892
Provision for loan losses	21,613	—	—	21,613
Non-interest income	213,763	138,045	(522)	351,286
Non-interest expense	657,448	114,166	7,270	778,884
Income (loss) before income taxes	498,459	27,962	(17,740)	508,681
Income tax expense (benefit)	52,928	5,872	(5,037)	53,763
Net income (loss)	445,531	22,090	(12,703)	454,918
Preferred stock dividends	—	—	8,063	8,063
Net income (loss) available to common shareholders	\$ 445,531	\$ 22,090	\$ (20,766)	\$ 446,855
Revenues from (expenses to) external customers	\$ 1,177,520	\$ 142,128	\$ (10,470)	\$ 1,309,178
Average assets (in millions)	\$ 30,964	\$ 54	\$ 12	\$ 31,030
2017				
Net interest income (expense)	\$ 856,593	\$ 17,644	\$ (7,815)	\$ 866,422
Provision for loan losses	35,460	—	—	35,460
Non-interest income	207,810	128,819	(159)	336,470
Non-interest expense	644,072	108,931	6,066	759,069
Income (loss) before income taxes	384,871	37,532	(14,040)	408,363
Income tax expense (benefit)	37,837	13,137	(6,760)	44,214
Net income (loss)	347,034	24,395	(7,280)	364,149
Preferred stock dividends	—	—	8,063	8,063
Net income (loss) available to common shareholders	\$ 347,034	\$ 24,395	\$ (15,343)	\$ 356,086
Revenues from (expenses to) external customers	\$ 1,064,403	\$ 146,463	\$ (7,974)	\$ 1,202,892
Average assets (in millions)	\$ 30,391	\$ 43	\$ 16	\$ 30,450

Note 19 - Condensed Financial Statements of Parent Company

Condensed financial statements pertaining only to Cullen/Frost Bankers, Inc. are presented below. Investments in subsidiaries are stated using the equity method of accounting.

Condensed Balance Sheets

	December 31,	
	2019	2018
Assets:		
Cash	\$ 9,116	\$ 11,397
Resell agreements	258,000	225,000
Total cash and cash equivalents	267,116	236,397
Investment in subsidiaries	3,896,962	3,362,474
Accrued interest receivable and other assets	2,545	9,122
Total assets	\$ 4,166,623	\$ 3,607,993
Liabilities:		
Junior subordinated deferrable interest debentures, net of unamortized issuance costs	\$ 136,299	\$ 136,242
Subordinated notes, net of unamortized issuance costs	98,865	98,708
Accrued interest payable and other liabilities	19,791	4,126
Total liabilities	254,955	239,076
Shareholders' Equity	3,911,668	3,368,917
Total liabilities and shareholders' equity	\$ 4,166,623	\$ 3,607,993

Condensed Statements of Income

	Year Ended December 31,		
	2019	2018	2017
Income:			
Dividend income paid by Frost Bank	\$ 234,531	\$ 223,371	\$ 149,671
Dividend income paid by non-banks	1,822	953	915
Interest and other income	2,868	1,828	421
Total income	239,221	226,152	151,007
Expenses:			
Interest expense	10,363	9,948	7,815
Salaries and employee benefits	1,551	1,973	1,202
Other	7,033	7,016	6,373
Total expenses	18,947	18,937	15,390
Income before income taxes and equity in undistributed earnings of subsidiaries	220,274	207,215	135,617
Income tax benefit	5,135	5,218	7,092
Equity in undistributed earnings of subsidiaries	218,190	242,485	221,440
Net income	443,599	454,918	364,149
Preferred stock dividends	8,063	8,063	8,063
Net income available to common shareholders	\$ 435,536	\$ 446,855	\$ 356,086

Condensed Statements of Cash Flows

	Year Ended December 31,		
	2019	2018	2017
Operating Activities:			
Net income	\$ 443,599	\$ 454,918	\$ 364,149
Adjustments to reconcile net income to net cash provided by operating activities:			
Equity in undistributed earnings of subsidiaries	(218,190)	(242,485)	(221,440)
Stock-based compensation	780	721	519
Net tax benefit from stock-based compensation	240	304	318
Net change in other assets and other liabilities	22,216	(12,709)	7,665
Net cash from operating activities	248,645	200,749	151,211
Investing Activities:			
Net cash from investing activities	—	—	—
Financing Activities:			
Proceeds from issuance of subordinated notes	—	—	98,434
Principal payments on subordinated notes	—	—	(100,000)
Proceeds from stock option exercises	20,770	31,647	67,746
Proceeds from stock-based compensation activities of subsidiaries	15,166	13,222	12,494
Purchase of treasury stock	(68,793)	(101,010)	(101,473)
Cash dividends paid on preferred stock	(8,063)	(8,063)	(8,063)
Cash dividends paid on common stock	(177,006)	(165,449)	(144,172)
Net cash from financing activities	(217,926)	(229,653)	(175,034)
Net change in cash and cash equivalents	30,719	(28,904)	(23,823)
Cash and cash equivalents at beginning of year	236,397	265,301	289,124
Cash and cash equivalents at end of year	\$ 267,116	\$ 236,397	\$ 265,301

Note 20 - Accounting Standards Updates

Accounting Standards Update (“ASU”) 2014-09, “Revenue from Contracts with Customers (Topic 606).” ASU 2014-09 implements a common revenue standard that clarifies the principles for recognizing revenue. The core principle of ASU 2014-09 is that an entity should recognize revenue to depict the transfer of promised goods or services to customers in an amount that reflects the consideration to which the entity expects to be entitled in exchange for those goods or services. To achieve that core principle, an entity should apply the following steps: (i) identify the contract(s) with a customer, (ii) identify the performance obligations in the contract, (iii) determine the transaction price, (iv) allocate the transaction price to the performance obligations in the contract and (v) recognize revenue when (or as) the entity satisfies a performance obligation. We adopted ASU 2014-09 effective January 1, 2018. See Note 1 - Summary of Significant Accounting Policies for additional information.

ASU 2016-01, “Financial Instruments – Overall (Subtopic 825-10): Recognition and Measurement of Financial Assets and Financial Liabilities.” ASU 2016-01, among other things, (i) requires equity investments, with certain exceptions, to be measured at fair value with changes in fair value recognized in net income, (ii) simplifies the impairment assessment of equity investments without readily determinable fair values by requiring a qualitative assessment to identify impairment, (iii) eliminates the requirement for public business entities to disclose the methods and significant assumptions used to estimate the fair value that is required to be disclosed for financial instruments measured at amortized cost on the balance sheet, (iv) requires public business entities to use the exit price notion when measuring the fair value of financial instruments for disclosure purposes, (v) requires an entity to present separately in other comprehensive income the portion of the total change in the fair value of a liability resulting from a change in the instrument-specific credit risk when the entity has elected to measure the liability at fair value in accordance with the fair value option for financial instruments, (vi) requires separate presentation of financial assets and financial liabilities by measurement category and form of financial asset on the balance sheet or the accompanying notes to the financial statements and (viii) clarifies that an entity should evaluate the need for a valuation allowance on a deferred tax asset related to available-for-sale securities. ASU 2016-01 became effective for us on January 1, 2018 and did not have a significant impact on our financial statements.

ASU 2016-02, “Leases (Topic 842).” ASU 2016-02 among other things, requires lessees to recognize a lease liability, which is a lessee's obligation to make lease payments arising from a lease, measured on a discounted basis; and a right-of-use asset, which is an asset that represents the lessee's right to use, or control the use of, a specified asset for the lease term. We adopted ASU 2016-02, along with several other subsequent codification updates related to lease accounting, as of January 1, 2019. See Note 1 - Summary of Significant Accounting Policies for additional information.

ASU 2016-13, “Financial Instruments - Credit Losses (Topic 326): Measurement of Credit Losses on Financial Instruments.” ASU 2016-13 along with several other subsequent codification updates related to accounting for credit losses, requires the measurement of all expected credit losses for financial assets held at the reporting date based on historical experience, current conditions, and reasonable and supportable forecasts and requires enhanced disclosures related to the significant estimates and judgments used in estimating credit losses, as well as the credit quality and underwriting standards of an organization's portfolio. In addition, ASU 2016-13 amends the accounting for credit losses on available-for-sale debt securities and purchased financial assets with credit deterioration. We currently expect the adoption of ASU 2016-13 will result in a combined 20.0% to 35.0% increase in our allowance for loan losses and our reserves for unfunded commitments. As we are currently finalizing the execution of our implementation controls and processes, the ultimate impact of the adoption of ASU 2016-13 as of January 1, 2020 could differ from our current expectation. The expected increase is a result of changing from an “incurred loss” model, which encompasses allowances for current known and inherent losses within the portfolio, to an “expected loss” model, which encompasses allowances for losses expected to be incurred over the life of the portfolio. Furthermore, ASU 2016-13 will necessitate that we establish an allowance for expected credit losses for certain debt securities and other financial assets; however, we do not expect these allowances to be significant. The adoption of ASU 2016-13 is not expected to have a significant impact on our regulatory capital ratios.

ASU 2016-15, “Statement of Cash Flows (Topic 230) - Classification of Certain Cash Receipts and Cash Payments.” ASU 2016-15 provides guidance related to certain cash flow issues in order to reduce the current and potential future diversity in practice. ASU 2016-15 became effective for us on January 1, 2018 and did not have a significant impact on our financial statements.

ASU 2016-16, “*Income Taxes (Topic 740) - Intra-Entity Transfers of Assets Other Than Inventory.*” ASU 2016-16 provides guidance stating that an entity should recognize the income tax consequences of an intra-entity transfer of an asset other than inventory when the transfer occurs. ASU 2016-16 became effective for us on January 1, 2018 and did not have a significant impact on our financial statements.

ASU 2016-18, “*Statement of Cash Flows (Topic 230) - Restricted Cash.*” ASU 2016-18 requires that a statement of cash flows explain the change during the period in the total of cash, cash equivalents, and amounts generally described as restricted cash or restricted cash equivalents. Therefore, amounts generally described as restricted cash and restricted cash equivalents should be included with cash and cash equivalents when reconciling the beginning-of-period and end-of-period total amounts shown on the statement of cash flows. ASU 2016-18 became effective for us on January 1, 2018 and did not have a significant impact on our financial statements.

ASU 2017-01, “*Business Combinations (Topic 805) - Clarifying the Definition of a Business.*” ASU 2017-01 clarifies the definition and provides a more robust framework to use in determining when a set of assets and activities constitutes a business. ASU 2017-01 is intended to provide guidance when evaluating whether transactions should be accounted for as acquisitions (or disposals) of assets or businesses. ASU 2017-01 became effective for us on January 1, 2018 and did not have a significant impact on our financial statements.

ASU 2017-04, “*Intangibles - Goodwill and Other (Topic 350) - Simplifying the Test for Goodwill Impairment.*” ASU 2017-04 eliminates Step 2 from the goodwill impairment test which required entities to compute the implied fair value of goodwill. Under ASU 2017-04, an entity should perform its annual, or interim, goodwill impairment test by comparing the fair value of a reporting unit with its carrying amount. An entity should recognize an impairment charge for the amount by which the carrying amount exceeds the reporting unit’s fair value; however, the loss recognized should not exceed the total amount of goodwill allocated to that reporting unit. ASU 2017-04 will be effective for us on January 1, 2020, with earlier adoption permitted and is not expected to have a significant impact on our financial statements.

ASU 2017-05, “*Other Income - Gains and Losses from the Derecognition of Nonfinancial Assets (Subtopic 610-20) - Clarifying the Scope of Asset Derecognition Guidance and Accounting for Partial Sales of Nonfinancial Assets.*” ASU 2017-05 clarifies the scope of Subtopic 610-20 and adds guidance for partial sales of nonfinancial assets, including partial sales of real estate. Historically, U.S. GAAP contained several different accounting models to evaluate whether the transfer of certain assets qualified for sale treatment. ASU 2017-05 reduces the number of potential accounting models that might apply and clarifies which model does apply in various circumstances. ASU 2017-05 became effective for us on January 1, 2018 and did not have a significant impact on our financial statements.

ASU 2017-08, “*Receivables - Nonrefundable Fees and Other Costs (Subtopic 310-20) - Premium Amortization on Purchased Callable Debt Securities.*” ASU 2017-08 shortens the amortization period for certain callable debt securities held at a premium to require such premiums to be amortized to the earliest call date unless applicable guidance related to certain pools of securities is applied to consider estimated prepayments. Under prior guidance, entities were generally required to amortize premiums on individual, non-pooled callable debt securities as a yield adjustment over the contractual life of the security. ASU 2017-08 does not change the accounting for callable debt securities held at a discount. We adopted ASU 2017-08 effective January 1, 2019 and recognized a cumulative effect adjustment reducing retained earnings by \$14.7 million. See Note 1 - Summary of Significant Accounting Policies for additional information.

ASU 2017-09, “*Compensation - Stock Compensation (Topic 718) - Scope of Modification Accounting.*” ASU 2017-09 clarifies when changes to the terms or conditions of a share-based payment award must be accounted for as modifications. Under ASU 2017-09, an entity will not apply modification accounting to a share-based payment award if all of the following are the same immediately before and after the change: (i) the award's fair value, (ii) the award's vesting conditions and (iii) the award's classification as an equity or liability instrument. ASU 2017-09 became effective for us on January 1, 2018 and did not have a significant impact on our financial statements.

ASU 2017-12, “*Derivatives and Hedging (Topic 815) - Targeted Improvements to Accounting for Hedging Activities.*” ASU 2017-12 amends the hedge accounting recognition and presentation requirements in ASC 815 to improve the transparency and understandability of information conveyed to financial statement users about an entity’s risk management activities to better align the entity’s financial reporting for hedging relationships with those risk management activities and to reduce the complexity of and simplify the application of hedge accounting. ASU 2017-12 became effective for us on January 1, 2019 and did not have a significant impact on our financial statements.

ASU 2018-02, “*Income Statement - Reporting Comprehensive Income (Topic 220) - Reclassification of Certain Tax Effects from Accumulated Other Comprehensive Income.*” Under ASU 2018-02, entities may elect to reclassify certain income tax effects related to the change in the U.S. statutory federal income tax rate under the Tax Cuts and Jobs Act, which was enacted on December 22, 2017, from accumulated other comprehensive income to retained earnings. ASU 2018-02 also requires certain accounting policy disclosures. We elected to adopt the provisions of ASU 2018-02 as of January 1, 2018 in advance of the required application date of January 1, 2019. See Note 1 - Summary of Significant Accounting Policies for additional information.

ASU 2018-05, “*Income Taxes (Topic 740) - Amendments to SEC Paragraphs Pursuant to SEC Staff Accounting Bulletin (SAB) No. 118.*” ASU 2018-05 amends the Accounting Standards Codification to incorporate various SEC paragraphs pursuant to the issuance of SAB 118. SAB 118 addresses the application of generally accepted accounting principles in situations when a registrant does not have the necessary information available, prepared, or analyzed (including computations) in reasonable detail to complete the accounting for certain income tax effects of the Tax Cuts and Jobs Act. See Note 13 - Income Taxes.

ASU 2018-13, “*Fair Value Measurement (Topic 820) - Disclosure Framework-Changes to the Disclosure Requirements for Fair Value Measurement.*” ASU 2018-13 modifies the disclosure requirements on fair value measurements in Topic 820. The amendments in this update remove disclosures that no longer are considered cost beneficial, modify/clarify the specific requirements of certain disclosures, and add disclosure requirements identified as relevant. ASU 2018-13 will be effective for us on January 1, 2020, with early adoption permitted, and is not expected to have a significant impact on our financial statements.

ASU 2018-14, “*Compensation - Retirement Benefits-Defined Benefit Plans-General (Subtopic 715-20).*” ASU 2018-14 amends and modifies the disclosure requirements for employers that sponsor defined benefit pension or other post-retirement plans. The amendments in this update remove disclosures that no longer are considered cost beneficial, clarify the specific requirements of disclosures, and add disclosure requirements identified as relevant. ASU 2018-14 will be effective for us on January 1, 2021, with early adoption permitted, and is not expected to have a significant impact on our financial statements.

ASU 2018-15, “*Intangibles - Goodwill and Other - Internal-Use Software (Subtopic 350-40) - Customer’s Accounting for Implementation Costs Incurred in a Cloud Computing Arrangement That Is a Service Contract.*” ASU 2018-15 clarifies certain aspects of ASU 2015-05, “*Customer’s Accounting for Fees Paid in a Cloud Computing Arrangement.*” which was issued in April 2015. Specifically, ASU 2018-15 aligns the requirements for capitalizing implementation costs incurred in a hosting arrangement that is a service contract with the requirements for capitalizing implementation costs incurred to develop or obtain internal-use software (and hosting arrangements that include an internal-use software license). ASU 2018-15 does not affect the accounting for the service element of a hosting arrangement that is a service contract. ASU 2018-15 will be effective for us on January 1, 2020, with early adoption permitted, and is not expected to have a significant impact on our financial statements.

ASU 2018-16, “*Derivatives and Hedging (Topic 815) - Inclusion of the Secured Overnight Financing Rate (SOFR) Overnight Index Swap (OIS) Rate as a Benchmark Interest Rate for Hedge Accounting Purposes.*” The amendments in this update permit use of the OIS rate based on SOFR as a U.S. benchmark interest rate for hedge accounting purposes under Topic 815 in addition to the interest rates on direct U.S. Treasury obligations, the LIBOR swap rate, the OIS rate based on the Fed Funds Effective Rate and the Securities Industry and Financial Markets Association (SIFMA) Municipal Swap Rate. ASU 2018-16 was effective for us on January 1, 2019 and did not have a significant impact on our financial statements.

ASU 2019-12, “*Income Taxes (Topic 740) - Simplifying the Accounting for Income Taxes.*” The guidance issued in this update simplifies the accounting for income taxes by eliminating certain exceptions to the guidance in ASC 740 related to the approach for intraperiod tax allocation, the methodology for calculating income taxes in an interim period and the recognition for deferred tax liabilities for outside basis differences. ASU 2019-12 also simplifies aspects of the accounting for franchise taxes and enacted changes in tax laws or rates and clarifies the accounting for transactions that result in a step-up in the tax basis of goodwill. ASU 2019-12 will be effective for us on January 1, 2021, with early adoption permitted, and is not expected to have a significant impact on our financial statements.

Cullen/Frost Bankers, Inc.
Consolidated Average Balance Sheets
(Dollars in thousands - tax-equivalent basis)

The following unaudited schedule is presented for additional information and analysis.

	Year Ended December 31,					
	2019			2018		
	Average Balance	Interest Income/ Expense	Yield /Cost	Average Balance	Interest Income/ Expense	Yield /Cost
Assets:						
Interest-bearing deposits	\$ 1,616,896	\$ 35,590	2.20%	\$ 2,951,128	\$ 56,968	1.93%
Federal funds sold and resell agreements	245,613	5,524	2.25	265,085	5,500	2.07
Securities:						
Taxable	5,048,552	117,082	2.33	4,222,688	86,370	2.03
Tax-exempt	8,248,812	325,058	4.06	7,842,737	322,855	4.11
Total securities	13,297,364	442,140	3.40	12,065,425	409,225	3.38
Loans, net of unearned discount	14,440,549	747,112	5.17	13,617,940	674,177	4.95
Total earning assets and average rate earned	29,600,422	1,230,366	4.20	28,899,578	1,145,870	3.96
Cash and due from banks	503,929			496,418		
Allowance for loan losses	(135,928)			(149,315)		
Premises and equipment, net	876,442			536,056		
Accrued interest receivable and other assets	1,240,986			1,247,113		
Total assets	\$ 32,085,851			\$ 31,029,850		
Liabilities:						
Non-interest-bearing demand deposits:						
Commercial and individual	\$ 9,829,635			\$ 10,164,396		
Correspondent banks	213,442			205,727		
Public funds	315,339			386,685		
Total non-interest-bearing demand deposits	10,358,416			10,756,808		
Interest-bearing deposits:						
Private accounts:						
Savings and interest checking	6,777,473	4,650	0.07	6,667,695	5,369	0.08
Money market deposit accounts	7,738,654	71,584	0.93	7,645,624	59,175	0.77
Time accounts	989,907	16,298	1.65	800,096	6,441	0.81
Public funds	548,827	7,210	1.31	418,843	4,352	1.04
Total interest-bearing deposits	16,054,861	99,742	0.62	15,532,258	75,337	0.49
Total deposits	26,413,277			26,289,066		
Federal funds purchased and repurchase agreements	1,283,381	19,675	1.53	1,054,915	8,021	0.76
Junior subordinated deferrable interest debentures	136,272	5,706	4.19	136,215	5,291	3.88
Subordinated notes payable and other notes	98,792	4,657	4.71	98,635	4,657	4.72
Total interest-bearing liabilities and average rate paid	17,573,306	129,780	0.74	16,822,023	93,306	0.55
Accrued interest payable and other liabilities	452,090			166,643		
Total liabilities	28,383,812			27,745,474		
Shareholders' equity	3,702,039			3,284,376		
Total liabilities and shareholders' equity	\$ 32,085,851			\$ 31,029,850		
Net interest income		\$ 1,100,586			\$ 1,052,564	
Net interest spread			3.46%			3.41%
Net interest income to total average earning assets			3.75%			3.64%

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 in 2019 and 2018 and a 35% tax rate for prior years, (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.

Year Ended December 31,											
2017			2016			2015			2014		
Average Balance	Interest Income/ Expense	Yield /Cost	Average Balance	Interest Income/ Expense	Yield /Cost	Average Balance	Interest Income/ Expense	Yield /Cost	Average Balance	Interest Income/ Expense	Yield /Cost
\$ 3,579,737	\$ 41,608	1.16%	\$ 3,062,189	\$ 16,103	0.53%	\$ 3,047,515	\$ 8,123	0.27%	\$ 4,189,110	\$ 10,725	0.26%
73,140	936	1.28	42,361	272	0.64	24,695	107	0.43	19,683	83	0.42
4,892,827	92,979	1.92	5,251,192	103,025	2.01	5,438,973	112,601	2.11	4,439,993	93,087	2.14
7,353,279	391,730	5.37	6,806,448	369,335	5.57	6,175,925	340,417	5.59	4,929,665	271,543	5.58
12,246,106	484,709	3.99	12,057,640	472,360	4.02	11,614,898	453,018	3.97	9,369,658	364,630	3.96
12,460,148	542,703	4.36	11,554,823	463,299	4.01	11,267,402	439,651	3.90	10,299,025	447,036	4.34
28,359,131	1,069,956	3.79	26,717,013	952,034	3.60	25,954,510	900,899	3.50	23,877,476	822,474	3.47
505,611			513,441			531,534			554,439		
(153,505)			(151,901)			(107,799)			(97,932)		
522,625			562,875			513,624			363,790		
1,216,345			1,190,665			1,168,757			1,068,528		
\$ 30,450,207			\$ 28,832,093			\$ 28,060,626			\$ 25,766,301		
\$ 10,155,502			\$ 9,215,962			\$ 9,334,604			\$ 8,384,376		
245,759			310,445			353,766			351,803		
418,165			507,912			491,440			388,851		
10,819,426			10,034,319			10,179,810			9,125,030		
6,376,855	1,303	0.02	5,745,385	1,054	0.02	4,831,927	996	0.02	4,211,336	924	0.02
7,502,494	12,721	0.17	7,466,252	4,673	0.06	7,715,890	6,418	0.08	7,342,967	7,852	0.11
775,940	1,764	0.23	811,102	1,331	0.16	874,368	1,473	0.17	966,420	2,053	0.21
430,203	1,400	0.33	454,786	190	0.04	438,763	137	0.03	407,006	193	0.05
15,085,492	17,188	0.11	14,477,525	7,248	0.05	13,860,948	9,024	0.07	12,927,729	11,022	0.09
25,904,918			24,511,844			24,040,758			22,052,759		
978,571	1,522	0.16	770,942	204	0.03	648,851	167	0.03	560,841	134	0.02
136,157	3,955	2.90	136,100	3,281	2.41	136,042	2,725	2.00	130,477	2,488	1.89
90,037	3,860	4.29	99,933	1,343	1.34	99,814	948	0.95	99,693	893	0.89
16,290,257	26,525	0.16	15,484,500	12,076	0.08	14,745,655	12,864	0.09	13,718,740	14,537	0.11
167,260			254,378			239,969			210,305		
27,276,943			25,773,197			25,165,434			23,054,075		
3,173,264			3,058,896			2,895,192			2,712,226		
\$ 30,450,207			\$ 28,832,093			\$ 28,060,626			\$ 25,766,301		
\$ 1,043,431			\$ 939,958			\$ 888,035			\$ 807,937		
		3.63%			3.52%			3.41%			3.36%
		3.69%			3.56%			3.45%			3.41%

ITEM 9. CHANGES IN AND DISAGREEMENTS WITH ACCOUNTANTS ON ACCOUNTING AND FINANCIAL DISCLOSURE

None

ITEM 9A. CONTROLS AND PROCEDURES

As of the end of the period covered by this Annual Report on Form 10-K, an evaluation was carried out by our management, with the participation of our 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 changes were made to our internal control over financial reporting (as defined in Rule 13a-15(f) under the Securities Exchange Act of 1934) during the last fiscal quarter that materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

Management's Report on Internal Control Over Financial Reporting

The management of Cullen/Frost Bankers, Inc. is responsible for establishing and maintaining adequate internal control over financial reporting. Our internal control over financial reporting is a process designed under the supervision of our Chief Executive Officer and Chief Financial Officer to provide reasonable assurance regarding the reliability of financial reporting and the preparation of our financial statements for external purposes in accordance with generally accepted accounting principles.

As of December 31, 2019, management assessed the effectiveness of our internal control over financial reporting based on the criteria for effective internal control over financial reporting established in "Internal Control - Integrated Framework," issued by the Committee of Sponsoring Organizations ("COSO") of the Treadway Commission ("2013 framework"). Based on the assessment, management determined that we maintained effective internal control over financial reporting as of December 31, 2019, based on those criteria.

Ernst & Young LLP, the independent registered public accounting firm that audited our consolidated financial statements included in this Annual Report on Form 10-K, has issued an attestation report on the effectiveness of our internal control over financial reporting as of December 31, 2019. The report, which expresses an unqualified opinion on the effectiveness of our internal control over financial reporting as of December 31, 2019, is included in this Item under the heading "Attestation Report of Independent Registered Public Accounting Firm."

Attestation Report of Independent Registered Public Accounting Firm

Report of Independent Registered Public Accounting Firm

To the Shareholders and the Board of Directors of
Cullen/Frost Bankers, Incorporated

Opinion on Internal Control over Financial Reporting

We have audited Cullen/Frost Bankers, Inc.'s internal control over financial reporting as of December 31, 2019, based on criteria established in Internal Control - Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework) (the COSO criteria). In our opinion, Cullen/Frost Bankers, Inc. (the Company) maintained, in all material respects, effective internal control over financial reporting as of December 31, 2019, based on the COSO criteria.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the consolidated balance sheets of the Company as of December 31, 2019 and 2018, and the related consolidated statements of income, comprehensive income, changes in shareholders' equity and cash flows for each of the three years in the period ended December 31, 2019, and the related notes and our report dated February 4, 2020 expressed an unqualified opinion thereon.

Basis for Opinion

The Company's management is responsible for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting included in the accompanying Management's Report on Internal Control Over Financial Reporting. Our responsibility is to express an opinion on the Company's internal control over financial reporting based on our audit. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

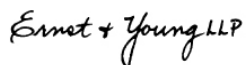
We conducted our audit in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects.

Our audit included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, testing and evaluating the design and operating effectiveness of internal control based on the assessed risk, and performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

Definition and Limitations of Internal Control over Financial Reporting

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

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

The logo for Ernst & Young LLP, featuring the company name in a stylized, cursive script.

San Antonio, Texas
February 4, 2020

ITEM 9B. OTHER INFORMATION

None

PART III

ITEM 10. DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE

Certain information regarding executive officers is included under the section captioned “Executive Officers of the Registrant” in Part I, Item 1, elsewhere in this Annual Report on Form 10-K. Other information required by this Item is incorporated herein by reference to our Proxy Statement (Schedule 14A) for our 2020 Annual Meeting of Shareholders to be filed with the SEC within 120 days of our fiscal year-end.

ITEM 11. EXECUTIVE COMPENSATION

The information required by this Item is incorporated herein by reference to our Proxy Statement (Schedule 14A) for our 2020 Annual Meeting of Shareholders to be filed with the SEC within 120 days of our fiscal year-end.

ITEM 12. SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT AND RELATED STOCKHOLDER MATTERS

Certain information regarding securities authorized for issuance under our equity compensation plans is included under the section captioned “Stock-Based Compensation Plans” in Part II, Item 5, elsewhere in this Annual Report on Form 10-K. Other information required by this Item is incorporated herein by reference to our Proxy Statement (Schedule 14A) for our 2020 Annual Meeting of Shareholders to be filed with the SEC within 120 days of our fiscal year-end.

ITEM 13. CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS, AND DIRECTOR INDEPENDENCE

The information required by this Item is incorporated herein by reference to our Proxy Statement (Schedule 14A) for our 2020 Annual Meeting of Shareholders to be filed with the SEC within 120 days of our fiscal year-end.

ITEM 14. PRINCIPAL ACCOUNTING FEES AND SERVICES

The information required by this Item is incorporated herein by reference to our Proxy Statement (Schedule 14A) for our 2020 Annual Meeting of Shareholders to be filed with the SEC within 120 days of our fiscal year-end.

PART IV

ITEM 15. EXHIBITS, FINANCIAL STATEMENT SCHEDULES

(a) The following documents are filed as part of this Annual Report on Form 10-K:

1. *Consolidated Financial Statements.* Reference is made to Part II, Item 8, of this Annual Report on Form 10-K.
2. *Consolidated Financial Statement Schedules.* These schedules are omitted as the required information is inapplicable or the information is presented in the consolidated financial statements or related notes.
3. *Exhibits.* The exhibits to this Annual Report on Form 10-K listed below have been included only with the copy of this report filed with the Securities and Exchange Commission.

Exhibit Number	Exhibit Description	Filed Herewith	Incorporated by Reference			Filing Date
			Form	File No.	Exhibit	
3.1	Restated Articles of Incorporation of Cullen/Frost Bankers, Inc.		10-Q	001-13221	3.1	7/26/2006
3.2	Amended and Restated Bylaws of Cullen/Frost Bankers, Inc.		8-K	001-13221	3.2	1/28/2016
3.3	Certificate of Designations of 5.375% Non-Cumulative Perpetual Preferred Stock, Series A		8-A	001-13221	3.3	2/15/2013
4.1	Description of Registrant's Securities	X				
4.2P ⁽¹⁾	Instruments Defining the Rights of Holders of Long-Term Debt					
10.1 ⁽²⁾	Cullen/Frost Bankers, Inc. Restoration Plan		10-K	001-3221	10.1	2/6/2019
10.2 ⁽²⁾	Amendment No. 1 to the Cullen/Frost Bankers, Inc. Restoration Plan		10-K	001-3221	10.2	2/6/2019
10.3 ⁽²⁾	Thrift Incentive Stock Purchase Plan for Certain Employees of Cullen/Frost Bankers, Inc.		10-K	001-3221	10.3	2/6/2019
10.4 ⁽²⁾	Cullen/Frost Restoration Profit Sharing Plan		10-K	001-3221	10.7	2/6/2019
10.5 ⁽²⁾	Amendment No. 1 to the Cullen/Frost Restoration Profit Sharing Plan		10-K	001-3221	10.8	2/6/2019
10.6 ⁽²⁾	2005 Omnibus Incentive Plan		DEF 14A	001-13221	Annex A	3/20/2013
10.7 ⁽²⁾	2007 Outside Director Incentive Plan		S-8	333-143397	4.4	5/31/2007
10.8 ⁽²⁾	2015 Omnibus Incentive Plan		DEF 14A	001-13221	Annex A	3/23/2015
10.9 ⁽²⁾	Amendment to the 2015 Omnibus Incentive Plan		10-K	001-13221	10.12	2/3/2017
10.10 ⁽²⁾	Deferred Stock Unit Award Agreement with 12 Directors	X				
10.11 ⁽²⁾	Change-In-Control Agreements with 2 Executive Officers		10-K	001-13221	10.4	2/6/2019
10.12 ⁽²⁾	Change-In-Control Agreements with 5 Executive Officers	X				
10.13 ⁽²⁾	Amendment to Change-In-Control Agreements with 7 Executive Officers	X				
21.1	Subsidiaries of Cullen/Frost Bankers, Inc.	X				
23.1	Consent of Independent Registered Public Accounting Firm	X				
24.1	Power of Attorney	X				
31.1	Rule 13a-14(a) Certification of the Chief Executive Officer	X				
31.2	Rule 13a-14(a) Certification of the Chief Financial Officer	X				
32.1 ⁽³⁾	Section 1350 Certification of the Chief Executive Officer	X				
32.2 ⁽³⁾	Section 1350 Certification of the Chief Financial Officer	X				
101.INS ⁽⁴⁾	Inline XBRL Instance Document	X				
101.SCH	Inline XBRL Taxonomy Extension Schema Document	X				
101.CAL	Inline XBRL Taxonomy Extension Calculation Linkbase Document	X				
101.DEF	Inline XBRL Taxonomy Extension Definition Linkbase Document	X				
101.LAB	InlineXBRL Taxonomy Extension Label Linkbase Document	X				
101.PRE	Inline XBRL Taxonomy Extension Presentation Linkbase Document	X				
104 ⁽⁵⁾	Cover Page Interactive Data File					

(1) We agree to furnish to the SEC, upon request, copies of any such instruments.

(2) Management contract or compensatory plan or arrangement.

(3) 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.

(4) The instance document does not appear in the interactive data file because its XBRL tags are embedded within the Inline XBRL document.

(5) Formatted as Inline XBRL and contained within the Inline XBRL Instance Document in Exhibit 101.

(b) Exhibits - See exhibit index included in Item 15(a)3 of this Annual Report on Form 10-K.

(c) Financial Statement Schedules - See Item 15(a)2 of this Annual Report on Form 10-K.

ITEM 16. FORM 10-K SUMMARY
None

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

Date: February 4, 2020

CULLEN/FROST BANKERS, INC.
(Registrant)

By:

/s/ JERRY SALINAS

Jerry Salinas
Group Executive Vice President and Chief Financial Officer

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed by the following persons on behalf of the registrant and in the capacities and on the dates indicated.

<u>Signature</u>	<u>Title</u>	<u>Date</u>
/s/ PHILLIP D. GREEN* Phillip D. Green	Chairman of the Board, Director and Chief Executive Officer (Principal Executive Officer)	February 4, 2020
/s/ JERRY SALINAS Jerry Salinas	Group Executive Vice President and Chief Financial Officer (Principal Financial Officer and Principal Accounting Officer)	February 4, 2020
/s/ CARLOS ALVAREZ* Carlos Alvarez	Director	February 4, 2020
/s/ CHRIS AVERY* Chris Avery	Director	February 4, 2020
/s/ CYNTHIA COMPARIN* Cynthia Comparin	Director	February 4, 2020
/s/ SAM DAWSON* Sam Dawson	Director	February 4, 2020
/s/ CRAWFORD H. EDWARDS* Crawford H. Edwards	Director	February 4, 2020
/s/ PATRICK B. FROST* Patrick B. Frost	Director and President of Frost Bank	February 4, 2020
/s/ DAVID J. HAEMISEGGER* David J. Haemisegger	Director	February 4, 2020
/s/ KAREN E. JENNINGS* Karen E. Jennings	Director	February 4, 2020
/s/ RICHARD M. KLEBERG, III* Richard M. Kleberg, III	Director	February 4, 2020
/s/ CHARLES W. MATTHEWS* Charles W. Matthews	Director	February 4, 2020
/s/ IDA CLEMENT STEEN* Ida Clement Steen	Director	February 4, 2020
/s/ GRAHAM WESTON* Graham Weston	Director	February 4, 2020
/s/ HORACE WILKINS, JR.* Horace Wilkins, Jr.	Director	February 4, 2020
*By: /s/ JERRY SALINAS Jerry Salinas As attorney-in-fact for the persons indicated	Group Executive Vice President and Chief Financial Officer (Principal Financial Officer and Principal Accounting Officer)	February 4, 2020

[\(Back To Top\)](#)

Section 2: EX-4.1 (EXHIBIT 4.1 - DESCRIPTION OF REGISTRANT'S SECURITIES)

Exhibit 4.1

DESCRIPTION OF REGISTRANT'S SECURITIES

As of December 31, 2019, Cullen/Frost Bankers, Inc. ("Cullen/Frost" or "we") had three classes of securities registered under Section 12 of the Securities Exchange Act of 1934 (the "Exchange Act"): (i) our common stock; (ii) our 6,000,000 shares of 5.375% non-cumulative perpetual preferred stock, series A (the "Preferred Stock"); and (iii) our \$100,000,000 aggregate principal amount of 4.500% subordinated notes due 2027 (the "Notes").

DESCRIPTION OF COMMON STOCK

The following description of Cullen/Frost's common stock is a summary and does not describe every right, term or condition of owning Cullen/Frost's common stock. It is subject to and is qualified in its entirety by reference to Cullen/Frost's restated articles of incorporation (the "Articles of Incorporation") and amended and restated bylaws (the "Bylaws"). For a complete description, refer to the Articles of Incorporation and the Bylaws and any applicable provisions of relevant law, including the applicable provisions of the Texas Business Organizations Code and federal law governing bank holding companies.

General

Pursuant to the Articles of Incorporation, Cullen/Frost is authorized to issue 210,000,000 shares of common stock, par value \$0.01 per share. Cullen/Frost's common stock is listed on The New York Stock Exchange.

Dividends

The holders of Cullen/Frost common stock are entitled to share ratably in dividends when and if declared by the Cullen/Frost board of directors from funds legally available for the dividends. Under the terms of the Preferred Stock, our ability to 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 Preferred Stock is subject to certain restrictions in the event that we do not declare and pay dividends on the Preferred Stock for the most recent dividend period.

Voting Rights

Each holder of Cullen/Frost common stock has one vote for each share held on matters presented for consideration by the shareholders. Directors are elected by a majority of the shareholder votes cast, provided that if the number of director nominees exceeds the number of directors to be elected, the directors are elected by a plurality of the votes cast. The Articles of Incorporation and the Bylaws prohibit shareholders from cumulating their votes in any election of directors or for any other purpose.

Preemptive Rights

The holders of Cullen/Frost common stock have no preemptive rights to acquire any additional shares of Cullen/Frost common stock.

Liquidation Rights

In the event of liquidation, dissolution or winding-up of Cullen/Frost, whether voluntary or involuntary, the holders of Cullen/Frost common stock will be entitled to share ratably in any of its assets or funds that are available for distribution to its shareholders after the satisfaction of its liabilities (or after adequate provision is made therefor) and after preferences of any outstanding Cullen/Frost preferred stock, including the Preferred Stock. Cullen/Frost common stock is neither redeemable nor convertible into another security of Cullen/Frost.

Classification of the Board

Cullen/Frost's board of directors is not classified.

DESCRIPTION OF THE PREFERRED STOCK

The following description of the Preferred Stock is a summary and does not describe every right, term or condition of owning the Preferred Stock. It is subject to and qualified in its entirety by reference to the pertinent sections of our Articles of Incorporation, including the certificate of designations creating the Preferred Stock, and any applicable provisions of relevant law, including the applicable provisions of the Texas Business Organizations Code and federal law governing bank holding companies.

General

Our Articles of Incorporation authorizes us to issue 10,000,000 shares of preferred stock in one or more series and authorizes our board of directors or a duly authorized committee of the board to fix the number of shares and determine the rights, preferences, privileges and restrictions of any such series of preferred stock. As of December 31, 2019, we had no issued and outstanding series of preferred stock other than the Preferred Stock.

The Preferred Stock represents a single series of our authorized preferred stock, consisting of 6,000,000 shares having a par value of \$0.01 per share. The Preferred Stock is listed on The New York Stock Exchange.

The Preferred Stock will not be convertible into, or exchangeable for, shares of any other class or series of our stock or other securities and will not be subject to any sinking fund or other obligation to redeem or repurchase.

Dividend Rights

Holders of the Preferred Stock are entitled to receive, when, as and if declared by our board of directors or a duly authorized committee of the board out of funds legally available therefor, non-cumulative cash dividends on the liquidation preference amount of \$25 per share from and including the date of original issuance, at a rate of 5.375% per annum. Dividends on the Preferred Stock are payable quarterly in arrears on March 15, June 15, September 15, and December 15 of each year, with respect to the quarterly dividend period (or portion thereof) ending on the day preceding such respective dividend payment date.

Redemption

The Preferred Stock will not be subject to any mandatory redemption, sinking fund, or other similar provisions. The holders of Preferred Stock will not have the right to require the redemption or repurchase of the Preferred Stock.

Optional Redemption. Cullen/Frost may redeem shares of the Preferred Stock on any dividend payment date on or after March 15, 2018, in whole or in part, from time to time, at a redemption price equal to \$25 per share, plus any declared and unpaid dividends on the shares of Preferred Stock called for redemption for prior dividend periods and accrued but unpaid dividends (whether or not declared) for the then-current dividend period prior to but excluding the redemption date.

Redemption Following a Regulatory Capital Treatment Event. Cullen/Frost may redeem shares of the Preferred Stock at its option at any time within 90 days following a regulatory capital treatment event (as defined in the certificate of designations creating the Preferred Stock), in whole but not in part, at a price equal to \$25 per share, plus any declared and unpaid dividends for prior dividend periods and accrued but unpaid dividends (whether or not declared) for the then-current dividend period prior to but excluding the redemption date.

Liquidation Rights

In the event we liquidate, dissolve or wind-up our business and affairs, either voluntarily or involuntarily, holders of the Preferred Stock will be entitled to receive liquidating distributions of \$25 per share, together with an amount equal to all dividends (if any) that have been declared on the Preferred Stock but not paid prior to such date of payment, before we make any distribution of assets to the holders of our common stock or any other class or series of shares ranking junior to the Preferred Stock with respect to the distribution of assets. If we fail to pay in full all amounts payable, including declared but unpaid dividends, with respect to the Preferred Stock and any stock having the same rank as the Preferred Stock with respect to the distribution of assets, the holders of the Preferred Stock and that other stock will share in any distribution of assets in proportion to the respective aggregate liquidation preferences to which they are entitled including an amount equal to any declared but unpaid dividends (and, in the case of any holder of stock on which dividends accrue on a cumulative basis, an amount equal to any unpaid, accrued, cumulative dividends, whether or not declared, as applicable). After the holders of the Preferred Stock and any stock having the same rank as the Preferred Stock are paid in full, they will have no right or claim to any of our remaining assets.

Neither the sale, lease, exchange or transfer (for cash, shares of stock, securities or other consideration) of all or any part of our property or business nor a merger or consolidation by us with or into any other entity will be considered a dissolution, liquidation or winding-up of our business or affairs.

Voting Rights

The Preferred Stock has no voting rights, except as provided below or as otherwise specifically required by Texas law. On any matter in which holders of Preferred Stock are entitled to vote, including when acting by written consent, each holder of Preferred Stock will have one vote per share, except as to votes upon a Nonpayment Event (as defined below) in which case the Preferred Stock will have voting rights in proportion to its liquidation preference.

Right to Elect Two Directors upon a Nonpayment Event. Whenever dividends payable on the shares of Preferred Stock (whether or not declared) have not been paid in an aggregate amount equal to full dividends for six or more quarterly dividend periods, whether or not consecutive (a “Nonpayment Event”), the authorized number of our directors will automatically be increased by two. The holders of the Preferred Stock will have the right, together with holders of any other series of preferred stock on which similar voting rights have been conferred and are exercisable with respect to the matter (i.e., on which dividends likewise have not been paid), voting together as a class in proportion to their respective liquidation preferences, by a plurality of the votes cast, to elect two directors to fill such newly created directorships.

Other Voting Rights. So long as any shares of Preferred Stock are outstanding and not called for redemption, the vote or consent of the holders of at least 66 2/3% of the then-outstanding shares of Preferred Stock, voting separately as a single class, is necessary for effecting or validating certain changes, including certain amendments, alterations or repeals of any provision of the Articles of Incorporation or the Bylaws that would significantly and adversely affect the Preferred Stock, binding share exchanges or reclassifications or mergers or consolidations involving Cullen/Frost.

Preemptive and Conversion Rights

The holders of the Preferred Stock do not have any preemptive rights. The Preferred Stock is not convertible into or exchangeable for property or shares of any other series or class of our capital stock.

Certain Anti-Takeover Matters

The Articles of Incorporation and Bylaws include a number of provisions that may have the effect of encouraging persons considering unsolicited tender offers or other unilateral takeover proposals to negotiate with the board of directors rather than pursue non-negotiated takeover attempts. These provisions include the following:

Advance Notice Requirements

The Bylaws establish advance notice procedures with regard to shareholder proposals relating to the nomination of candidates for election as directors or new business to be brought before meetings of shareholders of Cullen/Frost. These procedures provide that notice of such shareholder proposals must be timely given in writing to the Secretary of Cullen/Frost prior to the meeting at which the action is to be taken. Generally, to be timely, notice must be received not less than 60 days nor more than 90 days prior to the date of the meeting. The notice must contain certain information specified in the Bylaws.

Limitation on Ability of Shareholders to Call Special Meetings

The Bylaws provide procedures pursuant to which holders of record of not less than 10% of the voting power of outstanding shares of the common stock may call a special meeting of shareholders.

Amendment of Bylaws

Amendments of the Bylaws require the approval of either a majority of the board of directors or the vote of the holders of three-quarters of the outstanding shares entitled to vote thereon.

Removal of Directors

In order for any director to be removed, the Bylaws require the vote of the holders of two-thirds of the shares then entitled to vote for the election of directors.

DESCRIPTION OF THE NOTES

The following is a brief description of the terms of the Notes and the relevant indenture (the “Indenture”). It does not purport to be complete in all respects. This description is subject to and qualified in its entirety by reference to the Notes and the Indenture, which has been filed with the SEC and are available upon request from Cullen/Frost.

General

We issued \$100,000,000 aggregate principal amount of the Notes on March 17, 2017. We have the right to issue additional notes of the same series without the consent of the holders of the Notes. Any such additional notes would have the same terms as the Notes (except for the issue date and public offering price). The Notes are unsecured and subordinated in right of payment to all our senior indebtedness and effectively subordinated to all debt and all other liabilities of our subsidiaries.

The Indenture does not limit the amount of senior or subordinated debt that we or our subsidiaries may incur either under the Indenture or other indentures, loan agreements or other instruments to which we or our subsidiaries become a party. The Notes are not convertible or exchangeable for our common stock or preferred stock.

Maturity; Interest

The Notes will mature on March 17, 2027. The Notes bear interest at an annual rate equal to 4.500%. Interest on the Notes is payable semi-annually in arrears on March 17 and September 17 of each year to the persons in whose names the Notes are registered at the close of business on the preceding February 28 and August 31 of each year. Interest on the Notes at the maturity date will be payable to the persons to whom principal is payable.

Optional Redemption

The Notes are redeemable, in whole or in part, at our option at any time or from time to time on or after February 17, 2027 and are not subject to any sinking fund or similar provisions. The redemption price will be equal to 100% of the principal amount of the Notes being redeemed, plus accrued and unpaid interest to the redemption date.

Mandatory Redemption

The Notes are not mandatorily redeemable at the option of the holders.

Subordination

The Notes are subordinated in right of payment to the prior payment in full of all of our senior indebtedness. As of December 31, 2019, Cullen/Frost had minimal outstanding indebtedness that would rank senior to the Notes. In addition, as of that date, the aggregate amount of all debt and other liabilities of our subsidiaries, including deposits, that would effectively rank senior to the Notes was approximately \$30.2billion.

Events of Default and Defaults

Under the Indenture, our filing for bankruptcy and the occurrence of certain other events of bankruptcy, insolvency or reorganization relating to Cullen/Frost or the receivership of any “major constituent bank” (as defined in the Indenture) are defined as “events of default”.

Under the Indenture, the following are defined as “defaults” with respect to the Notes:

- failure to pay principal of or any premium on any note when due;
- failure to pay any interest on any note when due and that default continues for 30 days;
- failure to perform any other covenant in the indenture and that failure continues for 60 days after written notice to us by the trustee or the holders of at least 25% in aggregate principal amount of outstanding notes; and
- any event of default.

If an event of default occurs and is continuing, then the maturity of the Notes will automatically accelerate without any action by the trustee or the holders. After acceleration, but before a judgment or decree based on acceleration, the holders of a majority in aggregate principal amount of outstanding Notes may, under circumstances set forth in the Indenture, rescind the acceleration if we have deposited monies on account of certain overdue amounts with the trustee.

If a default occurs that is not also an event of default, neither the trustee nor the holders may act to accelerate the maturity of the Notes. But if a default occurs, the trustee may proceed to enforce any covenant and other rights of the holders of the Notes. Furthermore, if the default relates to our failure to make any payment of interest due and payable and such default continues for 30 days or such default is made in the payment of the principal or any premium at its maturity, then the trustee may demand payment of the amounts then due and payable and may proceed to prosecute any failure on our part to make such payments.

Cullen/Frost will furnish to the trustee annually a statement as to its performance of its obligations under the Indenture and as to any default in performance.

Modification of the Indenture

The following summarizes changes we can make to the Indenture and the Notes issued under the Indenture.

Changes Requiring Each Holder's Approval. First, there are changes that cannot be made without the approval of each holder of a Note affected by the change under the Indenture, including changes to the maturity for the principal or interest payment on a Note, reduction of the principal amount, the amount payable on acceleration of the maturity after a default, the interest rate or the redemption price for a Note, and impairment of any right a holder may have to require repayment of its Note. Refer to the Indenture for a full list of additional such changes.

Changes Not Requiring Approval. The second type of change does not require any approval by holders of the Notes. These changes are limited to clarifications and changes that would not adversely affect the Notes of that series in any material respect. Nor do we need any approval to make changes that affect only Notes to be issued under the Indenture after the changes take effect.

We may also make changes or obtain waivers that do not adversely affect a particular Note, even if they affect other debt securities that we may issue under the Indenture. In those cases, we do not need to obtain the approval of the holder of the unaffected debt security; we need only obtain any required approvals from the holders of the affected debt securities.

Changes Requiring Super-Majority Approval. Any other change to the Indenture and the Notes issued under the Indenture would require certain super-majority approvals as described in the Indenture.

Actions Not Restricted by Indenture

The Indenture does not contain restrictions on our ability to:

- incur, assume or become liable for any type of debt or other obligation;
- create liens on our property for any purpose; or
- pay dividends or make distributions on our capital stock or repurchase or redeem our capital stock.

The Indenture does not require the maintenance of any financial ratios or specified levels of net worth or liquidity. In addition, the Indenture does not contain any provisions that would require us to repurchase or redeem or modify the terms of any of the Notes upon a change of control or other event involving it that may adversely affect the creditworthiness of the Notes.

The Trustee

The Bank of New York Mellon is the indenture trustee. Subject to the provisions of the Indenture relating to the duties of the trustee, in case an event of default occurs and is continuing, the trustee is under no obligation to exercise any of its rights or powers under the Indenture at the request or direction of any of the holders, unless such holders have offered to the trustee reasonable indemnity. Subject to such provisions for the indemnification of the trustee, the holders of a majority in aggregate principal amount of the outstanding Notes will have the right to direct the time, method and place of conducting any proceeding for any remedy available to the trustee or exercising any trust or power conferred on the trustee.

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Section 3: EX-10.10 (EXHIBIT 10.10 - DEFERRED STOCK UNIT AWARD AGREEMENT WITH 12 DIRECTORS)

Exhibit 10.10

Deferred Stock Unit Award Agreement with 12 Directors

Form of Deferred Stock Unit Award Agreements made with the following directors of Cullen/Frost Bankers, Inc.

1. Carlos Alvarez
2. Chris M. Avery
3. Cynthia J. Comparin
4. Samuel G. Dawson
5. Crawford H. Edwards
6. David J. Haemisegger
7. Karen E. Jennings
8. Richard M. Kleberg III
9. Charles W. Matthews
10. Ida Clement Steen
11. Graham Weston
12. Horace Wilkins, Jr.

All of the above agreements are substantially identical in all material respects, except as to the dates of the agreements and the parties thereto.

Cullen/Frost Bankers, Inc.
2015 OMNIBUS INCENTIVE PLAN (the "Plan")
Deferred Stock Unit Award Agreement

This Award Agreement sets forth the terms and conditions of an Award of Deferred Stock Units ("DSUs") granted to you under the 2015 OMNIBUS INCENTIVE PLAN (the "Plan") as of [•].

1. The Plan. This Award is made pursuant to the Plan, the terms of which are incorporated in this Award Agreement. Capitalized terms used in this Award Agreement that are not defined in this Award Agreement have the meanings as used or defined in the Plan. References in this Award Agreement to any specific Plan provision shall not be construed as limiting the applicability of any other Plan provision. The Award is subject to all terms and provisions of the Plan as well as the terms and provisions of this Award Agreement.

2. Award. Subject to the terms and provisions of this Agreement and the Plan, Cullen/Frost Bankers, Inc. ("Cullen/Frost") hereby awards you as of the date hereof [•] ([•]) Deferred Stock Units. A DSU is an unfunded and unsecured promise of Cullen/Frost to deliver (or cause to be delivered) to you on the Delivery Date (as defined below), one Share for each DSU. Until such delivery, you have only the rights of a general unsecured creditor and no rights as a shareholder of Cullen/Frost.

3. Delivery.

(a) In General. Except as provided below in this Paragraph 3 and under Paragraph 9 hereof, the "Delivery Date" shall be the date when you experience a separation from service with Cullen/Frost. For purposes of this Award Agreement, a "separation from service" shall have the same meaning as ascribed to such term under Section 409A and the applicable regulations thereunder, applying all default provisions thereunder.

(b) Death. If you die before the Delivery Date, the Shares underlying your then-outstanding DSUs shall be delivered to the representative of your estate as soon as practicable after the date of death and after such documentation as may be requested by the Committee is provided to the Committee.

4. Dividend Equivalent Rights. Before the delivery of Shares pursuant to this Award Agreement, at or as soon as practicable after the time of distribution of any regular cash dividend paid by Cullen/Frost in respect of the Common Stock, you shall be entitled to receive an amount in cash or other property equal to such regular cash dividend payment as would have been made in respect of the Shares underlying this Award that have not yet been delivered, as if such Shares had been actually delivered. Each Dividend Equivalent Right shall be subject to the provisions of Article 18 of the Plan.

5. Non-transferability. Except as may otherwise be provided in this paragraph or as otherwise may be provided by the Committee, the limitations set forth in Section 14.1 of the Plan shall apply to this Award. Any purported transfer or assignment in violation of the provisions of this Paragraph or of Section 14.1 of the Plan shall be void. The Committee may adopt procedures pursuant to which you may transfer some or all of your DSUs for no consideration to a person described in Section 14.2 of the Plan.

6. Successors and Assigns of Cullen/Frost. The terms and conditions of this Award Agreement shall be binding upon and shall inure to the benefit of Cullen/Frost and its successors and assigns.

7. Amendment. The Committee reserves the right at any time to amend the terms and conditions set forth in this Award Agreement in any respect in accordance with Article 3 of the Plan, and the Board may amend the Plan in any respect in accordance with Article 21 of the Plan. Notwithstanding the foregoing and Sections 21.2 and 21.4 of the Plan, no such amendment shall materially adversely affect your rights and obligations under this Award Agreement without your consent (or the consent of your estate, if such consent is obtained after your death), except that the Committee reserves the right to accelerate the delivery of the Shares, provided such acceleration would not subject you to additional tax under Section 409A. Any amendment of this Award Agreement shall be in writing signed by an authorized member of the Board or any other person or persons authorized by the Board.

8. Governing Law. **THIS AWARD SHALL BE GOVERNED BY AND CONSTRUED IN ACCORDANCE WITH THE LAWS OF THE STATE OF TEXAS, WITHOUT REGARD TO PRINCIPLES OF CONFLICT OF LAWS.**

9. Compliance of Award Agreement and Plan With Section 409A.

(a) References in this Award Agreement to “Section 409A” refer to Section 409A of the Code, including any amendments or successor provisions to that Section and any regulations and other administrative guidance thereunder, in each case as they may be from time to time amended or interpreted through further administrative guidance. This Award Agreement and the Plan provisions that apply to this Award are intended and shall be construed to comply with Section 409A (including, where applicable, the requirements applicable to and the conditions for exemption from treatment as a “deferral of compensation” or “deferred compensation” as those terms are defined in the regulations under Section 409A (“409A deferred compensation”), whether by reason of short-term deferral treatment or other exceptions or provisions). The Committee shall have full authority to give effect to this intent. To the extent necessary to give effect to this intent, in the case of any conflict or potential inconsistency between the provisions of the Plan and this Award Agreement, the provisions of this Award Agreement shall govern, and in the case of any conflict or potential inconsistency between this Paragraph 9 and the other provisions of this Award Agreement, this Paragraph 9 shall govern.

(b) Except as provided below, delivery of Shares shall be made within 90 days after the Delivery Date.

Notwithstanding the foregoing, if you are determined to be a “specified employee” upon the Delivery Date, delivery of the Shares underlying your Award shall be made on the first day of the seventh month following the Delivery Date.

(c) Notwithstanding any provisions of this Award Agreement or the Plan to the contrary, to the extent necessary to comply with Section 409A, any securities, other Awards or other property that Cullen/Frost may deliver in respect of your DSUs shall not have the effect of deferring delivery or payment, income inclusion, or a substantial risk of forfeiture, beyond the date on which such delivery, payment or inclusion would occur or such risk of forfeiture would lapse, with respect to the Shares that would otherwise have been deliverable (unless the Committee elects a later date for this purpose in a manner otherwise consistent with Section 409A, including, to the extent applicable, the subsequent election provisions of Section 409A(a)(4)(C) of the Code and Treasury Regulations section 1.409A-2(b)).

(d) Notwithstanding the timing provisions of Paragraph 3(b), the delivery of Shares referred to therein shall be made within 90 days after the date of death.

(e) Notwithstanding any provision of Paragraph 4 or Article 18 of the Plan to the contrary, the Dividend Equivalent Rights with respect to each of your outstanding DSUs shall be paid to you within the calendar year in which occurs the date of distribution of any regular cash dividends paid by Cullen/Frost in respect of a Share the record date for which occurs on or after the date of grant. The payment shall be in an amount (less applicable withholding) equal to such regular dividend payment as would have been made in respect of the Shares underlying such outstanding DSUs.

(f) Delivery of Shares in respect of this Award may be made, if and to the extent elected by the Committee, later than the Delivery Date or other date or period specified hereinabove (but, in the case of any Award that constitutes 409A deferred compensation, only to the extent that the later date is permitted under Section 409A).

10. Headings. The headings in this Award Agreement are for the purpose of convenience only and are not intended to define or limit the construction of the provisions hereof.

IN WITNESS WHEREOF, Cullen/Frost and you have caused this Award Agreement to be duly executed and delivered.

Date:

CULLEN/FROST BANKERS, INC.

[•], Chairman

Accepted and Agreed:

[•], Director

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Section 4: EX-10.12 (EXHIBIT 10.12 - CHANGE-IN-CONTROL AGREEMENT WITH 5 EXECUTIVE OFFICERS)

Exhibit 10.12

Change-In-Control Agreements with Five Executive Officers

Form of Change-in-Control Agreements made with the following Executive Officers of Cullen/Frost Bankers, Inc.

1. Robert A. Berman
2. Paul H. Bracher
3. William L. Perotti
4. Jerry Salinas
5. Carol Severyn

All of the above agreements are substantially identical in all material respects, except as to the dates of the agreements and the parties thereto.

Cullen/Frost Bankers, Inc.

Executive Severance Agreement

THIS AGREEMENT is made and entered into as of the [DAY] day of [MONTH], [YEAR], by and between Cullen/Frost Bankers, Inc. (hereinafter referred to as the "Company") and [NAME] (hereinafter referred to as the "Executive").

WHEREAS, the Board of Directors of the Company has approved the Company entering into severance agreements with certain key executives of the Company;

WHEREAS, the Executive is a key executive of the Company;

WHEREAS, should the possibility of a Change in Control of the Company arise, the Board believes it is imperative that the Company and the Board should be able to rely upon the Executive to continue in his/her position, and that the Company should be able to receive and rely upon the Executive's advice, if requested, as to the best interests of the Company and its shareholders without concern that the Executive might be distracted by the personal uncertainties and risks created by the possibility of a Change in Control;

WHEREAS, should the possibility of a Change in Control arise, in addition to his/her regular duties, the Executive may be called upon to assist in the assessment of such possible Change in Control, advise management and the Board as to whether such Change in Control would be in the best interests of the Company and its shareholders, and to take such other actions as the Board might determine to be appropriate; and

WHEREAS, the Company and the Executive wish to amend and restate this Agreement as of the date hereof, to cause this Agreement to be exempt from, or comply with, as applicable, the terms of Section 409A of the Internal Revenue Code of 1986, as amended.

WHEREAS, the Executive and the Company desire that the terms of this Agreement shall completely replace and supersede the provisions set forth in the Executive Severance Agreement between the Company and the Executive, as in effect immediately prior to the date hereof.

NOW THEREFORE, to assure the Company that it will have the continued dedication of the Executive and the availability of his/her advice and counsel notwithstanding the possibility, threat, or occurrence of a Change in Control of the Company, and to induce the Executive to remain in the employ of the Company, and for other good and valuable consideration, the Company and the Executive agree as follows:

Article 1. Establishment, Term, and Purpose

This Agreement will commence on the Effective Date and shall continue in effect for one (1) full year. However, at the end of such one (1) year period and, if extended, at the end of each additional year thereafter, the term of this Agreement shall be extended automatically for one (1) additional year, unless the Committee delivers written notice thirty (30) days prior to the end of such term, or extended term, to each Executive, that the Agreement will not be extended. In such case, the Agreement will terminate at the end of the term, or extended term, then in progress.

However, in the event a Change in Control occurs during the original or any extended term, this Agreement will remain in effect for the longer of: (i) twenty-four (24) months beyond the month in which such Change in Control occurred; or (ii) until all obligations of the Company hereunder have been fulfilled, and until all benefits required hereunder have been paid to the Executive.

Article 2. Definitions

Whenever used in this Agreement, the following terms shall have the meanings set forth below and, when the meaning is intended, the initial letter of the word is capitalized.

2.1 "Base Salary" means the salary of record paid to an Executive as annual salary, excluding amounts received under incentive or other bonus plans, whether or not deferred.

2.2 "Beneficial Owner" shall have the meaning ascribed to such term in Rule 13d-3 of the General Rules and Regulations under the Exchange Act.

2.3 **“Beneficiary”** means the persons or entities designated or deemed designated by the Executive pursuant to Section 11.2 herein.

2.4 **“Board”** means the Board of Directors of the Company.

2.5 **“Cause”** means:

- (a) The Executive’s willful and continued failure to substantially perform his/her duties with the Company (other than any such failure resulting from Disability or occurring after issuance by the Executive of a Notice of Termination for Good Reason), after a written demand for substantial performance is delivered to the Executive that specifically identifies the manner in which the Company believes that the Executive has willfully failed to substantially perform his/her duties, and after the Executive has failed to resume substantial performance of his/her duties on a continuous basis within thirty (30) calendar days of receiving such demand;
- (b) The Executive’s willfully engaging in conduct (other than conduct covered under (a) above) which is demonstrably and materially injurious to the Company, monetarily or otherwise; or
- (c) The Executive’s having been convicted of a felony.

For purposes of this subparagraph, no act, or failure to act, on the Executive’s part shall be deemed “willful” unless done, or omitted to be done, by the Executive not in good faith and without reasonable belief that the action or omission was in the best interests of the Company. The termination of employment of the Executive shall not be deemed to be for Cause unless and until there shall have been delivered to the Executive a copy of a resolution duly adopted by the affirmative vote of not less than two-thirds of the entire membership of the Board (excluding the Executive, if applicable) at a meeting of the Board called and held for such purpose (after reasonable notice is provided to the Executive and the Executive is given an opportunity, together with counsel, to be heard before the Board) finding that, in the good faith opinion of the Board, the Executive is guilty of the conduct described above, and specifying the particulars thereof in detail.

2.6 **“Change in Control”** means any of the following events:

- (a) any “person”(as such term is defined in Section 3(a)(9) of the Securities Exchange Act of 1934 (the “Exchange Act”) and as used in Sections 13(d)(3) and 14(d)(2) of the Exchange Act) is or becomes a “beneficial owner” (as defined in Rule 13d-3 under the Exchange Act), directly or indirectly, of securities of the Company representing 20% or more of the combined voting power of the Company’s then outstanding securities eligible to vote for the election of the Board (the “Company Voting Securities”); provided, however, that the event described in this paragraph (a) shall not be deemed to be a Change in Control by virtue of any of the following acquisitions: (A) by the Company or any Subsidiary, (B) by any employee benefit plan (or related trust) sponsored or maintained by the Company or any Subsidiary, (C) by any underwriter temporarily holding securities pursuant to an offering of such securities or (D) a transaction (other than one described in (b) below) in which Company Voting Securities are acquired from the Company, if a majority of the incumbent Directors approve a resolution providing expressly that the acquisition pursuant to this clause (D) does not constitute a Change in Control under this paragraph (a);
- (b) the consummation of a merger, consolidation, statutory share exchange or similar form of corporate transaction involving the Company or any of its Subsidiaries that requires the approval of the Company’s stockholders, whether for such transaction or the issuance of securities in the transaction (a “Business Combination”), unless immediately following such Business Combination: (A) more than 60% of the total voting power of (x) the corporation resulting from such Business Combination (the “Surviving Corporation”), or (y) if applicable, the ultimate parent corporation that directly or indirectly has beneficial ownership of 100% of the voting securities eligible to elect directors of the Surviving Corporation (the “Parent Corporation”), is represented by Company Voting Securities that were outstanding immediately prior to such Business Combination (or, if applicable, is represented by shares into which such Company Voting Securities were converted pursuant to such Business Combination), and such voting power among (and only among) the holders thereof is in substantially the same proportion as the voting power of such Company Voting Securities among the holders thereof immediately prior to the Business Combination, (B) no person (other than any employee benefit plan (or related trust) sponsored or maintained by the Surviving Corporation or the Parent Corporation) is or becomes the beneficial owner, directly or indirectly, of 20% or more of the total voting power of the outstanding voting securities eligible to elect directors of the Parent Corporation (or, if there is no Parent Corporation, the Surviving Corporation) and (C) at least 50% of the members of the board of directors of the Parent Corporation (or, if there is no Parent Corporation, the Surviving Corporation)

following the consummation of the Business Combination were incumbent Directors at the time of the Board's approval of the execution of the initial agreement providing for such Business Combination; or

- (c) during any period of two consecutive years, individuals who at the beginning of such period constitute the Board of Directors and any new director (other than a director designated by a person who has entered into an agreement with the Company to effect a transaction described in paragraph (a) or (b) of this section) whose election by the Board of Directors or nomination for election by the Company's stockholders was approved by a vote of at least two-thirds of the directors then still in office who either were directors at the beginning of the period or whose election or nomination for election was previously so approved, cease for any reason to constitute a majority thereof; or
- (d) the stockholders of the Company approve a plan of complete liquidation or dissolution of the Company or a sale of all or substantially all of the Company's assets.

Notwithstanding the foregoing, a Change in Control of the Company shall not be deemed to occur solely because any person acquires beneficial ownership of more than 20% of the Company Voting Securities as a result of the acquisition of Company Voting Securities by the Company which reduces the number of Company Voting Securities outstanding; provided, that if after such acquisition by the Company such person becomes the beneficial owner of additional Company Voting Securities that increases the percentage of outstanding Company Voting Securities beneficially owned by such person, a Change in Control of the Company shall then occur. Further, in no event shall a Change in Control be deemed to have occurred, with respect to the Executive, if the Executive is part of a purchasing group which consummates the Change in Control transaction. The Executive shall be deemed "part of a purchasing group" for purposes of the preceding sentence if the Executive is an equity participant in the purchasing company or group (except for: (i) passive ownership of less than three percent (3%) of the stock of the purchasing company; or (ii) ownership of equity participation in the purchasing company or group which is otherwise not significant, as determined prior to the Change in Control by a majority of the nonemployee continuing Directors).

2.7 "Code" means the United States Internal Revenue Code of 1986, as amended, and any successors thereto.

2.8 "Committee" means the Compensation and Benefits Committee of the Board or any other committee appointed by the Board to perform the functions of the Compensation and Benefits Committee.

2.9 "Company" means Cullen/Frost Bankers, Inc., a Texas corporation, or any successor thereto as provided in Article 10 herein.

2.10 "Disability" means complete and permanent inability by reason of illness or accident to perform the duties of the occupation at which the Executive was employed when such disability commenced.

2.11 "Effective Date" means the date of this Agreement set forth above.

2.12 "Effective Date of Termination" means the date on which a Qualifying Termination occurs which triggers the payment of Severance Benefits hereunder.

2.13 "Exchange Act" means the United States Securities Exchange Act of 1934, as amended.

2.14 "Good Reason" shall mean, without the Executive's express written consent, the occurrence of any one or more of the following:

- (a) The assignment of the Executive to duties materially inconsistent with the Executive's authorities, duties, responsibilities, and status (including offices and reporting requirements) as an employee of the Company, or a reduction or alteration in the nature or status of the Executive's authorities, duties, or responsibilities than those in effect immediately preceding the Change in Control;
- (b) The Company's requiring the Executive to be based at a location which is at least fifty (50) miles further from the current primary residence than is such residence from the Company's current headquarters, except for required travel on the Company's business to an extent substantially consistent with the Executive's business obligations as of the Effective Date;
- (c) A material change in the Executive's Base Salary or bonus opportunity as in effect on the Effective Date or as the same shall be increased from time to time;
- (d) A material reduction in the Executive's level of participation in any of the Company's short- and/or long-term incentive compensation plans, or employee benefit or retirement plans, policies, practices, or arrangements in which the Executive participates immediately preceding the Change in Control; provided, however, that reductions in the levels of participation in any such plans shall not be deemed to be "Good Reason" if the Executive's reduced level of participation in each such program remains substantially consistent with the

average level of participation of other executives who have positions commensurate with the Executive's position.

For purposes of this Agreement, long-term incentives shall mean the Cullen Frost Bankers, Inc. 1992 Stock Plan and any other similar plans instituted by the Company;

- (e) The failure of the Company to obtain a satisfactory agreement from any successor to the Company to assume and agree to perform this Agreement, as contemplated in Article 10 herein; or
- (f) Any termination of Executive's employment by the Company that is not effected pursuant to a Notice of Termination.

The existence of Good Reason shall not be affected by the Executive's temporary incapacity due to physical or mental illness not constituting a Disability. The Executive's Retirement shall constitute a waiver of the Executive's rights with respect to any circumstance constituting Good Reason. The Executive's continued employment shall not constitute a waiver of the Executive's rights with respect to any circumstance constituting Good Reason.

2.15 "Notice of Termination" shall mean a written notice which shall indicate the specific termination provision in this Agreement relied upon, and shall set forth in reasonable detail the facts and circumstances claimed to provide a basis for termination of the Executive's employment under the provision so indicated.

2.16 "Person" shall have the meaning ascribed to such term in Section 3(a)(9) of the Exchange Act and used in Sections 13(d) and 14(d) thereof, including a "group" as provided in Section 13(d).

2.17 "Qualifying Termination" means any of the events described in Section 3.2 herein, the occurrence of which triggers the payment of Severance Benefits hereunder.

2.18 "Retirement" means the Executive's voluntary termination of employment other than for Good Reason in a manner which qualifies the Executive to receive immediately payable retirement benefits under the Company's tax-qualified retirement plan or under the successor or replacement of such retirement plan if it is then no longer in effect.

2.19 "Severance Benefits" means the payment of severance compensation as provided in Section 3.3 herein.

2.20 "Target Bonus" shall mean the target bonus amount established under the Company's annual incentive plan.

2.21 "Trust" means the Company grantor trust to be created pursuant to Article 6 of this Agreement.

Article 3. Severance Benefits

3.1 Right to Severance Benefits. The Executive shall be entitled to receive from the Company Severance Benefits, as described in Section 3.3 herein, if there has been a Change in Control of the Company and if, within twenty-four (24) calendar months following the Change in Control, a Qualifying Termination of the Executive has occurred.

The Executive shall not be entitled to receive Severance Benefits if he/she is terminated for Cause, or if his/her employment with the Company ends due to death, Disability, or Retirement or due to a voluntary termination of employment by the Executive without Good Reason.

3.2 Qualifying Termination. The occurrence of any one or more of the following events shall trigger the payment of Severance Benefits to the Executive under this Agreement:

- (a) An involuntary termination of the Executive's employment by the Company for reasons other than Cause within twenty-four (24) calendar months following a Change in Control of the Company pursuant to a Notice of Termination delivered to the Executive by the Company;
- (b) A voluntary termination by the Executive for Good Reason within twenty-four (24) calendar months following a Change in Control of the Company pursuant to a Notice of Termination delivered to the Company by the Executive; or
- (c) The Company or any successor company breaches any of the provisions of this Agreement.

3.3 Description of Severance Benefits. In the event the Executive becomes entitled to receive Severance Benefits, as provided in Sections 3.1 and 3.2 herein, the Company shall pay to the Executive and provide him with the following:

- (a) An amount equal to two (2) times the highest rate of the Executive's annualized Base Salary in effect immediately preceding the Change in Control.

- (b) An amount equal to two (2) times the Executive's highest target bonus established for the year immediately preceding the Change in Control.
- (c) An amount equal to the Executive's unpaid Base Salary, a pro rata amount of the Executive's Target Bonus for the year in which the termination occurs, accrued vacation pay, and earned but not taken vacation pay through the Effective Date of Termination.
- (d) A continuation of the welfare benefits of health care, life and accidental death and dismemberment, and disability insurance coverage for two (2) full years after the Effective Date of Termination. These benefits shall be provided to the Executive at the same premium cost, and at the same coverage level, as in effect as of the Executive's Effective Date of Termination. However, in the event the premium cost and/or level of coverage shall change for all employees of the Company, or for management employees with respect to supplemental benefits, the cost and/or coverage level, likewise, shall change for the Executive in a corresponding manner.

The continuation of these welfare benefits shall be discontinued prior to the end of the two (2) year period in the event the Executive has available substantially similar benefits at a comparable cost from a subsequent employer, as determined by the Committee.
- (e) All long-term incentive awards immediately vest.

The aggregate benefits accrued by the Executive as of the Effective Date of Termination under all other savings and retirement plans sponsored by the Company shall be distributed pursuant to the terms of the applicable plans.

3.4 Termination for Disability. Following a Change in Control of the Company, if an Executive's employment is terminated due to Disability, the Executive shall receive his/her Base Salary through the Effective Date of Termination, at which point in time the Executive's benefits shall be determined in accordance with the Company's disability, retirement, insurance, and other applicable plans and programs then in effect. In the event the Executive's employment is terminated due to Disability, the Executive shall not be entitled to the Severance Benefits described in Section 3.3.

3.5 Termination for Retirement or Death. Following a Change in Control of the Company, if the Executive's employment is terminated by reason of his/her Retirement or death, the Executive's benefits shall be determined in accordance with the Company's retirement, survivor's benefits, insurance, and other applicable programs of the Company then in effect. In the event the Executive's employment is terminated by reason of his/her Retirement or death, the Executive shall not be entitled to the Severance Benefits described in Section 3.3.

3.6 Termination for Cause, or Other Than for Good Reason or Retirement. Following a Change in Control of the Company, if the Executive's employment is terminated either: (a) by the Company for Cause; or (b) by the Executive (other than for Retirement, Good Reason, or under circumstances giving rise to a Qualifying Termination described in Section 3.2(c) herein), the Company shall pay the Executive his/her full Base Salary and accrued vacation through the Effective Date of Termination, at the rate then in effect, plus all other amounts to which the Executive is entitled under any compensation plans of the Company, at the time such payments are due, and the Company shall have no further obligations to the Executive under this Agreement.

3.7 Notice of Termination. Any termination of employment by the Company or by the Executive for Good Reason shall be communicated by a Notice of Termination.

Article 4. Form and Timing of Severance Benefits

4.1 Form and Timing of Severance Benefits. The Severance Benefits described in Sections 3.3(a), 3.3(b), and 3.3(c) herein shall be paid in cash to the Executive in a single lump sum as soon as practicable following the Effective Date of Termination, but in no event beyond thirty (30) days after such date (with the actual payment date during such 30-day period to be determined by the Company in its discretion).

4.2 Withholding of Taxes. The Company shall be entitled to withhold from any amounts payable under this Agreement all taxes as legally shall be required (including, without limitation, any United States federal taxes and any other state, city, or local taxes).

Article 5. Excise Tax Equalization Payment

5.1 Excise Tax Equalization Payment. In the event that the Executive becomes entitled to Severance Benefits or any other payment or benefit under this Agreement, or under any other agreement with or plan of the Company (in the aggregate, the "Total Payments"), if all or any part of the Total Payments will be subject to the tax (the "Excise Tax") imposed by Section 4999 of the Code (or any similar tax that may hereafter be imposed), the Company shall pay to the Executive in cash an additional amount (the "Gross-Up Payment") such that the net amount retained by the Executive after deduction of any

Excise Tax upon the Total Payments and any federal, state, and local income tax, penalties, interest, and Excise Tax upon the Gross-Up Payment provided for by this Section 5.1 (including FICA and FUTA), shall be equal to the Total Payments. Such payment shall be made by the Company to the Executive as soon as practical (but in any event no later than thirty (30) days after the date the Excise Tax is remitted).

5.2 Tax Computation. For purposes of determining whether any of the Total Payments will be subject to the Excise Tax and the amounts of such Excise Tax:

- (a) Any other payments or benefits received or to be received by the Executive in connection with a Change in Control of the Company or the Executive's termination of employment (whether pursuant to the terms of this Agreement or any other plan, arrangement, or agreement with the Company, or with any Person whose actions result in a Change in Control of the Company or any Person affiliated with the Company or such Persons) shall be treated as "parachute payments" within the meaning of Section 280G(b)(2) of the Code, and all "excess parachute payments" within the meaning of Section 280G(b)(1) shall be treated as subject to the Excise Tax, unless in the opinion of tax counsel as supported by the Company's independent auditors and acceptable to the Executive, such other payments or benefits (in whole or in part) do not constitute parachute payments, or unless such excess parachute payments (in whole or in part) represent reasonable compensation for services actually rendered within the meaning of Section 280G(b)(4) of the Code in excess of the base amount within the meaning of Section 280G(b)(3) of the Code, or are otherwise not subject to the Excise Tax;
- (b) The amount of the Total Payments which shall be treated as subject to the Excise Tax shall be equal to the lesser of: (i) the total amount of the Total Payments; or (ii) the amount of excess parachute payments within the meaning of Section 280G(b)(1) (after applying clause (a) above); and
- (c) The value of any noncash benefits or any deferred payment or benefit shall be determined by the Company's independent auditors in accordance with the principles of Sections 280G(d)(3) and (4) of the Code.

For purposes of determining the amount of the Gross-Up Payment, the Executive shall be deemed to pay federal income taxes at the highest marginal rate of federal income taxation in the calendar year in which the Gross-Up Payment is to be made, and state and local income taxes at the highest marginal rate of taxation in the state and locality of the Executive's residence on the Effective Date of Termination, net of the maximum reduction in federal income taxes which could be obtained from deduction of such state and local taxes.

5.3 Subsequent Recalculation. In the event the Internal Revenue Service adjusts the computation of the Company under Section 5.2 herein so that the Executive did not receive the greatest net benefit, the Company shall reimburse the Executive for the full amount necessary to make the Executive whole, plus a market rate of interest, as determined by the Committee, within 30 days after such adjustment.

Article 6. The Company's Payment Obligation

The Company's obligation to make the payments and the arrangements provided for herein shall be absolute and unconditional, and shall not be affected by any circumstances, including, without limitation, any offset, counterclaim, recoupment, defense, or other right which the Company may have against the Executive or anyone else. All amounts payable by the Company hereunder shall be paid without notice or demand. Each and every payment made hereunder by the Company shall be final, and the Company shall not seek to recover all or any part of such payment from the Executive or from whomsoever may be entitled thereto, for any reasons whatsoever.

The Executive shall not be obligated to seek other employment in mitigation of the amounts payable or arrangements made under any provision of this Agreement, and the obtaining of any such other employment shall in no event effect any reduction of the Company's obligations to make the payments and arrangements required to be made under this Agreement, except to the extent provided in Section 3.3(d) herein.

Article 7. Legal Remedies

7.1 Payment of Legal Fees. To the extent permitted by law, the Company shall pay all legal fees, costs of litigation, prejudgment interest, and other expenses incurred in good faith by the Executive as a result of the Company's refusal to provide the Severance Benefits to which the Executive becomes entitled under this Agreement, or as a result of the Company's contesting the validity, enforceability, or interpretation of this Agreement, or as a result of any conflict (including conflicts related to the calculation of parachute payments) between the parties pertaining to this Agreement. Such costs and fees shall be reimbursed as soon as practicable after the Executive makes a claim for reimbursement (but in no event later than the end of the year following the year in which the costs are incurred).

7.2 Arbitration. Any dispute or controversy arising under or in connection with this Agreement shall be settled by arbitration, conducted before a panel of three (3) arbitrators sitting in a location selected by the Executive within fifty (50) miles from the location of his/her employment with the Company, in accordance with the rules of the American Arbitration Association then in effect.

Judgment may be entered on the award of the arbitrator in any court having proper jurisdiction. All expenses of such arbitration, including the fees and expenses of the counsel for the Executive, shall be borne by the Company.

Article 8. Successors and Assignment

8.1 Successors to the Company. The Company will require any successor (whether direct or indirect, by purchase, merger, consolidation, or otherwise) of all or substantially all of the business and/or assets of the Company or of any division or subsidiary thereof to expressly assume and agree to perform the Company's obligations under this Agreement in the same manner and to the same extent that the Company would be required to perform them if no such succession had taken place. The date on which any such succession becomes effective shall be deemed to be the date of the Change in Control.

8.2 Assignment by the Executive. This Agreement shall inure to the benefit of and be enforceable by the Executive's personal or legal representatives, executors, administrators, successors, heirs, distributees, devisees, and legatees. If the Executive dies while any amount would still be payable to him hereunder had he/she continued to live, all such amounts, unless otherwise provided herein, shall be paid in accordance with the terms of this Agreement to the Executive's Beneficiary. If the Executive has not named a Beneficiary, then such amounts shall be paid to the Executive's devisee, legatee, or other designee, or if there is no such designee, to the Executive's estate.

Article 9. Miscellaneous

9.1 Employment Status. Except as may be provided under any other agreement between the Executive and the Company, the employment of the Executive by the Company is "at will," and may be terminated by either the Executive or the Company at any time, subject to applicable law.

9.2 Beneficiaries. The Executive may designate one or more persons or entities as the primary and/or contingent Beneficiaries of any Severance Benefits owing to the Executive under this Agreement. Such designation must be in the form of a signed writing acceptable to the Committee. The Executive may make or change such designations at any time.

9.3 Severability. In the event any provision of this Agreement shall be held illegal or invalid for any reason, the illegality or invalidity shall not affect the remaining parts of the Agreement, and the Agreement shall be construed and enforced as if the illegal or invalid provision had not been included. Further, the captions of this Agreement are not part of the provisions hereof and shall have no force and effect.

9.4 Modification. No provision of this Agreement may be modified, waived, or discharged unless such modification, waiver, or discharge is agreed to in writing and signed by the Executive and by an authorized member of the Committee, or by the respective parties' legal representatives and successors.

9.5 Applicable Law. To the extent not preempted by the laws of the United States, the laws of the state of Texas shall be the controlling law in all matters relating to this Agreement.

9.6 Code Section 409A. The Severance Benefits and other benefits under this Agreement are intended to comply with Section 409A of the Code or to otherwise be exempt therefrom.

- (a) Notwithstanding anything herein to the contrary, if (a) the Executive is a "specified employee" as determined pursuant to Section 409A of the Code as of the date of the Executive's "separation from service" (within the meaning of Treas. Reg. 1.409A-1(h)) and if any Severance Benefits or other payment or benefit provided for in this Agreement or otherwise both (i) constitutes a "deferral of compensation" within the meaning of Section 409A of the Code and (ii) cannot be paid or provided in the manner otherwise provided without subjecting the Executive to "additional tax", interest or penalties under Section 409A of the Code, then any such Severance Benefit or other payment or benefit that is payable during the first six months following the Executive's "separation from service" shall be paid or provided to the Executive in a cash lump-sum on the first business day of the seventh calendar month following the month in which the Executive's "separation from service" occurs. Any payment or benefit due upon a termination of the Executive's employment that represents a "deferral of compensation" within the meaning of Section 409A shall only be paid or provided to the Executive upon a "separation from service".
- (b) Notwithstanding anything to the contrary in Section 3.3 of this Agreement or elsewhere, any payment or benefit under Section 3.3 or otherwise that is exempt from Section 409A pursuant to Treas. Reg. 1.409A-1(b)(9)(v)(A) or (C) shall be paid or provided to the Executive only to the extent that the expenses are not incurred, or the benefits are not provided, beyond the last day of the second taxable year of the Executive

following the taxable year of the Executive in which the “separation from service” occurs; and provided further that such expenses are reimbursed no later than the last day of the third taxable year following the taxable year of the Executive in which the “separation from service” occurs. Except as otherwise expressly provided herein, to the extent any expense reimbursement or the provision of any in-kind benefit under this Agreement is determined to be subject to Section 409A of the Code, the amount of any such expenses eligible for reimbursement, or the provision of any in-kind benefit, in one calendar year shall not affect the expenses eligible for reimbursement in any other taxable year (except for any life-time or other aggregate limitation applicable to medical expenses), in no event shall any expenses be reimbursed after the last day of the calendar year following the calendar year in which the Executive incurred such expenses, and in no event shall any right to reimbursement or the provision of any in-kind benefit be subject to liquidation or exchange for another benefit.

- (c) For the purposes of this Agreement, each payment made pursuant to Section 3.3 shall be deemed to be separate payments, amounts payable under Section 3.3 of this Agreement shall be deemed not to be a “deferral of compensation” subject to Section 409A of the Code to the extent provided in the exceptions in Treas. Reg. Sections 1.409A-1(b)(4) (“short-term deferrals”) and (b)(9) (“separation pay plans,” including the exception under subparagraph (iii)) and other applicable provisions of Treas. Reg. Section 1.409A-1 through A-6.

IN WITNESS WHEREOF, the parties have executed this Agreement on this [DAY] day of [MONTH], [YEAR].

Cullen/Frost Bankers, Inc.

Executive

By: _____

Its: _____

Attest: _____

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Section 5: EX-10.13 (EXHIBIT 10.13 - AMENDMENT TO CHANGE-IN-CONTROL AGREEMENTS WITH 7 EXECUTIVE OFFICER)

Exhibit 10.13

Amendments to Change-In-Control Agreements with Seven Executive Officers

Form of Amendments to Change-in-Control Agreements made with the following Executive Officers of Cullen/Frost Bankers, Inc.

1. Robert A. Berman
2. Paul H. Bracher
3. Patrick B. Frost
4. Phillip D. Green
5. William L. Perotti
6. Jerry Salinas
7. Carol Severyn

All of the above amendments to agreements are substantially identical in all material respects, except as to the dates of the agreements and the parties thereto.

AMENDMENT
TO CULLEN/FROST BANKERS, INC.
EXECUTIVE SEVERANCE AGREEMENT

WHEREAS, Cullen/Frost Bankers, Inc. (the “Company”) and [NAME] (the “Executive”) entered into an Executive Severance Agreement, dated [MONTH] [DAY], [YEAR] (the “Agreement”);

WHEREAS, the Company and the Executive have agreed to amend the Agreement, effective as of [MONTH] [DAY], [YEAR] (the “Effective Date”) to eliminate the provisions of the Agreement providing for gross up of excise taxes imposed by Section 4999 of the Internal Revenue Code of 1986, as amended (the “Code”) and to provide for cutback of amounts under the Plan so that payments to an individual do not exceed the safe harbor amount under Section 280G of the Code if such cutback would put the Executive in a net better after-tax position than paying the excise tax.

NOW THEREFORE, in consideration the Executive’s continued employment with the Company and for other good and valuable consideration, the receipt of which is hereby acknowledged, effective as the Effective Date Article 5 is amended in its entirety to read as follows:

Article 5. Treatment of Parachute Payments

5.1 280G Net-Better Cut Back. Anything in this Agreement to the contrary notwithstanding, in the event it shall be determined that (i) any payment, award, benefit or distribution (or any acceleration of any payment, award, benefit or distribution) by the Company (or any of its affiliated entities) or any entity which effectuates a Change in Control (or any of its affiliated entities) to or for the benefit of Executive (whether pursuant to the terms of this Agreement or otherwise) (the “Payments”) would be subject to the excise tax imposed by Section 4999 of the Code (the “Excise Tax”), and (ii) the reduction of the amounts payable to Executive under this Agreement to the maximum amount that could be paid to Executive without giving rise to the Excise Tax (the “Safe Harbor Cap”) would provide the Executive with a greater after tax amount than if such amounts were not reduced, then the amounts payable to Executive under this Agreement shall be reduced (but not below zero) to the Safe Harbor Cap. The reduction of the amounts payable hereunder, if applicable, shall be made by reducing first the payments under Section 3.3(a), then the payments under Section 3.3(b), then the benefits under Section 3.3(d) and then the accelerated vesting under Section 3.3(e), unless an alternative method of reduction is elected by Executive. For purposes of reducing the Payments to the Safe Harbor Cap, only amounts payable under this Agreement (and no other Payments) shall be reduced. If the reduction of the amounts payable hereunder would not result in a greater after tax result to Executive, no amounts payable under this Agreement shall be reduced pursuant to this provision.

5.2 Determination by Accounting Firm. All determinations required to be made under this Article 5 shall be made by the public accounting firm that is retained by the Company as of the date immediately prior to the Change in Control (the “Accounting Firm”) which shall provide detailed supporting calculations both to the Company and Executive within fifteen (15) business days of the receipt of notice from the Company or the Executive that there has been a Payment, or such earlier time as is requested by the Company. Notwithstanding the foregoing, in the event (i) the Board shall determine prior to the Change in Control that the Accounting Firm is precluded from performing such services under applicable auditor independence rules or (ii) the Audit Committee of the Board determines that it does not want the Accounting Firm to perform such services because of auditor independence concerns or (iii) the Accounting Firm is serving as accountant or auditor for the individual, entity or group effecting the Change in Control, the Board shall appoint another nationally recognized public accounting firm to make the determinations required hereunder (which accounting firm shall then be referred to as the Accounting Firm hereunder). If payments are reduced to the Safe Harbor Cap, the Accounting Firm shall provide a reasonable opinion to Executive that he or she is not required to report any Excise Tax on his or her federal income tax return. All fees, costs and expenses (including, but not limited to, the costs of retaining experts) of the Accounting Firm shall be borne by the Company. If the Accounting Firm determines that no Excise Tax is payable by Executive, it shall furnish Executive with a written opinion to such effect, and to the effect that failure to report the Excise Tax, if any, on Executive’s applicable federal income tax return will not result in the imposition of a negligence or similar penalty. In the event the Accounting Firm determines that the Payments shall be reduced to the Safe Harbor Cap, it shall furnish Executive with a written opinion to such effect. The determination by the Accounting Firm shall be binding upon the Company and Executive (except as provided in Section 5.3 below).

5.3 Subsequent Recalculation. In the event the Internal Revenue Service adjusts the computation of the Company under Section 5.2 herein so that the Executive did not receive the greatest net benefit, the Company shall

reimburse the Executive for the full amount necessary to make the Executive whole, plus a market rate of interest, as determined by the Committee, within 30 days after such adjustment.

IN WITNESS WHEREOF, the Company and the Executive have caused this amendment to be executed by its duly authorized officers as of the Effective Date.

CULLEN/FROST BANKERS, INC.

[NAME AND TITLE OF CULLEN/FROST SIGNATORY]

AGREED AND ACKNOWLEDGED

[NAME]

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Section 6: EX-21.1 (EXHIBIT 21.1 SUBSIDIARIES OF CULLEN/FROST BANKERS, INC.)

Exhibit 21.1

Subsidiaries of Cullen/Frost Bankers, Inc.

<u>Name of Subsidiary</u>	<u>State or Other Jurisdiction of Incorporation or Organization</u>	<u>Percentage of Voting Securities Owned by Cullen/Frost Bankers, Inc.</u>
Cullen/Frost Capital Trust II	Delaware	100%
WNB Capital Trust I	Delaware	100%
Frost Bank	Texas	100%
Main Plaza Corporation	Texas	100%
Frost Insurance Agency, Inc.	Texas	100%
Frost Brokerage Services, Inc.	Texas	100%
Frost Investment Advisors, LLC	Delaware	100%
Frost Investment Services, LLC	Delaware	100%
Tri-Frost Corporation	Texas	100%
Carton Service Corporation	Texas	100%

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Section 7: EX-23.1 (EXHIBIT 23.1 - CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM)

Exhibit 23.1

Consent of Independent Registered Public Accounting Firm

We consent to the incorporation by reference in the following Registration Statements:

1. Registration Statement (Form S-8 No. 333-203755) pertaining to the 2015 Omnibus Incentive Plan,
2. Registration Statement (Form S-8 No. 333-143397) pertaining to the 2007 Outside Director Incentive Plan,
3. Registration Statements (Form S-8 No. 333-191964, No. 333-127341 and No. 333-158903) pertaining to the 2005 Omnibus Incentive Plan,
4. Registration Statements (Form S-8 No. 333-157236, No. 33-37500 and No.333-108321) pertaining to The 401(k) Stock Purchase Plan for Employees of Cullen/Frost Bankers, Inc. and its Affiliates,
5. Registration Statement (Form S-8 No. 33-39478) pertaining to the 1991 Thrift Incentive Stock Purchase Plan for Employees of Cullen/Frost Bankers, Inc. and its Affiliates, and
6. Registration Statement (Form S-3 No. 333-214987) of Cullen/Frost Bankers, Inc.;

of our reports dated February 4, 2020, with respect to the consolidated financial statements of Cullen/Frost Bankers, Inc., and the effectiveness of internal control over financial reporting of Cullen/Frost Bankers, Inc., included in the Annual Report (Form 10-K) for the year ended December 31, 2019.

San Antonio, Texas
February 4, 2020

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Section 8: EX-24.1 (EXHIBIT 24.1 - POWER OF ATTORNEY)

EXHIBIT 24.1

POWER OF ATTORNEY

KNOW ALL MEN BY THESE PRESENTS, that each person whose signature appears below constitutes and appoints Patrick B. Frost, Phillip D. Green, and Jerry Salinas, and each of them, his or her true and lawful attorneys-in-fact and agents, and with power of substitution and resubstitution, for him/her and in his/her name, place and stead, and in any and all capacities, to sign the Annual Report on Form 10-K of Cullen/Frost Bankers, Inc. for the fiscal year ended December 31, 2019, to sign any and all amendments thereto, and to file such Annual Report and amendments, with all exhibits thereto, and other documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorneys-in-fact and agents, and each of them, full power and authority to do and perform each and every act and thing requisite or necessary to be done in and about the premises, as fully to all intents and purposes as he/she might or could do in person, hereby ratifying and confirming all that said attorneys-in-fact and agents or either of them, or their or his substitute or substitutes, may lawfully do or cause to be done by virtue hereof.

<u>Signature</u>	<u>Title</u>	<u>Date</u>
<u>/s/ PHILLIP D. GREEN</u> Phillip D. Green	Chairman of the Board, Director and Chief Executive Officer (Principal Executive Officer)	January 29, 2020
<u>/s/ JERRY SALINAS</u> Jerry Salinas	Group Executive Vice President and Chief Financial Officer (Principal Financial Officer and Principal Accounting Officer)	January 29, 2020
<u>/s/ CARLOS ALVAREZ</u> Carlos Alvarez	Director	January 29, 2020
<u>/s/ CHRIS AVERY</u> Chris Avery	Director	January 29, 2020
<u>/s/ CYNTHIA COMPARIN</u> Cynthia Comparin	Director	January 29, 2020
<u>/s/ SAM DAWSON</u> Sam Dawson	Director	January 29, 2020
<u>/s/ CRAWFORD H. EDWARDS</u> Crawford H. Edwards	Director	January 29, 2020
<u>/s/ PATRICK B. FROST</u> Patrick B. Frost	Director and President of Frost Bank	January 29, 2020
<u>/s/ DAVID J. HAEMISEGGER</u> David J. Haemisegger	Director	January 29, 2020
<u>/s/ KAREN E. JENNINGS</u> Karen E. Jennings	Director	January 29, 2020
<u>/s/ RICHARD M. KLEBERG, III</u> Richard M. Kleberg, III	Director	January 29, 2020
<u>/s/ CHARLES W. MATTHEWS</u> Charles W. Matthews	Director	January 29, 2020
<u>/s/ IDA CLEMENT STEEN</u> Ida Clement Steen	Director	January 29, 2020
<u>/s/ GRAHAM WESTON</u> Graham Weston	Director	January 29, 2020
<u>/s/ HORACE WILKINS, JR</u> Horace Wilkins, Jr.	Director	January 29, 2020

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Section 9: EX-31.1 (EXHIBIT 31.1 - CERTIFICATION OF THE CHIEF EXECUTIVE OFFICER)

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

I, Phillip D. Green, certify that:

1. I have reviewed this Annual Report on Form 10-K 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.

February 4, 2020

/s/ Phillip D. Green

Phillip D. Green
Chief Executive Officer

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Section 10: EX-31.2 (EXHIBIT 31.2 - CERTIFICATION OF THE CHIEF FINANCIAL OFFICER)

Exhibit 31.2

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

I, Jerry Salinas, certify that:

1. I have reviewed this Annual Report on Form 10-K 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.

February 4, 2020

/s/ Jerry Salinas

Jerry Salinas
Group Executive Vice President and
Chief Financial Officer

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Section 11: EX-32.1 (EXHIBIT 32.1 - SECTION 1350 CERTIFICATION OF THE CHIEF EXECUTIVE OFFICER)

Exhibit 32.1

Section 1350 Certification of the Chief Executive Officer

Pursuant to Subsections (a) and (b) of Section 1350, Chapter 63 of Title 18, 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 Annual Report on Form 10-K for the year ended December 31, 2019 (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

February 4, 2020

The forgoing certification is being furnished solely pursuant to Subsections (a) and (b) of Section 1350, Chapter 63 of Title 18, 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.

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Section 12: EX-32.2 (EXHIBIT 32.2 - SECTION 1350 CERTIFICATION OF THE CHIEF FINANCIAL OFFICER)

Exhibit 32.2

Section 1350 Certification of the Chief Financial Officer

Pursuant to Subsections (a) and (b) of Section 1350, Chapter 63 of Title 18, 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 Annual Report on Form 10-K for the year ended December 31, 2019 (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

February 4, 2020

The forgoing certification is being furnished solely pursuant to Subsections (a) and (b) of Section 1350, Chapter 63 of Title 18, 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.

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