

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: 000-15637

SVB FINANCIAL GROUP
(Exact name of registrant as specified in its charter)

Delaware 91-1962278
(State or other jurisdiction of incorporation or organization) (I.R.S. Employer Identification No.)

3003 Tasman Drive, Santa Clara, California 95054-1191
(Address of principal executive offices) (Zip Code)

(408) 654-7400
(Registrant's telephone number, including area code)

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

<u>Title of each class</u>	<u>Trading Symbol</u>	<u>Name of each exchange on which registered</u>
Common stock, par value \$0.001 per share	SIVB	The Nasdaq Stock Market LLC
Depository shares, each representing a 1/40th ownership interest in a share of 5.250% Fixed-Rate Non-Cumulative Perpetual Preferred Stock, Series A	SIVBP	The Nasdaq Stock Market LLC

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

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

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

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

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

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

Large accelerated filer	<input checked="" type="checkbox"/>	Accelerated filer	<input type="checkbox"/>
Non-accelerated filer	<input type="checkbox"/>	Smaller reporting company	<input type="checkbox"/>
		Emerging growth company	<input type="checkbox"/>

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

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

The aggregate market value of the voting and non-voting common equity securities held by non-affiliates of the registrant as of June 30, 2019, the last business day of the registrant's most recently completed second fiscal quarter, based upon the closing price of its common stock on such date, on the NASDAQ Global Select Market was \$11,580,246,470.

At January 31, 2020, 51,622,841 shares of the registrant's common stock (\$0.001 par value) were outstanding.

<u>Documents Incorporated by Reference</u>	<u>Parts of Form 10-K Into Which Incorporated</u>
Definitive proxy statement for the Company's 2020 Annual Meeting of Stockholders to be filed within 120 days of the end of the fiscal year ended December 31, 2019	Part III

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Glossary of Frequently-used Acronyms in this Report

AICPA— American Institute of Certified Public Accountants
AFS— Available-for-Sale
ALL— Allowance for loan losses
ASC— Accounting Standards Codification
ASU— Accounting Standards Update
CET 1 — Common Equity Tier 1
DBO— California Department of Business Oversight - Division of Financial Institutions
EHOP— Employee Home Ownership Program of the Company
EPS— Earnings Per Share
ERI— Energy and Resource Innovation
ESOP— Employee Stock Ownership Plan of the Company
ESPP— 1999 Employee Stock Purchase Plan of the Company
FASB— Financial Accounting Standards Board
FDIC— Federal Deposit Insurance Corporation
FHLB— Federal Home Loan Bank
FINRA— Financial Industry Regulatory Authority
FRB— Federal Reserve Bank
FTE— Full-Time Employee
FTP— Funds Transfer Pricing
GAAP— Accounting principles generally accepted in the United States of America
HTM— Held-to-Maturity
IFRS— International Financial Reporting Standards
IPO— Initial Public Offering
IRS— Internal Revenue Service
IT— Information Technology
LIBOR— London Interbank Offered Rate
M&A— Mergers and Acquisitions
OTTI— Other Than Temporary Impairment
SEC— Securities and Exchange Commission
SPD-SVB— SPD Silicon Valley Bank Co. Ltd. (the Bank's joint venture bank in China)
TDR— Troubled Debt Restructuring
VIE— Variable Interest Entity

Forward-Looking Statements

This Annual Report on Form 10-K, including in particular “Management’s Discussion and Analysis of Financial Condition and Results of Operations” under Part II, Item 7 of this report, contains forward-looking statements within the meaning of the safe harbor provisions of the Private Securities Litigation Reform Act of 1995. In addition, management has in the past and may in the future make forward-looking statements to analysts, investors, representatives of the media and others. Forward-looking statements are statements that are not historical facts and represent only our beliefs regarding future events. Broadly speaking, forward-looking statements include, but are not limited to, the following:

- Financial projections, including with respect to our net interest income, noninterest income, earnings per share, noninterest expenses (including professional services, compliance, compensation and other costs), cash flows, balance sheet positions, capital expenditures, liquidity and capitalization or other financial items;
- Descriptions of our strategic initiatives, plans or objectives for future operations, including pending sales or acquisitions;
- Forecasts of private equity and venture capital funding and investment levels;
- Forecasts of future interest rates, economic performance, and income from investments;
- Forecasts of expected levels of provisions for loan losses, loan growth and client funds; and
- Descriptions of assumptions underlying or relating to any of the foregoing.

You can identify these and other forward-looking statements by the use of words such as “becoming,” “may,” “will,” “should,” “could,” “would,” “predict,” “potential,” “continue,” “anticipate,” “believe,” “estimate,” “assume,” “seek,” “expect,” “plan,” “intend,” the negative of such words or comparable terminology. Forward-looking statements are neither historical facts nor assurances of future performance. Although we believe that the expectations reflected in these forward-looking statements are reasonable, we have based these expectations on our current beliefs as well as our assumptions, and such expectations may prove to be incorrect. Because forward-looking statements relate to the future, they are subject to inherent uncertainties, risks and changes in circumstances that are difficult to predict and many of which are outside of our control. Our actual results of operations and financial performance could differ significantly from those expressed in or implied by our management’s forward-looking statements. Important factors that could cause our actual results and financial condition to differ from the expectations stated in the forward-looking statements include, among others:

- Market and economic conditions, including the interest rate environment, and the associated impact on us;
- The credit profile and credit quality of our loan portfolio and volatility of our levels of nonperforming assets and charge-offs;
- The adequacy of our allowance for loan losses and the need to make provisions for loan losses for any period;
- The borrowing needs of our clients;
- The sufficiency of our capital and liquidity positions;
- The levels of loans, deposits and client investment fund balances;
- The performance of our portfolio investments as well as the general condition of the public and private equity and mergers and acquisitions markets and their impact on our investments, including equity warrant assets, venture capital and private equity funds and direct equity investments;
- Our overall investment plans and strategies as well as the realization, timing, valuation and performance of our equity or other investments;
- The levels of public offerings, mergers and acquisitions and venture capital investment activity of our clients that may impact the borrowing needs of our clients and demand for our investment banking and other services;
- The occurrence of fraudulent activity, including breaches of our information security or cyber security-related incidents;
- Business disruptions and interruptions due to natural disasters and other external events;
- The impact on our reputation and business from our interactions with business partners, counterparties, service providers and other third parties;
- Expansion of our business internationally, and the impact of international market and economic events on us;
- Our ability to maintain or increase our market share through successfully implementing our business strategy and undertaking new business initiatives, including through the integration of SVB Leerink;
- The impact of governmental policy, legal requirements and regulations including regulations promulgated by the Board of Governors of the Federal Reserve System (the “Federal Reserve”), and other regulatory requirements;
- The impact of lawsuits and claims, as well as legal or regulatory proceedings;
- The impact of changes in accounting standards and tax laws;
- The levels of equity capital available to our client or portfolio companies;
- The effectiveness of our risk management framework and quantitative models; and
- Other factors as discussed in “Risk Factors” under Part I, Item 1A of this report.

Accordingly, you are cautioned not to place undue reliance on forward-looking statements. We urge investors to consider all of these factors, among others, carefully in evaluating the forward-looking statements contained in this Annual Report on Form 10-K. All subsequent written or oral forward-looking statements attributable to us or persons acting on our behalf are expressly qualified in their entirety by these cautionary statements. The forward-looking statements included in this filing are made only as of the date of this filing. We assume no obligation and do not intend to revise or update any forward-looking statements contained in this Annual Report on Form 10-K, except as required by law.

PART I.

ITEM 1. BUSINESS

General

SVB Financial Group ("SVB Financial") is a diversified financial services company, as well as a bank holding company and a financial holding company. SVB Financial was incorporated in the state of Delaware in March 1999. Through our various subsidiaries and divisions, we offer a diverse set of banking and financial products and services to clients across the United States, as well as in key international innovation markets. For more than 35 years, we have been dedicated to helping support entrepreneurs and clients of all sizes and stages throughout their life cycles, primarily in the technology, life science/healthcare, private equity/venture capital and premium wine industries.

We offer commercial and private banking products and services through our principal subsidiary, Silicon Valley Bank (the "Bank"), which is a California state-chartered bank founded in 1983 and a member of the Federal Reserve System. The Bank and its subsidiaries also offer asset management, private wealth management and other investment services. In addition, through SVB Financial's other subsidiaries and divisions, we offer investment banking services and non-banking products and services, such as funds management and M&A advisory services. We focus on cultivating strong relationships with firms within the private equity and venture capital community worldwide, many of which are also our clients and may invest in our corporate clients.

As of December 31, 2019, on a consolidated basis, we had total assets of \$71.0 billion, total investment securities of \$29.1 billion, total loans, net of unearned income, of \$33.2 billion, total deposits of \$61.8 billion and total SVB Financial stockholders' equity of \$6.5 billion.

Headquartered in Santa Clara, CA, we operate in key innovation markets in the United States and around the world. Our corporate office is located at 3003 Tasman Drive, Santa Clara, California 95054, and our telephone number is (408) 654-7400.

When we refer to "SVB Financial Group," "SVBFG," the "Company," "we," "our," "us" or use similar words, we mean SVB Financial Group and all of its subsidiaries collectively, including the Bank. When we refer to "SVB Financial" or the "Parent" we are referring only to our parent company entity, SVB Financial Group (not including subsidiaries).

Business Overview

For reporting purposes, SVB Financial Group has four operating segments for which we report financial information in this report: Global Commercial Bank, SVB Private Bank, SVB Capital and SVB Leerink.

Global Commercial Bank

Our Global Commercial Bank segment is comprised of results primarily from our Commercial Bank, our Global Funds Banking (formerly Private Equity) Division, SVB Wine and our Debt Fund Investments, each as further described below.

Commercial Bank. Our Commercial Bank products and services are provided by the Bank and its subsidiaries to commercial clients primarily in the technology, life science/healthcare and private equity/venture capital industries. The Bank provides solutions to the financial needs of commercial clients through credit, treasury management, foreign exchange, trade finance and other services. We broadly serve clients within the U.S., as well as non-U.S. clients in key international innovation markets.

Through our credit products and services, the Bank extends loans and other credit facilities to commercial clients. In particular, credit products and services include traditional term loans, equipment loans, asset-based loans, revolving lines of credit, accounts-receivable-based lines of credit, capital call lines of credit and credit cards. These loans may be secured by clients' assets or future cash flows or may be unsecured.

The Bank's treasury management products and services include a wide range of deposits and receivables, payments and cash management solutions accessible through our expanding online and mobile banking platforms. Deposit products include business and analysis checking accounts, money market accounts, multi-currency accounts, in-country bank accounts and sweep accounts. In connection with deposit services, the Bank provides receivables services, which include merchant services, remote capture, lockbox, electronic deposit capture and fraud control services. Payment and cash management products and services include wire transfer and automated clearing house payment services to enable clients to transfer funds more quickly, as well as business bill pay, business credit and debit cards, account analysis and disbursement services.

The Bank's foreign exchange and trade products and services help to facilitate clients' global finance and business needs. These products and services include foreign exchange services that help commercial clients to manage their foreign currency needs and risks through the purchase and sale of currencies, swaps and hedges on the global inter-bank market. The Bank also offers letters of credit, including export, import and standby letters of credit, to enable clients to ship and receive goods globally.

The Bank and its subsidiaries also offer a variety of investment services and solutions to its clients that enable them to more effectively manage their assets. For example, through its registered investment advisory subsidiary, SVB Asset Management, the Bank offers discretionary investment advisory services based on its clients' investment policies, strategies and objectives. The Bank also offers investment solutions through our repurchase agreement program.

Global Funds Banking (formerly Private Equity) Division. Our Global Funds Banking Division provides banking products and services primarily to our global private equity and venture capital clients.

SVB Wine. SVB Wine provides banking products and services to our premium wine industry clients, including vineyard development loans.

Debt Fund Investments. Debt Fund Investments is comprised of our investments in debt funds in which we are a strategic investor: (i) funds managed by Gold Hill Capital, which provide secured debt to private companies of all stages, and (ii) funds managed by Partners for Growth LLC, which provide secured debt primarily to mid-stage and late-stage companies.

SVB Private Bank

SVB Private Bank is the private banking division of the Bank, which provides a range of personal financial solutions for consumers. Our clients are primarily private equity/venture capital professionals and executive leaders of the innovation companies they support. We offer a customized suite of private banking services, including mortgages, home equity lines of credit, restricted stock purchase loans, capital call lines of credit and other secured and unsecured lending products. We also help our private banking clients meet their cash management needs by providing deposit account products and services, including checking, money market, certificates of deposit accounts, online banking, credit cards and other personalized banking services. SVB Private Bank also includes SVB Wealth Advisory, an investment advisory subsidiary of the Bank, which provides private wealth management services to individual clients.

SVB Capital

SVB Capital is the venture capital investment arm of SVB Financial Group, which focuses primarily on funds management. SVB Capital manages over \$4.5 billion of funds on behalf of third party limited partner investors and, on a more limited basis, SVB Financial Group. The SVB Capital family of funds is comprised of direct venture funds that invest in companies and funds of funds that invest in other venture capital funds. SVB Capital generates income for the Company primarily through investment returns (including carried interest) and management fees. See Note 2—"Summary of Significant Accounting Policies" of the "Notes to the Consolidated Financial Statements" under Part II, Item 8 of this report for additional details.

SVB Leerink

On January 4, 2019, we acquired Leerink Holdings LLC (now SVB Leerink Holdings LLC), the Boston-based parent company of healthcare and life science investment bank Leerink Partners LLC (now SVB Leerink LLC) ("SVB Leerink"). SVB Leerink is an investment bank specializing in equity and convertible capital markets, M&A, equity research and sales and trading for growth- and innovation-minded healthcare and life science companies and operates as a wholly-owned subsidiary of SVB Financial. SVB Leerink provides investment banking services across all subsectors of healthcare including biotechnology, pharmaceuticals, medical devices, diagnostic and life science tools, healthcare services and digital health. SVB Leerink focuses on two primary lines of business: (i) investment banking focused on providing companies with capital-raising services, financial advice on mergers and acquisitions, sales and trading services and equity research, and (ii) sponsorship of private investment funds.

For more information about our four operating segments, including financial information and results of operations, see "Management's Discussion and Analysis of Financial Condition and Results of Operations-Operating Segment Results" under Part II, Item 7 of this report, and Note 25—"Segment Reporting" of the "Notes to the Consolidated Financial Statements" under Part II, Item 8 of this report.

Revenue Sources

Our total revenue is comprised of our net interest income and noninterest income. Net interest income on a fully taxable equivalent basis and noninterest income for the year ended December 31, 2019 were \$2.1 billion and \$1.2 billion, respectively.

Net interest income accounts for the major portion of our earnings. It is comprised primarily of income generated from interest rate spread differences between the interest rates received on interest-earning assets, such as loans extended to clients and securities held in our fixed income securities portfolio, and the interest rates paid by us on interest-bearing liabilities, such as deposits and borrowings. Our deposits are largely obtained from commercial clients within our technology, life science/healthcare and private equity/venture capital industry sectors. We also obtain deposits from the premium wine industry commercial clients and from our SVB Private Bank clients. Other than our Private Bank clients, we do not obtain deposits from retail or consumer banking sources.

Noninterest income is primarily income generated from our fee-based services and gains on our investments and derivative securities. We offer a wide range of fee-based financial services to our clients, including global commercial banking, private banking and other business services. We generally refer to revenues generated by such fee-based services as our "core fee income," which is comprised of our client investment fees, foreign exchange fees, credit card fees, deposit service charges, lending related fees and letters of credit and standby letters of credit fees. In addition, through the acquisition of SVB Leerink, we offer investment banking and M&A advisory services. We generally refer to our core fee income plus revenues generated by these investment banking and M&A advisory services as "core fee income plus investment banking revenue and commissions." We believe our ability to integrate and cross-sell our diverse financial services to our clients is a strength of our business model. Additionally, we hold available-for-sale, held-to-maturity, non-marketable and marketable investment securities. Subject to applicable regulatory requirements, we manage and invest in private equity/venture capital funds that invest directly in privately-held companies, as well as funds that invest in other private equity/venture capital funds. Gains on these investments are reported in our consolidated statements of income and include noncontrolling interests. We also recognize gains from warrants to acquire stock in client companies, which we obtain in connection with negotiating credit facilities and certain other services. See "Management's Discussion and Analysis of Financial Condition and Results of Operations-Noninterest Income-Gains on Investment Securities, Net" and "Gains on Equity Warrant Assets, Net" under Part II, Item 7 of this report.

We derive substantially all of our revenue from U.S. clients. We derived less than 10 percent of our total revenues from foreign clients for each of 2019, 2018 and 2017.

Client Niches

We provide products and services to serve the needs of our clients in each of the niches described below. We serve our commercial company clients throughout their life cycles, beginning with the emerging, start-up stage and progressing through later stages as their needs mature and expand, primarily in the technology and life science/healthcare industries. We also serve other targeted client niches --- private equity and venture capital firms, premium wine and private banking/wealth management.

Technology and Life Science/Healthcare

We serve a variety of clients in the technology and life science/healthcare industries. Our technology clients tend to be in the industries of frontier tech and hardware (such as semiconductors, communications, data, storage and electronics); enterprise and consumer software/internet (such as infrastructure software, applications, software services, digital content and advertising technology), fintech and energy and resource innovation ("ERI"). For loan-related reporting, we report loans to technology clients in the following categories: hardware, software/internet and ERI. Because of the diverse nature of ERI products and services, ERI-related loans are reported under our hardware, software/internet, life science/healthcare and other commercial loan categories, as applicable. Our life science/healthcare clients primarily tend to be in the industries of biotechnology, medical devices, healthcare information technology and healthcare services. A key component of our technology and life science/healthcare business strategy is to develop relationships with clients at an early stage and offer them banking services that will continue to meet their needs as they mature and expand. We serve these clients primarily through three practices:

- Our **SVB Accelerator** practice focuses on serving our "emerging" or "early-stage" clients. These clients are generally privately-held companies in the start-up or early stages of their life cycles and funded by friends and family, "seed" or "angel" investors or have gone through an initial round of venture capital financing. They are typically engaged primarily in research and development activities and may have brought only a few products or services to market, if any. SVB Accelerator clients tend to have annual revenues below \$5 million, and many are pre-revenue companies.
- Our **SVB Growth** practice serves our "mid-stage" and "late-stage" clients. These clients are generally privately-held companies in the intermediate or later stages of their life cycles, and are often dependent on venture capital for funding. However, some of these clients are in the more advanced stages of their life cycles and may be publicly-held or poised to become publicly-held. Our SVB Growth clients generally have a more established product or service offering in the market and may be in a period of expansion. SVB Growth clients tend to have annual revenues between \$5 million and \$75 million.
- Our **SVB Corporate Finance** practice primarily serves our large corporate clients, which are more mature and established companies. These clients are generally publicly-held or large privately-held companies and have a more sophisticated product or service offering in the market. SVB Corporate Finance clients tend to have annual revenues over \$75 million.

In addition, our **Sponsored Finance** group provides debt financing in support of private equity sponsored company acquisitions, primarily technology and life science/healthcare companies.

Private Equity/Venture Capital

We serve clients in the private equity/venture capital community, many of whom are investors in the portfolio company clients to whom we provide banking services. In particular, we provide credit facilities to our private equity/venture capital clients, including capital call lines of credit, the repayment of which is dependent on the payment of capital calls or management fees by the underlying limited partner investors in the funds managed by the firms.

Since our founding, we have cultivated strong relationships within the venture capital community, which has over time expanded into the private equity community. We believe our network helps to facilitate deal flow opportunities between these private equity/venture capital firms and the companies within the markets we serve.

Premium Wine

We are one of the leading providers of financial services to premium wine producers across the Western United States, primarily in California's Napa Valley, Sonoma County and Central Coast regions, as well as the Pacific Northwest. We focus on vineyards and wineries that produce grapes and premium wines.

Private Bank/Wealth Management

We provide private banking and wealth management services to consumer clients, including private equity/venture capital professionals and executive leaders of the innovation companies we support. We offer private banking, cash management and wealth management services to meet their personal banking and financial needs.

Competition

The banking and financial services industry is highly competitive and continues to evolve as a result of changes in regulation, technology, product delivery systems and the general market and economic climate. Our competitors include other banks, debt funds, specialty and diversified financial services intermediaries and other "Fintech" disruptors that offer lending, leasing, payments, investment, foreign currency exchange, advisory and other financial products and services to our target client base. For example, we compete with alternative lenders, such as "marketplace" lenders, peer-to-peer lenders and other non-traditional lenders that have emerged in recent years. We also compete with non-financial service providers, particularly payment facilitators and processors, as well as other nonbanking technology providers in the payments industry which may offer specialized services to our client base. In addition, we compete with hedge funds and private equity funds, as well as investment banks. The principal competitive factors in our markets include product offerings, service, pricing and transaction size and structure. Given our established market position within the client segments that we serve, our continued efforts to develop products and services, and our ability to integrate and cross-sell our diverse financial services to extend the length of our relationships with our clients, we believe we compete favorably in the markets in our core business areas.

Employees

As of December 31, 2019, we employed 3,564 full-time equivalent employees.

Supervision and Regulation

Our bank and bank holding company operations are subject to extensive regulation by federal and state regulatory agencies. This regulation is intended primarily for the stability of the U.S. banking system as well as the protection of depositors and the Deposit Insurance Fund (the "DIF"). This regulation is not intended for the benefit of our security holders.

As a bank holding company that has elected financial holding company ("FHC") status, SVB Financial is subject to primary regulation, supervision, and examination by the Federal Reserve under the Bank Holding Company Act of 1956, as amended (the "BHC Act"). The Bank, as a California state-chartered bank and a member of the Federal Reserve System, is subject to primary supervision and examination by the Federal Reserve as well as the DBO. In addition, the Bank must comply with certain requirements of the FDIC as, to the extent provided by law, the Bank's deposits are insured by the FDIC. Our consumer banking activities also are subject to regulation and supervision by the Consumer Financial Protection Bureau (the "CFPB").

SVB Financial and certain of its non-bank subsidiaries are also subject to regulation by the SEC and FINRA as well as certain other federal and state regulatory agencies. In addition, we are subject to regulation by certain foreign regulatory agencies in international jurisdictions where we conduct, or may in the future wish to conduct, business, including the United Kingdom, Israel, Hong Kong, China, Germany and Canada. (See "International Regulation" below.)

The following discussion of statutes and regulations is a summary and does not purport to be complete. This discussion is qualified in its entirety by reference to the statutes and regulations referred to in this discussion. Regulators, the U.S. Congress, state legislatures and international consultative and standard-setting bodies continue to enact rules, laws and policies to regulate

the financial services industry and public companies in an effort to protect consumers and investors, and may have differing interpretations in the implementation of such rules. As a result, the precise nature of these laws and regulations and the effect of such policies on the Company's business cannot be predicted and, in some cases, may have a material and adverse effect on our business, financial condition, and/or results of operations. For more information, see "Risk Factors-Legal and Regulatory Risks" under Part I, Item 1A of this report.

Regulation and Supervision of SVB Financial and Silicon Valley Bank

As a financial holding company, SVB Financial generally may engage in certain otherwise prohibited non-banking activities and activities that the Federal Reserve has determined to be "financial in nature" or incidental or complementary to activities that are financial in nature, including certain securities, merchant banking and insurance activities.

In order to retain FHC status, a financial holding company and all of its depository institution subsidiaries must be well-capitalized and well-managed, as determined under relevant banking regulations. Otherwise, SVB Financial could face material restrictions on its activities and its ability to enter into certain transactions. In addition, if the Bank has not received at least a satisfactory rating on its most recent examination under the Community Reinvestment Act of 1977 ("CRA"), we would not be able to commence any new financial activities or acquire a company that engages in such activities. In that case, we would still be allowed to engage in activities closely related to banking and make investments in the ordinary course of conducting banking activities. The Bank continues to be in satisfactory compliance with the CRA.

Pursuant to applicable California and federal law, state-chartered commercial banks are permitted to engage in any activity permissible for national banks, which includes the many so-called "closely related to banking" or "non-banking" activities commonly conducted by national banks. In addition, the Bank may conduct, through a subsidiary, certain "financial" activities that would be impermissible for the Bank itself to the same extent as a national bank may, provided the Bank remains "well-capitalized," "well-managed" and in satisfactory compliance with the CRA.

Bank holding companies and insured banks are subject to potential enforcement actions of varying levels of severity by federal and state regulators and law enforcement authorities for unsafe or unsound practices in conducting their business or for violations of law, regulation or condition imposed in writing by any applicable agency or term of a written agreement with that agency.

Enhanced Prudential Standards

In October 2019, the federal banking agencies finalized rules that tailor the application of enhanced prudential standards to large bank holding companies and the capital and liquidity rules to large bank holding companies and depository institutions (the "Tailoring Rules") to implement amendments to the Dodd-Frank Wall Street Reform and Consumer Protection Act (the "Dodd-Frank Act") under the Economic Growth, Regulatory Relief, and Consumer Protection Act (the "EGRRCPA"). Under the EGRRCPA, the threshold above which the Federal Reserve is required to apply enhanced prudential standards to bank holding companies increased from \$50 billion in total consolidated assets to \$250 billion. The Federal Reserve may also impose enhanced prudential standards on bank holding companies with between \$100 billion and \$250 billion in total consolidated assets.

Under the Tailoring Rules, banking organizations are grouped into four categories based on their U.S. G-SIB status, size and four other risk-based indicators. The most stringent standards apply to U.S. G-SIBs, which represent Category I, and the least stringent standards apply to Category IV organizations, which have between \$100 billion and \$250 billion in total consolidated assets and less than \$75 billion in all four other risk-based indicators. SVB Financial, as a banking organization with less than \$100 billion in total consolidated assets, currently is not subject to most of the enhanced prudential standards. Several of the standards are summarized below:

- **Risk Management.** Bank holding companies with \$50 billion or more in total consolidated assets, including SVB Financial, are subject to risk committee and risk management requirements. In addition, bank holding companies with \$100 billion or more in total consolidated assets are subject to liquidity risk management, liquidity buffer and liquidity stress testing requirements.
- **Comprehensive Capital Analysis and Review ("CCAR").** Bank holding companies with \$100 billion or more in total consolidated assets are required to submit an annual capital plan to the Federal Reserve. For firms subject to CCAR, failure to submit a satisfactory plan can result in restrictions on capital distributions, including dividends and common stock repurchases.
- **Stress Testing.** Bank holding companies with \$100 billion or more in total consolidated assets are subject to supervisory stress tests conducted by the Federal Reserve and, except for Category IV firms, are also subject to company-run stress testing requirements (commonly referred to as Dodd-Frank Stress Tests or "DFAST"). Under the Tailoring Rules, bank holding companies with less than \$100 billion in total consolidated assets are not subject to company-run or supervisory stress testing requirements.
- **Resolution Planning.** Except for Category IV firms, bank holding companies with \$100 billion or more in total consolidated

assets are required to submit to the Federal Reserve and the FDIC a plan for rapid and orderly resolution in the event of material financial distress or failure. Bank holding companies with less than \$100 billion in total consolidated assets are not required to submit resolution plans. Separately, the FDIC requires insured depository institutions (“IDIs”) with total consolidated assets of \$50 billion or more, such as the Bank, to submit a resolution plan with respect to the bank. In April 2019, the FDIC released an advance notice of proposed rulemaking about potential changes to its IDI resolution planning requirements, and the next round of IDI resolution plan submissions will not be required until the rulemaking process is complete.

- **Liquidity Coverage Ratio.** Banking organizations in Categories I-III and, in certain cases, Category IV are subject to the liquidity coverage ratio (“LCR”) requirements and must maintain high-quality liquid assets in accordance with specific quantitative requirements.

Regulatory Capital

In July 2013, the Federal Reserve, the FDIC and the Office of the Comptroller of the Currency published final rules establishing a comprehensive capital framework for U.S. banking organizations (the “Capital Rules”), which implement the Basel III regulatory capital reforms and changes required by the Dodd-Frank Act. “Basel III” refers to the internationally agreed regulatory capital framework adopted by the Basel Committee on Banking Supervision (the “Basel Committee”).

The Capital Rules establish minimum risk-weighted capital ratios for Common Equity Tier 1 (“CET1”) capital, Tier 1 capital and total capital as well as a minimum leverage ratio. CET1 is defined as common stock, plus related surplus, and retained earnings plus minority interest in the form of common stock, subject to a limit, less the majority of the regulatory deductions and adjustments. For most banking organizations, the most common form of Tier 1 capital (other than CET1) is noncumulative perpetual preferred stock and the most common form of Tier 2 capital is subordinated debt and a portion of the allowance for loan and lease losses, in each case, subject to certain requirements. Total capital consists of Tier 1 capital and Tier 2 capital.

Under the Capital Rules, the minimum capital ratios applicable to SVB Financial and the Bank are as follows: 4.5% CET1 capital, 6.0% Tier 1 capital, 8.0% Total capital and 4.0% Tier 1 leverage. In addition, banking organizations must meet a 2.5% CET1 risk-based capital conservation buffer requirement in order to avoid constraints on capital distributions, such as dividends and equity repurchases, and certain bonus compensation for executive officers. The severity of the constraints would depend on the amount of the shortfall and the banking organization’s “eligible retained income” (that is, four-quarter trailing net income, net of distributions and tax effects not reflected in net income). The regulatory capital ratios of SVB Financial and the Bank currently exceed these levels, as shown in the following chart:

December 31, 2019	SVB Financial	Bank	Required Ratio (1)
CET 1 risk-based capital	12.58%	11.12%	7.0%
Tier 1 risk-based capital	13.43%	11.12%	8.5
Total risk-based capital	14.23%	11.96%	10.5
Tier 1 leverage	9.06%	7.30%	4.0

(1) Percentages represent the minimum capital ratios plus, as applicable, the 2.5% CET1 capital conservation buffer under the Capital Rules.

The regulatory capital ratios of SVB Financial and the Bank also exceed the “well-capitalized” requirements under relevant regulations. Refer to Note 24 —“Regulatory Matters” of the “Notes to the Consolidated Financial Statements” under Part II, Item 8 of this report for more information.

In July 2019, the federal banking agencies adopted final rules intended to simplify compliance with capital rules for non-advanced approaches banking organizations (the “Capital Simplification Rules”), such as SVB Financial and the Bank. The Capital Simplification Rules took effect for SVB Financial as of January 1, 2020 and simplify the capital treatment of mortgage servicing assets, certain deferred tax assets, investments in unconsolidated financial institutions and minority interests for banking organizations.

In December 2017, the Basel Committee published standards that it described as the finalization of the Basel III post-crisis regulatory reforms. Among other things, these standards revise the Basel Committee’s standardized approach for credit risk (including recalibrating risk weights and introducing new capital requirements for certain “unconditionally cancellable commitments,” and establish a new standardized approach for operational risk capital. Under the current Capital Rules, operational risk capital requirements do not apply to non-advanced approaches banking organizations, such as SVB Financial and the Bank. The federal banking agencies have not yet implemented these revised standards, and their impact on SVB Financial and the Bank will depend on the manner in which they are implemented.

Capital Planning

Banking organizations must have appropriate capital planning processes, with proper oversight from the Board of Directors. The Federal Reserve expects bank holding companies, such as SVB Financial, to conduct and document comprehensive capital adequacy analyses prior to the declaration of any dividends (on common stock, preferred stock, or other Tier 1 capital instruments), capital redemptions or capital repurchases. Moreover, the federal banking agencies view the adequacy and effectiveness of a bank's interest rate risk management process and the level of its interest rate exposures as critical factors in the evaluation of the bank's capital adequacy. A bank with material weaknesses in its interest rate risk management process or high levels of interest rate exposure relative to its capital will be directed by the relevant federal banking agencies to take corrective actions.

The Capital Simplification Rules adopted in July 2019 eliminated the standalone prior approval requirement for any repurchase of common stock. In certain circumstances, repurchases of common stock may be subject to a prior approval or notice requirement under other regulations or policies of the Federal Reserve. Any redemption or repurchase of preferred stock or subordinated debt remains subject to the prior approval of the Federal Reserve.

Proprietary Trading and Relationships with Certain Funds

The Volcker Rule, set out in section 13 of the BHC Act, restricts, among other things, bank holding companies and their affiliates from engaging in proprietary trading and from sponsoring, investing in, or having certain other relationships with certain privately offered funds, including certain venture capital funds, hedge funds and private equity funds ("covered funds"). On June 6, 2017, we received notice that the Federal Reserve approved our application for an extension of the permitted conformance period for our investments in certain "illiquid" covered funds. The approval extends the deadline by which the Company must sell, divest, restructure or otherwise conform such investments to the provisions of the Volcker Rule until the earlier of July 21, 2022 or the date by which each fund matures by its terms or is otherwise conformed to the Volcker Rule.

On October 8, 2019, the Volcker Rule implementing agencies, including the Federal Reserve (the "Agencies"), finalized rules amending the regulations implementing the Volcker Rule. The revised rules tailor compliance requirements based on the size of a firm's trading assets and liabilities and eliminate or adjust certain requirements to clarify permitted and prohibited activities. The revised rules went into effect on January 1, 2020, and firms are permitted to early-adopt the revised rules ahead of the mandatory compliance date of January 1, 2021. On January 30, 2020, the Agencies released for public comment proposed additional revisions to the covered funds provisions of the Volcker Rule implementing regulations. Among other changes, the proposal would add several exclusions from the definition of covered fund, including for certain venture capital funds and credit funds. We continue to assess the impact of the revised rules, and the potential impact of the proposed covered funds revisions, on our fund investments and other areas of our business.

As of December 31, 2019, under the current implementing regulations, we estimate that our total venture capital and private equity fund investments deemed to be prohibited covered fund interests, and therefore subject to the Volcker Rule's restrictions, had an aggregate carrying value and fair value of approximately \$213 million. These covered fund interests are comprised of interests attributable solely to the Company in our consolidated managed funds and certain of our non-marketable securities.

Prompt Corrective Action

State and federal banking agencies possess broad powers to take corrective and other supervisory action against an insured bank and its holding company. For example, an IDI is placed into one of five categories based on the level of its capital ratios: well-capitalized, adequately capitalized, undercapitalized, significantly undercapitalized and critically undercapitalized. At each successive lower capital category, an IDI is subject to more restrictions and prohibitions, including restrictions on growth, restrictions on interest rates paid on deposits, restrictions or prohibitions on payment of dividends and restrictions on the acceptance of brokered deposits. Based upon its capital levels, a bank that is classified as well-capitalized, adequately capitalized or undercapitalized may be treated as though it were in the next lower capital category if the appropriate federal banking agency, after notice and opportunity for hearing, determines that an unsafe or unsound condition or practice warrants such treatment.

Restrictions on Dividends

Dividends from the Bank constitute one of the primary sources of cash for SVB Financial. The Bank is subject to various federal and state statutory and regulatory restrictions on its ability to pay dividends, including applicable provisions of the California Financial Code and the federal prompt corrective action regulations. For example, the Bank may not, without approval of the Federal Reserve, declare or pay a dividend to SVB Financial if the total of all dividends declared in a calendar year exceeds the total of (a) the Bank's net income for that year and (b) its retained net income for the preceding two calendar years, less any required transfers to additional paid-in capital or to a fund for the retirement of preferred stock. In addition, the banking agencies have the authority to prohibit the Bank from paying dividends, depending upon the Bank's financial condition, if such payment is deemed to constitute an unsafe or unsound practice.

It is the Federal Reserve's policy that bank holding companies should generally pay dividends on common stock only out of income available over the past year and only if prospective earnings retention is consistent with the organization's expected future needs and financial condition. It is also the Federal Reserve's policy that bank holding companies should not maintain

dividend levels that undermine their ability to be a source of strength to their banking subsidiaries. Under the prompt corrective action regulations, the Federal Reserve may prohibit a bank holding company from paying any dividends if the holding company's bank subsidiary is classified as "undercapitalized."

Transactions with Affiliates

Transactions between the Bank and its operating subsidiaries (such as SVB Asset Management), on the one hand, and the Bank's affiliates (such as SVB Financial, SVB Leerink or an entity affiliated with our SVB Capital business), on the other, are subject to statutory and regulatory restrictions designed to limit the risks to the Bank and its subsidiaries, including Sections 23A and 23B of the Federal Reserve Act and the Federal Reserve's Regulation W. These restrictions include quantitative and qualitative limits on the amounts and types of transactions with affiliates, including extensions of credit to affiliates, investments in the stock or securities of affiliates, purchases of assets from affiliates and certain other transactions with affiliates. In addition, credit transactions with affiliates must be collateralized, and transactions with affiliates must be on market terms or better for the Bank.

Premiums for Deposit Insurance

The FDIC insures our customer deposits through the DIF up to prescribed limits for each depositor. The FDIC has established a reserve ratio of 2% as a long-term goal, which goes beyond the statutorily mandated minimum of 1.35%, and may increase assessment rates in the future accordingly.

Consumer Regulations

The Bank is subject to many federal consumer protection statutes and regulations, such as the CRA, the Equal Credit Opportunity Act (Regulation B), the Electronic Fund Transfer Act (Regulation E), the Truth in Lending Act (Regulation Z), the National Flood Insurance Act, the Fair Credit Reporting Act (as amended by the Fair and Accurate Credit Transaction Act) and various federal and state privacy protection laws. The Bank and SVB Financial are also subject to federal and state laws prohibiting unfair, deceptive, abusive, corrupt or fraudulent business practices, untrue or misleading advertising and unfair competition. As a depository institution with more than \$10 billion in total assets, the Bank is subject to examination by the CFPB. The CFPB's mandate is to promulgate consumer regulations and ensure that consumer financial practices at large banks, such as the Bank, comply with federal consumer financial protection requirements. The CFPB has broad enforcement authority, including investigations, civil actions, cease and desist proceedings and the ability to refer criminal findings to the Department of Justice. Penalties for violating these laws could include civil monetary penalties, remediation for affected consumers and reimbursements and orders to halt expansion or existing activities.

State and federal banking agencies and other such enforcement authorities have increased efforts to aggressively enforce consumer protection laws, implement regulations and take action against non-compliant parties.

Privacy and Cybersecurity

Data privacy and data protection are areas of increasing legislative focus. For example, the California Consumer Protection Act of 2018 (the "CCPA"), which became effective on January 1, 2020, applies to for-profit businesses that conduct business in California and meet certain revenue or data collection thresholds. The CCPA gives consumers the right to request disclosure of information collected about them, and whether that information has been sold or shared with others, the right to request deletion of personal information (subject to certain exceptions), the right to opt out of the sale of the consumer's personal information, and the right not to be discriminated against for exercising these rights. The CCPA contains several exemptions, including an exemption applicable to information that is collected, processed, sold or disclosed pursuant to federal law. Similar laws have been and may be adopted by other states where we do business, and the federal government may also pass data privacy or data protection legislation. In addition, in the European Union, privacy law is now governed by the General Data Protection Regulation (the "GDPR"). The GDPR established enhanced compliance obligations and increased penalties for non-compliance compared to the prior law governing data privacy in the European Union.

In October 2016, the federal banking agencies issued an advance notice of proposed rulemaking on enhanced cyber risk management standards that are intended to increase the operational resilience of large and interconnected entities under their supervision and help reduce the potential impact of a cyber incident on the financial system. The proposed standards focus on five areas: (1) cyber risk governance; (2) cyber risk management; (3) internal dependency management; (4) external dependency management; and (5) incident response, cyber resilience and situational awareness.

Anti-Money Laundering, Sanctions and Anti-Corruption Regulations

U.S. anti-money laundering laws and regulations, including the U.S. Bank Secrecy Act ("BSA") and the Uniting and Strengthening America by Providing Appropriate Tools Required to Intercept and Obstruct Terrorism Act of 2001 ("PATRIOT Act") and their corresponding regulations, require IDIs, broker-dealers, and certain other financial institutions to have policies, procedures and controls to detect, prevent and report money laundering and terrorist financing. The PATRIOT Act and its regulations also provide for information sharing, subject to certain conditions, between federal law enforcement agencies and financial institutions, as well as among financial institutions, for counter-terrorism purposes. Additionally, federal banking

regulators are required, when reviewing bank holding company acquisition and bank merger applications, to consider the effectiveness of the anti-money laundering activities of the applicants.

In addition, we must comply with economic sanctions administered by the U.S. Treasury's Office of Foreign Assets Control and targeted against designated foreign countries, nationals and others. We are also subject to anti-corruption laws and regulations in the United States and internationally, including the U.S. Foreign Corrupt Practices Act and the U.K. Bribery Act, which impose strict prohibitions on payments and hiring practices with regard to government officials and employees.

Material deficiencies in compliance with anti-money laundering and anti-corruption rules and sanctions regimes can result in public enforcement actions by the bank regulatory agencies and other government agencies, including civil money penalties and supervisory restrictions on growth and expansion.

Regulation of Certain Subsidiaries and Regulatory Affiliates

SVB Leerink LLC, a subsidiary of SVB Leerink, is registered as a broker-dealer with the SEC and is a member of FINRA, and is subject to regulation by both agencies. It is also a member of the Securities Investor Protection Corporation. SVB Asset Management, SVB Wealth Advisory and funds management entities associated with SVB Leerink Capital LLC, a subsidiary of SVB Leerink, are registered with the SEC under the Investment Advisers Act of 1940, as amended, and are subject to its corresponding regulations.

SVB Leerink LLC must comply with the financial responsibility rules governing broker-dealers, including Rule 15c3-1 under the Securities Exchange Act of 1934, as amended (the "Exchange Act"), which is designed to measure the general financial condition and liquidity of a broker-dealer and seek to ensure its financial stability in light of its activities. It is required to maintain minimum net capital levels, which could limit the ability for capital to be withdrawn or require a capital infusion to support growth in the business or new or ongoing activities.

In June 2019, the SEC adopted a rule that requires broker-dealers to act in the best interest of their customers and issued an interpretation clarifying the its views of the existing fiduciary duty owed by investment advisers to their clients. Additionally, the SEC adopted a rule that requires broker-dealers and investment advisers to provide a standardized, short-form disclosure highlighting services offered, applicable standards of conduct, fees and costs, the differences between brokerage and advisory services, and any conflicts of interest. Several states have also proposed uniform fiduciary duty standards for broker-dealers and advisers.

Further, the Company has oversight responsibilities with respect to the regulatory compliance of certain unconsolidated subsidiaries and affiliates, such as Vouch Inc., that the Company may be deemed to control for purposes of the BHC Act.

Securities Registration and Listing

SVB Financial's common stock, 5.250% Fixed-Rate Non-Cumulative Perpetual Preferred Stock, Series A ("Series A Preferred Stock"), and depositary shares, each representing a 1/40th interest in a share of Series A Preferred Stock ("Depositary Shares"), are registered under the Securities Act of 1933, as amended. SVB Financial's common stock and Depositary Shares are also listed on the Nasdaq Global Select Market. As such, SVB Financial is subject to the SEC's information, proxy solicitation, insider trading, corporate governance, and other public company requirements and restrictions as well as Nasdaq's Marketplace Rules and other requirements.

As a public company, SVB Financial is also subject to the accounting oversight and corporate governance requirements of the Sarbanes-Oxley Act of 2002 (the "Sarbanes-Oxley Act"), including, among other things, required executive certification of financial presentations, increased requirements for board audit committees and their members, and enhanced requirements relating to disclosure controls and procedures and internal controls over financial reporting.

International Regulation

Our international-based subsidiaries and offices and global activities, including our banking branches in the United Kingdom, Germany, Canada and the Cayman Islands as well as our joint venture bank in China, are subject to the respective laws and regulations of those countries and the regions in which they operate. This includes laws and regulations promulgated by, but not limited to, the Financial Conduct Authority and the Prudential Regulation Authority in the United Kingdom, the Office of the Superintendent of Financial Institutions in Canada, the German Federal Financial Supervisory Authority (BaFin), the China Banking and Insurance Regulatory Commission, the Cayman Islands Monetary Authority and the Hong Kong Monetary Authority. To the extent we are able to commence operations in any other international market, we will also become subject to the regulatory regimes of those jurisdictions. In jurisdictions where we do not currently have certain licenses or other regulatory authorizations, our activities may be limited. Moreover, promulgation by standard-setting bodies that are charged with the development of international regulatory frameworks, such as the Basel Committee, can affect the Bank and SVB Financial globally as national regulators implement the frameworks in local jurisdictions.

Available Information

We make available free of charge through our Internet website, <http://www.svb.com>, our annual report on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K, and amendments to those reports filed or furnished pursuant to Section 13(a) or 15(d) of the Exchange Act, as soon as reasonably practicable after such material is electronically filed with or furnished to the SEC. The contents of our website are not incorporated herein by reference and the website address provided is intended to be an inactive textual reference only.

ITEM 1A. RISK FACTORS

Our business faces significant risks, including credit, market and liquidity, operational, legal and regulatory and strategic and reputational risks. The factors described below are not intended to serve as a comprehensive listing of the risks we face. Additional risks and uncertainties that we have not identified as material, or of which we currently are not aware, may also impair our business operations. If any of the events or circumstances described in the following factors occurs, our business, financial condition and/or results of operations could be materially and adversely affected.

Credit Risks

Because of the credit profile of our loan portfolio, our levels of nonperforming assets and charge-offs can be volatile. We may need to make material provisions for credit losses in any period, which could reduce net income, increase net losses or otherwise adversely affect our financial condition in that period.

Our loan portfolio has a credit profile different from that of most other banking companies. The credit profiles of our clients vary across our loan portfolio, based on the nature of our lending to different market segments.

Early-stage and mid-stage companies. In our portfolios for early-stage and mid-stage privately held companies, many of our loans are made to companies with modest or negative cash flows and/or no established record of profitable operations, primarily within the technology and life science and healthcare industries. Consequently, repayment of these loans is often dependent upon receipt by our borrowers of additional financing from venture capitalists or others, or in some cases, a successful sale to a third party, public offering or other form of liquidity or “exit” event. In recent periods, liquidity levels have been healthy and many companies have been able to obtain liquidity through venture capital-backed financing as well as various other exit opportunities at relatively high valuations. However, there can be no assurance that they will be able to continue to obtain funding at current valuation levels, if at all. If current economic conditions weaken or do not continue to improve, such activities may slow down, or valuations may drop in a meaningful manner, which may impact the financial health of our client companies. For example, equity markets may be less receptive to initial public offerings due to the recent underperformance of certain initial public offerings in the technology sector. In such case, investors may provide financing in a more selective manner, at lower levels and/or on less favorable terms, if at all, any of which may have an adverse effect on our borrowers’ ability to repay their loans to us.

Larger loans; syndicated loans. In addition, a significant portion of our loan portfolio is comprised of larger loans, which could increase the impact on us of any single borrower default. As of December 31, 2019, gross loans equal to or greater than \$20 million to any single client (individually or in the aggregate) totaled \$15.5 billion, or 53.4 percent of our portfolio. These larger loans have represented an increasing portion of our total loan portfolio over time. They include capital call lines of credit to our private equity and venture capital clients, as well as other loans made to our later-stage and larger corporate clients, and may be made to companies with greater levels of debt relative to their equity, balance sheet liquidity or cash flow. Additionally, we have continued our efforts to grow our loan portfolio by agenting or arranging larger syndicated credit facilities and participating in larger syndicates agented by other financial institutions as well as making sponsor-led buyout loans, which are leveraged buyout or recapitalization financings typically sponsored by our private equity clients. In those arrangements where we do not act as the lead syndicate agent, our control or decision-making ability over the credit facility is typically limited to our participation interest.

Loans dependent on third parties. Further, the repayment of financing arrangements we enter into with our clients may be dependent on the financial condition or ability of third parties to meet their payment obligations to our clients. For example, we enter into formula-based financing arrangements that are secured by our clients’ accounts receivable from third parties with whom they do business. We also make loans secured by letters of credit issued by third party banks and enter into letters of credit discounting arrangements, the repayment of which may be dependent on reimbursement by third party banks. We also extend recurring revenue-based lines of credit, where repayment may be dependent on borrowers’ revenues from third parties. Further, in our loan portfolio of private equity and venture capital firm clients, many of our clients have lines of credit, the repayment of which is dependent on the payment of capital calls or management fees by the underlying limited partner investors in the funds managed by these firms. These capital call lines of credit are a significant portion of our loan portfolio. (Capital call

lines of credit represent more than half of our loan portfolio as of the end of 2019, and may in future periods increase). These third parties may not be able to meet their financial obligations to our clients or to us, which, ultimately, could have an adverse impact on us.

Technology, life science and healthcare industries. In addition, because of the intense competition and rapid technological change that characterize the technology, life science and healthcare industry sectors in which most of our borrowers reside, as well as periodic volatility in the market prices for securities of companies in these industries, a borrower's financial position can deteriorate rapidly. Collateral for many of our loans often includes intellectual property and other intangible assets, which are difficult to value and may not be readily salable in the case of default. As a result, even if a loan is secured, we may not be able to fully recover the amounts owed to us, if at all.

Wineries and vineyards. In addition, we lend to premium wineries and vineyards through SVB Wine. Repayment of loans made to these clients may be dependent on overall wine demand and sales, or other sources of financing or income which may be adversely affected by a challenging economic environment, as well as overall grape supply and income from tourism which may be adversely affected by poor weather, heavy rains, flooding, droughts, fires, wildfires, earthquakes or other natural or catastrophic conditions.

Loans to individuals. We also lend to individual investors, executives, entrepreneurs or other influencers in the innovation economy, primarily through SVB Private Bank, a division of the Bank. These individual clients may face difficulties meeting their financial commitments, especially during a challenging economic environment, and may be unable to repay their loans. In certain instances, we may also relax loan covenants and conditions or extend loan terms to individual borrowers who are experiencing financial difficulties. While such determinations are based on an assessment of various factors, including access to additional capital in the near term, there can be no assurance that such continued support will result in any individual borrower meeting his or her financial commitments.

Based on the credit profile of our overall loan portfolio, our level of nonperforming loans, loan charge-offs and allowance for credit losses can be volatile and can vary materially from period to period. Increases in our level of nonperforming loans or loan charge-offs may require us to increase our provision for credit losses in any period, which could reduce our net income or cause net losses in that period. Additionally, such increases in our level of nonperforming loans or loan charge-offs may also have an adverse effect on our capital ratios, credit ratings and market perceptions of us. See "Loans" under "Management's Discussion and Analysis of Financial Condition and Results of Operations - Consolidated Financial Condition" under Part II, Item 7 of this report.

Our allowance for credit losses is determined based upon both objective and subjective factors, and may not be adequate to absorb credit losses.

As a lender, we face the risk that our borrower clients will fail to repay their loans when due. If borrower defaults cause large aggregate losses, it could have a material adverse effect on our business, results of operations or financial condition. We reserve for such losses by establishing an allowance for credit losses, the increase of which results in a charge to our earnings as a provision for credit losses. Although we have established an evaluation process designed to determine the adequacy of our allowance for credit losses that uses historical and other objective information, the classification of loans and the forecasts and establishment of credit losses are also dependent upon the subjective experience and judgment of our management. Actual losses are difficult to forecast, especially if such losses stem from factors beyond our historical experience or are otherwise inconsistent with our credit quality assessments. There can be no assurance that our allowance for credit losses will be sufficient to absorb future credit losses or prevent a material adverse effect on our business, financial condition or results of operations.

ASU 2016-13, Financial Instruments-Credit Losses (Topic 326): Measurement of Credit Losses on Financial Instruments ("ASU 2016-13" or "CECL"), became effective January 1, 2020 and amended the incurred loss impairment methodology with a methodology that reflects expected credit losses and requires consideration of a broader range of reasonable and supportable information to inform credit loss estimates. The standard removes the existing "probable" threshold in GAAP for recognizing credit losses and instead requires companies to reflect their estimate of credit losses over the life of the financial assets. We currently estimate the day 1 combined impact of adopting CECL on our allowance for loan losses and allowance for unfunded credit commitments to be an increase of approximately \$50 million (on a pre-tax basis) or approximately 13% of the total combined allowance compared to our reported amount at December 31, 2019. Our ability to accurately forecast estimated credit losses will evolve based on how the new model and related inputs correspond to actual loss rates, and this process may take longer than expected.

Banking regulators, as part of their supervisory function, periodically review our methodology, models and the underlying assumptions, estimates and assessments we make in determining the adequacy of our allowance for credit losses. These

regulators may conclude that changes are necessary, which could impact our overall credit portfolio. Such changes could result in, among other things, modifications to our methodology or models, reclassification or downgrades of our loans, increases in our allowance for credit losses or other credit costs, imposition of new or more stringent concentration limits, restrictions in our lending activities and/or recognition of further losses.

The borrowing needs of our clients may be unpredictable, especially during a challenging economic environment. We may not be able to meet our unfunded credit commitments, or adequately reserve for losses associated with our unfunded credit commitments, which could have a material adverse effect on our business, financial condition, results of operations or reputation.

A commitment to extend credit is a formal agreement to lend funds to a client as long as the conditions established under the agreement have been satisfied. The actual borrowing needs of our clients under these credit commitments have historically been lower than the contractual amount of the commitments. As a result, we typically have a substantial amount of total unfunded credit commitments reflected off our balance sheet, and a significant portion of these commitments ultimately expire without being drawn upon. See Note 22—"Off-Balance Sheet Arrangements, Guarantees and Other Commitments" of the "Notes to the Consolidated Financial Statements" under Part II, Item 8 of this report for additional details. However, the actual borrowing needs of our clients may exceed our expected funding requirements. For example, our client companies may be more dependent on our credit commitments in a challenging economic environment due to the lack of available credit elsewhere, the increasing costs of credit through other channels, or the limited availability of financings from private equity or venture capital firms. In addition, limited partner investors of our private equity and venture capital fund clients may fail to meet their underlying investment commitments due to liquidity or other financing difficulties, which may impact our clients' borrowing needs. Any failure to meet our unfunded credit commitments in accordance with the actual borrowing needs of our clients may have a material adverse effect on our business, financial condition, results of operations or reputation.

Further, although we have established a reserve for losses associated with our unfunded credit commitments, the level of the reserve is determined by a methodology that is similar to that used to establish our allowance for credit losses in our funded loan portfolio and that has also been amended by CECL. The reserve is susceptible to significant changes and is primarily based on credit commitments less the amounts that have been funded, the amount of the unfunded portion that we expect to be utilized in the future, credit quality of the loan credit commitments, and management's estimates and judgment. There can be no assurance that our allowance for unfunded credit commitments will be adequate to provide for actual losses associated with our unfunded credit commitments. An increase in the allowance for unfunded credit commitments in any period may result in a charge to our earnings, which could reduce our net income or increase net losses in that period.

CECL became effective January 1, 2020 and amended the incurred loss impairment methodology with a methodology that reflects expected credit losses and requires consideration of a broader range of reasonable and supportable information to inform credit loss estimates. The standard removes the existing "probable" threshold in GAAP for recognizing credit losses and instead requires companies to reflect their estimate of credit losses over the life of the financial assets. We currently estimate the day 1 combined impact of adopting CECL on our allowance for loan losses and allowance for unfunded credit commitments to be an increase of approximately \$50 million (on a pre-tax basis) or approximately 13% of the total combined allowance compared to our reported amount at December 31, 2019. Our ability to accurately forecast estimated credit losses will evolve based on how the new model and related inputs correspond to actual loss rates, and this process may take longer than expected.

Market and Liquidity Risks

Our current level of interest rate spread may decline in the future. Any material reduction in our interest rate spread could have a material adverse effect on our business, results of operations or financial condition.

A significant portion of our net income comes from our interest rate spread, which is the difference between the interest rates paid by us on interest-bearing liabilities, such as deposits and internal borrowings, and the interest rates and fees we receive on our interest-earning assets, such as loans extended to our clients, securities held in our investment portfolio and excess cash held to manage short-term liquidity. Our interest rate spread can be affected by the mix of loans, investment securities, deposits and other liabilities on our balance sheet, as well as a variety of external factors beyond our control that affect interest rate levels, such as competition, inflation, recession, global economic disruptions, unemployment and the fiscal and monetary policies of various governmental bodies. For example, changes in key variable market interest rates, such as the Federal Funds, National Prime ("Prime"), LIBOR or Treasury rates, generally impact our interest rate spread. While changes in interest rates do not generally produce equivalent changes in the revenues earned from our interest-earning assets and the expenses associated with our interest-bearing liabilities, increases in market interest rates are nevertheless likely to cause our interest rate spread to increase. Conversely, if interest rates decline, our interest rate spread will likely decline. The Federal Reserve has recently lowered interest rates and may continue to do so in the future. If interest rates do not rise or continue to decline, low rates could constrain our interest rate spread and may adversely affect our business forecasts. On the other hand, increases in interest rates may result in

a change in the mix of non-interest and interest-bearing accounts, and the level of off-balance sheet market-based investment preferred by our clients, which may also impact our interest rate spread.

Changes in the method of determining LIBOR or other reference rates, or uncertainty related to such potential changes, may adversely affect the value of reference rate-linked debt securities that we hold or issue, which could further impact our interest rate spread. In 2017, the U.K. Financial Conduct Authority announced that it would no longer persuade or compel submission of bank rates used for calculation of LIBOR after 2021. 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 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-linked financial instruments.

Regulators, industry groups and certain committees (for example, the Alternative Reference Rates Committee) have published recommended fallback 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 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.

Liquidity risk could impair our ability to fund operations and jeopardize our financial condition.

Liquidity is essential to our business, both at the SVB Financial and the Bank level. We require sufficient liquidity to meet our expected financial obligations, as well as unexpected requirements stemming from client activity and market changes. Primary liquidity resources for SVB Financial include cash flow from investments and interest in financial assets held by operating subsidiaries other than the Bank; to the extent declared, dividends from the Bank, its main operating subsidiary; and as needed, periodic capital market transactions offering debt and equity instruments in the public and private markets. The primary source of liquidity for the Bank is client deposits. When needed, our liquidity is supplemented by wholesale borrowing capacity in the form of short- and long-term borrowings secured by our portfolio of high quality investment securities, long-term capital market debt issuances and unsecured overnight funding channels available to us in the Federal Funds market. An inability to maintain or raise funds through these sources could have a substantial negative effect, individually or collectively, on SVB Financial and the Bank's liquidity. Our access to funding sources in amounts adequate to finance our activities, or on terms attractive to us, could be impaired by factors that affect us specifically or the financial services industry in general. For example, factors that could detrimentally impact our access to liquidity sources include a decrease in the level of our business activity due to a market downturn or adverse regulatory action against us, a downturn in asset markets such that the collateral we hold cannot be realized or is liquidated at prices not sufficient to recover the full amount of our secured obligations, a reduction in our credit rating, any damage to our reputation or any other decrease in depositor or investor confidence in our creditworthiness and business. Our access to liquidity could also be impaired by factors that are not specific to us, such as laws and regulations that limit the amount of intercompany dividends that bank subsidiaries may pay, severe volatility or disruption of the financial markets or negative views and expectations about prospects for the financial services industry as a whole. Any such event or failure to manage our liquidity effectively could affect our competitive position, increase our borrowing costs and the interest rates we pay on deposits, limit our access to the capital markets and have a material adverse effect on our financial condition.

Our equity warrant assets, venture capital and private equity fund investments and direct equity investment portfolio gains depend upon the performance of our portfolio investments and the general condition of the public and private equity and mergers and acquisitions markets, which are uncertain and may vary materially by period.

In connection with negotiated credit facilities and certain other services, we often obtain equity warrant assets giving us the right to acquire stock in private, venture-backed companies in the technology, life science and healthcare industries subject to applicable regulatory limits. We have also made investments through SVB Financial, SVB Leerink and our SVB Capital family of funds in venture capital funds and direct investments in companies, many of which are required to be carried at fair value or are impacted by changes in fair value. The fair values of these warrants and investments are reflected in our financial statements and are adjusted on a quarterly basis. Fair value changes are recorded as unrealized gains or losses through consolidated net income. However, the timing and amount of changes in fair value, if any, of these financial instruments depends on factors beyond our control, including the perceived and actual performance of the companies or funds in which we invest, fluctuations in the market prices of the preferred or common stock of the portfolio companies, the timing of our receipt of relevant financial information from these companies, market volatility and interest rate factors and legal and contractual restrictions. Moreover, the timing and amount of our realization of actual net proceeds, if any, from our disposition of these financial instruments also often depend on factors beyond our control. In addition to those mentioned above, such factors include the level of public offerings, and mergers and acquisitions or other exit activity, legal and contractual restrictions on our ability to sell our equity positions (including the expiration of any "lock-up" agreements) and the timing of any actual dispositions. Because of the inherent

variability of these financial instruments and the markets in which they are bought and sold, their fair market value might increase or decrease materially from period to period, and the net proceeds ultimately realized upon disposition might be materially different than the then-current recorded fair market value.

In addition, depending on the fair value of these warrants and direct equity investments, a meaningful portion of the aggregate fair value of our total warrant and direct equity investment portfolios may, from time to time, be concentrated in a limited number of warrants and direct equity investments. Valuation changes in one or more of these warrants or direct equity investments may have a material impact on the valuation of our total investment portfolio. Moreover, because valuations of private companies are inherently uncertain, may fluctuate over short periods of time and may be based on estimates, our determinations of fair value for private companies may differ materially from the values that would have been used if a ready market for these securities existed. Therefore, fair value determinations may materially understate or overstate the value that we ultimately realize upon the sale of one or more investments. We cannot predict future realized or unrealized gains or losses, and any such gains or losses are likely to vary materially from period to period. See Note 16-“Derivative Financial Instruments” of the “Notes to the Consolidated Financial Statements” under Part II, Item 8 of this report for additional details.

Changes in the market for public equity offerings, mergers and acquisitions or a slowdown in private equity or venture capital investment levels may affect the needs of our clients for investment banking or mergers and acquisitions advisory services and the borrowing needs of our clients, which could in turn adversely affect our business, results of operations or financial condition.

While an active market for public equity offerings, financings, and mergers and acquisitions activity generally has positive implications for our business, one negative consequence is that our clients may pay off or reduce their loans with us if they complete a public equity offering, are acquired by or merge with another entity or otherwise receive a significant equity investment.

By contrast, a low demand for public equity or mergers and acquisitions transactions or an inability to complete such transactions due to events affecting market conditions generally, such as a partial or full U.S. government shutdown, could result in fewer transactions overall and therefore decrease revenues of SVB Leerink, our investment banking business, as such revenues stem primarily from underwriting and advisory fees associated with capital markets and mergers and acquisitions transactions.

A slowdown in overall private equity or venture capital investment levels may reduce the need for our clients to borrow from our capital call lines of credit, which are typically utilized by our private equity and venture capital fund clients to make investments prior to receipt of capital called from their respective limited partners. Any significant reduction in the outstanding amounts of our loans or under our lines of credit could have a material adverse effect on our business, results of operations or financial condition.

Operational Risks

If we fail to retain our key employees or recruit new employees, our growth and results of operations could be adversely affected.

We rely on key personnel, including a substantial number of employees who have technical expertise in their subject matter area and a strong network of relationships with individuals and institutions in the markets we serve. In addition, as we expand into international markets, we will need to hire local personnel within those markets. Further, competition for key personnel is substantial and may increase, particularly if new competitors seek to enter one of our markets or existing market participants seek to increase their market share. If we were to have less success in recruiting and retaining these employees than our competitors, for reasons including domestic or foreign regulatory restrictions on compensation practices or the availability of more attractive opportunities elsewhere, our growth and results of operations could be adversely affected.

Moreover, equity awards are an important component of our compensation program, especially for our executive officers and other members of senior management. The extent of shares available for grant in connection with such equity awards pursuant to our incentive compensation plans is generally subject to stockholder approval. If we do not have sufficient shares to grant to existing or new employees, there could be an adverse effect on our recruiting and retention efforts, which could impact our growth and results of operations.

The occurrence of fraudulent activity, breaches of our information security or cybersecurity-related incidents could have a material adverse effect on our business, financial condition or results of operations.

As a financial institution, we are susceptible to fraudulent activity, information security breaches and cybersecurity-related incidents that could be committed against us, our clients or our third party partners, which may result in financial losses or

increased costs to us or our clients, disclosure or misuse of our information or our client information, misappropriation of assets, privacy breaches against our employees or clients, litigation or damage to our reputation. Such fraudulent activity may take many forms, including check fraud, electronic fraud, wire fraud, phishing, social engineering, business email compromise, malfeasance and other dishonest acts. Information security breaches and cybersecurity-related incidents may include fraudulent or unauthorized access to systems used by us, our clients or third party partners, denial or degradation of service attacks, malware or other cyber-attacks. Sources of attacks vary and may include hackers, disgruntled employees or vendors, organized crime, terrorists, foreign governments, corporate espionage and activists. In recent periods, there continues to be a rise in electronic fraudulent activity, security breaches and cyber-attacks within the financial services industry, especially in the commercial banking sector due to cyber criminals targeting commercial bank accounts. Consistent with industry trends, we remain at risk for attempted electronic fraudulent activity, as well as attempts at security breaches and cybersecurity-related incidents. These attempts can be, and in some cases have been, directed at us (including our employees, executives or directors), as well as our vendors or other third party partners. Moreover, in recent periods, large corporations (including financial institutions and retail companies), as well as U.S. governmental agencies, have suffered significant data breaches, in some cases exposing not only confidential and proprietary corporate information, but also sensitive financial and other personal information of their customers and employees and subjecting them to potential fraudulent activity. Some of our clients may have been affected by these breaches, which increase their risks of identity theft, credit card fraud and other fraudulent activity that could involve their accounts with us, which could subject us to potential liability. Additionally, state-sponsored or terrorist-sponsored efforts to hack or disable information technology systems increases risks, since the motivation may be for geopolitical as much as for financial gain.

Information pertaining to us and our clients is maintained, and transactions are executed, on our networks and systems, as well as those of our clients and certain of our third party partners, such as our online banking or reporting systems. The secure maintenance and transmission of confidential information, as well as execution of transactions over these systems, are essential to protect us and our clients against fraud and security breaches and to maintain our clients' confidence. Breaches of information security also may occur, and in infrequent cases have occurred, through intentional or unintentional acts by those having access to our systems or our clients' or counterparties' confidential information, including employees and third party contractors. In addition, SVB provides card transaction processing services to some merchant customers under agreements we have with those merchants and/or with the payment networks. Under these agreements, we may be responsible for certain losses and penalties if one of our merchant customers suffers a data security breach. Furthermore, SVB's cardholders use their debit and credit cards to make purchases from third parties or through third party processing services. As such, SVB is subject to risk from data breaches of such third party's information systems or its payment processors, for reasons including unauthorized card use. Such a data security breach could compromise SVB's account information, cause losses on card accounts and increase litigation costs. SVB may suffer losses associated with reimbursing our customers for such fraudulent transactions on customers' card accounts, as well as for other costs related to data security breaches, such as replacing cards associated with compromised card accounts.

We also offer certain services that allow non-account holders to process payments through SVB's systems, as well as financial analytics services. In the course of providing those services, we may obtain sensitive data about customers who do not otherwise hold accounts with us, including information regarding accounts held at other institutions, as well as profit and loss and other proprietary financial or other information regarding our customers or the non-account holders they service. In the event of a data breach, this sensitive information may be exposed and could subject us to claims for damages.

In addition, increases in criminal activity levels and sophistication, advances in computer capabilities, new discoveries, vulnerabilities in third party technologies and services (including cloud computing and storage, computing hardware, browsers and operating systems) or other developments could result in a compromise or breach of the technology, processes and controls that we use to prevent fraudulent transactions and to protect data about us, our clients and underlying transactions, as well as the technology used by our clients to access our systems. The forms, methods and sophistication of fraud, security breaches, cyber-attacks and other similar criminal activity continue to evolve, and as we evolve and grow our business, especially in new businesses or geographies, we may be unable to foresee future risks. Although we have developed, and continue to invest in, systems and processes that are designed to detect and prevent security breaches and cyber-attacks and periodically test our security and effectiveness of our cyber incident response plans, our risk mitigation strategies and internal controls, including risk assessment policies and procedures, testing, backup and redundancy systems, incident response plans, training and authentication or encryption tools, may not be effective against defending against fraud, security breaches or cyber-attacks. Our inability to anticipate, or failure to adequately mitigate, fraudulent activities, breaches of security or cyber-attacks could result in: financial losses to us or our clients; our loss of business and/or clients; loss or exposure of our confidential data or information; damage to our reputation; the incurrence of additional expenses; loss of personnel; disruption to our business; force majeure claims by us or critical suppliers; our inability to grow our online services or other businesses; additional regulatory scrutiny or penalties; or our exposure to civil litigation and possible financial liability.

We face risks associated with the ability of our information technology systems and our people and processes to support our operations and future growth effectively.

Our information technology systems, people and internal business processes are critical to our operations and future growth. Our systems may be subject to service outages from time to time due to various reasons, including infrastructure failures, interruptions due to system upgrades or malware removal, employee error or malfeasance, or other force majeure-related reasons (such as recent blackouts in California), which could cause business disruption. Additionally, our systems and processes need to be sufficiently scalable to operate effectively, and we need to have the appropriate talent and organizational structures to support our business. As a result, we continue to invest in technology and more automated solutions in order to optimize the efficiency of our core operational and administrative infrastructure. In the absence of having effective automated solutions, we may rely on manual processes which may be more prone to error. Moreover, as we evolve, we may further install or implement new systems and processes or otherwise replace, upgrade or make other modifications to our existing systems and processes. These changes could be costly and require significant investment in the training of our employees and other third party partners, as well as impose substantial demands on management time. If we do not implement new initiatives or utilize new technologies effectively or in accordance with regulatory requirements, or if our people (including outsourced business partners) are not appropriately trained or developed or do not perform their functions properly or have the appropriate resources to do so, we could experience business interruptions or other system failures which, among other things, could result in inefficiencies, revenue losses, loss of clients, employee dissatisfaction, exposure to fraudulent activities, regulatory enforcement actions or damage to our reputation, each of which could have a material adverse effect on our business.

Business disruptions and interruptions due to natural disasters and other external events beyond our control can adversely affect our business, financial condition or results of operations.

Our operations can be subject to natural disasters and other external events beyond our control, such as the effects of earthquakes, fires, floods, severe weather, public health issues such as the recent outbreak of the coronavirus or other pandemic diseases, power failures, telecommunication loss, major accidents, terrorist attacks, acts of war, and other natural and man-made events, some of which may be intensified by the effects of climate change and changing weather patterns. For example, our corporate headquarters and some of our critical business offices are located in California, which has recently experienced major wildfires and blackouts and is located over major earthquake fault lines. An earthquake or other disaster could cause severe destruction, disruption or interruption to our operations or property and significantly impact our employees. More recently, the coronavirus outbreak, which originated in China, has impacted other countries. There have been numerous reports of the outbreak disrupting or restricting supply chains, resulting in closures of facilities and reductions in demand across companies in a variety of industries. It is also possible that the spread of the coronavirus may have direct effects on our operations, such as limiting employee travel or increasing telecommuting arrangements. In addition, recent developments and reports relating to the coronavirus have coincided with heightened volatility in financial markets in the U.S. and worldwide. If the coronavirus adversely affects the ability of our borrowers to satisfy their obligations, the demand for our loans, or our business operations, or leads to a significant or prolonged impact on global markets or economic growth, our financial conditions and results of operations could be adversely affected.

We and other financial institutions generally must resume operations promptly following any interruption. If we were to suffer a disruption or interruption and were not able to resume normal operations within a period consistent with industry standards, our business, financial condition or results of operations could be adversely affected in a material manner. In addition, depending on the nature and duration of the disruption or interruption, we might become vulnerable to fraud, additional expense or other losses, or to a loss of business and clients. Although we have implemented a business continuity management program that we continue to enhance on an ongoing basis, there can be no assurance that the program will adequately mitigate the risks of such business disruptions and interruptions.

Additionally, natural disasters and external events, including those occurring in and around California, could affect the business and operations of our clients, which could impair their ability to repay their loans or fees when due, impair the value of collateral securing their loans, cause our clients to reduce their deposits with us, or otherwise adversely affect their business dealings with us, any of which could have a material adverse effect on our business, financial condition or results of operations. A significant portion of our client borrowers, including our premium winery and vineyard clients, our SVB Private Bank mortgage clients and other corporate clients, are located in or have offices in California, which has historically experienced severe natural disasters resulting in disruptions to businesses and damage to property, including wildfires and earthquakes. If there is a major earthquake, flood, fire, drought or other natural or catastrophic disaster in California or elsewhere in the markets in which we operate, our borrowers may experience uninsured property losses or sustained disruption to business or loss that may materially impair their ability to meet the terms of their loan obligations.

We face reputation and business risks due to our interactions with business partners, service providers and other third parties.

We rely on third parties, both in the United States and internationally in countries such as Canada, the United Kingdom, Germany, Denmark, Hong Kong, China, Israel and India, to provide services to us and our clients or otherwise act as partners in our business activities in a variety of ways, including through the provision of key components of our business infrastructure.

We expect these third parties to perform services for us, fulfill their obligations to us, accurately inform us of relevant information, and conduct their activities in a manner that reflects positively on our brand and business. Although we manage exposure to such third party risk through a variety of means, including the performance of due diligence and ongoing monitoring of vendor performance, there can be no assurance these efforts will be effective. Any failure of our business partners, service providers or other third parties to meet their commitments to us or to perform in accordance with our expectations could result in operational disruptions, increased expenditures, regulatory actions in which we may be held responsible for the actions of third parties, damage to our reputation and the loss of clients, which in turn could harm our business and operations, strategic growth objectives and financial performance.

Our third party partners may also rely on their own business partners and service providers in the ordinary course of their business. Although we seek to diversify our exposure to third party partners in order to increase our resiliency, we are nevertheless exposed to the risk that a disruption or other information technology event at a common service provider to our vendors could impede their ability to provide products or services to us, which in turn could harm our business and operations, strategic growth objectives and financial performance.

The soundness of other financial institutions could adversely affect us.

Financial services institutions are interrelated because of trading, clearing, counterparty and other relationships. We routinely execute transactions with counterparties in the financial services industry, including brokers and dealers, commercial banks, investment banks, payment processors and other institutional clients, which may result in payment obligations to us or to our clients due to products we have arranged. Many of these transactions expose us to credit and market risk that may cause our counterparty or client to default. In particular, the interconnectivity of multiple financial services institutions with central agents, exchanges and clearing houses, and the increased centrality of these entities, increases the risk that an operational failure at one institution or entity may cause an industry-wide operational failure that could materially impact our ability to conduct business. Any losses arising from such occurrences could materially and adversely affect our business, results of operations or financial condition.

We depend on the accuracy and completeness of information about customers and counterparties.

In deciding whether to extend credit or enter into other transactions with customers and counterparties, we may rely on information furnished to us by or on behalf of customers and counterparties, including financial statements and other information relating to their business or financial condition. We also may rely on representations of customers and counterparties as to the accuracy and completeness of that information and, with respect to financial statements, on reports or other certifications of their auditors or accountants. For example, under our accounts receivable financing arrangements, we rely on information, such as invoices, contracts and other supporting documentation, provided by our clients and their account debtors to determine the amount of credit to extend. Similarly, in deciding whether to extend credit, we may rely upon our customers' representations that their financial statements conform to GAAP (or other applicable accounting standards in foreign markets) and present fairly, in all material respects, the financial condition, results of operations and cash flows of the customer. If we rely on materially misleading, false, inaccurate or fraudulent information in evaluating the creditworthiness or other risk profiles of our clients or counterparties, we could be subject to credit losses, regulatory action, reputational harm or experience other adverse effects on our business, results of operations or financial condition.

If we fail to maintain an effective system of internal control over financial reporting, we may not be able to accurately report our financial results. As a result, current and potential holders of our securities could lose confidence in our financial reporting, which would harm our business and the trading price of our securities.

Maintaining and adapting our internal controls over financial reporting, as required by Section 404 of the Sarbanes-Oxley Act and related rules and regulations of the SEC, can be costly and require significant management attention. As we continue to grow or acquire additional businesses, our internal controls may become more complex and require additional resources to ensure they remain effective amidst dynamic regulatory and other guidance. Failure to maintain effective controls or implement required new or improved controls or difficulties encountered in the process may harm our operating results or cause us to fail to meet our reporting obligations. If we or our independent registered accounting firm identify material weaknesses in our internal controls over financial reporting or if we are otherwise required to restate our financial statements, we could be required to implement costly and time-consuming remedial measures and could lose investor confidence in the accuracy and completeness of our financial reports. We may also face regulatory enforcement or other actions, including the potential delisting of our common stock from the NASDAQ Stock Market. This could have an adverse effect on our business, financial condition or results of operations, as well as the trading price of our securities, and could potentially subject us to litigation.

We face risks associated with our current international operations and ongoing international expansion.

One important component of our strategy is to expand internationally. We currently have international offices in Canada, the United Kingdom, Israel, Germany, Denmark, India, Hong Kong and China, including a joint-venture bank in China. We plan to expand our operations and business activities in some of our current international markets, as well as expand our business beyond those markets. Our efforts to expand our business internationally carry certain risks, including risks arising from the uncertainty regarding our ability to generate revenues from foreign operations; risks associated with leveraging and doing business with local business partners through joint ventures, strategic arrangements or other partnerships; and other general operational risks. In addition, there are certain risks inherent in doing business on an international basis, including, among others, legal, regulatory and tax requirements and restrictions; uncertainties regarding liability, tariffs and other trade barriers, such as recent trade tensions between the United States and China; uncertainties regarding international public health issues like the recent outbreak of the coronavirus; difficulties in staffing and managing foreign operations; the incremental requirement of management's attention and resources; differing technology standards or customer requirements; data security or transfer risks; cultural differences; political and economic risks such as uncertainty created by the withdrawal of the United Kingdom from the European Union on January 31, 2020; and financial risks, including currency and payment risks such as fluctuation in the value of the euro and Chinese yuan (renminbi). These risks could hinder our ability, or the ability of our local partners, to service our clients effectively, and adversely affect the success of our international operations, which, in turn, could have a material adverse effect on our overall business, results of operations or financial condition. In addition, we face risks that our employees and affiliates may fail to comply with applicable laws and regulations governing our international operations, including the U.S. Foreign Corrupt Practices Act, U.K. Bribery Act, anti-corruption laws, privacy laws, economic and trade sanctions requirements and other applicable laws and regulations. Failure to comply with such laws and regulations could, among other things, result in enforcement actions and fines against us, as well as limitations on the conduct of our business, any of which could have a material adverse effect on our business and results of operations.

Legal and Regulatory Risks

We are subject to extensive regulation that could limit or restrict our activities, impose financial requirements or limitations on the conduct of our business, or result in higher costs to us, and the stringency of the regulatory framework applicable to us may increase if, and as, our balance sheet continues to grow.

SVB Financial, including the Bank, is extensively regulated under federal and state laws and regulations governing financial institutions, including those imposed by the FDIC, the Federal Reserve, the CFPB, the SEC and the DBO, as well as various regulatory authorities that govern our global activities. Federal and state laws and regulations govern, restrict, limit or otherwise affect the activities in which we may engage and may affect our ability to expand our business over time, result in an increase in our compliance costs, including higher FDIC insurance premiums, and may affect our ability to attract and retain qualified executive officers and employees (especially when compared to competitors not subject to similar restrictions). Further, the stringency of the regulatory framework that applies to us may increase as our asset size and international business grows.

A change in applicable statutes, regulations or regulatory policies could have a material adverse effect on our business, including limiting or imposing conditions on the types of financial services and products we may offer or increasing the ability of nonbanks to offer competing financial services and products. Increased regulatory requirements (and the associated compliance costs), whether due to the growth of our business, the adoption of new laws and regulations, changes in existing laws and regulations, or more expansive or aggressive interpretations of existing laws and regulations, may have a material adverse effect on our business, financial condition or results of operations.

If we continue to grow and meet regulatory thresholds that trigger enhanced standards, we will be subject to more stringent regulations, including certain enhanced prudential standards applicable to large bank holding companies.

As of December 31, 2019, our total consolidated assets were \$71.0 billion. Under the Tailoring Rules, many enhanced prudential standards and other related requirements do not currently apply to bank holding companies with total consolidated assets of \$100 billion or less, such as SVB Financial. Certain enhanced prudential standards and related requirements would apply to us should we exceed \$100 billion in total consolidated assets. For example, Category IV institutions under the Tailoring Rules (which generally are those with between \$100 billion and \$250 billion in total consolidated assets and less than \$75 billion in certain risk-based indicators) are subject to additional requirements, such as supervisory stress testing and the requirement to submit an annual capital plan to the Federal Reserve.

If we become subject to additional prudential standards, we will face more stringent requirements or limitations on our business, as well as increased compliance costs. For example, if we are subject to CCAR, the Federal Reserve may object to, or otherwise not respond favorably to, our capital plan, capital actions or stress test results, and we may be limited as to how we utilize our capital, including with respect to common stock repurchases. See "Business-Supervision and Regulation-Enhanced

Prudential Standards,” under this Part I, Item 1, for a more detailed description of the various requirements that may become applicable to us.

We face a risk of noncompliance and enforcement action with the Bank Secrecy Act, other anti-money laundering and anti-bribery statutes and regulations, and U.S. economic and trade sanctions.

The Bank Secrecy Act, the USA PATRIOT Act of 2001, and other laws and regulations require financial institutions to, among other duties, institute and maintain an effective anti-money laundering program and file suspicious activity and currency transaction reports as appropriate. The federal Financial Crimes Enforcement Network is authorized to impose significant civil money penalties for violations of those requirements and has engaged in coordinated enforcement efforts with state and federal banking regulators, as well as the U.S. Department of Justice and IRS. We also must comply with U.S. economic and trade sanctions administered by the U.S. Treasury Department’s Office of Foreign Assets Control and the U.S. Foreign Corrupt Practices Act, and we, like other financial institutions, are subject to increased scrutiny for compliance with these requirements. We maintain policies, procedures and systems designed to detect and deter prohibited financing activities. However, if these controls were deemed deficient or fail to prevent wrongdoing, we could be subject to liability, including civil fines and regulatory actions, which may include restrictions on our ability to pay dividends and the necessity to obtain regulatory approvals to proceed with certain aspects of our business plan. In addition, any failure to effectively maintain and implement adequate programs to combat money laundering and terrorist financing could have serious reputational consequences for us. Any of these results could materially and adversely affect our business, financial condition or results of operations.

If we were to violate, or fail to comply with, international, federal or state laws or regulations governing financial institutions, we could be subject to disciplinary action that could have a material adverse effect on our business, financial condition, results of operations or reputation.

International, federal and state banking regulators possess broad powers to take supervisory or enforcement action with respect to financial institutions. Other regulatory bodies, including the SEC, FINRA and state securities regulators, regulate investment advisers and broker-dealers, including our subsidiaries, SVB Asset Management and SVB Leerink. These laws and regulations are highly complex, and if we were to violate, even if unintentionally or inadvertently, regulatory authorities could take various actions against us, such as imposing restrictions on how we conduct our business, imposing higher capital and liquidity requirements, requiring us to maintain higher insurance levels, revoking necessary licenses or authorizations, imposing censures, civil money penalties or fines, issuing cease and desist or other supervisory orders, and suspending or expelling us or any of our employees from certain businesses. For example, we could face material restrictions on our activities and our ability to enter into certain transactions if SVB Financial and the Bank cease to maintain their status as well-capitalized or well-managed as defined under relevant regulations. These enforcement actions could have a material adverse effect on our business, financial condition, results of operations and reputation.

Laws and regulations regarding the handling of personal data and information may impede our services or result in increased costs, legal claims or fines against us.

We are subject to an evolving body of federal, state and non-U.S. laws, regulations, guidelines and principles regarding data privacy and security, including the protection of personal information. Legal requirements relating to the collection, storage, handling, use, disclosure, transfer and security of personal data continue to evolve, and regulatory scrutiny in this area is increasing around the world. Significant uncertainty exists as privacy and data protection laws may be interpreted and applied differently from country to country and may create inconsistent or conflicting requirements. For example, the General Data Protection Regulation, or GDPR, extends the scope of the European Union data protection law to all companies processing data of EU residents, regardless of location. In 2018, the State of California, where our principal offices are located, passed the California Consumer Privacy Act, or CCPA, which became effective as of January 2020, and established new requirements regarding handling of personal data to entities serving or employing California residents. The GDPR and CCPA have heightened our privacy compliance obligations and have required us to evaluate our current operations, information technology systems and data handling practices and implement changes where necessary to comply, with associated costs. Our failure to comply with any such laws, or the failure of our current operations, information technology systems and data handling practices to prevent breaches involving personal data, may result in significant liabilities and/or reputational harm.

Adverse results from litigation or governmental or regulatory investigations can impact our business practices and operating results.

We are currently involved in certain legal proceedings, and may from time to time be involved in governmental or regulatory investigations and inquiries relating to matters that arise in connection with the conduct of our business. While we have not recognized a material accrual liability for any lawsuits and claims filed or pending against us to date, the outcome of litigation and other legal and regulatory matters is inherently uncertain and it is possible that the actual results of one or more of such matters may be substantially higher than the amounts reserved, or that judgments may be rendered, or fines or penalties assessed

in matters for which we have no reserves. Further, adverse outcomes in lawsuits or investigations may result in significant monetary damages, admissions of guilt or injunctive relief that may adversely affect our operating results or financial condition as well as our ability to conduct our businesses as they are presently being conducted. Any such resolution of a criminal matter involving us or our employees could lead to increased exposure to civil litigation and overlapping government investigations, could adversely affect our reputation, could result in penalties or limitations on our ability to conduct our activities generally or in certain circumstances and could have other negative effects.

Moreover, even if we prevail in such actions, litigation and investigations can be costly and time-consuming, and often risk diverting the attention of our management and key personnel from our business operations, which 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, the FASB or the SEC may change the financial accounting and reporting standards that govern the preparation of our financial statements. Also, our global initiatives, as well as continuing trends towards the convergence of international accounting standards, such as rules that may be adopted under the International Financial Reporting Standards ("IFRS"), may result in our Company being subject to new or changing accounting and reporting standards. In addition, the bodies that interpret the accounting standards (such as banking regulators or outside auditors) may change their interpretations or positions on how these standards should be applied. These changes may be beyond our control, can be hard to predict and can materially impact how we record and report our financial condition or results of operations. In some cases, we could be required to apply a new or revised standard retrospectively, or apply an existing standard differently, also retrospectively, in each case resulting in our revising or restating prior period financial statements.

We could be adversely affected by changes in tax laws and regulations or the interpretations of such laws and regulations.

We are subject to the income tax laws of the United States, its constituent states and municipalities and those of the foreign jurisdictions in which we have business operations. These tax laws are complex and may be subject to different interpretations. We must make judgments and interpretations about the application of these inherently complex tax laws when determining our provision for income taxes, our deferred tax assets and liabilities, and our valuation allowance. Changes to the tax laws, administrative rulings or court decisions could increase our provision for income taxes and reduce our net income.

A failure to appropriately identify and address potential conflicts of interest could adversely affect our businesses.

Due to the broad scope of our businesses, we regularly address potential conflicts of interest, including situations where our services to a particular client or our own investments or other interests conflict, or are perceived to conflict, with the interests of that client or another client, as well as situations where one or more of our businesses have access to material non-public information that may not be shared with our other businesses and situations where we may be a creditor of an entity with which we also have an advisory or other relationship. For example, SVB Leerink provides investment banking services to clients in the healthcare and life sciences industry, some of which may also be clients or potential clients of the Bank. In addition, we invest in and partner with entities in the innovation economy, some of which may be clients or potential clients of the Bank.

We have procedures and controls designed to identify and address these conflicts of interest, including those designed to prevent the improper sharing of information among our businesses. However, appropriately identifying and dealing with conflicts of interest is complex and difficult, and our reputation could be damaged and the willingness of clients to enter into transactions with us may be affected if we fail, or appear to fail, to identify, disclose and deal appropriately with conflicts of interest. In addition, potential or perceived conflicts could give rise to litigation or regulatory enforcement actions.

Our holding company, SVB Financial, relies on equity warrant assets income, investment distributions and dividends from its subsidiaries for most of its cash revenues.

SVB Financial is a holding company and is a separate and distinct legal entity from its subsidiaries. It receives most of its cash revenues from three primary funding sources: income from our equity warrant assets and investment securities and, to the extent declared, cash dividends paid by our subsidiaries, primarily the Bank. These sources generate cash which is used by SVB Financial to pay operating and borrowing costs and, to the extent authorized or declared, fund dividends to holders of its capital stock and stock repurchase programs. Any income derived from those financial instruments is subject to a variety of factors as discussed in the "Credit Risks" portion of this "Risk Factors" section. Moreover, various federal and state laws and regulations limit the amount of dividends that the Bank and certain of our nonbank subsidiaries may pay to SVB Financial. In addition, SVB Financial's right to participate in a distribution of assets upon a liquidation or reorganization of any of its subsidiaries is subject to the prior claims of the subsidiary's creditors.

Anti-takeover provisions and federal laws, particularly those applicable to financial institutions, may limit the ability of another party to acquire us, which could prevent a merger or acquisition that may be attractive to stockholders and/or have a material adverse effect on our stock price.

As a bank holding company, we are subject to certain laws that could delay or prevent a third party from acquiring us. The Bank Holding Company Act of 1956, as amended, and the Change in Bank Control Act of 1978, as amended, together with federal and state regulations, require that, depending on the particular circumstances, either the Federal Reserve must approve or, after receiving notice, must not object to any person or entity acquiring “control” (as determined under the Federal Reserve’s standards) of a bank holding company, such as SVB Financial, or a state member bank, such as the Bank. In addition, DBO approval may be required in connection with the acquisition of control of the Bank. Moreover, certain provisions of our certificate of incorporation and by-laws and certain other actions we may take or have taken could delay or prevent a third party from acquiring us. Any of these laws, regulations and other provisions may prevent a merger or acquisition that would be attractive to stockholders and could limit the price investors would be willing to pay in the future for our common stock.

Strategic, Reputational and Other Risks

Concentration of risk increases the potential for significant losses, or, to the extent we establish internal concentration limits to mitigate such risk, lower revenues or a slow-down in growth.

Our focus on certain markets or segments, including those by client industry, life-cycle stage, size and geography, increases the potential for significant losses due to concentration of risk. It may also result in lower revenues or slower growth if we choose to limit growth in certain markets or segments to mitigate concentration risk. While there may exist a great deal of diversity within each industry, our clients are concentrated within the following general industry niches: technology, life science and healthcare, private equity and venture capital and premium wine. Clients of our private banking division are primarily professionals in these industries. In particular, our technology clients generally tend to be in the industries of hardware (such as semiconductors, communications, data storage and electronics), software/internet (such as infrastructure software, applications, software services, digital content and advertising technology), and energy and resource innovation. Our life science and healthcare clients are concentrated in the industries of biotechnology, medical devices, healthcare information technology and healthcare services. Many of our client companies are also concentrated by certain stages within their life cycles, such as early-stage, mid-stage or later-stage and many of these companies are venture capital-backed. In addition, growth prospects and our geographic focus on key domestic and international innovation markets, as well as premium wine markets, may lead to an increase in our concentration risk. Our loan concentrations are derived from our borrowers engaging in similar activities as well as certain types of loans extended to a diverse group of borrowers that could cause those borrowers to be similarly impacted by economic or other conditions. Any adverse effect on any of our areas of concentration could have a material impact on our business, results of operations and financial condition, even when economic and market conditions are generally favorable to our competitors that are not exposed to similar concentration risk.

Decreases in the amount of equity capital available to our portfolio companies could adversely affect our business, growth and profitability.

Our core strategy is focused on providing banking and financial products and services to companies, investors, entrepreneurs and influencers in the innovation economy, including in particular to early-stage and mid-stage companies that receive financial support from sophisticated investors, including venture capital or private equity firms, “angels,” corporate investors, crowd-funding and other evolving sources of capital. We derive a meaningful share of our deposits from these companies and provide them with loans as well as other banking products and services. In some cases, our lending credit decision is based on our analysis of the likelihood that our client will receive additional rounds of equity capital from investors or other funding sources. Among the factors that have affected and could in the future affect the amount of capital available to our portfolio companies are: the receptivity of the capital markets; the prevalence of public equity offerings or mergers and acquisitions activity (primarily among companies within the technology and life science and healthcare industry sectors); the availability and return on alternative investments; economic conditions in the technology, life science and healthcare and private equity/venture capital industries; and overall general economic conditions. Reduced capital markets valuations could also reduce the amount of capital available to our client companies, including companies within our technology and life science and healthcare industry sectors. If the amount of capital available to such companies decreases, it is likely that the number of our new clients and investor financial support to our existing clients could decrease, which could have an adverse effect on our business, profitability and growth prospects.

We face competitive pressures that could adversely affect our business, results of operations, financial condition or growth.

We compete with other banks as well as specialty and diversified financial services companies and investment, debt, venture capital and private equity funds, some of which are larger than we are and which may offer a broader range of lending, leasing, payments, foreign currency exchange, and other financial products and advisory services to our client base. We also compete

with other alternative and more specialized lenders, such as online “marketplace” lenders, peer-to-peer lenders and other non-traditional lenders that have emerged in recent years.

Moreover, we compete with fintech and non-financial services companies, many of which offer bank or bank-like products, specialized services involving the elimination of banks as intermediaries (known as “disintermediation”) and/or the unbundling of banking products and services into point solutions. The activity of fintechs and support of fintechs by venture capital firms has increased significantly in recent years and are expected to continue to increase. For example, a number of fintechs have applied for bank or industrial loan charters or have partnered with existing banks to allow them to offer deposit products to their customers. There has also been significant fintech activity in the areas of credit cards, payments, foreign exchange and lending. Regulatory changes, such as the recently proposed revisions to the FDIC’s rules on brokered deposits intended to reflect recent technological changes and innovations, may also make it easier for fintechs to partner with banks and offer deposit products. In addition, some traditional technology companies are beginning to provide financial services directly to their customers and are expected to continue to explore new ways to do so. Many of these companies have fewer regulatory constraints than we do, and some have lower cost structures. Some of these companies also have greater resources to invest in technological improvements than we currently have and may be able to better recruit technology talent.

Our competitors may focus their marketing efforts on industry sectors that we serve; for example, they may seek to increase their lending and other financial relationships with technology companies or special industries such as wineries. When new competitors seek to enter one of our markets, or when existing market participants seek to increase their market share, they sometimes undercut the pricing and/or credit terms prevalent in that market, which could adversely affect our market share or ability to exploit new market opportunities. We may have to agree to accept less attractive credit, pricing and other investment terms if we act to meet these competitive challenges, which could adversely affect our business, results of operations, financial condition and future growth. Similarly, competitive pressures and market disruption could adversely affect our access to capital and attractive investment opportunities for our funds business.

Our ability to maintain or increase our market share depends on our ability to attract and maintain, as well as meet the needs of, existing and future clients.

Our success depends, in part, upon our ability to maintain or increase our market share. In particular, much of our success depends on our ability to attract early-stage or start-up companies as clients and to retain those companies as clients as they grow and mature successfully through the various stages of their life cycles. As a result, we adapt our products and services to evolving industry standards as well as introduce new products and services beyond industry standards in order to serve our clients, who are innovators themselves. A failure to achieve market acceptance for any new products or services we introduce, a failure to introduce products or services that the market demands, or the costs associated with developing, introducing and providing new products and services could have an adverse effect on our business, results of operations, growth prospects and financial condition.

We face risks in connection with our strategic undertakings and new business initiatives.

We are engaged, and may in the future engage, in strategic activities domestically or internationally (including acquisitions such as the acquisition of SVB Leerink), joint ventures, partnerships, investments or other business growth initiatives or undertakings. There can be no assurance that we will successfully identify appropriate opportunities, that we will be able to negotiate or finance such activities or that such activities, if undertaken, will be successful.

We are focused on our long-term growth and have undertaken various strategic activities and business initiatives, many of which involve activities that are new to us or, in some cases, are experimental in nature. For example, we are expanding our global presence and may engage in activities in jurisdictions where we have limited experience from a business, legal and/or regulatory perspective. With the acquisition of SVB Leerink, we have also expanded into new lines of business, namely, investment banking and M&A advisory services. We are also expanding our payments processing capabilities to better serve our clients, including innovating new electronic payment processing solutions, developing new payments technologies, and supporting new or evolving disruptive payments systems. We may also serve clients that deal with new or evolving industries or business activities, such as digital currencies. Given our evolving geographic and product diversification, and our innovative product solutions, these payment-related initiatives may subject us to, among other risks, increased business, reputational and operational risk, as well as more complex legal, regulatory and compliance costs and risks.

Our ability to execute strategic activities and new business initiatives successfully (such as the acquisition of SVB Leerink) will depend on a variety of factors. These factors likely will vary based on the nature of the activity but may include our success in integrating an acquired company or a new internally developed growth initiative into our business, operations, services, products, personnel and systems, operating effectively with any partner with whom we elect to do business, meeting applicable regulatory requirements and obtaining applicable regulatory licenses or other approvals, hiring or retaining key employees, achieving anticipated synergies, meeting management’s expectations, realizing the anticipated benefits of the activities, and

overall general market conditions. Our ability to address these matters successfully cannot be assured. In addition, our strategic efforts may divert resources or management's attention from ongoing business operations and may subject us to additional regulatory scrutiny and potential liability. If we do not successfully execute a strategic undertaking, it could adversely affect our business, financial condition, results of operations, reputation or growth prospects. In addition, if we were to conclude that the value of an acquired business had decreased and that the related goodwill had been impaired, that conclusion would result in an impairment of goodwill charge to us, which would adversely affect our results of operations.

In addition, in order to finance future strategic undertakings, we might require additional financing, which might not be available on terms favorable to us, or at all. If obtained, equity financing could be dilutive and the incurrence of debt and contingent liabilities could have a material adverse effect on our business, results of operations or financial condition.

Our business reputation and relationships are important and any damage to them could have a material adverse effect on our business.

Our reputation is very important in sustaining our business and we rely on our relationships with our current, former and potential clients and stockholders, the venture capital and private equity communities, and other actors in the industries that we serve. Any damage to our reputation, whether arising from regulatory, supervisory or enforcement actions, matters affecting our financial reporting or compliance with SEC and exchange listing requirements, negative publicity, the way in which we conduct our business or otherwise, could strain our existing relationships and make it difficult for us to develop new relationships. Additionally, negative publicity regarding the industries that we focus on serving (for example, technology, private equity or venture capital) may also damage our reputation. Any such damage to our reputation and relationships could in turn lead to a material adverse effect on our business.

Whereas negative public opinion once was primarily driven by adverse news coverage in traditional media, the increased use of social media platforms facilitates the rapid dissemination of information or misinformation, which magnifies the potential harm to our reputation. In addition, the behavior of our employees, including with respect to our employees' use of social media, subjects us to potential negative publicity if such behavior does not align with our high standards of integrity or fails to comply with regulations or accepted practices.

An ineffective risk management framework could have a material adverse effect on our strategic planning and our ability to mitigate risks and/or losses and could have adverse regulatory consequences.

We have implemented a risk management framework to identify and manage our risk exposure. This framework is comprised of various processes, systems and strategies, and is designed to manage the types of risk to which we are subject, including, among others, credit, market, liquidity, operational, capital, compliance, strategic and reputational risks. Our framework also includes financial, analytical, forecasting or other modeling methodologies, which involve management assumptions and judgment. In addition, our Board of Directors, in consultation with management, has adopted a risk appetite statement, which sets forth certain thresholds and limits to govern our overall risk profile. However, there is no assurance that our risk management framework, including the risk metrics under our risk appetite statement, will be effective under all circumstances or that it will adequately identify, manage or mitigate any risk or loss to us. If our risk management framework is not effective, we could suffer unexpected losses and become subject to regulatory consequences, as a result of which our business, financial condition, results of operations or prospects could be materially adversely affected.

We rely on quantitative models to measure risks and to estimate certain financial values.

Quantitative models may be used to help manage certain aspects of our business and to assist with certain business decisions, including estimating credit losses, measuring the fair value of financial instruments when reliable market prices are unavailable, estimating the effects of changing interest rates and other market measures on our financial condition and results of operations, and managing risk. However, all models have certain limitations. For example, our measurement methodologies rely on many assumptions, historical analyses and correlations. These assumptions may not capture or fully incorporate conditions leading to losses, particularly in times of market distress, and the historical correlations on which we rely may no longer be relevant. Additionally, as businesses and markets evolve, our measurements may not accurately reflect the changing environment. Further, even if the underlying assumptions and historical correlations used in our models are adequate, our models may be deficient due to errors in computer code, bad data, misuse of data, or the use of a model for a purpose outside the scope of the model's design. Although we employ strategies to manage and govern the risks associated with our use of models, they may not be effective or fully reliable. As a result, our models may not capture or fully express the risks we face, suggest that we have sufficient capitalization when we do not, lead us to misjudge the business and economic environment in which we operate and ultimately cause planning failures or the reporting of incorrect information to our regulators. Any such occurrence or the perception of such occurrence by our regulators, investors or clients could in turn have a material adverse effect on our business, financial condition, results of operations or reputation.

The price of our capital stock may be volatile or may decline.

The trading price of our capital stock may fluctuate or be adversely affected as a result of a number of factors, many of which are outside our control, including trading volumes that affect the market prices of the shares of many companies. Factors that could affect the trading price of our capital stock include:

- actual or anticipated quarterly fluctuations in our operating results and financial condition;
- changes in revenue or earnings estimates or publication of research reports and recommendations by financial analysts;
- failure to meet analysts' revenue or earnings estimates;
- speculation in the press or investment community;
- strategic actions by us or our competitors;
- actions by institutional stockholders;
- fluctuations in the stock price and operating results of our competitors;
- general market conditions and, in particular, developments related to market conditions for the financial services industry;
- actual or anticipated changes in interest rates;
- market perceptions about the innovation economy, including levels of funding or "exit" activities of companies in the industries we serve;
- proposed or adopted regulatory changes or developments;
- anticipated or pending investigations, proceedings or litigation that involve or affect us; and
- domestic and international economic factors unrelated to our performance.

The trading price of the shares of our common stock and depositary shares representing fractional interests in our preferred stock and the value of our other securities will further depend on many factors, which may change from time to time, including, without limitation, our financial condition, performance, creditworthiness and prospects, and future sales of our equity or equity-related securities. In some cases, the markets have produced downward pressure on trading prices of capital stock and credit availability for certain issuers without regard to those issuers' underlying financial strength. A significant decline in the trading price of our capital stock could result in substantial losses for individual stockholders and could lead to costly and disruptive securities litigation, as well as the loss of key employees.

Our capital stock is subordinate to our existing and future indebtedness.

Our capital stock, including our common stock and depositary shares representing fractional interests in our preferred stock, ranks junior to all of SVB Financial's existing and future indebtedness and other non-equity claims with respect to assets available to satisfy claims against us, including claims in the event of our liquidation. We may incur additional indebtedness in the future to increase our capital resources or if our total capital ratio or the total capital ratio of the Bank falls below the required minimums. Furthermore, our common stock is subordinate to our Series A Preferred Stock.

We do not currently pay dividends on shares of our common stock and may not do so in the future.

Holders of shares of our capital stock are only entitled to receive such dividends as our Board of Directors may declare out of funds legally available for such payments. We do not currently pay dividends on our common stock and have no current plans to do so. Furthermore, the terms of our outstanding preferred stock prohibit us from declaring or paying any dividends on any junior series of our capital stock, including our common stock, or from repurchasing, redeeming or acquiring such junior stock, unless we have declared and paid full dividends on our outstanding preferred stock for the most recently completed dividend period. We are also subject to statutory and regulatory limitations on our ability to pay dividends on our capital stock. If we are unable to satisfy the capital requirements applicable to us for any reason, we may be limited in our ability to declare and pay dividends on our capital stock.

ITEM 1B. UNRESOLVED STAFF COMMENTS

None.

ITEM 2. PROPERTIES

Our corporate headquarters facility consists of three buildings and is located at 3003 Tasman Drive, Santa Clara, California. The total square footage of the premises leased under the current lease arrangement is approximately 213,625 square feet. The lease will expire on September 30, 2024, unless terminated earlier or extended.

We currently operate 30 regional offices in the United States as well as offices outside the United States. All of our office properties are occupied under leases or license agreements, which expire at various dates through 2030, and in most instances include options to renew or extend at market rates and terms.

Our Global Commercial Bank operations are principally conducted out of our corporate headquarters in Santa Clara, California and our office in Tempe, Arizona, and our lending teams operate out of the various regional and international offices. SVB Private Bank and SVB Capital principally operate out of our Menlo Park, California offices. SVB Leerink principally operates out of our Boston, Massachusetts and New York, New York offices.

We believe that our properties are in good condition and suitable for the conduct of our business.

ITEM 3. LEGAL PROCEEDINGS

The information set forth under Note 28—“Legal Matters” of the “Notes to the Consolidated Financial Statements” under Part II, Item 8 of this report is incorporated herein by reference.

ITEM 4. MINE SAFETY DISCLOSURES

Not applicable.

PART II.**ITEM 5. MARKET FOR THE REGISTRANT'S COMMON EQUITY, RELATED STOCKHOLDER MATTERS AND ISSUER PURCHASES OF EQUITY SECURITIES****Market Information**

Our common stock is traded on the NASDAQ Global Select Market under the symbol "SIVB".

Holders

As of January 31, 2020, there were 590 registered holders of our common stock. We believe there were approximately 93,744 beneficial holders of common stock whose shares were held in the name of brokerage firms or other financial institutions. We are not provided with the number or identities of all of these stockholders, but we have estimated the number of such stockholders from the number of stockholder documents requested by these brokerage firms for distribution to their customers.

Dividends

SVB Financial does not currently pay cash dividends on our common stock. We have not paid any cash dividends since 1992.

Our Board of Directors evaluates whether to pay cash dividends, taking into consideration such factors as it considers relevant, including our current and projected financial performance, our projected sources and uses of capital, general economic conditions, considerations relating to our current and potential stockholder base, applicable regulatory requirements, and relevant tax laws. Our ability to pay cash dividends is also limited by generally applicable corporate and banking laws and regulations. See "Business-Supervision and Regulation-Restrictions on Dividends" under Part I, Item 1 of this report.

Securities Authorized for Issuance under Equity Compensation Plans

The information required by this Item regarding equity compensation plans is incorporated by reference to the information set forth in Part III, Item 12 of this report.

Repurchases of Equity Securities by the Issuer and Affiliated Purchasers

Stock repurchase activity during the three months ended December 31, 2019 was as follows:

Period ended	Total number of shares purchased	Average price paid per share	Total number of shares purchased as part of publicly announced programs	Maximum dollar value that may yet be purchased under the programs (1)
October 31, 2019	—	\$ —	—	\$ —
November 30, 2019	—	—	—	—
December 31, 2019	—	—	—	—
Total	—	\$ —	—	\$ —

- (1) On October 24, 2019, the Company announced that its Board of Directors had authorized a \$350 million common stock repurchase program pursuant to which the Company may, from time to time and on or before the program's expiration date, repurchase shares of its outstanding common stock in the open market, in privately-negotiated transactions, or otherwise, subject to applicable laws and regulations. The extent to which the Company repurchases its shares, and the timing of such repurchases, will depend upon a variety of factors, including market conditions, regulatory requirements, availability of funds, and other relevant considerations, as determined by the Company. The Company may, in its discretion, begin, suspend or terminate repurchases at any time prior to the program's expiration, without any prior notice. Repurchases may also be made pursuant to a trading plan under Rule 10b5-1 under the Exchange Act, which would permit shares to be repurchased when the Company might otherwise be precluded from doing so because of self-imposed trading blackout periods or other regulatory restrictions. The new stock repurchase program expires on October 29, 2020.

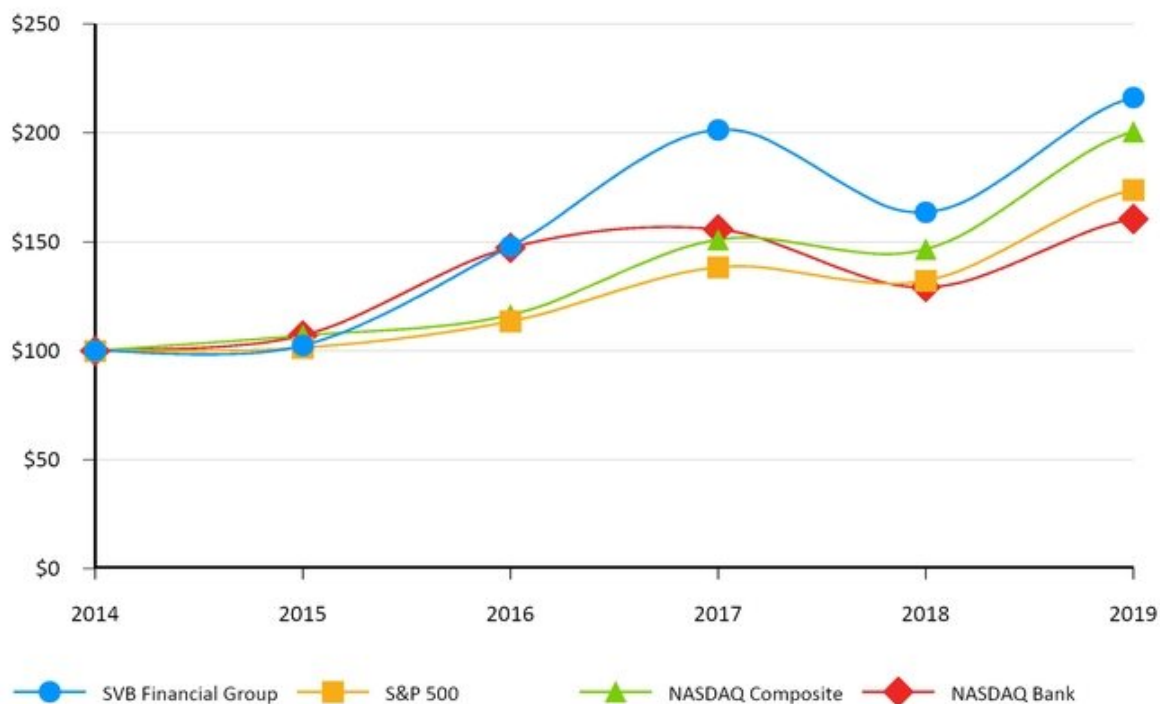
During the three months ended December 31, 2019, we did not repurchase any shares of our common stock under the new stock repurchase program. At December 31, 2019, \$350.0 million represents the maximum amount available to repurchase shares under the new stock repurchase program.

Performance Graph

The following information is not deemed to be “soliciting material” or “filed” with the SEC or subject to the liabilities of Section 18 of the Exchange Act, and the report shall not be deemed to be incorporated by reference into any prior or subsequent filing by the Company under the Securities Act or the Exchange Act.

The following graph compares, for the period from December 31, 2014 through December 31, 2019, the cumulative total stockholder return on the common stock of the Company with (i) the cumulative total return of the Standard and Poor's 500 (“S&P 500”) Index, (ii) the cumulative total return of the NASDAQ Composite index, and (iii) the cumulative total return of the NASDAQ Bank Index. The graph assumes an initial investment of \$100 and reinvestment of dividends. The graph is not indicative of future stock price performance.

Comparison of 5 Year Cumulative Total Return*



* \$100 invested on 12/31/14 in

stock or index, including reinvestment of dividends.

Fiscal year ended December 31st.

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	December 31,					
	2014	2015	2016	2017	2018	2019
SVB Financial Group	\$ 100.00	\$ 102.44	\$ 147.89	\$ 201.40	\$ 163.63	\$ 216.28
S&P 500	100.00	101.38	113.51	138.29	132.23	173.86
NASDAQ Composite	100.00	106.96	116.45	150.96	146.67	200.49
NASDAQ Bank	100.00	107.08	147.27	155.68	129.17	160.44

ITEM 6. SELECTED CONSOLIDATED FINANCIAL DATA

The following selected consolidated financial data should be read in conjunction with our consolidated financial statements and supplementary data as presented under Part II, Item 8 of this report. Information as of and for the years ended December 31, 2019, 2018 and 2017 is derived from audited financial statements presented separately herein, while information as of and for the years ended December 31, 2016 and 2015 is derived from audited financial statements not presented separately within.

(Dollars in thousands, except per share amounts and ratios)	Year ended December 31,				
	2019	2018	2017	2016	2015
Income statement summary:					
Net interest income	\$ 2,096,601	\$ 1,893,988	\$ 1,420,369	\$ 1,150,523	\$ 1,006,425
Provision for credit losses	(106,416)	(87,870)	(92,304)	(106,679)	(95,683)
Noninterest income	1,221,479	744,984	557,231	456,552	472,794
Noninterest expense	(1,601,262)	(1,188,193)	(1,010,655)	(859,797)	(779,962)
Income before income tax expense	1,610,402	1,362,909	874,641	640,599	603,574
Income tax expense	(425,685)	(351,561)	(355,463)	(250,333)	(228,754)
Net income before noncontrolling interests	1,184,717	1,011,348	519,178	390,266	374,820
Net income attributable to noncontrolling interests	(47,861)	(37,508)	(28,672)	(7,581)	(30,916)
Net income available to common stockholders	\$ 1,136,856	\$ 973,840	\$ 490,506	\$ 382,685	\$ 343,904
Common share summary:					
Earnings per common share—basic	\$ 21.90	\$ 18.35	\$ 9.33	\$ 7.37	\$ 6.70
Earnings per common share—diluted	21.73	18.11	9.20	7.31	6.62
Book value per common share	118.67	97.29	79.11	69.71	61.97
Weighted average shares outstanding—basic	51,915	53,078	52,588	51,915	51,318
Weighted average shares outstanding—diluted	52,311	53,772	53,306	52,349	51,916
Year-end balance sheet summary:					
Available-for-sale securities	\$ 14,014,919	\$ 7,790,043	\$ 11,120,664	\$ 12,620,411	\$ 16,380,748
Held-to-maturity securities	13,842,946	15,487,442	12,663,455	8,426,998	8,790,963
Loans, net of unearned income	33,164,636	28,338,280	23,106,316	19,899,944	16,742,070
Total assets	71,004,903	56,927,979	51,214,467	44,683,660	44,686,703
Deposits	61,757,807	49,328,900	44,254,075	38,979,868	39,142,776
Short-term borrowings	17,430	631,412	1,033,730	512,668	774,900
Long-term debt	347,987	696,465	695,492	795,704	796,702
SVBFG stockholders' equity	6,470,307	5,116,209	4,179,795	3,642,554	3,198,134
Average balance sheet summary:					
Available-for-sale securities	\$ 9,597,712	\$ 9,789,211	\$ 12,424,137	\$ 13,331,315	\$ 14,436,140
Held-to-maturity securities	14,672,342	14,997,846	9,984,610	8,192,183	7,829,177
Loans, net of unearned income	29,916,207	25,630,520	21,159,394	18,283,591	14,762,941
Total assets	63,211,630	55,229,060	48,380,272	43,987,451	40,846,377
Deposits	55,056,950	48,075,344	42,745,148	38,759,059	36,293,362
Short-term borrowings	144,545	643,886	48,505	220,251	23,226
Long-term debt	685,445	695,938	766,943	796,302	770,848
SVBFG common stockholders' equity	5,674,531	4,734,417	3,961,405	3,509,526	3,075,371
Capital ratios:					
SVBFG CET 1 risk-based capital ratio	12.58%	13.41%	12.78%	12.80%	12.28%
SVBFG total risk-based capital ratio	14.23	14.45	13.96	14.21	13.84
SVBFG tier 1 risk-based capital ratio	13.43	13.58	12.97	13.26	12.83
SVBFG tier 1 leverage ratio	9.06	9.06	8.34	8.34	7.63
SVBFG tangible common equity to tangible assets (1)	8.39	8.99	8.16	8.15	7.16
SVBFG tangible common equity to risk-weighted assets (1)	12.76	13.28	12.77	12.89	12.34
Bank CET 1 risk-based capital ratio	11.12	12.41	12.06	12.65	12.52
Bank total risk-based capital ratio	11.96	13.32	13.04	13.66	13.60
Bank tier 1 risk-based capital ratio	11.12	12.41	12.06	12.65	12.52
Bank tier 1 leverage ratio	7.30	8.10	7.56	7.67	7.09
Bank tangible common equity to tangible assets (1)	7.24	8.13	7.47	7.77	6.95
Bank tangible common equity to risk-weighted assets (1)	11.31	12.28	11.98	12.75	12.59

Average SVBFG stockholders' equity to average assets	8.98	8.57	8.19	7.98	7.53
Selected financial results:					
Return on average assets	1.80%	1.76%	1.01%	0.87%	0.84%
Return on average SVBFG common stockholders' equity	20.03	20.57	12.38	10.90	11.18
Net interest margin	3.51	3.57	3.05	2.72	2.57
Gross loan charge-offs to average total gross loans	0.31	0.26	0.31	0.53	0.34
Net loan charge-offs to average total gross loans	0.24	0.22	0.27	0.46	0.30
Nonperforming assets as a percentage of total assets	0.15	0.17	0.23	0.27	0.28
Allowance for loan losses as a percentage of total gross loans	0.91	0.99	1.10	1.13	1.29

(1) See "Management's Discussion and Analysis of Financial Condition and Results of Operations-Capital Resources-Capital Ratios" under Part II, Item 7 of this report for a reconciliation of non-GAAP tangible common equity to tangible assets and tangible common equity to risk-weighted assets.

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

The following discussion and analysis of our financial condition and results of operations should be read in conjunction with "Selected Consolidated Financial Data" under Part II, Item 6 and our audited consolidated financial statements and supplementary data as presented under Part II, Item 8 of this report. Certain prior period amounts have been reclassified to conform to current period presentations.

The following discussion and analysis of our financial condition and results of operations contains forward-looking statements. These statements are based on current expectations and assumptions, which are subject to risks and uncertainties. See our cautionary language at the beginning of this report under "Forward-Looking Statements". Actual results could differ materially because of various factors, including but not limited to those discussed in "Risk Factors," under Part I, Item 1A of this report.

Our fiscal year ends December 31st and, unless otherwise noted, references to years or fiscal years are for fiscal years ended December 31st.

Overview of Company Operations

SVB Financial is a diversified financial services company, as well as a bank holding company and a financial holding company. SVB Financial was incorporated in the state of Delaware in March 1999. Through our various subsidiaries and divisions, we offer a variety of banking and financial products and services. For more than 35 years, we have been dedicated to helping innovative companies and their investors succeed, especially in the technology, life science/healthcare, private equity/venture capital and premium wine industries. We provide our clients of all sizes and stages with a diverse set of products and services to support them through all stages of their life cycles, and key innovation markets around the world.

We offer commercial and private banking products and services through our principal subsidiary, the Bank, which is a California-state chartered bank founded in 1983 and a member of the Federal Reserve System. Through its subsidiaries, the Bank also offers asset management, private wealth management and other investment services. In addition, through SVB Financial's other subsidiaries and divisions, we also offer investment banking services and non-banking products and services, such as funds management, M&A advisory services and venture capital and private equity investment.

Management's Overview of 2019 Financial Performance

Overall, we had strong growth and profitability to cap a record year in 2019, which was marked by higher net interest and core fee income, record investment securities and equity warrant gains, strong total client funds growth, healthy loan growth and continued stable credit quality. Additionally, we saw higher noninterest expense, primarily from increased compensation and benefits expenses, as well as increased professional services expenses reflective of increased expenses to support our domestic and global expansion initiatives, as well as investments made in projects, systems, and technology to support our revenue growth and related initiatives and other operating costs. Increases in noninterest income and noninterest expenses were attributable to, in part, the inclusion of SVB Leerink in our 2019 financial results.

Our core business continued to perform well as a result of our ongoing focus on innovation companies and their investors and continued efforts to secure client relationships. We saw continued success in working with private equity/venture capital firms and life science/healthcare clients as well as clients in our private banking division.

Results for the fiscal year ended, and as of, December 31, 2019 (compared to the fiscal year ended, and as of, December 31, 2018, where applicable):

BALANCE SHEET

Assets. \$63.2 billion in average total assets (up 14.5%). \$71.0 billion in period-end total assets (up 24.7%).

Loans. \$29.9 billion in average total loan balances, net of unearned income (up 16.7%). \$33.2 billion in period-end total loan balances, net of unearned income (up 17.0%).

Total Client Funds. (on-balance sheet deposits and off-balance sheet client investment funds). \$146.7 billion in average total client fund balances (up 19.1%). \$161.0 billion in period-end total client fund balances (up 18.9%).

AFS/HTM Fixed Income Investments. \$24.3 billion in average fixed income investment securities (down 2.1%). \$27.9 billion in period-end fixed income investment securities (up 19.7%).

EARNINGS

EPS. Earnings per diluted share of \$21.73 (up 20.0%).

Net Income. Consolidated net income available to common stockholders of \$1.1 billion (up 16.7%).

- Net interest income of \$2.1 billion (up 10.7%).
- Net interest margin of 3.51% (down 6bps).
- Noninterest income of \$1.2 billion (up 64.0%), non-GAAP core fee income⁺ of \$641.8 million (up 24.4%) and non-GAAP core fee income plus investment banking revenue and commissions⁺⁺ of \$893.4 million (up 73.2%).
- Noninterest expense of \$1.6 billion (up 34.8%).

ROE. Return on average equity ("ROE") performance of 20.03%.

Operating Efficiency Ratio. Operating efficiency ratio of 48.26% with a non-GAAP core operating efficiency ratio of 48.06%⁺⁺⁺.

CAPITAL

Capital. Continued strong capital, with all capital ratios considered "well-capitalized" under banking regulations. SVBFG and SVB capital ratios, respectively, were:

- CET 1 risk-based capital ratio of 12.58% and 11.12%.
- Tier 1 risk-based capital ratio of 13.43% and 11.12%.
- Total risk-based capital ratio of 14.23% and 11.96%. - Tier 1 leverage ratio of 9.06% and 7.30%.

CREDIT QUALITY

Credit Quality. Continued stable credit.

- Allowance for loan losses of 0.91% as a percentage of period-end total gross loans.
- Allowance for unfunded credit commitments of 0.28% as a percentage of total unfunded credit commitments.
- Provision for loan losses of 0.28% as a percentage of total gross loans.
- Net loan charge-offs of 0.24% as a percentage of average total gross loans.

⁺ Consists of fee income from client investments, foreign exchange, credit cards, deposit services, lending related activities and letters of credit and standby letters of credit. This is a non-GAAP financial measure. (See the non-GAAP reconciliation under "Results of Operations—Noninterest Income").

⁺⁺ Consists of non-GAAP core fee income plus investment banking revenue and commissions. This is a non-GAAP financial measure. (See the non-GAAP reconciliation under "Results of Operations—Noninterest Income").

⁺⁺⁺ This ratio excludes certain financial line items where performance is typically subject to market or other conditions beyond our control and excludes SVB Leerink revenue and expenses. It is calculated by dividing noninterest expense after adjusting for noninterest expense attributable to SVB Leerink by total revenue after adjusting for noninterest income attributable to SVB Leerink, net gains or losses on investment securities and equity warrant assets, investment banking revenue and commissions. Additionally, noninterest expense and total revenue are adjusted for income or losses attributable to noncontrolling interests and adjustments to net interest income for a taxable equivalent basis. This is a non-GAAP financial measure. (See the non-GAAP reconciliation under "Results of Operations-Noninterest Expense").

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A summary of our performance in 2019 compared to 2018 is as follows:

(Dollars in thousands, except per share amounts, employees and ratios)	Year ended December 31,		
	2019	2018	% Change
Income Statement:			
Diluted earnings per share	\$ 21.73	\$ 18.11	20.0 %
Net income available to common stockholders	1,136,856	973,840	16.7
Net interest income	2,096,601	1,893,988	10.7
Net interest margin	3.51%	3.57%	(6) bps
Provision for credit losses	\$ 106,416	\$ 87,870	21.1 %
Noninterest income	1,221,479	744,984	64.0
Noninterest expense	1,601,262	1,188,193	34.8
Non-GAAP core fee income (1)	641,838	515,890	24.4
Non-GAAP core fee income, plus investment banking revenue and commissions (1)	893,361	515,890	73.2
Non-GAAP noninterest income, net of noncontrolling interests (1)	1,172,855	706,984	65.9
Non-GAAP noninterest expense, net of noncontrolling interests (2)	1,600,427	1,187,671	34.8
Balance Sheet:			
Average available-for-sale-securities	\$ 9,597,712	\$ 9,789,211	(2.0) %
Average held-to-maturity securities	14,672,342	14,997,846	(2.2)
Average loans, net of unearned income	29,916,207	25,630,520	16.7
Average noninterest-bearing demand deposits	38,783,470	39,633,118	(2.1)
Average interest-bearing deposits	16,273,480	8,442,226	92.8
Average total deposits	55,056,950	48,075,344	14.5
Earnings Ratios:			
Return on average assets (3)	1.80%	1.76%	2.3 %
Return on average SVBFG common stockholders' equity (4)	20.03	20.57	(2.6)
Asset Quality Ratios:			
Allowance for loan losses as a percentage of total period-end gross loans	0.91%	0.99%	(8) bps
Allowance for loan losses for performing loans as a percentage of total gross performing loans	0.78	0.86	(8)
Gross loan charge-offs as a percentage of average total gross loans	0.31	0.26	5
Net loan charge-offs as a percentage of average total gross loans	0.24	0.22	2
Capital Ratios:			
SVBFG CET 1 risk-based capital ratio	12.58%	13.41%	(83) bps
SVBFG total risk-based capital ratio	14.23	14.45	(22)
SVBFG tier 1 risk-based capital ratio	13.43	13.58	(15)
SVBFG tier 1 leverage ratio	9.06	9.06	—
SVBFG tangible common equity to tangible assets (5)	8.39	8.99	(60)
SVBFG tangible common equity to risk-weighted assets (5)	12.76	13.28	(52)
Bank CET 1 risk-based capital ratio	11.12	12.41	(129)
Bank total risk-based capital ratio	11.96	13.32	(136)
Bank tier 1 risk-based capital ratio	11.12	12.41	(129)
Bank tier 1 leverage ratio	7.30	8.10	(80)
Bank tangible common equity to tangible assets (5)	7.24	8.13	(89)
Bank tangible common equity to risk-weighted assets (5)	11.31	12.28	(97)
Other Ratios:			
GAAP operating efficiency ratio (6)	48.26%	45.02%	7.2 %
Non-GAAP core operating efficiency ratio (2)	48.06	48.06	—
Total costs of deposits (7)	0.32	0.06	NM
Book value per common share (8)	\$ 118.67	\$ 97.29	22.0
Other Statistics:			
Average full-time equivalent employees	3,362	2,685	25.2 %
Period-end full-time equivalent employees	3,564	2,900	22.9

(1) See "Results of Operations—Noninterest Income" for a description and reconciliation of non-GAAP core fee income and non-GAAP core fee income plus investment banking revenue and commissions.

- (2) See “Results of Operations–Noninterest Expense” for a description and reconciliation of non-GAAP noninterest expense and non-GAAP core operating efficiency ratio.
- (3) Ratio represents consolidated net income available to common stockholders divided by average assets.
- (4) Ratio represents consolidated net income available to common stockholders divided by average SVBFG common stockholders’ equity.
- (5) See “Capital Resources–Capital Ratios” for a reconciliation of non-GAAP tangible common equity to tangible assets and tangible common equity to risk-weighted assets.
- (6) The operating efficiency ratio is calculated by dividing total noninterest expense by total net interest income plus noninterest income.
- (7) Ratio represents total cost of deposits and is calculated by dividing interest expense from deposits by average total deposits.
- (8) Book value per common share is calculated by dividing total SVBFG common stockholders’ equity by total outstanding common shares at period-end.

Critical Accounting Policies and Estimates

Our accounting policies are fundamental to understanding our financial condition and results of operations. We have identified three policies as being critical because they require us to make particularly difficult, subjective and/or complex judgments about matters that are inherently uncertain, and because it is likely that materially different amounts would be reported under different conditions or using different assumptions. We evaluate our estimates and assumptions on an ongoing basis and we base these estimates on historical experiences and various other factors and assumptions that are believed to be reasonable under the circumstances. Actual results may differ materially from these estimates under different assumptions or conditions.

Our critical accounting policies include those that address the adequacy of the allowance for loan losses and allowance for unfunded credit commitments, measurements of fair value and the valuation of equity warrant assets. Our senior management has discussed and reviewed the development, selection, application and disclosure of these critical accounting policies with the Audit Committee of our Board of Directors.

We disclose our method and approach for each of our critical accounting policies in Note 2—“Summary of Significant Accounting Policies” of the “Notes to the Consolidated Financial Statements” under Part II, Item 8 of this report.

Allowance for Loan Losses and Allowance for Unfunded Credit Commitments

Allowance for Loan Losses

The allowance for loan losses is management's estimate of credit losses inherent in the loan portfolio at the balance sheet date. We consider our accounting policy for the allowance for loan losses to be critical as our estimation of the allowance involves material estimates by us and is particularly susceptible to significant changes in the near-term. Determining the allowance for loan losses requires us to make forecasts that are highly uncertain and require a high degree of judgment. Our loan loss reserve methodology is applied to our loan portfolio and we maintain the allowance for loan losses at levels that we believe are appropriate to absorb estimated probable losses inherent in our loan portfolio. A committee comprised of senior management evaluates the adequacy of the allowance for loan losses.

Our allowance for loan losses is established for loan losses that are probable and incurred but not yet realized. The process of anticipating loan losses is inherently imprecise. We apply a systematic process for the evaluation of individual loans and pools of loans for inherent risk of loan losses. At the time of approval, each loan in our portfolio is assigned a credit risk rating through an evaluation process, which includes consideration of such factors as payment status, the financial condition of the borrower, borrower compliance with loan covenants, underlying collateral values, potential loan concentrations and general economic conditions. The credit risk ratings for each loan are monitored and updated on an ongoing basis.

The allowance for loan losses is based on a formula allocation for similarly risk-rated loans by client industry sector and individually for impaired loans. Our formula allocation is determined on a quarterly basis by utilizing a historical loan loss migration model, which is a statistical model used to estimate an appropriate allowance for outstanding loan balances by calculating the likelihood of a loan being charged-off based on its credit risk rating using historical loan performance data from our portfolio. The formula allocation provides the average loan loss experience for each portfolio segment, which considers our quarterly historical loss experience since the year 2000, both by risk-rating category and client industry sector. The resulting loan loss factors for each risk-rating category and client industry sector are ultimately applied to the respective period-end client loan balances for each corresponding risk-rating category by client industry sector to provide an estimation of the allowance for loan losses.

We also supplement our allowance by applying qualitative allocations to the results we obtained through our historical loan loss migration model to ascertain the total allowance for loan losses. These qualitative allocations are based upon management's assessment of the risks that may lead to a loan loss experience different from our historical loan loss experience. These risks are aggregated to become our qualitative allocation. Refer to Note 2—“Summary of Significant Accounting Policies” of the “Notes to the Consolidated Financial Statements” under Part II, Item 8 of this report for a summary of the factors management considers for its qualitative allocation as part of management's estimate of the changing risks in the lending environment.

Allowance for Unfunded Credit Commitments

The allowance for unfunded credit commitments is determined using a methodology that is inherently similar to the methodology used for calculating the allowance for loan losses adjusted for factors specific to binding commitments, including the probability of funding and exposure at funding. Our reserve methodology for unfunded loan commitments applies segment specific historical loss experience for our funded loan portfolio and segment specific probability of funding factors to estimate the allowance for unfunded credit commitments. The allowance for unfunded credit commitments also includes certain qualitative allocations as deemed appropriate by management. We consider our accounting policy for the allowance for unfunded credit commitments to be critical as estimation of the reserve involves material estimates by management and is susceptible to changes in the near term. The allowance for unfunded credit commitments equals management's best estimate of probable credit losses that are inherent in the portfolio at the balance sheet date.

For an overview of the impact of CECL to the allowance for loan losses and the allowance for unfunded credit commitments, see "Recent Accounting Pronouncements" under Part II, Item 7 of this report.

Fair Value Measurements

We use fair value measurements to record fair value for certain financial instruments and to determine fair value disclosures. We disclose our method and approach for fair value measurements of assets and liabilities in Note 2—"Summary of Significant Accounting Policies" of the "Notes to the Consolidated Financial Statements" under Part II, Item 8 of this report.

ASC 820, Fair Value Measurements and Disclosures, establishes a three-level hierarchy for disclosure of assets and liabilities recorded at fair value. The classification of assets and liabilities within the hierarchy is based on whether the significant inputs to the valuation methodology used for measurement are observable or unobservable and the significance of the level of the input to the entire measurement. Observable inputs reflect market-derived or market-based information obtained from independent sources, while unobservable inputs reflect our estimates about market data. The three levels for measuring fair value are defined in Note 2—"Summary of Significant Accounting Policies" of the "Notes to the Consolidated Financial Statements" under Part II, Item 8 of this report.

The degree of management judgment involved in determining the fair value of a financial instrument is dependent upon the availability of quoted market prices or observable market parameters. For financial instruments that trade actively and have quoted market prices or observable market parameters, there is minimal subjectivity involved in measuring fair value (Level 1 measurements). When observable market prices and parameters are not fully available, management judgment is necessary to estimate fair value. For inactive markets, there is little information, if any, to evaluate if individual transactions are orderly. Accordingly, we are required to estimate, based upon all available facts and circumstances, the degree to which orderly transactions are occurring and provide more weighting to price quotes that are based upon orderly transactions (Level 2 measurements). In addition, changes in market conditions may reduce the availability of quoted prices or observable data. For example, reduced liquidity in the capital markets or changes in secondary market activities could result in observable market inputs becoming unavailable. Therefore, when market data is not available, we use valuation techniques requiring more management judgment to estimate the appropriate fair value measurement (Level 3 measurements). Significant judgment is required to determine whether certain assets measured at fair value are included in Level 2 or Level 3. When making this judgment, we consider available information and our understanding of the valuation techniques and significant inputs used. The classification of Level 2 or Level 3 is based upon the specific facts and circumstances of each instrument or instrument category and judgments are made regarding the significance of the Level 3 inputs to the instrument's fair value measurement in its entirety. If Level 3 inputs are considered significant, the instrument is classified as Level 3. Accordingly, the degree of judgment exercised by management in determining fair value is greater for financial assets and liabilities categorized as Level 3.

The following table summarizes our financial assets and liabilities that are measured at fair value on a recurring basis and the amounts measured using significant Level 3 inputs at December 31, 2019 and 2018:

(Dollars in thousands)	December 31,			
	2019		2018	
	Total Balance	Level 3	Total Balance	Level 3
Assets carried at fair value	\$ 14,672,330	\$ 161,172	\$ 8,388,011	\$ 146,278
As a percentage of total assets	20.7%	0.2%	14.7%	0.3%
Liabilities carried at fair value	\$ 137,984	\$ —	\$ 98,050	\$ —
As a percentage of total liabilities	0.2%	—%	0.2%	—%
As a percentage of assets carried at fair value		1.1		1.7

Financial assets valued using Level 3 measurements consist of our non-marketable securities (investments in venture capital) and equity warrant assets (rights to shares of private and public company capital stock). The valuation techniques of our non-marketable securities carried under fair value accounting and equity warrant assets involve a significant degree of management judgment. Refer to Note 2—"Summary of Significant Accounting Policies" of the "Notes to the Consolidated Financial Statements" under Part II, Item 8 of this report for a summary of the valuation techniques and significant inputs used for each class of Level 3 assets.

The inherent uncertainty in the process of valuing securities for which a ready market does not exist may cause our estimated values of these securities to differ significantly from the values that would have been derived had a ready market for the securities existed, and those differences could be material. The timing and amount of changes in fair value, if any, of these financial instruments depend upon factors beyond our control, including the performance of the underlying companies, fluctuations in the market prices of the preferred or common stock of the underlying companies, general volatility and interest rate market factors, and legal and contractual restrictions. The timing and amount of actual net proceeds, if any, from the disposition of these financial instruments depend upon factors beyond our control, including investor demand for IPOs, levels of M&A activity, legal and contractual restrictions on our ability to sell and the perceived and actual performance of portfolio companies. All of these factors are difficult to predict and there can be no assurances that we will realize the full value of these securities, which could result in significant losses.

During 2019, the Level 3 assets that are measured at fair value on a recurring basis experienced net realized and unrealized gains of \$133.9 million (which is inclusive of noncontrolling interest), primarily due to gains on exercised warrant assets. During 2018 and 2017, the Level 3 assets that are measured at fair value on a recurring basis experienced net realized and unrealized gains of \$88.4 million and \$55.2 million (which is inclusive of noncontrolling interest), respectively.

Derivative Assets-Equity Warrant Assets

As discussed above, the valuation of our equity warrant assets is a Level 3 measurement, which requires a significant degree of management judgment in order to value the assets. Our equity warrant asset policy is also considered a critical policy due to the variability of returns from our shares of private and public companies and due to the degree of management judgment in selecting a valuation technique for our equity warrant assets.

The timing and value realized from the disposition of equity warrant assets depend upon factors beyond our control, including the performance of the underlying portfolio companies, investor demand for IPOs, fluctuations in the price of the underlying common stock of these private and public companies, levels of M&A activity and legal and contractual restrictions on our ability to sell the underlying securities. All of these factors are difficult to predict. Many equity warrant assets may be terminated or may expire without compensation and may incur valuation losses from lower-priced funding rounds. We are unable to predict future gains or losses with accuracy, and gains or losses could vary materially from period to period.

Additionally, while management has selected the valuation methodology that it believes provides the best estimate of fair value, there are several acceptable valuation techniques as well as alternative approaches for the calculation of significant inputs for the valuation technique. In the event that a different valuation technique or approach for calculating a significant input were to be used, then the estimated values of these assets could differ significantly from the existing values recorded. Further, the inherent uncertainty of valuing assets for which a ready market is unavailable may cause our estimated values of these assets to differ significantly from the values that would have been derived had a ready market for the assets existed, and those differences could be material and ultimately, the recorded fair value of equity warrant assets may never be realized, which could result in significant losses.

Recent Accounting Pronouncements

Financial Instruments - Credit Losses

In June 2016, the FASB issued a new Accounting Standard Update (ASU 2016-13, Financial Instruments- Credit Losses (Topic 326): Measurement of Credit Losses on Financial Instruments) ("ASU 2016-13" or "CECL"), which amends the incurred loss impairment methodology in current GAAP with a methodology that reflects a current expected credit loss measurement to estimate the allowance for credit losses over the contractual life of the financial assets (including loans, unfunded credit commitments and HTM debt securities) and requires consideration of a broader range of reasonable and supportable information to inform credit loss estimates. While the CECL model does not apply to available-for-sale debt securities, ASU 2016-13 does require entities to record an allowance when recognizing credit losses for available-for-sale securities, rather than reduce the amortized cost of the securities by direct write-offs, which allows for reversal of credit impairments in future periods based on improvements in credit. We adopted the guidance on January 1, 2020, using a modified retrospective approach.

Our implementation process included loss forecasting model development, evaluation of technical accounting topics, updates to our allowance accounting policies, reporting processes and related internal controls, overall operational readiness

for our adoption of CECL as well as parallel runs for CECL alongside our current allowance process. We provided quarterly updates to senior management and to the Audit and Credit Committees of the Board of Directors throughout the implementation process.

A summary of our approach for estimating current expected life-time credit losses for loans, unfunded commitments and HTM debt securities includes the following:

- A reasonable and supportable forecast period of three years for all portfolio segments and classes of financing receivables and unfunded credit exposures leveraging the weighted-average of a range of macroeconomic scenarios. This period reflects management's expectation of losses based on forward-looking economic scenarios over that time and closely aligns with other internal forecast periods. After the forecast period, our estimate of credit losses will revert to historical averages gradually over the remaining contractual lives, adjusted for prepayments. The macroeconomic scenarios are reviewed on a quarterly basis.
- We will utilize a discounted cash flow ("DCF") approach to measure credit impairment for loans identified for individual assessment, which includes TDR's. Collateral-dependent loans identified for individual assessment will be carried at the fair value of collateral, net of selling costs (when applicable).
- Our HTM debt securities portfolio, with the exception of our municipal bond portfolio, have been evaluated and currently carry zero risk of credit loss as they are securities that are either explicitly or implicitly guaranteed by the U.S. government. A reasonable and supportable forecast period of one year will be applied to our municipal bonds, however, we do not expect the allowance for credit losses to be significant for this portion of our HTM debt securities portfolio.
- Under the prior guidance, our loan portfolio was disclosed by market segments. Going forward, our technology (software/internet and hardware) and life science/healthcare market segments will be disclosed by class of financing receivable that align with their underlying underwriting methodology. The technology (software/internet and hardware) and life science/healthcare market segments will be classified as investor dependent, balance sheet dependent or cash flow dependent and prior period amounts will be reclassified for comparability. There are no other material changes to our current market segments.

Based on our loan and unfunded credit commitments portfolio composition at December 31, 2019, and the current economic environment, we currently estimate the day 1 combined impact of adopting CECL on our allowance for loan losses and allowance for unfunded credit commitments to be an increase of approximately \$50 million (on a pre-tax basis) or approximately 13% of the total combined allowance compared to our reported amount at December 31, 2019. The increase reflects an increase in our expected credit loss for our investor dependent loan portfolio as longer-duration assets require more reserves under CECL methodology, offset by a decrease for our private equity/venture capital loan portfolio, given their higher historical credit quality. Based on the credit quality of our existing HTM debt securities portfolio at December 31, 2019, we currently estimate the day one impact of CECL on our allowance for our HTM municipal bond portfolio to be approximately \$0.2 million (on a pre-tax basis).

At adoption, we will have a cumulative-effect adjustment to retained earnings for our change in the allowance for credit losses for our loans, unfunded credit commitments and HTM debt securities, which will impact our capital. An increase in our allowance will result in a decrease to our regulatory capital amounts and ratios. Federal banking regulatory agencies have provided relief for an initial capital decrease at adoption by allowing the impact to be phased-in over three years on a straight-line basis. At adoption, we do not expect to elect this option as the decrease to our regulatory capital amounts does not have a material impact on our capital ratios.

Other Recent Accounting Pronouncements

In August 2018, the FASB issued a new Accounting Standard Update (ASU No. 2018-13, Fair Value Measurement (Topic 820): Disclosure Framework - Changes to the Disclosure Requirements for Fair Value Measurement). The ASU primarily modifies certain disclosures with respect to Level 3 fair value measurements. This guidance became effective on January 1, 2020. We adopted the guidance on January 1, 2020, however, the adoption did not have an impact on our consolidated financial position or results of operations and we do not expect the adoption of this standard to have a material impact on the disclosures in our Notes to the Consolidated Financial Statements.

In December 2019, the FASB issued Accounting Standards Update No. 2019-12, Income Taxes (Topic 740): Simplifying the Accounting for Income Taxes which is part of the Board's initiative to reduce cost and complexity related to accounting for income taxes. The ASU eliminates certain exceptions to the general principles of ASC 740, Income Taxes, and simplifies income tax accounting in several areas. The amendments are effective for fiscal years (and interim periods within those fiscal years) beginning after December 15, 2020, with early adoption permitted. The ASU allows entities to adopt this provision on a retrospective basis for all periods presented or a modified retrospective basis through a cumulative-effect adjustment to retained earnings as of the beginning of the period of adoption. We are currently evaluating the impact this ASU will have on our financial position, results of operations, cash flows and disclosures.

Results of Operations

Net Interest Income and Margin (Fully Taxable Equivalent Basis)

Net interest income is defined as the difference between: (i) interest earned from loans, fixed income investments in our available-for-sale and held-to-maturity securities portfolios and short-term investment securities, and, (ii) interest paid on funding sources. Net interest margin is defined as net interest income, on a fully taxable equivalent basis, as a percentage of average interest-earning assets. Net interest income and net interest margin are presented on a fully taxable equivalent basis to consistently reflect income from taxable loans and securities and tax-exempt securities based on the applicable federal statutory tax rate.

Analysis of Net Interest Income Changes Due to Volume and Rate (Fully Taxable Equivalent Basis)

Net interest income is affected by changes in the amount and mix of interest-earning assets and interest-bearing liabilities, referred to as "volume change." Net interest income is also affected by changes in yields earned on interest-earning assets and rates paid on interest-bearing liabilities, referred to as "rate change." The following table sets forth changes in interest income for each major category of interest-earning assets and interest expense for each major category of interest-bearing liabilities. The table also reflects the amount of simultaneous changes attributable to both volume and rate changes for the years indicated. For this table, changes that are not solely due to either volume or rate are allocated in proportion to the percentage changes in average volume and average rate.

(Dollars in thousands)	2019 compared to 2018			2018 compared to 2017		
	Change due to			Change due to		
	Volume	Rate	Total	Volume	Rate	Total
Interest income:						
Federal Reserve deposits, federal funds sold, securities purchased under agreements to resell and other short-term investment securities	\$ 50,581	\$ 10,651	\$ 61,232	\$ (3,606)	\$ 17,309	\$ 13,703
Fixed income investment portfolio (taxable)	(22,833)	50,079	27,246	53,911	75,561	129,472
Fixed income investment portfolio (non-taxable)	12,596	488	13,084	35,132	(105)	35,027
Loans, net of unearned income	229,091	11,594	240,685	236,981	95,711	332,692
Increase in interest income, net	269,435	72,812	342,247	322,418	188,476	510,894
Interest expense:						
Interest-bearing checking and savings accounts	(72)	33	(39)	118	11	129
Money market deposits	79,243	45,945	125,188	3,634	16,308	19,942
Money market deposits in foreign offices	(11)	(1)	(12)	(5)	(3)	(8)
Time deposits	560	600	1,160	24	28	52
Sweep deposits in foreign offices	10,137	11,932	22,069	(81)	596	515
Total increase in deposits expense	89,857	58,509	148,366	3,690	16,940	20,630
Short-term borrowings	(12,408)	1,421	(10,987)	13,481	555	14,036
3.50% Senior Notes	12	—	12	12	—	12
5.375% Senior Notes	(505)	—	(505)	35	—	35
7.0% Junior Subordinated Debentures	—	—	—	(3,096)	—	(3,096)
6.05% Subordinated Notes	—	—	—	(467)	—	(467)
Total (decrease) increase in borrowings expense	(12,901)	1,421	(11,480)	9,965	555	10,520
Increase in interest expense, net	76,956	59,930	136,886	13,655	17,495	31,150
Increase in net interest income	\$ 192,479	\$ 12,882	\$ 205,361	\$ 308,763	\$ 170,981	\$ 479,744

Net Interest Income (Fully Taxable Equivalent Basis)

2019 compared to 2018

Net interest income increased by \$205.4 million to \$2.1 billion in 2019, compared to \$1.9 billion in 2018. Overall, the increase in our net interest income was due primarily to higher average loan and interest earning cash and short-term investment securities balances.

The main factors affecting interest income and interest expense for 2019, compared to 2018, are discussed below:

- *Interest income* for 2019 increased by \$342.2 million primarily due to:
 - A \$240.7 million increase in interest income from loans to \$1.6 billion in 2019, compared to \$1.4 billion in 2018. This increase was reflective of an increase in average loan balances of \$4.3 billion and an increase in the overall yield on our loan portfolio of 5 basis points to 5.35 percent from 5.30 percent. Gross loan yields, excluding loan interest recoveries and loan fees, increased by 2 basis points to 4.79 percent from 4.77 percent, reflective of the benefit of interest rate increases in effect the first half of the year, partially offset by the strong growth of our lower yielding private equity/venture capital loan portfolio and interest rate decreases in the third and fourth quarters of 2019. Our private equity/venture capital portfolio represented 53.5 percent and 49.5 percent of our total gross loan portfolio at December 31, 2019 and 2018, respectively,
 - A \$61.2 million increase in interest income from our short-term investment securities to \$96.4 million, compared to \$35.2 million in 2018. The increase was due primarily to an increase of \$3.1 billion in average interest earning cash and short-term investment securities balances and higher yields reflective of the benefit of interest rate increases in effect the first half of the year, partially offset by interest rate decreases in the third and fourth quarters of 2019, and
 - A \$40.3 million increase in interest income from our fixed income investment securities to \$625.8 million in 2019, compared to \$585.4 million in 2018. The increase was reflective of an increase in our fixed income securities yield of 22 basis points to 2.58 percent from 2.36 percent, partially offset by a decrease of \$0.5 billion in average fixed income investment balances primarily due to a decrease in average HTM securities. The increase

in our fixed income securities yield was primarily from higher reinvestment yields on maturing fixed income investments as well as higher yields on new purchases due to the benefit of interest rate increases in effect the first half of the year.

Interest expense for 2019 increased to \$212.8 million, compared to \$75.9 million for 2018, primarily due to:

- A \$148.4 million increase in deposits interest expense, due primarily to an increase in interest paid on our interest-bearing money market deposits as a result of market rate adjustments and an increase of \$7.8 billion in average interest-bearing deposits, partially offset by
- An \$11.5 million decrease in borrowings interest expense, due primarily to a decrease in our average short-term borrowings balance during 2019 as a result of the increase in average deposit balances.

2018 compared to 2017

Net interest income increased by \$479.7 million to \$1.9 billion in 2018, compared to \$1.4 billion in 2017. Overall, the increase in our net interest income was due primarily to both higher average loan and investment portfolio balances as well as higher interest rates.

The main factors affecting interest income and interest expense for 2018, compared to 2017, are discussed below:

- *Interest income* for 2018 increased by \$510.9 million primarily due to:
 - A \$332.7 million increase in interest income from loans to \$1.4 billion in 2018, compared to \$1.0 billion in 2017. This increase was reflective of an increase in average loan balances of \$4.5 billion and an increase in the overall yield on our loan portfolio of 45 basis points to 5.30 percent from 4.85 percent. Gross loan yields, excluding loan interest recoveries and loan fees, increased by 55 basis points to 4.77 percent from 4.22 percent, reflective of the benefit of interest rate increases, partially offset by the strong growth of our lower yielding private equity/ venture capital loan portfolio. Our private equity/venture capital portfolio represented 49.5 percent and 42.8 percent of our total gross loan portfolio at December 31, 2018 and 2017, respectively.
 - A \$164.5 million increase in interest income from our fixed income investment securities to \$585.4 million in 2018, compared to \$420.9 million in 2017. The increase was reflective of an increase of \$2.4 billion in average fixed income investment balances as a result of strong deposit growth in 2018 and an increase in our fixed income securities yield of 48 basis points to 2.36 percent from 1.88 percent. The increase in our fixed income securities yield was primarily from higher reinvestment yields on maturing fixed income investments as well as higher yields on new purchases due to interest rate increases, and
 - A \$13.7 million increase in interest income from our Federal Reserve deposits to \$35.2 million, compared to \$21.5 million in 2017. The increase was due primarily to higher yields as a result of rate increases in 2018.
- *Interest expense* for 2018 increased to \$75.9 million, compared to \$44.8 million for 2017, primarily due to:
 - A \$20.6 million increase in deposits interest expense, due primarily to an increase in interest paid on our interest-bearing money market deposits as a result of market rate adjustments, and
 - A \$10.5 million increase in borrowings interest expense, due primarily to an increase in our average short-term borrowings balance during 2018 to fund loan growth as a result of the timing of loan funding and deposit activities. The increase in interest expense from short-term borrowings was partially offset by a decrease in interest expense from long-term debt reflective of the repayment of our 6.05% Subordinated Notes and the redemption of our Junior Subordinated Debentures in 2017.

Net Interest Margin (Fully Taxable Equivalent Basis)

Our net interest margin decreased by 6 basis points to 3.51 percent in 2019, compared to 3.57 percent in 2018 and 3.05 percent in 2017.

2019 compared to 2018

The decrease in our net interest margin in 2019 was reflective primarily of the impact of market rate adjustments made on interest-bearing money market deposits partially offset by the continued shift in the mix of average interest-earning assets towards our higher yielding loan portfolio. For the year ended December 31, 2019, our loan portfolio comprised 50 percent of our average interest-earning assets, an increase from 48 percent for the year ended December 31, 2018.

2018 compared to 2017

The increase in our net interest margin in 2018 was reflective primarily of the impact of rising interest rates and the continued shift in the mix of average interest-earning assets towards our higher yielding loan portfolio. For the year ended December 31, 2018, our loan portfolio comprised 48 percent of our average interest-earning assets, an increase from 45 percent for the year ended December 31, 2017.

Average Balances, Yields and Rates Paid (Fully Taxable Equivalent Basis)

The average yield earned on interest-earning assets is the amount of fully taxable equivalent interest income expressed as a percentage of average interest-earning assets. The average rate paid on funding sources is the amount of interest expense expressed as a percentage of average funding sources. The following tables set forth average assets, liabilities, noncontrolling interests, preferred stock and SVBFG common stockholders' equity, interest income, interest expense, yields and rates and the composition of our net interest margin in 2019, 2018 and 2017:

Average Balances, Yields and Rates Paid for the Years Ended December 31, 2019, 2018 and 2017

(Dollars in thousands)	Year ended December 31,								
	2019			2018			2017		
	Average Balance	Interest Income/Expense	Yield/Rate	Average Balance	Interest Income/Expense	Yield/Rate	Average Balance	Interest Income/Expense	Yield/Rate
Interest-earning assets:									
Federal Reserve deposits, federal funds sold, securities purchased under agreements to resell and other short-term investment securities (1)	\$ 5,932,146	\$ 96,440	1.63%	\$ 2,820,883	\$ 35,208	1.25%	\$ 3,109,840	\$ 21,505	0.69%
Investment Securities: (2)									
Available-for-sale securities:									
Taxable	9,597,712	217,650	2.27	9,789,211	185,120	1.89	12,424,137	199,423	1.61
Held-to-maturity securities:									
Taxable	13,041,160	351,201	2.69	13,727,745	356,485	2.60	9,732,869	212,710	2.19
Non-taxable (3)	1,631,182	56,901	3.49	1,270,101	43,817	3.45	251,741	8,790	3.49
Total loans, net of unearned income (4) (5)	29,916,207	1,599,165	5.35	25,630,520	1,358,480	5.30	21,159,394	1,025,788	4.85
Total interest-earning assets	60,118,407	2,321,357	3.86	53,238,460	1,979,110	3.71	46,677,981	1,468,216	3.15
Cash and due from banks	592,196			480,900			374,811		
Allowance for loan losses	(306,800)			(282,489)			(247,004)		
Other assets (6)	2,807,827			1,792,189			1,574,484		
Total assets	\$ 63,211,630			\$ 55,229,060			\$ 48,380,272		
Funding sources:									
Interest-bearing liabilities:									
Interest-bearing checking and savings accounts	\$ 498,606	\$ 424	0.09%	\$ 583,295	\$ 463	0.08%	\$ 433,966	\$ 334	0.08%
Money market deposits	13,721,076	152,901	1.11	6,609,873	27,713	0.42	5,743,083	7,771	0.14
Money market deposits in foreign offices	164,693	64	0.04	192,128	76	0.04	203,775	84	0.04
Time deposits	111,806	1,271	1.14	62,570	111	0.18	48,818	59	0.12
Sweep deposits in foreign offices	1,777,299	23,012	1.29	994,360	943	0.09	1,080,306	428	0.04
Total interest-bearing deposits	16,273,480	177,672	1.09	8,442,226	29,306	0.35	7,509,948	8,676	0.12
Short-term borrowings	144,545	3,592	2.49	643,886	14,579	2.26	48,505	543	1.12
3.50% Senior Notes	347,799	12,598	3.62	347,458	12,586	3.62	347,128	12,574	3.62
5.375% Senior Notes	337,646	18,945	5.61	348,480	19,450	5.58	347,862	19,415	5.58
7.0% Junior Subordinated Debentures	—	—	—	—	—	—	52,775	3,096	5.87
6.05% Subordinated Notes	—	—	—	—	—	—	19,178	467	2.44
Total interest-bearing liabilities	17,103,470	212,807	1.24	9,782,050	75,921	0.78	8,325,396	44,771	0.54
Portion of noninterest-bearing funding sources	43,014,937			43,456,410			38,352,585		
Total funding sources	60,118,407	212,807	0.35	53,238,460	75,921	0.14	46,677,981	44,771	0.10
Noninterest-bearing funding sources:									
Demand deposits	38,783,470			39,633,118			35,235,200		
Other liabilities	1,483,737			937,199			721,432		
Preferred stock	17,751			—			—		
SVBFG common stockholders' equity	5,674,531			4,734,417			3,961,405		
Noncontrolling interests	148,671			142,276			136,839		
Portion used to fund interest-earning assets	(43,014,937)			(43,456,410)			(38,352,585)		
Total liabilities and total equity	\$ 63,211,630			\$ 55,229,060			\$ 48,380,272		
Net interest income and margin		\$ 2,108,550	3.51%		\$ 1,903,189	3.57%		\$ 1,423,445	3.05%
Total deposits	\$ 55,056,950			\$ 48,075,344			\$ 42,745,148		
Reconciliation to reported net interest income:									
Adjustments for taxable equivalent basis		(11,949)			(9,201)			(3,076)	
Net interest income, as reported		\$ 2,096,601			\$ 1,893,988			\$ 1,420,369	

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- (1) Includes average interest-earning deposits in other financial institutions of \$0.9 billion, \$0.8 billion and \$1.1 billion in 2019, 2018 and 2017, respectively. For 2019, 2018 and 2017, balances also include \$4.1 billion, \$1.6 billion and \$1.9 billion, respectively, deposited at the FRB, earning interest at the Federal Funds target rate.
- (2) Yields on interest-earning investment securities do not give effect to changes in fair value that are reflected in other comprehensive income.
- (3) Interest income on non-taxable investment securities is presented on a fully taxable equivalent basis using the federal statutory income tax rate of 21.0 percent for 2019 and 2018 and 35.0 percent for 2017.
- (4) Nonaccrual loans are reflected in the average balances of loans.
- (5) Interest income includes loan fees of \$167.6 million, \$136.6 million and \$128.1 million in 2019, 2018 and 2017, respectively.
- (6) Average investment securities of \$1.1 billion, \$0.8 billion, and \$0.7 billion in 2019, 2018 and 2017, respectively, were classified as other assets as they were noninterest-earning assets. These investments primarily consisted of non-marketable and other equity securities.

Provision for Credit Losses

The following table summarizes our allowance for loan losses and the allowance for unfunded credit commitments for 2019, 2018 and 2017, respectively:

(Dollars in thousands)	Year ended December 31,		
	2019	2018	2017
Allowance for loan losses, beginning balance	\$ 280,903	\$ 255,024	\$ 225,366
Provision for loan losses	94,183	84,292	85,939
Gross loan charge-offs	(92,603)	(67,917)	(66,682)
Loan recoveries	21,038	11,636	8,538
Foreign currency translation adjustments	1,403	(2,132)	1,863
Allowance for loan losses, ending balance	\$ 304,924	\$ 280,903	\$ 255,024
Allowance for unfunded credit commitments, beginning balance	55,183	51,770	45,265
Provision for unfunded credit commitments	12,233	3,578	6,365
Foreign currency translation adjustments	240	(165)	140
Allowance for unfunded credit commitments, ending balance (1)	\$ 67,656	\$ 55,183	\$ 51,770
Ratios and other information:			
Provision for loan losses as a percentage of period-end total gross loans	0.28%	0.30%	0.37%
Gross loan charge-offs as a percentage of average total gross loans	0.31	0.26	0.31
Net loan charge-offs as a percentage of average total gross loans	0.24	0.22	0.27
Allowance for loan losses as a percentage of period-end total gross loans	0.91	0.99	1.10
Provision for credit losses	\$ 106,416	\$ 87,870	\$ 92,304
Period-end total gross loans	33,327,704	28,511,312	23,254,153
Average total gross loans	30,077,343	25,790,949	21,287,336

- (1) The “allowance for unfunded credit commitments” is included as a component of “Other liabilities.”

The provision for credit losses is the combination of both the provision for loan losses and the provision for unfunded credit commitments. Our provision for loan losses is a function of our reserve methodology, which is used to determine an appropriate allowance for loan losses for the period. Our reserve methodology is based on our evaluation of the existing allowance for loan losses in relation to total gross loans using historical and other objective information, and on our qualitative assessment of the inherent and identified credit risk of the loan portfolio. Our provision for unfunded credit commitments is determined using a methodology that is similar to the methodology used for calculating the allowance for loan losses, adjusted for factors specific to binding commitments, including the probability of funding and exposure at funding. Our provision for credit losses equals our best estimate of probable credit losses that are inherent in the portfolios at the balance sheet date. For a more detailed discussion of credit quality and the allowance for loan losses, see “Critical Accounting Policies and Estimates” above, “Consolidated Financial Condition-Credit Quality and the Allowance for Loan Losses” below and Note 10—“Loans, Allowance for Loan Losses and Allowance for Unfunded Credit Commitments” of the “Notes to the Consolidated Financial Statements” under Part II, Item 8 of this report for further details on our allowance for loan losses.

Provision for Loan Losses

We had a provision for loan losses of \$94.2 million in 2019, compared to a provision of \$84.3 million in 2018 and a provision of \$85.9 million in 2017. The provision for loan losses of \$94.2 million in 2019 was reflective primarily of \$38.7 million from period-end loan growth, \$56.3 million in net new specific reserves for nonaccrual loans and \$43.2 million from charge-offs not specifically reserved for, partially offset by a decrease of \$23.0 million for our performing loans and \$21.0 million of recoveries.

The provision for loan losses of \$84.3 million in 2018 was reflective primarily of \$46.6 million from period-end loan growth, \$39.0 million in net new specific reserves for nonaccrual loans and \$26.7 million from charge-offs not specifically reserved for, partially offset by a benefit of \$20.7 million from overall improved credit quality of our loan portfolio reflective of the increase of our private equity/venture capital loans, which tend to be of higher credit quality.

The provision for loan losses of \$85.9 million in 2017 was reflective primarily of \$62.7 million in net new specific reserves for nonaccrual loans and \$29.1 million from period-end loan growth, partially offset by a benefit from overall improved credit quality of our loan portfolio reflective of the increase of our private equity/venture capital loans.

Provision for Unfunded Credit Commitments

We recorded a provision for unfunded credit commitments of \$12.2 million in 2019, compared to a provision of \$3.6 million in 2018 and \$6.4 million in 2017. Our provision for unfunded credit commitments in 2019 was driven primarily by growth in unfunded credit commitments of \$5.3 billion.

We recorded a provision for unfunded credit commitments of \$3.6 million in 2018. Our provision for unfunded credit commitments in 2018 was driven primarily by increased reserves of \$7.9 million from growth in unfunded credit commitments, partially offset by a benefit of \$4.7 million from overall improved credit quality of our loan portfolio as mentioned above.

We recorded a provision for unfunded credit commitments of \$6.4 million in 2017. Our provision for unfunded credit commitments in 2017 was driven primarily by qualitative allocations based on our loan portfolio being comprised of larger loans and additional reserves as a result of the increase in unfunded credit commitments.

Noninterest Income

For the year ended December 31, 2019, noninterest income was \$1.2 billion, compared to \$745.0 million and \$557.2 million for the comparable 2018 and 2017 periods, respectively. For the year ended December 31, 2019, non-GAAP noninterest income, net of noncontrolling interests was \$1.2 billion, compared to \$707.0 million and \$527.8 million for the comparable 2018 and 2017 periods, respectively. For the year ended December 31, 2019, non-GAAP core fee income plus investment banking revenue and commissions was \$893.4 million, compared to \$515.9 million and \$379.0 million for the comparable 2018 and 2017 periods, respectively. For the year ended December 31, 2019, non-GAAP core fee income was \$641.8 million, compared to \$515.9 million and \$379.0 million for the comparable 2018 and 2017 periods, respectively. (See reconciliations of non-GAAP measures used below under "Use of Non-GAAP Financial Measures".)

Use of Non-GAAP Financial Measures

To supplement our audited consolidated financial statements presented in accordance with GAAP, we use certain non-GAAP measures of financial performance (including, but not limited to, non-GAAP core fee income, non-GAAP core fee income plus investment banking revenue and commissions, non-GAAP noninterest income and non-GAAP net gains on investment securities). These supplemental performance measures may vary from, and may not be comparable to, similarly titled measures by other companies in our industry. Non-GAAP financial measures are not in accordance with, or an alternative for, GAAP. Generally, a non-GAAP financial measure is a numerical measure of a company's performance that either excludes or includes amounts that are not normally excluded or included in the most directly comparable measure calculated and presented in accordance with GAAP. A non-GAAP financial measure may also be a financial metric that is not required by GAAP or other applicable requirement.

We believe these non-GAAP financial measures, when taken together with the corresponding GAAP financial measures, provide meaningful supplemental information regarding our performance by excluding items that represent income attributable to investors other than us and our subsidiaries and certain other non-recurring items. Our management uses, and believes that investors benefit from referring to, these non-GAAP financial measures in assessing our operating results and when planning, forecasting and analyzing future periods. However, these non-GAAP financial measures should be considered in addition to, and not as a substitute for or preferable to, financial measures prepared in accordance with GAAP.

Included in noninterest income is income and expense attributable to noncontrolling interests. We recognize, as part of our investment funds management business through SVB Capital, the entire income or loss from funds consolidated in accordance with ASC Topic 810 as discussed in Note 2—"Summary of Significant Accounting Policies" of the "Notes to the Consolidated Financial Statements" under Part II, Item 8 of this report. We are required under GAAP to consolidate 100% of the results of these entities, even though we may own less than 100% of such entities. The relevant amounts attributable to investors other

than us are reflected under “Net Income Attributable to Noncontrolling Interests” on our statements of income. Where applicable, the tables below for noninterest income and net gains on investment securities exclude noncontrolling interests.

Core fee income is a non-GAAP financial measure, which represents GAAP noninterest income, but excludes (i) certain line items where performance is typically subject to market or other conditions beyond our control, primarily our net gains (losses) on investment securities and equity warrant assets, (ii) our investment banking revenue and commissions and (iii) other noninterest income. Core fee income includes client investment fees, foreign exchange fees, credit card fees, deposit service charges, lending related fees and letters of credit and standby letters of credit fees.

Core fee income plus investment banking revenue and commissions is a non-GAAP measure, which represents GAAP noninterest income, but excludes certain line items where performance is typically subject to market or other conditions beyond our control, primarily our net gains (losses) on investment securities and equity warrant assets, and other noninterest income. Core fee income plus investment banking revenue and commissions includes core fee income plus investment banking revenue and commissions.

The following table provides a reconciliation of GAAP noninterest income to non-GAAP noninterest income, net of noncontrolling interests for 2019, 2018 and 2017, respectively:

(Dollars in thousands)	Year ended December 31,				
	2019	2018	% Change 2019/2018	2017	% Change 2018/2017
GAAP noninterest income	\$ 1,221,479	\$ 744,984	64.0%	\$ 557,231	33.7%
Less: income attributable to noncontrolling interests, including carried interest allocation	48,624	38,000	28.0	29,452	29.0
Non-GAAP noninterest income, net of noncontrolling interests	\$ 1,172,855	\$ 706,984	65.9	\$ 527,779	34.0

The following table provides a reconciliation of GAAP noninterest income to non-GAAP core fee income for 2019, 2018 and 2017, respectively:

(Dollars in thousands)	Year ended December 31,				
	2019	2018	% Change 2019/2018	2017	% Change 2018/2017
GAAP noninterest income	\$ 1,221,479	\$ 744,984	64.0%	\$ 557,231	33.7 %
Less: gains on investment securities, net	134,670	88,094	52.9	64,603	36.4
Less: gains on equity warrant assets, net	138,078	89,142	54.9	54,555	63.4
Less: other noninterest income	55,370	51,858	6.8	59,110	(12.3)
Non-GAAP core fee income plus investment banking revenue and commissions (1)	\$ 893,361	\$ 515,890	73.2	\$ 378,963	36.1
Less: investment banking revenue	195,177	—	—	—	—
Less: commissions	56,346	—	—	—	—
Non-GAAP core fee income (2)	\$ 641,838	\$ 515,890	24.4	\$ 378,963	36.1

(1) Non-GAAP core fee income plus investment banking revenue and commissions represents noninterest income, but excludes certain line items where performance is typically subject to market or other conditions beyond our control and other noninterest income. Core fee income plus investment banking revenue and commissions is Non-GAAP core fee income (as defined in the subsequent footnote) with the addition of investment banking revenue and commissions.

(2) Non-GAAP core fee income represents noninterest income, but excludes (i) certain line items where performance is typically subject to market or other conditions beyond our control, (ii) our investment banking revenue and commissions and (iii) other noninterest income. Non-GAAP core fee income includes client investment fees, foreign exchange fees, credit card fees, deposit service charges, lending related fees and letters of credit and standby letters of credit fees.

Gains on Investment Securities, Net

Net gains on investment securities include gains and losses from our non-marketable and other equity securities, which include public equity securities held as a result of exercised equity warrant assets, as well as gains and losses from sales of our AFS debt securities portfolio, when applicable.

Our non-marketable and other equity securities portfolio primarily represents investments in venture capital and private equity funds, SPD-SVB, debt funds, private and public portfolio companies and qualified affordable housing projects. We experience variability in the performance of our non-marketable and other equity securities from period to period, which results in net gains or losses on investment securities (both realized and unrealized). This variability is due to a number of factors, including unrealized changes in the values of our investments, changes in the amount of realized gains and losses from distributions, changes in liquidity events and general economic and market conditions. Unrealized gains or losses from non-marketable and other equity securities for any single period are typically driven by valuation changes, and are therefore subject to potential increases or decreases in future periods. Such variability may lead to volatility in the gains or losses from investment securities. As such, our results for a particular period are not necessarily indicative of our expected performance in a future period.

The extent to which any unrealized gains or losses will become realized is subject to a variety of factors, including, among other things, the expiration of certain sales restrictions to which these equity securities may be subject to (e.g. lock-up agreements), changes in prevailing market prices, market conditions, the actual sales or distributions of securities and the timing of such actual sales or distributions, which, to the extent such securities are managed by our managed funds, are subject to our funds' separate discretionary sales/distributions and governance processes.

Our AFS securities portfolio is a fixed income investment portfolio that is managed with the objective of earning an appropriate portfolio yield over the long-term while maintaining sufficient liquidity and credit diversification as well as addressing our asset/liability management objectives. Though infrequent, sales of debt securities in our AFS securities portfolio may result in net gains or losses and are conducted pursuant to the guidelines of our investment policy related to the management of our liquidity position and interest rate risk.

In 2019, we had net gains on investment securities of \$134.7 million, compared to \$88.1 million and \$64.6 million in 2018 and 2017, respectively. Non-GAAP net gains on investment securities, net of noncontrolling interests were \$86.2 million in 2019, compared to \$49.9 million and \$35.4 million in 2018 and 2017, respectively. Net gains on investment securities, net of noncontrolling interests of \$86.2 million in 2019 were driven by the following:

- Gains of \$37.9 million from our managed funds of funds portfolio, related primarily to net unrealized valuation increases in both private and public company investments held by the funds in the portfolio,
- Gains of \$33.1 million from our strategic and other investments portfolio, primarily driven by net unrealized valuation increases in both private and public company investments held in our strategic venture capital funds, and
- Gains of \$7.9 million from our managed direct venture funds, related primarily to net unrealized valuation increases in investments held by the funds in the portfolio.

Net gains on investment securities, net of noncontrolling interests of \$49.9 million in 2018 were driven by the following:

- Gains of \$39.9 million from our strategic and other investments portfolio, primarily driven by net unrealized valuation increases in both private and public company investments held in our strategic venture capital funds,
- Gains of \$29.1 million from our managed funds of funds portfolio, related primarily to net unrealized valuation increases in both private and public company investments held by the funds in the portfolio, and
- Losses of \$25.2 million from our public equity securities portfolio primarily reflective of net losses on sales of shares of Roku, Inc. ("Roku"), from exercised warrants in 2017, which were sold in the first quarter of 2018.

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The following table provides a reconciliation of GAAP total gains (losses) on investment securities, net, to non-GAAP net gains (losses) on investment securities, net of noncontrolling interests, for 2019, 2018 and 2017:

(Dollars in thousands)	Managed Funds of Funds	Managed Direct Venture Funds	Public Equity Securities (1)	Sales of AFS Debt Securities (1)	Debt Funds	Strategic and Other Investments	SVB Leerink	Total
Year ended December 31, 2019								
GAAP gains (losses) on investment securities, net	\$ 74,939	\$ 17,982	\$ 5,421	\$ (3,905)	\$ 1,647	\$ 33,101	\$ 5,485	\$ 134,670
Less: gains attributable to noncontrolling interests, including carried interest allocation	37,087	10,089	—	—	—	—	1,325	48,501
Non-GAAP net gains (losses) on investment securities, net of noncontrolling interests	<u>\$ 37,852</u>	<u>\$ 7,893</u>	<u>\$ 5,421</u>	<u>\$ (3,905)</u>	<u>\$ 1,647</u>	<u>\$ 33,101</u>	<u>\$ 4,160</u>	<u>\$ 86,169</u>
Year ended December 31, 2018								
GAAP gains (losses) on investment securities, net	\$ 62,019	\$ 11,502	\$ (25,158)	\$ (740)	\$ 541	\$ 39,930	\$ —	\$ 88,094
Less: gains attributable to noncontrolling interests, including carried interest allocation	32,938	5,245	—	—	—	—	—	38,183
Non-GAAP net gains (losses) on investment securities, net of noncontrolling interests	<u>\$ 29,081</u>	<u>\$ 6,257</u>	<u>\$ (25,158)</u>	<u>\$ (740)</u>	<u>\$ 541</u>	<u>\$ 39,930</u>	<u>\$ —</u>	<u>\$ 49,911</u>
Year ended December 31, 2017								
GAAP gains (losses) on investment securities, net	\$ 41,140	\$ 1,823	\$ —	\$ (5,189)	\$ 8,950	\$ 17,879	\$ —	\$ 64,603
Less: gains attributable to noncontrolling interests, including carried interest allocation	28,108	1,079	—	—	—	—	—	29,187
Non-GAAP net gains (losses) on investment securities, net of noncontrolling interests	<u>\$ 13,032</u>	<u>\$ 744</u>	<u>\$ —</u>	<u>\$ (5,189)</u>	<u>\$ 8,950</u>	<u>\$ 17,879</u>	<u>\$ —</u>	<u>\$ 35,416</u>

(1) Presentation for year-ended December 31, 2017 amounts are not determined in a manner consistent with the December 31, 2019 and 2018 presentation due to the adoption of ASU 2016-01.

Gains on Equity Warrant Assets, Net

Gains on equity warrant assets, net, were \$138.1 million in 2019, compared to \$89.1 million in 2018 and \$54.6 million in 2017. Net gains on equity warrant assets of \$138.1 million in 2019 were primarily due to the following:

- Net gains of \$107.2 million from the exercises of equity warrant assets in 2019, compared to net gains of \$58.2 million in 2018, driven by increased IPO activity during 2019, and
- Net gains of \$34.4 million from changes in warrant valuations in 2019, compared to net gains of \$36.9 million in 2018, driven by valuation increases in our private company warrant portfolio.

Gains on equity warrant assets, net, of \$89.1 million in 2018 were primarily due to the following:

- Net gains of \$58.2 million from the exercises of equity warrant assets in 2018, compared to net gains of \$48.3 million in 2017, driven by increased M&A and IPO activity during 2018, and
- Net gains of \$36.9 million from changes in warrant valuations in 2018, compared to net gains of \$10.7 million in 2017, driven by valuation increases in our private company warrant portfolio and reflective of increased M&A activity during 2018.

A summary of gains on equity warrant assets, net, for 2019, 2018 and 2017 is as follows:

(Dollars in thousands)	Year ended December 31,				
	2019	2018	% Change 2019/2018	2017	% Change 2018/2017
Equity warrant assets (1):					
Gains on exercises, net	\$ 107,168	\$ 58,186	84.2 %	\$ 48,275	20.5%
Terminations	(3,502)	(5,964)	(41.3)	(4,422)	34.9
Changes in fair value, net	34,412	36,920	(6.8)	10,702	NM
Total gains on equity warrant assets, net	<u>\$ 138,078</u>	<u>\$ 89,142</u>	<u>54.9</u>	<u>\$ 54,555</u>	<u>63.4</u>

NM—Not meaningful

- (1) At December 31, 2019, we held warrants in 2,268 companies, compared to 2,095 companies at December 31, 2018 and 1,868 companies at December 31, 2017. The total value of our warrant portfolio was \$165.5 million at December 31, 2019, \$149.2 million at December 31, 2018, and \$123.8 million at December 31, 2017. Warrants in 20 companies each had fair values greater than \$1.0 million and collectively represented \$57.6 million, or 34.8 percent, of the fair value of the total warrant portfolio at December

Non-GAAP Core Fee Income

(Dollars in thousands)	Year ended December 31,				
	2019	2018	% Change 2019/2018	2017	% Change 2018/2017
Non-GAAP core fee income (1):					
Client investment fees	\$ 182,068	\$ 130,360	39.7%	\$ 56,136	132.2 %
Foreign exchange fees	159,262	138,812	14.7	115,760	19.9
Credit card fees	118,719	94,072	26.2	76,543	22.9
Deposit service charges	89,200	76,097	17.2	58,715	29.6
Lending related fees	49,920	41,949	19.0	43,265	(3.0)
Letters of credit and standby letters of credit fees	42,669	34,600	23.3	28,544	21.2
Total non-GAAP core fee income (1)	<u>\$ 641,838</u>	<u>\$ 515,890</u>	<u>24.4</u>	<u>\$ 378,963</u>	<u>36.1</u>
Investment banking revenue	195,177	—	—	—	—
Commissions	56,346	—	—	—	—
Total non-GAAP core fee income plus investment banking revenue and commissions (2)	<u>\$ 893,361</u>	<u>\$ 515,890</u>	<u>73.2</u>	<u>\$ 378,963</u>	<u>36.1</u>

- (1) This non-GAAP core fee income represents noninterest income, but excludes (i) certain line items where performance is typically subject to market or other conditions beyond our control, (ii) our investment banking revenue and commissions and (iii) other noninterest income. See “Use of Non-GAAP Measures” above.
- (2) Non-GAAP core fee income plus investment banking revenue and commissions represents noninterest income, but excludes certain line items where performance is typically subject to market or other conditions beyond our control and other noninterest income. See “Use of Non-GAAP Measures” above.

Client Investment Fees

We offer a variety of investment products on which we earn fees. These products include money market mutual funds, overnight repurchase agreements and sweep money market funds available through the Bank, client-directed accounts offered through SVB Securities, our former broker dealer subsidiary that was deregistered as a broker dealer in the third quarter of 2019, and fixed income management services offered through SVB Asset Management and SVB Wealth Advisory, our investment advisory subsidiaries.

Client investment fees were \$182.1 million in 2019, compared to \$130.4 million and \$56.1 million in 2018 and 2017, respectively. The increases were reflective primarily of the large increase in average client investment funds of \$16.6 billion and \$23.5 billion in 2019 and 2018, respectively, driven by our clients' increased utilization of our off-balance sheet sweep money market funds and products managed by SVB Asset Management. In addition, client investment fees also benefited from improved spreads on our client investment funds due to increases in general market rates in both years. The increase in 2018 was primarily due to the reintroduction of fees, associated with our repurchase agreement program, which had been previously waived due to the low rate environment.

(Dollars in thousands)	Year ended December 31,				
	2019	2018	% Change 2019/2018	2017	% Change 2018/2017
Client investment fees by type:					
Sweep money market fees	\$ 104,236	\$ 75,654	37.8%	\$ 28,485	165.6%
Asset management fees	28,665	23,882	20.0	16,831	41.9
Repurchase agreement fees	49,167	30,824	59.5	10,820	184.9
Total client investment fees	<u>\$ 182,068</u>	<u>\$ 130,360</u>	<u>39.7</u>	<u>\$ 56,136</u>	<u>132.2</u>

The following table summarizes average client investment funds for 2019, 2018 and 2017:

(Dollars in millions)	Year ended December 31,				
	2019	2018	% Change 2019/2018	2017	% Change 2018/2017
Sweep money market funds	\$ 40,667	\$ 32,232	26.2%	\$ 19,718	63.5%
Client investment assets under management (1)	41,887	34,754	20.5	25,417	36.7
Repurchase agreements	9,079	8,086	12.3	6,390	26.5
Total average client investment funds (2)	<u>\$ 91,633</u>	<u>\$ 75,072</u>	<u>22.1</u>	<u>\$ 51,525</u>	<u>45.7</u>

- (1) These funds represent investments in third-party money market mutual funds and fixed-income securities managed by SVB Asset Management.
(2) Client investment funds are maintained at third-party financial institutions and are not recorded on our balance sheet.

The following table summarizes period-end client investment funds at December 31, 2019, 2018 and 2017:

(Dollars in millions)	December 31,				
	2019	2018	% Change 2019/2018	2017	% Change 2018/2017
Sweep money market funds	\$ 43,226	\$ 38,348	12.7%	\$ 23,911	60.4%
Client investment assets under management (1)	46,904	39,214	19.6	29,344	33.6
Repurchase agreements	9,062	8,422	7.6	7,074	19.1
Total period-end client investment funds (2)	<u>\$ 99,192</u>	<u>\$ 85,984</u>	<u>15.4</u>	<u>\$ 60,329</u>	<u>42.5</u>

- (1) These funds represent investments in third-party money market mutual funds and fixed-income securities managed by SVB Asset Management.
(2) Client investment funds are maintained at third-party financial institutions and are not recorded on our balance sheet.

Foreign Exchange Fees

Foreign exchange fees were \$159.3 million in 2019, compared to \$138.8 million and \$115.8 million in 2018 and 2017, respectively. The increases in foreign exchange fees were due primarily to increased trade volumes driven by the continuing increase in the number of clients actively managing currency exposures.

(Dollars in thousands)	Year ended December 31,				
	2019	2018	% Change 2019/2018	2017	% Change 2018/2017
Foreign exchange fees by instrument type:					
Spot contract commissions	\$ 145,915	\$ 127,459	14.5 %	\$ 104,344	22.2 %
Forward contract commissions	13,068	10,940	19.5	10,934	0.1
Option premium fees	279	413	(32.4)	482	(14.3)
Total foreign exchange fees	<u>\$ 159,262</u>	<u>\$ 138,812</u>	14.7	<u>\$ 115,760</u>	19.9

Credit Card Fees

Credit card fees were \$118.7 million in 2019, compared to \$94.1 million and \$76.5 million in 2018 and 2017, respectively. The increases were primarily due to an increase in net interchange fees reflective of increased client utilization of our credit card products and enhanced payment solutions provided to new and existing clients. A summary of credit card fees by instrument type for 2019, 2018 and 2017 is as follows:

(Dollars in thousands)	Year ended December 31,				
	2019	2018	% Change 2019/2018	2017	% Change 2018/2017
Credit card fees by instrument type:					
Card interchange fees, net	\$ 93,553	\$ 74,381	25.8%	\$ 60,224	23.5%
Merchant service fees	18,355	14,420	27.3	11,584	24.5
Card service fees	6,811	5,271	29.2	4,735	11.3
Total credit card fees	<u>\$ 118,719</u>	<u>\$ 94,072</u>	26.2	<u>\$ 76,543</u>	22.9

Deposit Service Charges

Deposit service charges were \$89.2 million in 2019, compared to \$76.1 million and \$58.7 million in 2018 and 2017, respectively. The increases were attributable to higher deposit client counts as well as higher volumes of our transaction-based fee products. The increase in 2018 was also driven by the introduction of new product solutions and enhanced product pricing.

Lending Related Fees

Lending related fees were \$49.9 million in 2019, compared to \$41.9 million and \$43.3 million in 2018 and 2017, respectively. The increase in 2019 was due to an increase in loan servicing fees and syndication fee income. The decrease in 2018 was due primarily to an adjustment of \$4.5 million, to increase unused commitment fees during 2017, related to fees earned in prior periods from unused lines of credit. A summary of lending related fees by type for 2019, 2018 and 2017 is as follows:

(Dollars in thousands)	Year ended December 31,				
	2019	2018	% Change 2019/2018	2017	% Change 2018/2017
Lending related fees by instrument type:					
Unused commitment fees	\$ 34,829	\$ 32,452	7.3%	\$ 34,110	(4.9)%
Other	15,091	9,497	58.9	9,155	3.7
Total lending related fees	<u>\$ 49,920</u>	<u>\$ 41,949</u>	19.0	<u>\$ 43,265</u>	(3.0)

Letters of Credit and Standby Letters of Credit Fees

Letters of credit and standby letters of credit fees were \$42.7 million in 2019, compared to \$34.6 million and \$28.5 million in 2018 and 2017, respectively. The increases were primarily driven by increases in deferred fee income reflective of larger letter of credit issuances.

Investment Banking Revenue

Investment banking revenue, attributable to the acquisition of SVB Leerink, was \$195.2 million in 2019 consisting primarily of underwriting fees. A summary of investment banking revenue by type for 2019, 2018 and 2017 is as follows:

(Dollars in thousands)	Year ended December 31,				
	2019	2018	% Change 2019/2018	2017	% Change 2018/2017
Investment banking revenue:					
Underwriting fees	\$ 153,306	\$ —	—%	\$ —	—%
Advisory fees	37,846	—	—	—	—
Private placements and other	4,025	—	—	—	—
Total investment banking revenue	<u>\$ 195,177</u>	<u>\$ —</u>	<u>—</u>	<u>\$ —</u>	<u>—</u>

Commissions

Commissions, attributable to the acquisition of SVB Leerink, for the year ended December 31, 2019 were \$56.3 million and consisted of client trading activity. Commissions include commissions received from clients for the execution of agency-based brokerage transactions in listed and over-the-counter equities.

Other Noninterest Income

Total other noninterest income was \$55.4 million in 2019, compared to income of \$51.9 million in 2018 and \$59.1 million in 2017. The increase was due primarily to increases in fund management fees resulting from our acquisition of SVB Leerink on January 4, 2019 and in other service revenue, partially offset by a loss on the early redemption of our \$350.0 million 5.375% Senior Notes due 2020. The loss consisted of the amount paid in excess of the principal amount represented a \$9.0 million premium due to holders upon early redemption. The decrease of \$7.2 million in other noninterest income in 2018 was primarily due to a decrease of \$5.2 million in service-based fees and other noninterest income reflective of the sale of our equity valuation services business during 2017. A summary of other noninterest income for 2019, 2018 and 2017 is as follows:

(Dollars in thousands)	Year ended December 31,				
	2019	2018	% Change 2019/2018	2017	% Change 2018/2017
Other noninterest income by instrument type:					
Fund management fees	\$ 32,522	\$ 23,016	41.3 %	\$ 21,214	8.5 %
Net gains on revaluation of foreign currency instruments, net of foreign exchange forward contracts (1)	345	666	(48.2)	1,788	(62.8)
(Losses) gains on extinguishment of debt	(8,960)	—	—	2,731	(100.0)
Other service revenue (2)	<u>31,463</u>	<u>28,176</u>	<u>11.7</u>	<u>33,377</u>	<u>(15.6)</u>
Total other noninterest income	<u>\$ 55,370</u>	<u>\$ 51,858</u>	<u>6.8</u>	<u>\$ 59,110</u>	<u>(12.3)</u>

(1) Represents the net revaluation of client and internal foreign currency denominated financial instruments. We enter into foreign exchange forward contracts to economically reduce our foreign exchange exposure related to client and internal foreign currency denominated financial instruments.

(2) Includes dividends on FHLB/FRB stock, correspondent bank rebate income, incentive fees related to carried interest, valuation fee income and other fee income.

Noninterest Expense

A summary of noninterest expense for 2019, 2018 and 2017 is as follows:

(Dollars in thousands)	Year ended December 31,				
	2019	2018	% Change 2019/2018	2017	% Change 2018/2017
Compensation and benefits	\$ 989,734	\$ 726,980	36.1 %	\$ 606,402	19.9 %
Professional services	205,479	158,835	29.4	121,935	30.3
Premises and equipment	96,770	77,918	24.2	71,753	8.6
Net occupancy	69,279	54,753	26.5	48,397	13.1
Business development and travel	68,912	48,180	43.0	41,978	14.8
FDIC and state assessments	18,509	34,276	(46.0)	35,069	(2.3)
Other	152,579	87,251	74.9	85,121	2.5
Total noninterest expense	<u>\$ 1,601,262</u>	<u>\$ 1,188,193</u>	34.8	<u>\$ 1,010,655</u>	17.6

Included in noninterest expense is expense attributable to noncontrolling interests. See below for a description and reconciliation of non-GAAP noninterest expense and non-GAAP core operating efficiency ratio, both of which exclude noncontrolling interests.

Non-GAAP Noninterest Expense

We use and report non-GAAP noninterest expense, non-GAAP taxable equivalent revenue and non-GAAP core operating efficiency ratio, which excludes noncontrolling interests and SVB Leerink. We believe these non-GAAP financial measures, when taken together with the corresponding GAAP financial measures, provide meaningful supplemental information regarding our performance by: (i) excluding certain items that represent expenses attributable to investors other than us and our subsidiaries, or certain items that do not occur every reporting period; or (ii) providing additional information used by management that is not otherwise required by GAAP or other applicable requirements. Our management uses, and believes that investors benefit from referring to, these non-GAAP financial measures in assessing our operating results and when planning, forecasting and analyzing future periods. However, these non-GAAP financial measures should be considered in addition to, not as a substitute for or preferable to, financial measures prepared in accordance with GAAP.

The table below provides a summary of non-GAAP noninterest expense and non-GAAP core operating efficiency ratio, both net of noncontrolling interests:

Non-GAAP core operating efficiency ratio (Dollars in thousands, except ratios)	Year ended December 31,				
	2019	2018	% Change 2019/2018	2017	% Change 2018/2017
GAAP noninterest expense	\$ 1,601,262	\$ 1,188,193	34.8 %	\$ 1,010,655	17.6 %
Less: expense attributable to noncontrolling interests	835	522	60.0	813	(35.8)
Non-GAAP noninterest expense, net of noncontrolling interests	1,600,427	1,187,671	34.8	1,009,842	17.6
Less: expense attributable to SVB Leerink	252,677	—	—	—	—
Non-GAAP noninterest expense, net of noncontrolling interests and SVB Leerink	\$ 1,347,750	\$ 1,187,671	13.5	\$ 1,009,842	17.6
GAAP net interest income	\$ 2,096,601	\$ 1,893,988	10.7	\$ 1,420,369	33.3
Adjustments for taxable equivalent basis	11,949	9,201	29.9	3,076	199.1
Non-GAAP taxable equivalent net interest income	2,108,550	1,903,189	10.8	1,423,445	33.7
Less: income attributable to noncontrolling interests	72	30	140.0	33	(9.1)
Non-GAAP taxable equivalent net interest income, net of noncontrolling interests	2,108,478	1,903,159	10.8	1,423,412	33.7
Less: net interest income attributable to SVB Leerink	1,252	—	—	—	—
Non-GAAP taxable equivalent net interest income, net of noncontrolling interests and SVB Leerink	\$ 2,107,226	\$ 1,903,159	10.7	\$ 1,423,412	33.7
GAAP noninterest income	\$ 1,221,479	\$ 744,984	64.0	\$ 557,231	33.7
Less: income attributable to noncontrolling interests, including carried interest allocation	48,624	38,000	28.0	29,452	29.0
Non-GAAP noninterest income, net of noncontrolling interests	1,172,855	706,984	65.9	527,779	34.0
Less: non-GAAP net gains on investment securities, net of noncontrolling interests	86,169	49,911	72.6	35,416	40.9
Less: net gains on equity warrant assets	138,078	89,142	54.9	54,555	63.4
Less: investment banking revenue	195,177	—	—	—	—
Less: commissions	56,346	—	—	—	—
Non-GAAP noninterest income, net of noncontrolling interests and net of net gains on investment securities, net gains on equity warrant assets, investment banking revenue and commissions	\$ 697,085	\$ 567,931	22.7	\$ 437,808	29.7
GAAP total revenue	\$ 3,318,080	\$ 2,638,972	25.7	\$ 1,977,600	33.4
Non-GAAP taxable equivalent revenue, net of noncontrolling interests and SVB Leerink, net gains on investment securities, net gains on equity warrant assets, investment banking revenue and commissions	\$ 2,804,311	\$ 2,471,090	13.5	\$ 1,861,220	32.8
GAAP operating efficiency ratio	48.26%	45.02%	7.2	51.11%	(11.9)
Non-GAAP core operating efficiency ratio (1)	48.06	48.06	—	54.26	(11.4)

- (1) The non-GAAP core operating efficiency ratio is calculated by dividing noninterest expense after adjusting for noninterest expense attributable to SVB Leerink by total revenue after adjusting for net interest income attributable to SVB Leerink, net gains or losses on investment securities and equity warrant assets, investment banking revenue and commissions. Additionally, noninterest expense and total revenue are adjusted for income or losses and expenses attributable to noncontrolling interests and adjustments to net interest income for a taxable equivalent basis.

Compensation and Benefits Expense

The following table provides a summary of our compensation and benefits expense:

(Dollars in thousands, except employees)	Year ended December 31,				
	2019	2018	% Change 2019/2018	2017	% Change 2018/2017
Compensation and benefits:					
Salaries and wages	\$ 436,500	\$ 324,971	34.3%	\$ 277,148	17.3%
Incentive compensation & ESOP	292,270	207,306	41.0	149,346	38.8
Other employee incentives and benefits (1)	260,964	194,703	34.0	179,908	8.2
Total compensation and benefits	<u>\$ 989,734</u>	<u>\$ 726,980</u>	36.1	<u>\$ 606,402</u>	19.9
Period-end full-time equivalent employees	3,564	2,900	22.9	2,438	18.9
Average full-time equivalent employees	3,362	2,685	25.2	2,396	12.1

- (1) Other employee incentives and benefits includes employer payroll taxes, group health and life insurance, share-based compensation, 401(k), warrant incentive and retention plans, agency fees and other employee-related expenses.

Compensation and benefits expense was \$989.7 million in 2019, compared to \$727.0 million in 2018 and \$606.4 million in 2017. The key factors driving the increase in compensation and benefits expense in 2019 were as follows:

- An increase of \$111.5 million in salaries and wages expense, reflective primarily of an increase in the number of average FTEs by 677 to 3,362 in 2019, compared to 2,685 in 2018, and annual pay raises. The increase in FTEs was primarily to support our overall growth as well as the acquisition of SVB Leerink which added 230 average FTEs in 2019,
- An increase of \$85.0 million in incentive compensation expense due primarily to the inclusion of SVB Leerink in our financial results for 2019, partially offset by lower incentive accruals compared to strong 2018 performance levels, and
- An increase of \$66.3 million in other employee compensation and benefits, related to various expenses, particularly the inclusion of SVB Leerink in our financial results for 2019, share-based compensation reflective of an increase in restricted stock compensation due to increased headcount in 2019, an increase in warrant incentive plan expense due to the increased cash liquidations on equity warrant assets in 2019 as compared to 2018 as well as an increase in employer payroll taxes and group health and life insurance reflective of our increased headcount in 2019.

The increase in compensation and benefits expense of \$120.6 million in 2018, as compared to 2017, was due primarily to the following:

- An increase of \$56.3 million in incentive compensation expense due primarily to our strong 2018 full-year performance and reflective of our improved ROE relative to our peers, which is one of our key plan performance metrics,
- An increase of \$47.8 million in salaries and wages expense, reflective primarily of an increase in the number of average FTEs by 289 to 2,685 in 2018, compared to 2,396 in 2017, and annual pay raises. The increase in FTE was primarily to support our overall growth, and
- An increase of \$14.8 million in other employee compensation and benefits, related to various expenses, particularly share-based compensation reflective of the increase in our stock price as well as employer payroll taxes and group health and life insurance reflective of our increased headcount in 2018. These increases were partially offset by a decrease in our warrant incentive plan expense in 2018 compared to 2017 primarily reflective of our exercise of Roku equity warrants in the fourth quarter of 2017 which resulted in a large accrual of warrant incentive compensation expense in 2017 and subsequent decline of Roku's common stock price, which was sold in 2018, resulting in a lower warrant incentive payout than previously accrued for.

Our variable compensation plans primarily consist of our Incentive Compensation Plan, Direct Drive Incentive Compensation Plan, Retention Program, Warrant Incentive Plan, Deferred Compensation Plan, 401(k) and ESOP Plan, SVB Leerink Incentive Compensation Plan and SVB Leerink Retention Award. Total costs incurred under these plans were \$347.3 million in 2019, compared to \$239.2 million in 2018 and \$183.9 million in 2017. These amounts are included in total compensation and benefits expense discussed above.

Professional Services

Professional services expense was \$205.5 million in 2019, compared to \$158.8 million in 2018 and \$121.9 million in 2017. The increase in 2019 was primarily related to investments in our regulatory, risk management and compliance infrastructure to support our growth both domestically and globally, as well as in projects, systems and technology to support our revenue growth and our global digital banking, and continued global infrastructure, initiatives and other operating costs. Additionally, legal and consulting costs increased in 2019 due to the acquisition of SVB Leerink.

The increase in 2018 was primarily related to enhancements in our regulatory, risk management and compliance infrastructure to support our growth both domestically and globally, as well as investments made in projects, systems and technology to support our revenue growth and related initiatives and other operating costs. Additionally, we incurred \$8.8 million of legal and consulting fees in 2018 associated with the acquisition of SVB Leerink.

Premises and Equipment

Premises and equipment expense was \$96.8 million in 2019, compared to \$77.9 million in 2018 and \$71.8 million in 2017. The increase related to investments in projects, systems and technology to support our revenue growth and related initiatives as well as other operating costs.

Net Occupancy

Net occupancy expense was \$69.3 million in 2019, compared to \$54.8 million in 2018 and \$48.4 million in 2017. The increase was primarily due to lease renewals at higher costs, reflective of market conditions, and the expansion of certain offices to support our growth. Additionally, for 2019, \$7.4 million was attributable to the inclusion of SVB Leerink in our financial results effective January 4, 2019.

FDIC and State Assessments

FDIC and state assessments expense was \$18.5 million in 2019, compared to \$34.3 million in 2018 and \$35.1 million in 2017. The decrease in FDIC and state assessments expense in 2019 was due primarily to the elimination of the FDIC surcharge for banks effective October 1, 2018, reflective of the deposit insurance fund reserve ratio reaching its minimum funding requirements.

Other Noninterest Expense

A summary of other noninterest expense for 2019, 2018 and 2017 is as follows:

(Dollars in thousands)	Year ended December 31,				
	2019	2018	% Change 2019/2018	2017	% Change 2018/2017
Lending and other client related processing costs	\$ 28,491	\$ 24,237	17.6 %	\$ 23,768	2.0 %
Correspondent bank fees	14,503	13,713	5.8	12,976	5.7
Investment banking activities	13,733	—	—	—	—
Trade order execution costs	10,813	—	—	—	—
Data processing services	12,536	10,811	16.0	10,251	5.5
Telephone	9,861	9,404	4.9	10,647	(11.7)
Dues and publications	4,603	4,605	—	3,263	41.1
Postage and supplies	3,198	2,799	14.3	2,797	0.1
Other	54,841	21,682	152.9	21,419	1.2
Total other noninterest expense	<u>\$ 152,579</u>	<u>\$ 87,251</u>	74.9	<u>\$ 85,121</u>	2.5

Other noninterest expense was \$152.6 million in 2019, compared to \$87.3 million in 2018 and \$85.1 million in 2017. The increase was primarily by ongoing expenses related to the inclusion of SVB Leerink in our financial results, specifically, \$13.7 million for investment banking activities, \$10.8 million for trade order execution costs and \$11.5 million related to the amortization of intangible assets. Additionally, marketing expenses increased \$7.7 million for the year ended December 31, 2019 as compared to the 2018 period.

Net Income Attributable to Noncontrolling Interests

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Included in net income is income and expense attributable to noncontrolling interests. The relevant amounts allocated to investors in our consolidated subsidiaries, other than us, are reflected under “net income attributable to noncontrolling interests” on our consolidated statements of income.

In the table below, noninterest income consists primarily of investment gains and losses from our consolidated funds. Noninterest expense is primarily related to management fees paid by our managed funds to SVB Financial's subsidiaries as the managed funds' general partners. A summary of net income attributable to noncontrolling interests for 2019, 2018 and 2017 is as follows:

(Dollars in thousands)	Year ended December 31,				
	2019	2018	% Change 2019/2018	2017	% Change 2018/2017
Net interest income (1)	\$ (72)	\$ (30)	140.0 %	\$ (33)	(9.1)%
Noninterest income (1)	(20,290)	(22,342)	(9.2)	(25,789)	(13.4)
Noninterest expense (1)	835	522	60.0	813	(35.8)
Carried interest allocation (2)	(28,334)	(15,658)	81.0	(3,663)	NM
Net income attributable to noncontrolling interests	<u>\$ (47,861)</u>	<u>\$ (37,508)</u>	27.6	<u>\$ (28,672)</u>	30.8

NM—Not meaningful

(1) Represents noncontrolling interests' share in net interest income, noninterest income and noninterest expense.

(2) Represents the preferred allocation of income (or change in income) earned by us as the general partner of certain consolidated funds.

Net income attributable to noncontrolling interests was \$47.9 million in 2019, compared to \$37.5 million in 2018. Net income attributable to noncontrolling interests of \$47.9 million for 2019 was primarily a result of the following:

- Net gains on investment securities (including carried interest allocation) attributable to noncontrolling interests of \$48.5 million (\$20.2 million excluding carried interest allocation) primarily from our managed funds of funds and our managed direct venture funds portfolios, related primarily to net unrealized valuation increases in both private and public company investments held by the funds in the portfolios, and
- Noninterest expense of \$0.8 million, primarily related to management fees paid by the noncontrolling interests to our subsidiaries that serve as the general partner.

Net income attributable to noncontrolling interests was \$37.5 million in 2018, compared to \$28.7 million in 2017. Net income attributable to noncontrolling interests of \$37.5 million for 2018 was primarily a result of the following:

- Net gains on investment securities (including carried interest allocation) attributable to noncontrolling interests of \$38.2 million (\$22.5 million excluding carried interest allocation) primarily from our managed funds of funds portfolio, related primarily to net unrealized valuation increases in both private and public company investments held by the funds in the portfolio, and
- Noninterest expense of \$0.5 million, primarily related to management fees paid by the noncontrolling interests to our subsidiaries that serve as the general partner.

Income Taxes

Our effective income tax expense rate was 27.2 percent in 2019, compared to 26.5 percent in 2018 and 42.0 percent in 2017. Our effective tax rate is calculated by dividing income tax expense by the sum of income before income tax expense and the net income attributable to noncontrolling interests. The components of our effective tax rates for 2019, 2018 and 2017 are discussed in Note 19—“Income Taxes” of the “Notes to the Consolidated Financial Statements” under Part II, Item 8 of this report.

The increase in our effective tax rate for 2019 was primarily due to a decrease in excess tax benefits from share-based compensation driven by a decrease in the number of stock options exercised during 2019 due to the decline in the stock price from the record highs during 2018.

The reduction in our effective tax rate for 2018 was primarily due to the lower Federal corporate tax rate as a result of the Tax Cuts and Jobs Act (the “TCJA”) effective January 1, 2018. The effective tax rate for each of 2018 and 2017 included the recognition of tax benefits of \$18.0 million due to the adoption of ASU 2016-09, Improvements to Employee Share-Based Payment Accounting.

Operating Segment Results

We have four segments for which we report our financial information: Global Commercial Bank (“GCB”), SVB Private Bank, SVB Capital and SVB Leerink. SVB Leerink is a new reportable segment for 2019 as a result of the acquisition of SVB Leerink effective January 4, 2019.

We report segment information based on the “management” approach. The management approach designates the internal reporting used by management for making decisions and assessing performance as the source of our reporting segments. Refer to Note 25—“Segment Reporting” of the “Notes to the Consolidated Financial Statements” under Part II, Item 8 of this report for additional details.

The following is our reportable segment information for 2019, 2018 and 2017:

Global Commercial Bank

(Dollars in thousands)	Year ended December 31,				
	2019	2018	% Change 2019/2018	2017	% Change 2018/2017
Net interest income	\$ 1,850,391	\$ 1,623,488	14.0%	\$ 1,274,366	27.4 %
Provision for loan losses	(91,814)	(80,953)	13.4	(81,553)	(0.7)
Noninterest income	637,922	520,302	22.6	392,101	32.7
Noninterest expense	(874,854)	(793,159)	10.3	(707,666)	12.1
Income before income tax expense	\$ 1,521,645	\$ 1,269,678	19.8	\$ 877,248	44.7
Total average loans, net of unearned income	\$ 26,031,284	\$ 22,354,305	16.4	\$ 18,479,793	21.0
Total average assets	56,043,321	48,854,416	14.7	43,704,667	11.8
Total average deposits	53,053,665	46,039,570	15.2	41,043,731	12.2

Income before income tax expense from our GCB increased to \$1.5 billion in 2019, compared to \$1.3 billion in 2018 and \$0.9 billion in 2017, which reflected the continued growth of our core commercial business and clients. The key components of GCB's performance are discussed below:

2019 compared to 2018

Net interest income from GCB increased by \$226.9 million in 2019, due primarily to an increase in loan interest income resulting from an increase in average loan balances and higher loan yields as well as an increase in FTP earned for an increase in average deposits.

Noninterest income increased by \$117.6 million in 2019, related primarily to an increase in our core fees (higher client investment fees, foreign exchange fees, credit card fees and deposit service charges). The increase in client investment fees was due to higher client investment fund balances as well as from improved spreads on our client investment funds due to increases in general market rates. The increase in foreign exchange fees was due primarily to increased trade volumes driven by the continuing increase in the number of clients actively managing currency exposures. The increase in credit card fees was primarily due to an increase in net interchange fees reflective of increased client utilization of our credit card products and enhanced payment solutions provided to new and existing clients. The increase in deposit service charges was reflective of higher deposit client counts, as well as higher transaction volumes from existing clients.

Noninterest expense increased by \$81.7 million in 2019, due primarily to increased expenses for compensation and benefits and professional services. Compensation and benefits expenses increased as a result of higher salaries and wages expenses and higher other employee compensation and benefits, partially offset by lower incentive compensation accruals. The increase in GCB salaries and wages expenses was due primarily to an increase in the average number of FTEs at GCB, which increased by 328 to 2,350 FTEs in 2019, compared to 2,022 FTEs in 2018. The increase in total other employee benefits was related to various expenses, particularly share-based compensation as well as employer payroll taxes and group health and life insurance reflective of our increased headcount in 2019. Professional services expenses increased primarily related to enhancements in our regulatory, risk management and compliance infrastructure to support our growth both domestically and globally, as well as investments made in projects, systems and technology to support our revenue growth and related initiatives and other operating costs.

2018 compared to 2017

Net interest income from GCB increased by \$349.1 million in 2018, due primarily to an increase in loan interest income resulting from an increase in average loan balances and higher loan yields as well as an increase in FTP earned for an increase in average deposits.

Noninterest income increased by \$128.2 million in 2018, related primarily to an increase in our core fees (higher client investment fees, foreign exchange fees, credit card fees and deposit service charges). The increase in client investment fees was due to higher client investment fund balances as well as from improved spreads on our client investment funds due to increases in general market rates. The increase in foreign exchange fees was due primarily to an increase in our client count as well as volume related to increased client engagement. The increase in credit card fees was primarily reflective of increased client utilization of our credit card products and enhanced payment solutions provided to new and existing clients, partially offset by higher rebate/rewards expense. The increase in deposit service charges was reflective of higher deposit client counts, as well as higher transaction volumes from existing clients.

Noninterest expense increased by \$85.5 million in 2018, due primarily to increased expenses for compensation and benefits. Compensation and benefits expenses increased as a result of higher salaries and wages expenses, higher incentive compensation and higher other employee compensation and benefits. The increase in GCB salaries and wages expenses was due primarily to an increase in the average number of FTEs at GCB, which increased by 183 to 2,022 FTEs in 2018, compared to 1,839 FTEs in 2017. The increase in GCB incentive compensation expense was due to our strong 2018 full-year performance and reflective of our improved ROE relative to our peers, which is one of our key plan performance metrics. The increase in total other employee benefits was related to various expenses, particularly share-based compensation as well as employer payroll taxes and group health and life insurance reflective of our increased headcount in 2018.

SVB Private Bank

(Dollars in thousands)	Year ended December 31,				
	2019	2018	% Change 2019/2018	2017	% Change 2018/2017
Net interest income	\$ 51,022	\$ 64,902	(21.4)%	\$ 58,131	11.6 %
Provision for loan losses	(2,369)	(3,339)	(29.1)	(4,386)	(23.9)
Noninterest income	3,366	2,281	47.6	2,175	4.9
Noninterest expense	(40,151)	(25,064)	60.2	(17,693)	41.7
Income before income tax expense	\$ 11,868	\$ 38,780	(69.4)	\$ 38,227	1.4
Total average loans, net of unearned income	\$ 3,341,188	\$ 2,850,271	17.2	\$ 2,423,078	17.6
Total average assets	3,371,052	2,871,743	17.4	2,445,220	17.4
Total average deposits	1,524,232	1,502,308	1.5	1,303,542	15.2

Income before income tax expense from SVB Private Bank decreased to \$11.9 million in 2019, compared to \$38.8 million in 2018. Income before income tax expense was \$38.2 million in 2017. The key drivers of SVB Private Bank's performance are discussed below:

2019 compared to 2018

Net interest income decreased by \$13.9 million in 2019, due primarily to an increase of \$0.5 billion in average loans resulting in an increase in FTP charged to SVB Private Bank.

Noninterest expense increased by \$15.1 million in 2019, due primarily to increased expenses for compensation and benefits and professional services. Compensation and benefits expenses increased primarily due to the allocation of client service administration FTE to SVB Private Bank as well as the continued increase in the number of average FTEs. Professional services expenses increased primarily related to enhancements in our regulatory, risk management and compliance infrastructure to support our growth both domestically and globally, as well as investments made in projects, systems and technology to support our revenue growth and related initiatives and other operating costs.

2018 compared to 2017

Net interest income increased by \$6.8 million in 2018, due primarily to an increase in loan interest income from an increase in average loan balances and higher loan yields.

Noninterest expense increased by \$7.4 million in 2018, primarily as a result of higher salaries and wages expenses as we continue to increase the number of average FTEs at SVB Private Bank, which increased by 16 to 67 FTEs in 2018, compared to 51 FTEs in 2017, and due to higher incentive compensation reflective of our strong 2018 full-year performance.

SVB Capital

(Dollars in thousands)	Year ended December 31,				
	2019	2018	% Change 2019/2018	2017	% Change 2018/2017
Net interest income	\$ 38	\$ 23	65.2%	\$ 48	(52.1)%
Noninterest income	122,394	101,181	21.0	58,992	71.5
Noninterest expense	(30,798)	(22,792)	35.1	(19,340)	17.8
Income before income tax expense	\$ 91,634	\$ 78,412	16.9	\$ 39,700	97.5
Total average assets	\$ 405,152	\$ 380,543	6.5	\$ 325,939	16.8

SVB Capital's components of noninterest income primarily include net gains and losses on non-marketable and other equity securities, carried interest and fund management fees. All components of income before income tax expense discussed below are net of noncontrolling interests.

We experience variability in the performance of SVB Capital from period to period due to a number of factors, including changes in the values of our funds' underlying investments, changes in the amount of distributions and general economic and market conditions. Such variability may lead to volatility in the gains and losses from investment securities and cause our results to differ from period to period.

Income before income tax expense from SVB Capital was \$91.6 million in 2019, compared to \$78.4 million in 2018 and \$39.7 million in 2017. The key drivers of SVB Capital's performance are discussed below:

2019 compared to 2018

Noninterest income increased \$21.2 million to \$122.4 million in 2019 reflective of higher net gains on investment securities and fund management fees compared to 2018. SVB Capital's components of noninterest income primarily include the following:

- Net gains on investment securities of \$82.2 million in 2019, compared to net gains of \$69.8 million in 2018. The net gains on investment securities of \$82.2 million in 2019 were related to net unrealized valuation increases in both private and public company investments held in our strategic venture capital funds as well as in our managed funds of funds portfolio driven by IPO and M&A activity in 2019, and
- Fund management fees of \$26.9 million for 2019, compared to \$23.0 million in 2018.

2018 compared to 2017

Noninterest income increased \$42.2 million to \$101.2 million in 2018 reflective of higher net gains on investment securities and fund management fees compared to 2017. SVB Capital's components of noninterest income primarily include the following:

- Net gains on investment securities of \$69.8 million in 2018, compared to net gains of \$35.8 million in 2017. The net gains on investment securities of \$69.8 million in 2018 were related to net unrealized valuation increases in both private and public company investments held in our strategic venture capital funds as well as in our managed funds of funds portfolio driven by IPO and M&A activity in 2018, and
- Fund management fees of \$23.0 million for 2018, compared to \$21.2 million in 2017.

(Dollars in thousands)	Year ended December 31,				
	2019	2018	% Change 2019/2018	2017	% Change 2018/2017
Net interest income	\$ 1,252	\$ —	—%	\$ —	—%
Noninterest income	264,516	—	—	—	—
Noninterest expense	(252,678)	—	—	—	—
Income before income tax expense	\$ 13,090	\$ —	—	\$ —	—
Total average assets	\$ 397,650	\$ —	—	\$ —	—

SVB Leerink's components of noninterest income primarily include investment banking revenue, commissions and net gains and losses on non-marketable and other equity securities, carried interest and fund management fees. All components of income before income tax expense discussed below are net of noncontrolling interests.

2019

SVB Leerink had noninterest income of \$264.5 million for the year ended December 31, 2019, primarily consisting of \$195.2 million of investment banking revenue, \$56.3 million of commissions and \$5.7 million of fund management fees.

SVB Leerink had noninterest expense of \$252.7 million for the year ended December 31, 2019, primarily consisting of \$179.2 million in compensation and benefits expense and \$45.2 million in other noninterest expense, driven by investment banking and trade order execution costs. Additionally, for the year ended December 31, 2019, SVB Leerink incurred \$23.5 million in acquisition related expenses which were comprised of \$12.0 million in expense related to the retention pool for employees of \$60.0 million to be paid over five years and \$11.5 million in expense related to the amortization of intangible assets.

Consolidated Financial Condition

Our total assets, and total liabilities and stockholders' equity were \$71.0 billion at December 31, 2019, \$56.9 billion at December 31, 2018 and \$51.2 billion at December 31, 2017. Refer below to a summary of the individual components driving the changes in total assets, total liabilities and stockholders' equity.

Cash and Cash Equivalents

Cash and cash equivalents totaled \$6.8 billion at December 31, 2019, an increase of \$3.2 billion, or 89.9 percent, compared to \$3.6 billion at December 31, 2018. As of December 31, 2019, \$3.7 billion of our cash and due from banks was deposited at the FRB and was earning interest at the Federal Funds target rate, and interest-earning deposits in other financial institutions were \$2.1 billion. As of December 31, 2018, \$1.7 billion, of our cash and due from banks was deposited at the FRB and was earning interest at the Federal Funds target rate and interest-earning deposits in other financial institutions were \$1.2 billion.

Investment Securities

Investment securities totaled \$29.1 billion at December 31, 2019, an increase of \$4.9 billion, or 20.0 percent, compared to \$24.2 billion at December 31, 2018, a decrease of \$0.2 billion, or 0.9 percent, compared to \$24.4 billion at December 31, 2017. Our investment securities portfolio consists primarily of: (i) an AFS securities portfolio and a HTM securities portfolio, both of which consist of interest-earning fixed income investment securities; and (ii) a non-marketable and other equity securities portfolio, which represents primarily investments managed as part of our funds management business as well as public equity securities held as a result of exercised equity warrant assets. The major components of the change are explained below.

The following table presents a profile of our investment securities portfolio at December 31, 2019, 2018 and 2017:

(Dollars in thousands)	December 31,		
	2019	2018	2017
Available-for-sale securities, at fair value:			
U.S. Treasury securities	\$ 6,894,010	\$ 4,738,258	\$ 6,840,502
U.S. agency debentures	99,547	1,084,117	1,567,128
Foreign government debt securities	9,038	5,812	—
Residential mortgage-backed securities:			
Agency-issued mortgage-backed securities	4,148,791	—	—
Agency-issued collateralized mortgage obligations—fixed rate	1,538,343	1,880,218	2,267,035
Agency-issued collateralized mortgage obligations—variable rate	—	81,638	373,730
Agency-issued commercial mortgage-backed securities	1,325,190	—	—
Equity securities	—	—	72,269
Total available-for-sale securities	14,014,919	7,790,043	11,120,664
Held-to-maturity securities, at amortized cost:			
U.S. agency debentures	518,728	640,990	659,979
Residential mortgage-backed securities:			
Agency-issued mortgage-backed securities	6,992,009	8,103,638	6,304,969
Agency-issued collateralized mortgage obligations—fixed rate	1,608,032	2,183,204	2,829,979
Agency-issued collateralized mortgage obligations—variable rate	178,611	214,483	255,782
Agency-issued commercial mortgage-backed securities	2,759,615	2,769,706	1,868,985
Municipal bonds and notes	1,785,951	1,575,421	743,761
Total held-to-maturity securities	13,842,946	15,487,442	12,663,455
Non-marketable and other equity securities:			
Non-marketable securities (fair value accounting):			
Consolidated venture capital and private equity fund investments	87,180	118,333	128,111
Unconsolidated venture capital and private equity fund investments	178,217	201,098	98,548
Other investments without a readily determinable fair value	55,255	25,668	27,680
Other equity securities in public companies (fair value accounting)	59,200	20,398	310
Non-marketable securities (equity method accounting):			
Venture capital and private equity fund investments	215,367	129,485	89,809
Debt funds	7,271	5,826	21,183
Other investments	152,863	121,721	111,198
Investments in qualified affordable housing projects, net	458,476	318,575	174,214
Total non-marketable and other equity securities	1,213,829	941,104	651,053
Total investment securities	\$ 29,071,694	\$ 24,218,589	\$ 24,435,172

Available-for-Sale Securities

Period-end AFS securities were \$14.0 billion at December 31, 2019, compared to \$7.8 billion at December 31, 2018, and \$11.1 billion at December 31, 2017. The increase of \$6.2 billion in 2019 was primarily due to purchases of new investments of \$9.9 billion, partially offset by \$1.6 billion in paydowns, scheduled maturities and called maturities and sales of \$2.2 billion of U.S. Treasury notes and agency backed collateralized mortgage obligations. Securities classified as available-for-sale are carried at fair value with changes in fair value recorded as unrealized gains or losses in a separate component of stockholders' equity.

Period-end AFS securities at December 31, 2018 decreased \$3.3 billion, compared to 2017 primarily due to \$3.4 billion in paydowns, scheduled maturities and called maturities and sales of \$0.5 billion of U.S. Treasury notes and agency backed collateralized mortgage obligations, partially offset by purchases of new investments of \$0.7 billion.

The following table summarizes the remaining contractual principal maturities and fully taxable equivalent yields on fixed income securities, carried at fair value, classified as AFS as of December 31, 2019. The weighted average yield is computed using the amortized cost of fixed income investment securities, which are reported at fair value. For U.S. Treasury securities and U.S. agency debentures and foreign government debt securities, the expected maturity is the actual contractual maturity of the notes. Expected remaining maturities for certain U.S. agency debentures may occur earlier than their contractual maturities because the note issuers have the right to call outstanding amounts ahead of their contractual maturity. Expected maturities for mortgage-backed securities may differ significantly from their contractual maturities because mortgage borrowers have the right to prepay outstanding loan obligations with or without penalties. Mortgage-backed securities classified as AFS typically have original contractual maturities from 10 to 30 years whereas expected average lives of these securities tend to be significantly shorter and vary based upon structure and prepayments in lower interest rate environments. The weighted average yield on mortgage-backed securities is based on prepayment assumptions at the purchase date. Actual yields earned may differ significantly based upon actual prepayments.

(Dollars in thousands)	December 31, 2019									
	Total		One Year or Less		After One Year to Five Years		After Five Years to Ten Years		After Ten Years	
	Carrying Value	Weighted Average Yield	Carrying Value	Weighted Average Yield	Carrying Value	Weighted Average Yield	Carrying Value	Weighted Average Yield	Carrying Value	Weighted Average Yield
U.S. Treasury securities	\$ 6,894,010	1.99 %	\$ 1,835,971	1.78 %	\$ 1,890,778	2.27%	\$ 3,167,261	1.96%	\$ —	—%
U.S. agency debentures	99,547	2.28	—	—	—	—	99,547	2.28	—	—
Foreign government debt securities	9,038	(0.64)	9,038	(0.64)	—	—	—	—	—	—
Residential mortgage-backed securities:										
Agency-issued mortgage backed securities	4,148,791	2.82	—	—	—	—	—	—	4,148,791	2.82
Agency-issued collateralized mortgage obligations - fixed rate	1,538,343	2.58	—	—	—	—	1,858	3.22	1,536,485	2.58
Agency-issued commercial mortgage-backed securities	1,325,190	2.35	—	—	—	—	743,874	2.25	581,316	2.48
Total	<u>\$14,014,919</u>	2.34	<u>\$1,845,009</u>	1.77	<u>\$1,890,778</u>	2.27	<u>\$4,012,540</u>	2.02	<u>\$6,266,592</u>	2.73

Held-to-Maturity Securities

Period-end HTM securities were \$13.8 billion at December 31, 2019, a decrease of \$1.6 billion, or 10.6 percent, compared to \$15.5 billion at December 31, 2018. The decrease was due to paydowns and scheduled maturities of \$2.1 billion, partially offset by new purchases of \$0.5 billion.

Period-end HTM securities were \$15.5 billion at December 31, 2018, an increase of \$2.8 billion, or 22.3 percent, compared to \$12.7 billion at December 31, 2017. The increase was due to new purchases of \$4.7 billion, with \$3.9 billion of agency backed mortgage securities purchases and \$0.8 billion of municipal bond purchases, partially offset by \$1.9 billion in portfolio paydowns and maturities.

Securities classified as HTM are accounted for at cost with no adjustments for changes in fair value. For securities re-designated as HTM from AFS, the unrealized gains at the date of transfer will continue to be reported as a separate component of shareholders' equity and are being amortized over the life of the securities in a manner consistent with the amortization of a premium or discount.

The following table summarizes the remaining contractual principal maturities and fully taxable equivalent yields on fixed income investment securities classified as HTM as of December 31, 2019. Interest income on certain municipal bonds and notes (non-taxable investments) are presented on a fully taxable equivalent basis using the federal statutory tax rate of 21.0 percent. The weighted average yield is computed using the amortized cost of fixed income investment securities. For U.S. agency debentures, the expected maturity is the actual contractual maturity of the notes. Expected maturities for mortgage-backed securities may differ significantly from their contractual maturities because mortgage borrowers have the right to prepay outstanding loan obligations with or without penalties. Mortgage-backed securities classified as HTM typically have original contractual maturities from 10 to 30 years whereas expected average lives of these securities tend to be significantly shorter and vary based upon structure and prepayments in lower interest rate environments. The weighted average yield on mortgage-backed securities is based on prepayment assumptions at the purchase date. Actual yields earned may differ significantly based upon actual prepayments.

(Dollars in thousands)	December 31, 2019									
	Total		One Year or Less		After One Year to Five Years		After Five Years to Ten Years		After Ten Years	
	Amortized Cost	Weighted Average Yield	Amortized Cost	Weighted Average Yield	Amortized Cost	Weighted Average Yield	Amortized Cost	Weighted Average Yield	Amortized Cost	Weighted Average Yield
U.S. agency debentures	\$ 518,728	2.65%	\$ —	—%	\$ 123,100	2.61%	\$ 395,628	2.66%	\$ —	—%
Residential mortgage-backed securities:										
Agency-issued mortgage-backed securities	6,992,009	2.90	2,066	2.73	76,759	2.05	726,422	2.47	6,186,762	2.96
Agency-issued collateralized mortgage obligations - fixed rate	1,608,032	1.78	—	—	—	—	624,128	1.64	983,904	1.87
Agency-issued collateralized mortgage obligations - variable rate	178,611	0.74	—	—	—	—	—	—	178,611	0.74
Agency-issued commercial mortgage-backed securities	2,759,615	3.03	—	—	—	—	102,633	3.56	2,656,982	3.01
Municipal bonds and notes	1,785,951	3.57	13,973	1.91	83,368	2.18	387,278	2.89	1,301,332	3.88
Total	<u>\$13,842,946</u>	2.84	<u>\$ 16,039</u>	2.02	<u>\$ 283,227</u>	2.33	<u>\$ 2,236,089</u>	2.40	<u>\$11,307,591</u>	2.95

Portfolio duration is a standard measure used to approximate changes in the market value of fixed income instruments due to a change in market interest rates. The measure is an estimate based on the level of current market interest rates, expectations for changes in the path of forward rates and the effect of forward rates on mortgage prepayment speed assumptions. As such, portfolio duration will fluctuate with changes in market interest rates. Changes in portfolio duration are also impacted by changes in the mix of longer versus shorter term-to-maturity securities. At December 31, 2019, our estimated fixed income securities portfolio weighted-average duration was 3.9 years, compared to 3.8 and 3.0 years at December 31, 2018 and 2017, respectively.

Non-Marketable and Other Equity Securities

Non-marketable and other equity securities were \$1.2 billion at December 31, 2019, an increase of \$272.7 million, or 29.0 percent, compared to \$941.1 million at December 31, 2018, which increased by \$290.0 million, or 44.6 percent, compared to \$651.1 million at December 31, 2017. Included in our non-marketable and other equity securities carried under fair value accounting are amounts that are attributable to noncontrolling interests. We are required under GAAP to consolidate certain SVB Capital funds, even though we may own less than 100 percent of such entities. See below for a summary of the carrying value (as reported) of non-marketable and other equity securities compared to the amounts attributable to SVBFG.

The increase in non-marketable and other equity securities of \$272.7 million in 2019 was related primarily attributable to equity securities from exercised warrants, valuation increases in our managed funds of funds investments and new investments within our qualified housing projects portfolio. We also increased our investment in non-marketable and other equity securities by \$47.7 million due to the inclusion of SVB Leerink in our financial results as of December 31, 2019.

The increase in non-marketable and other equity securities of \$290.0 million in 2018 was related primarily to new investments and the adoption of ASU 2016-01, Recognition and Measurement of Financial Assets and Financial Liabilities, which required equity investments (except those accounted for under the equity method of accounting) to be measured at fair value and eliminated the cost method of accounting. As part of this adoption we recorded an adjustment to opening retained earnings for cost method investments measured at NAV and increased the carrying value of our unconsolidated venture capital and private equity fund investments by \$103.1 million. Additionally, we increased our investments in qualified affordable housing projects by \$144.4 million, net of amortization.

The following table summarizes the carrying value (as reported) of non-marketable and other equity securities compared to the amounts attributable to SVBFG (which generally represents the carrying value times our ownership percentage) at December 31, 2019, 2018 and 2017:

(Dollars in thousands)	December 31,					
	2019		2018		2017	
	Carrying value (as reported)	Amount attributable to SVBFG	Carrying value (as reported)	Amount attributable to SVBFG	Carrying value (as reported)	Amount attributable to SVBFG
Non-marketable and other equity securities:						
Non-marketable securities (fair value accounting):						
Consolidated venture capital and private equity fund investments (1)	\$ 87,180	\$ 22,482	\$ 118,333	\$ 30,235	\$ 128,111	\$ 33,044
Unconsolidated venture capital and private equity fund investments (2)	178,217	178,217	201,098	201,098	98,548	98,548
Other investments without a readily determinable fair value (3)	55,255	55,255	25,668	25,668	27,680	27,680
Other equity securities in public companies (fair value accounting) (4)	59,200	59,056	20,398	20,098	310	103
Non-marketable securities (equity method accounting) (5):						
Venture capital and private equity fund investments	215,367	131,403	129,485	82,921	89,809	64,675
Debt funds	7,271	7,271	5,826	5,826	21,183	21,183
Other investments	152,863	152,863	121,721	121,721	111,198	111,198
Investments in qualified affordable housing projects, net	458,476	458,476	318,575	318,575	174,214	174,214
Total non-marketable and other equity securities	\$ 1,213,829	\$ 1,065,023	\$ 941,104	\$ 806,142	\$ 651,053	\$ 530,645

(1) The following table shows the amounts of venture capital and private equity fund investments held by the following consolidated funds and amounts attributable to SVBFG for each fund at December 31, 2019, 2018 and 2017:

(Dollars in thousands)	December 31,					
	2019		2018		2017	
	Carrying value (as reported)	Amount attributable to SVBFG	Carrying value (as reported)	Amount attributable to SVBFG	Carrying value (as reported)	Amount attributable to SVBFG
Strategic Investors Fund, LP	\$ 5,729	\$ 720	\$ 12,452	\$ 1,564	\$ 14,673	\$ 1,843
Capital Preferred Return Fund, LP	45,341	9,772	53,957	11,629	54,147	11,670
Growth Partners, LP	35,976	11,976	50,845	16,927	58,372	19,432
CP I, LP	134	14	1,079	115	919	99
Total consolidated venture capital and private equity fund investments	\$ 87,180	\$ 22,482	\$ 118,333	\$ 30,235	\$ 128,111	\$ 33,044

- (2) The carrying values represented investments in 205 and 213 funds (primarily venture capital funds) at December 31, 2019 and December 31, 2018, respectively, where our ownership interest is typically less than 5% of the voting interests of each such fund and in which we do not have the ability to exercise significant influence over the partnerships operating activities and financial policies. Effective January 1, 2018, we adopted ASU 2016-01, Recognition and Measurement of Financial Assets and Financial Liabilities which eliminated the concept of cost method accounting. We carry our unconsolidated venture capital and private equity fund investments at fair value based on the fund investments' net asset values per share as obtained from the general partners of the investments. For each fund investment, we adjust the net asset value per share for differences between our measurement date and the date of the fund investment's net asset value by using the most recently available financial information from the investee general partner, for example September 30th, for our December 31st consolidated financial statements, adjusted for any contributions paid, distributions received from the investment and significant fund transactions or market events during the reporting period. We recorded a cumulative adjustment to opening retained earnings on January 1, 2018 for the difference between fair value and cost for these fund investments. The estimated fair values and carrying values of these venture capital and private equity fund investments were \$178.2 million and \$201.1 million as of December 31, 2019 and 2018, respectively. As of December 31, 2017, these investments were carried at cost and had a carrying value of \$98.5 million.
- (3) Effective January 1, 2018, we adopted ASU 2016-01, Recognition and Measurement of Financial Assets and Financial Liabilities, which eliminated the concept of cost method accounting. On a prospective basis, we report our other investments in the line item "Other investments without a readily determinable fair value." These investments include direct equity investments in private companies. The carrying value is based on the price at which the investment was acquired plus or minus changes resulting from observable price changes in orderly transactions for identical or similar investments. We consider a range of factors when adjusting the fair value of these investments, including, but not limited to, the term and nature of the investment, local market conditions, values for comparable securities, current and projected operating performance, exit strategies, financing transactions subsequent to the acquisition of the investment and a discount for certain investments that have lock-up restrictions or other features that indicate a discount to fair value is warranted. For further details on the carrying value of these investments refer to Note 9—"Investment Securities" of the "Notes to the Consolidated Financial Statements" under Part II, Item 8 of this report.
- (4) Investments classified as other equity securities (fair value accounting) represent shares held in public companies as a result of exercising public equity warrant assets and direct equity investments in public companies held by our consolidated funds. Effective January 1, 2018 we adopted ASU 2016-01 Recognition and Measurement of Financial Assets and Financial Liabilities, which requires equity securities to be measured at fair value with changes in the fair value recognized through net income. Prior to January 1, 2018, we reported equity securities in public companies that we held as a result of exercising public equity warrant assets in available-for-sale securities. These equity securities are reported in non-marketable and other equity securities.

- (5) The following table shows the carrying value and our ownership percentage of each investment at December 31, 2019, 2018 and 2017 (equity method accounting):

(Dollars in thousands)	December 31, 2019		December 31, 2018		December 31, 2017	
	Carrying value (as reported)	Amount attributable to SVBFG	Carrying value (as reported)	Amount attributable to SVBFG	Carrying value (as reported)	Amount attributable to SVBFG
Venture capital and private equity fund investments:						
Strategic Investors Fund II, LP	\$ 3,612	\$ 3,387	\$ 4,670	\$ 4,366	\$ 6,342	\$ 5,971
Strategic Investors Fund III, LP	15,668	12,701	17,396	14,059	18,758	15,211
Strategic Investors Fund IV, LP	27,064	22,780	28,974	24,388	25,551	21,739
Strategic Investors Fund V funds	46,830	24,586	28,189	14,799	16,856	8,849
CP II, LP (i)	5,907	3,567	7,122	4,308	6,700	4,056
Other venture capital and private equity fund investments	116,286	64,382	43,134	21,001	15,602	8,849
Total venture capital and private equity fund investments	\$ 215,367	\$ 131,403	\$ 129,485	\$ 82,921	\$ 89,809	\$ 64,675
Debt funds:						
Gold Hill Capital 2008, LP (ii)	\$ 5,525	\$ 5,525	\$ 3,901	\$ 3,901	\$ 18,690	\$ 18,690
Other debt funds	1,746	1,746	1,925	1,925	2,493	2,493
Total debt funds	\$ 7,271	\$ 7,271	\$ 5,826	\$ 5,826	\$ 21,183	\$ 21,183
Other investments:						
SPD Silicon Valley Bank Co., Ltd.	\$ 74,190	\$ 74,190	\$ 76,412	\$ 76,412	\$ 75,337	\$ 75,337
Other investments	78,673	78,673	45,309	45,309	35,861	35,861
Total other investments	\$ 152,863	\$ 152,863	\$ 121,721	\$ 121,721	\$ 111,198	\$ 111,198

- (i) Our ownership includes direct ownership interest of 1.3 percent and indirect ownership interest of 3.8 percent through our investments in Strategic Investors Fund II, LP.
- (ii) Our ownership includes direct ownership interest of 11.5 percent in the fund and an indirect interest in the fund through our investment in Gold Hill Capital 2008, LLC of 4.0 percent.

Volcker Rule

On June 6, 2017, we received notice that the Board of Governors of the Federal Reserve approved the Company's application for an extension of the permitted conformance period for the Company's investments in "illiquid" covered funds. The approval extends the deadline by which the Company must sell, divest, restructure or otherwise conform such investments to the provisions of the Volcker Rule until the earlier of (i) July 21, 2022 or (ii) the date by which each fund matures by its terms or is otherwise conformed to the Volcker Rule.

As implemented under the Dodd-Frank Wall Street Reform and Consumer Protection Act, the Volcker Rule prohibits, subject to certain exceptions, a banking entity, such as the Company, from sponsoring or investing in covered funds, defined to include many venture capital and private equity funds. As noted above, the Company currently maintains certain investments deemed to be prohibited covered fund investments, which as of December 31, 2019, had an estimated aggregate carrying value and fair value of approximately \$213 million. (For more information about the Volcker Rule, see "Business - Supervision and Regulatory - Proprietary Trading and Relationships with Certain Funds" under Part I, Item I of this report.)

Loans

The following table details the composition of the loan portfolio, net of unearned income, as of the five most recent year-ends:

(Dollars in thousands)	December 31,				
	2019	2018	2017	2016	2015
Commercial loans:					
Software/internet (1)	\$ 6,199,548	\$ 6,154,755	\$ 6,172,531	\$ 5,627,031	\$ 5,437,915
Hardware (1)	1,371,159	1,234,557	1,193,599	1,180,398	1,071,528
Private equity/venture capital	17,801,324	14,110,560	9,952,377	7,691,148	5,467,577
Life science/healthcare (1)	2,368,048	2,385,612	1,808,827	1,853,004	1,710,642
Premium wine	267,487	249,266	204,105	200,156	201,175
Other (1)	420,555	321,978	365,724	393,551	312,278
Total commercial loans	28,428,121	24,456,728	19,697,163	16,945,288	14,201,115
Real estate secured loans:					
Premium wine (2)	820,730	710,397	669,053	678,166	646,120
Consumer loans (3)	3,286,737	2,612,971	2,300,506	1,926,968	1,544,440
Other	38,880	40,435	42,068	43,487	44,830
Total real estate secured loans	4,146,347	3,363,803	3,011,627	2,648,621	2,235,390
Construction loans (4)	100,219	97,077	68,546	64,671	78,682
Consumer loans	489,949	420,672	328,980	241,364	226,883
Total loans, net of unearned income (5)(6)	\$ 33,164,636	\$ 28,338,280	\$ 23,106,316	\$ 19,899,944	\$ 16,742,070

- (1) Due to the diverse nature of energy and resource innovation products and services, for our loan-related reporting purposes, ERI-related loans are reported under our software/internet, hardware, life science/healthcare and other commercial loan categories, as applicable.
- (2) Included in our premium wine portfolio are gross construction loans of \$83 million, \$99 million, \$100 million, \$110 million and \$121 million at December 31, 2019, 2018, 2017, 2016 and 2015, respectively.
- (3) Consumer loans secured by real estate at December 31, 2019, 2018, 2017, 2016 and 2015 were comprised of the following:

(Dollars in thousands)	December 31,				
	2019	2018	2017	2016	2015
Loans for personal residence	\$ 2,829,880	\$ 2,251,292	\$ 1,995,840	\$ 1,655,349	\$ 1,312,818
Loans to eligible employees	401,396	290,194	243,118	199,291	156,001
Home equity lines of credit	55,461	71,485	61,548	72,328	75,621
Consumer loans secured by real estate	\$ 3,286,737	\$ 2,612,971	\$ 2,300,506	\$ 1,926,968	\$ 1,544,440

- (4) Construction loans consist of qualified affordable housing project loans made to fulfill our responsibilities under the Community Reinvestment Act and are primarily secured by real estate.
- (5) Unearned income, net of deferred costs, was \$163 million, \$173 million, \$148 million, \$125 million and \$115 million in 2019, 2018, 2017, 2016 and 2015, respectively.
- (6) Included within our total loan portfolio are credit card loans of \$395 million, \$335 million, \$270 million, \$224 million, and \$177 million at December 31, 2019, 2018, 2017, 2016 and 2015, respectively, and primarily represent corporate credit cards.

Both commercial and consumer loans increased from December 31, 2018 to December 31, 2019 with the largest increases coming from our private equity/venture capital and consumer real estate industry segments. The growth from our private equity/venture capital clients was due to increased utilization from our capital call lines of credit and the growth in our consumer real estate segment was reflective primarily of healthy new client acquisition.

Loan Concentration

Loan concentrations may exist when there are borrowers engaged in similar activities or types of loans extended to a diverse group of borrowers that could cause those borrowers or portfolios to be similarly impacted by economic or other conditions. A substantial percentage of our loans are commercial in nature. The breakdown of total gross loans and total loans as a percentage of gross loans by industry sector is as follows:

(Dollars in thousands)	December 31,			
	2019		2018	
	Amount	Percentage	Amount	Percentage
Commercial loans:				
Software/internet	\$ 6,255,866	18.8%	\$ 6,209,978	21.8%
Hardware	1,381,025	4.1	1,245,800	4.4
Private equity/venture capital	17,817,390	53.5	14,118,132	49.5
Life science/healthcare	2,427,680	7.2	2,461,076	8.6
Premium wine	267,739	0.8	249,316	0.9
Other	442,469	1.3	346,747	1.2
Commercial loans	28,592,169	85.7	24,631,049	86.4
Real estate secured loans:				
Premium wine	821,837	2.5	711,237	2.5
Consumer loans	3,283,445	9.9	2,609,645	9.2
Other	38,997	0.1	40,627	0.1
Real estate secured loans	4,144,279	12.5	3,361,509	11.8
Construction loans	100,978	0.3	98,034	0.3
Consumer loans	490,278	1.5	420,720	1.5
Total gross loans	\$ 33,327,704	100.0%	\$ 28,511,312	100.0%

The following table provides a summary of gross loans by size and category. The breakout of the categories is based on total client balances (individually or in the aggregate) as of December 31, 2019:

(Dollars in thousands)	December 31, 2019					
	Less than Five Million	Five to Ten Million	Ten to Twenty Million	Twenty to Thirty Million	Thirty Million or More	Total
Commercial loans:						
Software/internet	\$ 1,565,277	\$ 893,496	\$ 1,419,850	\$ 1,065,751	\$ 1,311,492	\$ 6,255,866
Hardware	331,064	103,903	323,595	221,529	400,934	1,381,025
Private equity/venture capital	1,051,650	1,101,597	2,575,482	2,029,547	11,059,114	17,817,390
Life science/healthcare	346,573	372,821	626,389	429,419	652,478	2,427,680
Premium wine	76,133	55,046	49,180	57,036	30,344	267,739
Other	375,862	6,149	26,709	—	33,749	442,469
Commercial loans	3,746,559	2,533,012	5,021,205	3,803,282	13,488,111	28,592,169
Real estate secured loans:						
Premium wine	173,090	212,343	232,706	91,433	112,265	821,837
Consumer loans	2,716,617	295,045	169,102	20,180	82,501	3,283,445
Other	7,244	—	31,753	—	—	38,997
Real estate secured loans	2,896,951	507,388	433,561	111,613	194,766	4,144,279
Construction loans	5,382	22,670	24,675	48,251	—	100,978
Consumer loans	209,765	82,225	41,428	73,133	83,727	490,278
Total gross loans	\$ 6,858,657	\$ 3,145,295	\$ 5,520,869	\$ 4,036,279	\$ 13,766,604	\$ 33,327,704

At December 31, 2019, gross loans equal to or greater than \$20 million to any single client (individually or in the aggregate) totaled \$17.8 billion, or 53.4 percent of our portfolio. These loans represented 397 clients, and of these loans, \$37.3 million were on nonaccrual status as of December 31, 2019.

The following table provides a summary of gross loans by size and category. The breakout of the categories is based on total client balances (individually or in the aggregate) as of December 31, 2018:

(Dollars in thousands)	December 31, 2018					
	Less than Five Million	Five to Ten Million	Ten to Twenty Million	Twenty to Thirty Million	Thirty Million or More	Total
Commercial loans:						
Software/internet	\$ 1,515,096	\$ 918,647	\$ 1,520,634	\$ 1,221,250	\$ 1,034,351	\$ 6,209,978
Hardware	292,022	152,061	196,763	386,288	218,666	1,245,800
Private equity/venture capital	836,894	1,012,605	2,120,918	2,135,279	8,012,436	14,118,132
Life science/healthcare	273,075	477,046	645,895	410,127	654,933	2,461,076
Premium wine	70,573	55,852	48,656	65,035	9,200	249,316
Other	246,011	18,921	10,911	70,904	—	346,747
Commercial loans	3,233,671	2,635,132	4,543,777	4,288,883	9,929,586	24,631,049
Real estate secured loans:						
Premium wine	168,130	173,882	263,093	83,945	22,187	711,237
Consumer loans	2,258,479	239,400	111,766	—	—	2,609,645
Other	7,506	—	33,121	—	—	40,627
Real estate secured loans	2,434,115	413,282	407,980	83,945	22,187	3,361,509
Construction loans	7,076	15,064	75,894	—	—	98,034
Consumer loans	148,391	55,401	51,409	93,690	71,829	420,720
Total gross loans	\$ 5,823,253	\$ 3,118,879	\$ 5,079,060	\$ 4,466,518	\$ 10,023,602	\$ 28,511,312

At December 31, 2018, gross loans equal to or greater than \$20 million to any single client (individually or in the aggregate) totaled \$14.5 billion, or 50.8 percent of our portfolio. These loans represented 361 clients, and of these loans, \$27.5 million were on nonaccrual status as of December 31, 2018.

The credit profile of our loan portfolio clients varies based on the nature of the lending we do for different market segments. Our three main market segments are (i) technology (software/internet and hardware) and life science/healthcare, (ii) private equity/venture capital and (iii) SVB Private Bank.

(i) Technology and Life Science/Healthcare

Our technology and life science/healthcare loan portfolios include loans to clients at the various stages of their life cycles and represent the largest segments of our loan portfolio. The primary underwriting method for our technology and life science/healthcare portfolios are classified as investor dependent, balance sheet dependent or cash flow dependent.

Investor dependent loans represented a relatively small percentage of our overall portfolio at 10 percent of total gross loans at December 31, 2019 and 11 percent at December 31, 2018. These loans are made to companies in both our Accelerator (early-stage) and Growth practices. Investor dependent loans typically have modest or negative cash flows and no established record of profitable operations. Repayment of these loans may be dependent upon receipt by borrowers of additional equity financing from venture capital firms or others, or in some cases, a successful sale to a third party or an IPO. Venture capital firms may provide financing selectively, at reduced amounts, or on less favorable terms, which may have an adverse effect on our borrowers' ability to repay their loans to us. When repayment is dependent upon the next round of venture investment and there is an indication that further investment is unlikely or will not occur, it is often likely that the company would need to be sold to repay the debt in full. If reasonable efforts have not yielded a likely buyer willing to repay all debt at the close of the sale or on commercially viable terms, the account will most likely be deemed to be impaired.

Balance sheet dependent loans, which includes asset-based loans, represented seven percent of total gross loans at December 31, 2019 compared to eight percent at December 31, 2018. Balance sheet dependent loans are structured to require constant current asset coverage (i.e. cash, cash equivalents, accounts receivable and, to a much lesser extent, inventory) in an amount that exceeds the outstanding debt. These loans are generally made to companies in our Growth and Corporate Finance practices. Our asset-based lending, which includes working capital lines and accounts receivable financing, represented two and one percent of total gross loans as of both December 31, 2019 and December 31, 2018, respectively. The repayment of these arrangements is dependent on the financial condition, and payment ability, of third parties with whom our clients do business.

Cash flow dependent loans, which include sponsored buyout lending, represented 14 percent of total gross loans at December 31, 2019, compared to 16 percent of total gross loans at December 31, 2018. Cash flow dependent loans require the borrower to maintain cash flow from operations that is sufficient to service all debt. Borrowers must demonstrate normalized cash flow in excess of all fixed charges associated with operating the business. Sponsored buyout loans represented six percent of total gross loans at December 31, 2019, compared to eight percent of total gross loans at December 31, 2018. These loans are typically used to assist a select group of experienced private equity sponsors with the acquisition of businesses, are larger in size, and repayment is generally dependent upon the cash flows of the acquired company. The acquired companies are typically established, later-stage businesses of scale and characterized by reasonable levels of leverage and loan structures that include meaningful financial covenants. The sponsor's equity contribution is often 50 percent or more of the acquisition price.

(ii) Private Equity/Venture Capital

We also provide financial services to clients in the private equity/venture capital community. At December 31, 2019, our lending to private equity/venture capital firms and funds represented 54 percent of total gross loans, compared to 50 percent of total gross loans at December 31, 2018. The vast majority of this portfolio consists of capital call lines of credit, the repayment of which is dependent on the payment of capital calls by the underlying limited partner investors in the funds managed by these firms. These facilities are generally governed by meaningful financial covenants oriented towards ensuring that the funds' remaining callable capital is sufficient to repay the loan, and larger commitments (typically provided to larger private equity funds) are often secured by an assignment of the general partner's right to call capital from the fund's limited partner investors.

(iii) SVB Private Bank

Our SVB Private Bank clients are primarily private equity/venture capital professionals and executive leaders of the innovation companies. Our lending to SVB Private Bank clients represented 11 percent of total gross loans at both December 31, 2019 and December 31, 2018. Many of these clients have mortgages, which represented 87 percent of this portfolio at December 31, 2019; the balance of this portfolio consisted of home equity lines of credit, restricted stock purchase loans, capital call lines of credit and other secured and unsecured lending.

State Concentrations

Approximately 27 percent of our outstanding total gross loan balances as of December 31, 2019 were to borrowers based in California compared to 28 percent as of December 31, 2018. As of December 31, 2019, borrowers in New York decreased to nine percent of our outstanding gross loan balances compared to 10 percent as of December 31, 2018. Other than California as of December 31, 2019, there are no states with gross loan balances greater than or equal to 10 percent.

See generally "Risk Factors—Credit Risks" set forth under Part I, Item 1A of this report.

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As of December 31, 2019, 93 percent, or \$30.9 billion, of our outstanding total gross loans were variable-rate loans that adjust at a prescribed measurement date upon a change in our prime-lending rate or other variable indices, compared to 93 percent, or \$26.4 billion, as of December 31, 2018. The following table sets forth the remaining contractual maturity distribution of our gross loans by industry sector at December 31, 2019, for fixed and variable rate loans:

(Dollars in thousands)	Remaining Contractual Maturity of Gross Loans			
	One Year or Less	After One Year and Through Five Years	After Five Years	Total
Fixed-rate loans:				
Commercial loans:				
Software/internet	\$ 338,416	\$ 194,091	\$ 6	\$ 532,513
Hardware	40,381	15,374	—	55,755
Private equity/venture capital	13,173	43,710	4,800	61,683
Life science/healthcare	69,265	84,065	75	153,405
Premium wine	2,313	10,376	7,726	20,415
Other	387,359	612	—	387,971
Total commercial loans	850,907	348,228	12,607	1,211,742
Real estate secured loans:				
Premium wine	49,545	174,329	498,097	721,971
Consumer loans	—	9,014	344,920	353,934
Other	—	21,494	17,503	38,997
Total real estate secured loans	49,545	204,837	860,520	1,114,902
Construction loans	90,290	4,864	5,805	100,959
Consumer loans	829	6,111	2,683	9,623
Total fixed-rate loans	\$ 991,571	\$ 564,040	\$ 881,615	\$ 2,437,226
Variable-rate loans:				
Commercial loans:				
Software/internet	\$ 1,369,995	\$ 4,268,125	\$ 85,233	\$ 5,723,353
Hardware	278,227	947,156	99,887	1,325,270
Private equity/venture capital	17,359,728	345,226	50,753	17,755,707
Life science/healthcare	128,182	2,117,839	28,254	2,274,275
Premium wine	121,568	121,558	4,198	247,324
Other	8,096	46,402	—	54,498
Total commercial loans	19,265,796	7,846,306	268,325	27,380,427
Real estate secured loans:				
Premium wine	1,555	59,037	39,274	99,866
Consumer loans	7,399	17,076	2,905,036	2,929,511
Other	—	—	—	—
Total real estate secured loans	8,954	76,113	2,944,310	3,029,377
Construction loans	19	—	—	19
Consumer loans	140,312	153,589	186,754	480,655
Total variable-rate loans	19,415,081	8,076,008	3,399,389	30,890,478
Total gross loans	\$ 20,406,652	\$ 8,640,048	\$ 4,281,004	\$ 33,327,704

Upon maturity, loans satisfying our credit quality standards may be eligible for renewal. Such renewals are subject to the normal underwriting and credit administration practices associated with new loans. We do not grant loans with unconditional extension terms.

Loan Administration

The Credit Committee of our Board of Directors oversees our credit risks and strategies, as well as our key credit policies and lending practices.

Subject to the oversight of the Credit Committee, lending authority is delegated to our Chief Credit Officer and other senior members of our lending management based on certain size and underwriting criteria.

Credit Quality Indicators

As of December 31, 2019 and December 31, 2018, our total criticized loans and impaired loans represented three and four percent of our total gross loans, respectively. Criticized loans and impaired loans to early-stage clients represented 22 percent and 19 percent of our total criticized loans and impaired loan balances at December 31, 2019 and December 31, 2018, respectively. Loans to early-stage clients represent a relatively small percentage of our overall portfolio at five and six percent of total gross loans at December 31, 2019 and December 31, 2018, respectively. It is common for an early-stage client's remaining liquidity to fall temporarily below the threshold for a pass-rated credit during its capital-raising period for a new round of funding. Based on our experience, for most early-stage clients, this situation typically lasts one to two quarters and generally resolves itself with a subsequent round of venture funding, though there are exceptions, from time to time. As a result, we expect that each of our early-stage clients will reside in our criticized portfolio during a portion of their life cycle.

Credit Quality and Allowance for Loan Losses

The following table presents a summary of the activity for the allowance for loan losses as of the five most recent year-ends:

(Dollars in thousands)	Year ended December 31,				
	2019	2018	2017	2016	2015
Allowance for loan losses, beginning balance	\$ 280,903	\$ 255,024	\$ 225,366	\$ 217,613	\$ 165,359
Charge-offs:					
Commercial loans:					
Software/internet	(46,930)	(42,315)	(45,012)	(68,784)	(33,246)
Hardware	(10,056)	(16,148)	(10,414)	(13,233)	(5,145)
Venture capital/private equity	(2,047)	(112)	(323)	—	—
Life science/healthcare	(31,950)	(6,662)	(8,210)	(9,693)	(7,291)
Premium wine	(174)	—	—	—	—
Other	(415)	(2,391)	(1,156)	(5,045)	(4,990)
Total commercial loans	(91,572)	(67,628)	(65,115)	(96,755)	(50,672)
Consumer loans	(1,031)	(289)	(1,567)	(102)	(296)
Total charge-offs	(92,603)	(67,917)	(66,682)	(96,857)	(50,968)
Recoveries:					
Commercial loans:					
Software/internet	11,363	5,664	4,649	7,278	1,621
Hardware	7,069	1,849	487	1,667	3,332
Venture capital/private equity	2,047	13	—	—	—
Life science/healthcare	267	348	189	1,129	277
Premium wine	—	—	—	—	7
Other	36	3,275	1,850	1,880	809
Total commercial loans	20,782	11,149	7,175	11,954	6,046
Consumer loans	256	487	1,363	258	163
Total recoveries	21,038	11,636	8,538	12,212	6,209
Provision for loan losses	94,183	84,292	85,939	95,697	97,629
Foreign currency translation adjustments	1,403	(2,132)	1,863	(3,299)	(616)
Allowance for loan losses, ending balance	\$ 304,924	\$ 280,903	\$ 255,024	\$ 225,366	\$ 217,613

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In 2019, total charge-offs increased to \$92.6 million compared to \$67.9 million in 2018. Gross loan charge-offs in 2019 came primarily from our software/internet and life science/healthcare loan portfolios and consisted primarily of early-stage clients.

The following table summarizes the allocation of the allowance for loan losses among specific classes of loans as of the five most recent year-ends:

(Dollars in thousands)	December 31,									
	2019		2018		2017		2016		2015	
	ALL Amount	Percent of Total Loans (1)	ALL Amount	Percent of Total Loans (1)	ALL Amount	Percent of Total Loans (1)	ALL Amount	Percent of Total Loans (1)	ALL Amount	Percent of Total Loans (1)
Commercial loans:										
Software/internet	\$ 100,223	18.8%	\$ 103,567	21.8%	\$ 96,104	26.8%	\$ 97,388	28.3%	\$ 103,045	32.5%
Hardware	19,644	4.1	19,725	4.4	27,614	5.2	31,166	5.9	23,085	6.4
Private equity/venture capital	115,805	53.5	98,581	49.5	82,468	42.8	50,299	38.7	35,282	32.7
Life science/healthcare	39,245	7.2	32,180	8.6	24,924	8.0	25,446	9.3	36,576	10.2
Premium wine	5,148	3.3	3,355	3.4	3,532	3.8	4,115	4.5	5,205	5.1
Other	3,353	1.7	3,558	1.7	3,941	2.1	4,768	2.5	4,252	2.6
Total commercial loans	283,418	88.6	260,966	89.4	238,583	88.7	213,182	89.2	207,445	89.5
Consumer loans	21,506	11.4	19,937	10.6	16,441	11.3	12,184	10.8	10,168	10.5
Total	<u>\$ 304,924</u>	<u>100.0%</u>	<u>\$ 280,903</u>	<u>100.0%</u>	<u>\$ 255,024</u>	<u>100.0%</u>	<u>\$ 225,366</u>	<u>100.0%</u>	<u>\$ 217,613</u>	<u>100.0%</u>

(1) Represents loan balances as a percentage of total gross loans at each respective year-end.

Nonperforming Assets

Nonperforming assets consist of loans on nonaccrual status, loans past due 90 days or more still accruing interest, and Other Real Estate Owned ("OREO") and other foreclosed assets. We measure all loans placed on nonaccrual status for impairment based on the fair value of the underlying collateral or the net present value of the expected cash flows. The table below sets forth certain data and ratios between nonperforming loans, nonperforming assets and the allowance for loan losses:

(Dollars in thousands)	December 31,				
	2019	2018	2017	2016	2015
Gross nonperforming, past due, and restructured loans:					
Nonaccrual loans	\$ 102,669	\$ 94,142	\$ 119,259	\$ 118,979	\$ 123,392
Loans past due 90 days or more still accruing interest	3,515	1,964	191	33	—
Total nonperforming loans	106,184	96,106	119,450	119,012	123,392
OREO and other foreclosed assets	—	—	—	—	—
Total nonperforming assets	\$ 106,184	\$ 96,106	\$ 119,450	\$ 119,012	\$ 123,392
Performing TDRs	\$ 31,990	\$ 31,639	\$ 71,468	\$ 33,732	\$ 10,635
Nonperforming loans as a percentage of total gross loans	0.32%	0.34%	0.51%	0.59%	0.73%
Nonperforming assets as a percentage of total assets	0.15	0.17	0.23	0.27	0.28
Allowance for loan losses	\$ 304,924	\$ 280,903	\$ 255,024	\$ 225,366	\$ 217,613
As a percentage of total gross loans	0.91%	0.99%	1.10%	1.13%	1.29%
As a percentage of total gross nonperforming loans	287.17	292.28	213.50	189.36	176.36
Allowance for loan losses for nonaccrual loans	\$ 44,859	\$ 37,941	\$ 41,793	\$ 37,277	\$ 51,844
As a percentage of total gross loans	0.13%	0.13%	0.18%	0.19%	0.31%
As a percentage of total gross nonperforming loans	42.25	39.48	34.99	31.32	42.02
Allowance for loan losses for total gross performing loans	\$ 260,065	\$ 242,962	\$ 213,231	\$ 188,089	\$ 165,769
As a percentage of total gross loans	0.78%	0.85%	0.92%	0.94%	0.98%
As a percentage of total gross performing loans	0.78	0.86	0.92	0.94	0.99
Total gross loans	\$ 33,327,704	\$ 28,511,312	\$ 23,254,153	\$ 20,024,662	\$ 16,857,131
Total gross performing loans	33,221,520	28,415,206	23,134,703	19,905,650	16,733,739
Allowance for unfunded credit commitments (1)	67,656	55,183	51,770	45,265	34,415
As a percentage of total unfunded credit commitments	0.28%	0.29%	0.30%	0.27%	0.22%
Total unfunded credit commitments (2)	\$ 24,521,920	\$ 18,913,021	\$ 17,462,537	\$ 16,743,196	\$ 15,614,359

(1) The "allowance for unfunded credit commitments" is included as a component of other liabilities and any provision is included in the "Provision for credit losses" in the statement of income. See "Provision for Credit Losses" for a discussion of the changes to the allowance.

(2) Includes unfunded loan commitments and letters of credit.

Our allowance for loan losses as a percentage of total gross loans decreased 8 basis points to 0.91 percent at December 31, 2019, compared to 0.99 percent at December 31, 2018. The decrease is reflective of a seven basis point decrease in the reserves for gross performing loans. Our reserve percentage for performing loans as a percentage of total gross performing loans decreased to 0.78 percent at December 31, 2019, compared to 0.86 percent at December 31, 2018, reflective of the continued shift in the mix of our overall loan portfolio to our higher quality private equity/venture capital loan portfolio. Our reserve percentage for nonaccrual loans as a percentage of total gross loans remained flat at 0.13 percent at both December 31, 2019 and December 31, 2018.

Nonaccrual Loans

The following table presents a detailed composition of nonaccrual loans by industry sector as of the five most recent year-ends:

(Dollars in thousands)	December 31,				
	2019	2018	2017	2016	2015
Commercial loans:					
Software/internet	\$ 67,155	\$ 66,781	\$ 78,860	\$ 76,605	\$ 77,545
Hardware	2,143	1,256	16,185	6,581	430
Private equity/venture capital	—	3,700	658	—	—
Life science/healthcare	26,401	17,791	20,520	31,783	44,107
Premium wine	205	284	401	491	1,167
Other	1,285	411	32	403	—
Total commercial loans	97,189	90,223	116,656	115,863	123,249
Consumer loans:					
Real estate secured loans	5,480	3,919	2,181	1,504	143
Other consumer loans	—	—	422	1,612	—
Total consumer loans	5,480	3,919	2,603	3,116	143
Total nonaccrual loans	\$ 102,669	\$ 94,142	\$ 119,259	\$ 118,979	\$ 123,392

The following table presents a summary of changes in nonaccrual loans for the years ended December 31, 2019 and 2018:

(Dollars in thousands)	Year ended December 31,	
	2019	2018
Balance, beginning of period	\$ 94,142	\$ 119,259
Additions	165,827	85,499
Paydowns	(101,994)	(66,660)
Charge-offs	(55,224)	(43,857)
Other reductions	(82)	(99)
Balance, end of period	\$ 102,669	\$ 94,142

Our nonaccrual loan balance increased \$8.5 million to \$102.7 million at December 31, 2019, compared to \$94.1 million at December 31, 2018. The \$8.5 million increase was primarily attributable to our life science/healthcare portfolio. Our life science/healthcare nonaccrual loan portfolio increased \$8.6 million primarily due to \$18.3 million in new nonaccruals for three clients in our Growth practice, partially offset by \$7.6 million of paydowns for two clients in our Growth practice and sponsored buyout loan portfolio and a \$2.4 million decrease for one sponsored buyout loan due to partial charge-off during 2019.

Our nonaccrual loans as of December 31, 2019 included \$75.0 million from six clients (three software/internet clients represented \$52.0 million and three life science/healthcare clients represented \$22.9 million). One of these loans is a sponsored buyout loan that was added to our nonaccrual portfolio in 2015, one is a Growth client that was added in 2018 and four are new nonaccrual loans added during 2019, three Growth clients and one sponsored buyout loan. The total credit exposure for these six largest nonaccrual loans was \$75.1 million as of December 31, 2019, for which we have specifically reserved \$35.3 million.

Average nonaccrual loans for the years ended December 31, 2019, 2018, 2017, 2016 and 2015 were \$160.3 million, \$117.1 million, \$123.8 million, \$108.7 million, and \$80.3 million, respectively. The increase in average nonaccrual loans was attributable to the increase in nonaccrual loans from our life science/healthcare loan portfolio related to the new nonaccruals for the clients mentioned above. If the nonaccrual loans for the years ended December 31, 2019, 2018, 2017, 2016 and 2015 had not been nonperforming, \$5.6 million, \$7.4 million, \$7.7 million, \$4.6 million and \$4.5 million, respectively, in interest income would have been recorded.

Accrued Interest Receivable and Other Assets

A summary of accrued interest receivable and other assets at December 31, 2019 and 2018 is as follows:

(Dollars in thousands)	December 31,		
	2019	2018	% Change
Derivative assets (1)	\$ 332,814	\$ 258,139	28.9 %
Foreign exchange spot contract assets, gross	810,275	152,268	NM
Accrued interest receivable	216,962	197,927	9.6
Net deferred tax assets	28,433	65,433	(56.5)
FHLB and Federal Reserve Bank stock	60,258	58,878	2.3
Accounts receivable	47,663	55,807	(14.6)
Other assets	248,828	162,809	52.8
Total accrued interest receivable and other assets	\$ 1,745,233	\$ 951,261	83.5

NM—Not meaningful

(1) See “Derivatives” section below.

Foreign Exchange Spot Contract Assets

The increase of \$658.0 million in foreign exchange spot contract assets was primarily due to an overall increase in the amount of unsettled spot trades reflective of several large trades at year-end December 31, 2019 as compared to December 31, 2018.

Net Deferred Tax Assets

The decrease of \$37.0 million in net deferred tax assets was primarily due to an increase in the fair value of our AFS securities portfolio driven by decreases in market interest rates as compared to December 31, 2018.

Other Assets

Other assets includes various asset amounts for other operational transactions. The increase of \$86.0 million was primarily due to the inclusion of SVB Leerink in our financial results, which included a \$38.6 million increase from receivables. Additionally, the increase resulted from a \$25.6 million increase in current tax receivables, due to quarterly tax payments exceeding our estimated full year taxable income as of December 31, 2019 and a \$15.2 million increase in merchant card receivables due to the timing of settlement.

Derivatives

Derivative instruments are recorded as a component of other assets and other liabilities on the balance sheet. The following table provides a summary of derivative assets and liabilities at December 31, 2019 and 2018:

(Dollars in thousands)	December 31,		
	2019	2018	% Change
Assets:			
Equity warrant assets	\$ 165,473	\$ 149,238	10.9%
Foreign exchange forward and option contracts	115,854	100,402	15.4
Client interest rate derivatives	28,811	8,499	NM
Interest rate swaps	22,676	—	—
Total derivatives assets	\$ 332,814	\$ 258,139	28.9
Liabilities:			
Foreign exchange forward and option contracts	\$ 98,207	\$ 88,559	10.9
Client interest rate derivatives	14,154	9,491	49.1
Interest rate swaps	25,623	—	—
Total derivatives liabilities	\$ 137,984	\$ 98,050	40.7

NM—Not meaningful

Equity Warrant Assets

In connection with negotiating credit facilities and certain other services, we often obtain rights to acquire stock in the form of equity warrant assets in primarily private, venture-backed companies in the technology and life science/healthcare industries. At December 31, 2019, we held warrants in 2,268 companies, compared to 2,095 companies at December 31, 2018. Warrants in 20 companies each had values greater than \$1.0 million and collectively represented \$57.6 million, or 34.8 percent, of the fair value of the total warrant portfolio. The change in fair value of equity warrant assets is recorded in gains on equity warrant assets, net, in noninterest income, a component of consolidated net income. The following table provides a summary of transactions and valuation changes for the years ended December 31, 2019 and 2018:

(Dollars in thousands)	Year ended December 31,	
	2019	2018
Balance, beginning of period	\$ 149,238	\$ 123,763
New equity warrant assets	16,103	18,021
Non-cash increases in fair value	34,412	36,920
Exercised equity warrant assets	(30,778)	(23,502)
Terminated equity warrant assets	(3,502)	(5,964)
Balance, end of period	\$ 165,473	\$ 149,238

Foreign Exchange Forward and Foreign Currency Option Contracts

We enter into foreign exchange forward contracts and foreign currency option contracts with clients involved in foreign activities, either as the purchaser or seller, depending upon the clients' need. For each forward or option contract entered into with our clients, we enter into an opposite way forward or option contract with a correspondent bank, which mitigates the risk of fluctuations in currency rates. We also enter into forward contracts with correspondent banks to economically reduce our foreign exchange exposure related to certain foreign currency denominated instruments. Net gains and losses on the revaluation of foreign currency denominated instruments are recorded in the line item "Other" as part of noninterest income, a component of consolidated net income. We have not experienced nonperformance by any of our counterparties and therefore have not incurred any related losses. Further, we anticipate performance by all counterparties. Our net exposure for foreign exchange forward and foreign currency option contracts, net of cash collateral, was \$22.2 million at December 31, 2019 and \$20.7 million at December 31, 2018. For additional information on our foreign exchange forward contracts and foreign currency option contracts, see Note 16—"Derivative Financial Instruments" of the "Notes to the Consolidated Financial Statements" under Part II, Item 8 of this report.

Client Interest Rate Derivatives

We sell interest rate contracts to clients who wish to mitigate their interest rate exposure. We economically reduce the interest rate risk from this business by entering into opposite way contracts with correspondent banks. Our net exposure for client interest rate derivative contracts, net of cash collateral, was \$28.6 million at December 31, 2019 and \$8.7 million at December 31, 2018. For information on our client interest rate derivatives, refer to Note 16—"Derivative Financial Instruments" of the "Notes to the Consolidated Financial Statements" under Part II, Item 8 of this report.

Interest Rate Swaps

To manage interest rate risk on our variable-interest rate loan portfolio, we enter into interest rate swap contracts to hedge against future changes in interest rates by using hedging instruments to lock in future cash inflows that would otherwise be impacted by movements in the market interest rates. We designate these interest rate swap contracts as cash flow hedges that qualify for hedge accounting under ASC 815 and record them in other assets and other liabilities. Our net exposure for interest rate swaps, net of cash collateral, was zero at December 31, 2019. For information on our interest rate swaps, refer to Note 16—"Derivative Financial Instruments" of the "Notes to the Consolidated Financial Statements" under Part II, Item 8 of this report.

Deposits

The following table presents the composition of our deposits as of December 31, 2019, 2018 and 2017:

(Dollars in thousands)	December 31,		
	2019	2018	2017
Noninterest-bearing demand	\$ 40,841,570	\$ 39,103,422	\$ 36,655,497
Interest-bearing checking and savings accounts	568,256	648,468	556,121
Money market	17,749,736	7,498,205	5,975,220
Money market deposits in foreign offices	352,437	152,781	111,201
Sweep deposits in foreign offices	2,057,715	1,875,298	908,890
Time	188,093	50,726	47,146
Total deposits	\$ 61,757,807	\$ 49,328,900	\$ 44,254,075

The increase in deposits of \$12.4 billion in 2019 was driven primarily by a healthy equity funding environment across a majority of our market segments with robust activities in the IPO and secondary public offering markets as well as strong new client acquisition. In addition, we saw a continued shift in the mix of our on-balance sheet deposits with growth in our interest-bearing deposits reflective of our deposit growth initiatives and continued strong liquidity of our clients. No material portion of our deposits has been obtained from a single depositor and the loss of any one depositor would not materially affect our business. Approximately 13 percent, 16 percent and 14 percent of our total deposits at December 31, 2019, 2018 and 2017, respectively, were from our clients in Asia.

The increase in deposits of \$5.1 billion in 2018 was driven primarily by a healthy equity funding environment across a majority of our market segments with robust activities in the IPO and secondary public offering markets as well as strong new client acquisition.

At December 31, 2019, 34 percent of our total deposits were interest-bearing deposits, compared to 21 percent at December 31, 2018 and 17 percent at December 31, 2017. The increases were driven by active management of deposit products as well as new product offerings.

At December 31, 2019, the aggregate balance of time deposit accounts individually equal to or greater than \$100,000 totaled \$185 million, compared to \$46 million at December 31, 2018 and \$41 million at December 31, 2017. At December 31, 2019, \$182 million in time deposit accounts individually equal to or greater than \$100,000 were scheduled to mature within one year. The maturity profile of our time deposits as of December 31, 2019 is as follows:

(Dollars in thousands)	December 31, 2019				
	Three months or less	More than three months to six months	More than six months to twelve months	More than twelve months	Total
Time deposits, \$100,000 and over	\$ 155,533	\$ 1,558	\$ 24,514	\$ 3,105	\$ 184,710
Other time deposits	2,114	635	634	—	3,383
Total time deposits	\$ 157,647	\$ 2,193	\$ 25,148	\$ 3,105	\$ 188,093

Short-Term Borrowings

The following table summarizes our short-term borrowings that mature in one month or less:

(Dollars in thousands)	December 31,					
	2019		2018		2017	
	Amount	Rate	Amount	Rate	Amount	Rate
Short-term FHLB advances	\$ —	—%	\$ 300,000	2.54%	\$ 700,000	1.37%
Federal funds purchased	—	—	—	—	330,000	1.45
Securities sold under agreement to repurchase	—	—	319,414	2.70	—	—
Other short-term borrowings	17,430	1.55	11,998	2.39	3,730	1.33
Total short-term borrowings	\$ 17,430	1.55	\$ 631,412	2.62	\$ 1,033,730	1.39

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We had \$17.4 million in short-term borrowings at December 31, 2019, compared to \$631.4 million at December 31, 2018. There were no overnight short-term borrowings as of December 31, 2019. For more information on our short-term debt, see Note 15—“Short-Term Borrowings and Long-Term Debt” of the “Notes to the Consolidated Financial Statements” under Part II, Item 8 of this report.

Average daily balances and maximum month-end balances for our short-term borrowings in 2019, 2018 and 2017 were as follows:

(Dollars in thousands)	Year ended December 31,		
	2019	2018	2017
Average daily balances:			
Short-term FHLB advances	\$ 63,836	\$ 424,384	\$ 36,712
Federal Funds purchased (1)	25,959	44,164	7,529
Securities sold under agreements to repurchase	36,716	164,938	—
Other short-term borrowings (2)	19,034	10,400	4,264
Total average short-term borrowings	\$ 145,545	\$ 643,886	\$ 48,505
Weighted average interest rate during the year:			
Short-term FHLB advances	2.57%	2.24%	1.02%
Federal Funds purchased	2.45	2.10	1.36
Securities sold under agreements to repurchase	2.65	2.37	—
Other short-term borrowings	1.92	2.28	1.55
Maximum month-end balances:			
Short-term FHLB advances	\$ 400,000	\$ 2,250,000	\$ 700,000
Federal Funds purchased	265,000	490,000	330,000
Securities sold under agreements to repurchase	196,000	394,592	—
Other short-term borrowings	30,246	19,770	8,470

- (1) As part of our liquidity risk management practices, we periodically test availability and access to overnight borrowings in the Federal Funds market. These balances represent short-term borrowings.
- (2) Represents cash collateral received from certain counterparties in relation to market value exposures of derivative contracts in our favor.

Long-Term Debt

The following table represents outstanding long-term debt at December 31, 2019, 2018 and 2017:

(Dollars in thousands)	Principal value at December 31, 2019	December 31,		
		2019	2018	2017
3.50% Senior Notes	\$ 350,000	\$ 347,987	\$ 347,639	\$ 347,303
5.375% Senior Notes	—	—	348,826	348,189
Total long-term debt	\$ 350,000	\$ 347,987	\$ 696,465	\$ 695,492

As of December 31, 2019, long-term debt was comprised of our 3.50% Senior Notes. We early redeemed our 5.375% Senior Notes in full as of December 20, 2019. For more information on our long-term debt outstanding at December 31, 2019, refer to Note 15—“Short-Term Borrowings and Long-Term Debt” of the “Notes to the Consolidated Financial Statements” under Part II, Item 8 of this report.

Other Liabilities

A summary of other liabilities at December 31, 2019 and 2018 is as follows:

(Dollars in thousands)	December 31,		
	2019	2018	% Change
Foreign exchange spot contract liabilities, gross	\$ 888,360	\$ 170,355	NM
Accrued compensation	354,393	224,405	57.9
Derivative liabilities (1)	137,984	98,050	40.7
Allowance for unfunded credit commitments	67,656	55,183	22.6
Other liabilities	593,359	458,366	29.5
Total other liabilities	<u>\$ 2,041,752</u>	<u>\$ 1,006,359</u>	102.9

NM—Not meaningful

(1) See “Derivatives” section above.

Foreign Exchange Spot Contract Liabilities

The increase of \$718.0 million in foreign exchange spot contract liabilities was due primarily to an increase in the amount of unsettled spot trades at December 31, 2019 as compared to December 31, 2018.

Accrued Compensation

Accrued compensation includes amounts for our Incentive Compensation Plan, Direct Drive Incentive Compensation Plan, Retention Program, Warrant Incentive Plan, ESOP, SVB Leerink Incentive Compensation Plan, SVB Leerink Retention Award and other compensation arrangements. The increase of \$130.0 million was due primarily to the result of higher incentive compensation accruals attributable to SVB Leerink FTEs as a result of strong 2019 performance as well as the increase in the number of average FTEs in 2019. For a description of our variable compensation plans, refer to Note 20—“Employee Compensation and Benefit Plans” of the “Notes to the Consolidated Financial Statements” under Part II, Item 8 of this report.

Other Liabilities

Other liabilities increased \$135.0 million to \$593.4 million at December 31, 2019, compared to \$458.4 million at December 31, 2018, reflective primarily of a \$96.3 million net increase in new commitments for our qualified affordable tax credit funds, a \$14.2 million increase in FX trade liability due to large outstanding trades and a \$10.3 million increase in deferred compensation due to increases in the fair value of the underlying investments. In addition, an increase of \$16.7 million in other liabilities was attributable to the inclusion of SVB Leerink in our financial results at December 31, 2019.

Noncontrolling Interests

Noncontrolling interests totaled \$150.8 million and \$148.6 million at December 31, 2019 and 2018, respectively. The increase was due to net income attributable to noncontrolling interests of \$47.9 million as well as an additional \$5.3 million attributable to the inclusion of SVB Leerink in our financial results, partially offset by net capital distributions of \$51.0 million primarily to investors in our managed funds of funds for the year ended December 31, 2019. For more information, refer to Note 2—“Summary of Significant Accounting Policies” of the “Notes to the Consolidated Financial Statements” under Part II, Item 8 of this report.

Capital Resources

We maintain an adequate capital base to support anticipated asset growth, operating needs, and credit and other business risks, and to provide for SVB Financial and the Bank to be in compliance with applicable regulatory capital guidelines, including the joint agency rules implementing the "Basel III" capital rules. Our primary sources of new capital include retained earnings and proceeds from the sale and issuance of our capital stock or other securities. Under the oversight of the Finance Committee of our Board of Directors, management engages in regular capital planning processes in an effort to optimize the use of the capital available to us and to appropriately plan for our future capital needs. The capital plan considers capital needs for the foreseeable future and allocates capital to both existing and future business activities. Expected future use or activities for which capital may be set aside include balance sheet growth and associated relative increases in market or credit exposure, investment activity, potential product and business expansions, acquisitions and strategic or infrastructure investments. In addition, we conduct capital stress tests as part of our annual capital planning process. The capital stress tests allow us to assess the impact of adverse changes in the economy and interest rates on our capital adequacy position.

Common Stock

On November 13, 2018, the Company announced a program to purchase up to \$500 million of our outstanding common stock (the "Stock Repurchase Program"). The program completed on July 1, 2019, after we repurchased and retired 2.2 million shares of our outstanding common stock totaling \$499.6 million. The program completed on July 1, 2019.

On October 24, 2019, the Company's Board of Directors authorized a new stock repurchase program that enables the Company to repurchase up to \$350 million of its outstanding common stock, though no shares have yet been repurchased under the new stock repurchase program. This program expires on October 29, 2020. The extent to which the Company repurchases its shares, and the timing of such repurchases, will depend upon a variety of factors, including market conditions, regulatory requirements, availability of funds, and other relevant considerations, as determined by the Company. The Company may, in its discretion, begin, suspend or terminate repurchases at any time prior to the program's expiration, without any prior notice. Repurchases may also be made pursuant to a trading plan under Rule 10b5-1 under the Exchange Act, which would permit shares to be repurchased when the Company might otherwise be precluded from doing so because of self-imposed trading blackout periods or other regulatory restrictions.

Share repurchases subsequent to December 31, 2019

As of February 27, 2020, we have repurchased 244,223 shares of our common stock totaling \$60.0 million at an average share price of \$245.76.

Preferred Stock

On December 9, 2019, the Company issued depositary shares each representing a 1/40th ownership interest in 350,000 shares of Series A Preferred Stock with \$0.001 par value and liquidation preference of \$1,000 per share, or \$25 per depositary share. The Series A Preferred Stock has no stated maturity and is not subject to any sinking fund or other obligation of SVB Financial Group. Dividends are approved by the Board of Directors and, if declared, are payable quarterly, in arrears, at a rate per annum equal to 5.25 percent.

As of December 31, 2019, there were 350,000 shares issued and outstanding of Series A Preferred Stock, which had a carrying value of \$340.1 million and liquidation preference of \$350 million.

SVBFG Stockholders' Equity

SVBFG stockholders' equity totaled \$6.5 billion at December 31, 2019, an increase of \$1.4 billion, or 26.5 percent compared to \$5.1 billion at December 31, 2018. This increase was primarily the result of net income of \$1.1 billion in 2019, an increase in capital of \$340.1 million related to the issuance of preferred stock, and an increase in accumulated other comprehensive income reflective primarily of a \$193.7 million (\$139.9 million net of tax) increase in the fair value of our AFS securities portfolio driven by decreases in period-end market interest rates. These increases were partially offset by a decrease in retained earnings of \$352.5 million related to the repurchase of shares of our outstanding common stock under the Stock Repurchase Program.

Funds generated through retained earnings are a significant source of capital and liquidity and are expected to continue to be so in the future.

Capital Ratios

Regulatory capital ratios for SVB Financial and the Bank exceeded minimum federal regulatory guidelines under the current Capital Rules as well as for a well-capitalized bank holding company and insured depository institution, respectively, as of December 31, 2019, 2018 and 2017. See Note 24—"Regulatory Matters" of the "Notes to the Consolidated Financial Statements" under Part II, Item 8 of this report for further information. Capital ratios for SVB Financial and the Bank, compared to the minimum capital ratios are set forth below:

	December 31,			Required Minimum (1)	Well Capitalized Minimum
	2019	2018	2017		
SVB Financial:					
CET 1 risk-based capital ratio (2)	12.58%	13.41%	12.78%	7.0%	N/A
Tier 1 risk-based capital ratio	13.43	13.58	12.97	8.5	6.0
Total risk-based capital ratio	14.23	14.45	13.96	10.5	10.0
Tier 1 leverage ratio (2)	9.06	9.06	8.34	4.0	N/A
Tangible common equity to tangible assets ratio (3)(4)	8.39	8.99	8.16	N/A	N/A
Tangible common equity to risk-weighted assets ratio (3)(4)	12.76	13.28	12.77	N/A	N/A
Bank:					
CET 1 risk-based capital ratio	11.12%	12.41%	12.06%	7.0%	6.5%
Tier 1 risk-based capital ratio	11.12	12.41	12.06	8.5	8.0
Total risk-based capital ratio	11.96	13.32	13.04	10.5	10.0
Tier 1 leverage ratio	7.30	8.10	7.56	4.0	5.0
Tangible common equity to tangible assets ratio (3)(4)	7.24	8.13	7.47	N/A	N/A
Tangible common equity to risk-weighted assets ratio (3)(4)	11.31	12.28	11.98	N/A	N/A

- (1) Percentages represent the minimum capital ratios plus, as applicable, the fully phased-in 2.5% CET1 capital conservation buffer under the Capital Rules.
- (2) "Well-Capitalized Minimum" CET 1 risk-based capital and Tier 1 leverage ratios are not formally defined under applicable banking regulations for bank holding companies.
- (3) See below for a reconciliation of non-GAAP tangible common equity to tangible assets and tangible common equity to risk-weighted assets.
- (4) The FRB has not issued any minimum guidelines for the tangible common equity to tangible assets ratio or the tangible common equity to risk-weighted assets ratio, however, we believe these ratios provide meaningful supplemental information regarding our capital levels and are therefore provided above.

2019 compared to 2018

Risk-based capital ratios (CET 1, tier 1, and total risk-based capital) for SVB Financial decreased as of December 31, 2019, compared to the same ratios as of December 31, 2018, primarily as a result of a proportionally higher increase in our risk-weighted assets relative to the increase in capital during 2019. The increase in risk-weighted assets was driven primarily by robust loan growth during 2019. The increase in tier 1 and total risk-based capital was reflective primarily of net income of \$1.1 billion and \$340.1 million for our Series A Preferred Stock issuance. The increase in CET 1 capital was reflective primarily of net income. SVB Financial's tier 1 leverage ratio remained flat as of December 31, 2019, as compared to December 31, 2018.

Risk-based capital ratios (CET 1, tier 1, total risk-based capital, and tier 1 leverage) for Silicon Valley Bank (the "Bank") decreased as of December 31, 2019, compared to the same ratios as of December 31, 2018. The decreases were a result of the proportionally higher increase in our risk-weighted assets and average assets relative to the increase in capital during 2019. The increase in risk-weighted assets and average assets were driven by robust loan growth during 2019. The increases in capital due to net income were partially offset by \$733 million of cash dividends paid by the Bank to our bank holding company, SVB Financial, during 2019.

All our reported capital ratios remain above the levels considered to be "well capitalized" under applicable banking regulations.

2018 compared to 2017

Risk-based capital ratios (CET 1, tier 1, and total risk-based capital) for SVB Financial and the Bank increased as of December 31, 2018, compared to the same ratios as of December 31, 2017, primarily as a result of a proportionally higher increase in capital relative to the increase in our risk-weighted assets during 2018. The increase in capital was reflective primarily of net income of \$973.8 million as well as a net increase of \$68.8 million related to the adoption of new accounting guidance in 2018, partially

offset by a decrease of \$147.1 million related to the repurchase of our outstanding common stock under the Stock Repurchase Program. The increase in risk-weighted assets was due primarily to our robust loan growth in 2018.

Both SVB Financial and the Bank's tier 1 leverage ratios increased as of December 31, 2018, as compared to December 31, 2017, due to proportionally higher capital relative to average assets growth during 2018.

Non-GAAP Tangible Common Equity to Tangible Assets and Non-GAAP Tangible Common Equity to Risk-weighted Assets

The tangible common equity to tangible assets ratio and the tangible common equity to risk-weighted assets ratios are not required by GAAP or applicable bank regulatory requirements. However, we believe these ratios provide meaningful supplemental information regarding our capital levels. Our management uses, and believes that investors benefit from referring to, these ratios in evaluating the adequacy of the Company's capital levels; however, this financial measure should be considered in addition to, not as a substitute for or preferable to, comparable financial measures prepared in accordance with GAAP. These ratios are calculated by dividing total SVBFG stockholder's equity, by total period-end assets and risk-weighted assets, after reducing both amounts by acquired intangibles, if any. The manner in which this ratio is calculated varies among companies. Accordingly, our ratio is not necessarily comparable to similar measures of other companies. The following table provides a reconciliation of non-GAAP financial measures with financial measures defined by GAAP:

Non-GAAP tangible common equity and tangible assets (Dollars in thousands, except ratios)	SVB Financial				
	December 31, 2019	December 31, 2018	December 31, 2017	December 31, 2016	December 31, 2015
GAAP SVBFG stockholders' equity	\$ 6,470,307	\$ 5,116,209	\$ 4,179,795	\$ 3,642,554	\$ 3,198,134
Less: preferred stock	340,138	—	—	—	—
Less: intangible assets	187,240	—	—	—	—
Tangible common equity	\$ 5,942,929	\$ 5,116,209	\$ 4,179,795	\$ 3,642,554	\$ 3,198,134
GAAP total assets	\$ 71,004,903	\$ 56,927,979	\$ 51,214,467	\$ 44,683,660	\$ 44,686,703
Less: intangible assets	187,240	—	—	—	—
Tangible assets	\$ 70,817,663	\$ 56,927,979	\$ 51,214,467	\$ 44,683,660	\$ 44,686,703
Risk-weighted assets	\$ 46,577,485	\$ 38,527,853	\$ 32,736,959	\$ 28,248,750	\$ 25,919,594
Non-GAAP tangible common equity to tangible assets	8.39%	8.99%	8.16%	8.15%	7.16%
Non-GAAP tangible common equity to risk-weighted assets	12.76	13.28	12.77	12.89	12.34

Non-GAAP tangible common equity and tangible assets (Dollars in thousands, except ratios)	Bank				
	December 31, 2019	December 31, 2018	December 31, 2017	December 31, 2016	December 31, 2015
Tangible common equity	\$ 5,034,095	\$ 4,554,814	\$ 3,762,542	\$ 3,423,427	\$ 3,059,045
Tangible assets	\$ 69,563,817	\$ 56,047,134	\$ 50,383,774	\$ 44,059,340	\$ 44,045,967
Risk-weighted assets	\$ 44,502,150	\$ 37,104,080	\$ 31,403,489	\$ 26,856,850	\$ 24,301,043
Non-GAAP tangible common equity to tangible assets	7.24%	8.13%	7.47%	7.77%	6.95%
Non-GAAP tangible common equity to risk-weighted assets	11.31	12.28	11.98	12.75	12.59

2019 compared to 2018

SVB Financial's and the Bank's tangible common equity to tangible assets and risk-weighted assets ratios decreased due to the proportionally higher increases in tangible and risk-weighted assets relative to tangible common equity. The increase in risk-tangible and risk-weighted assets were driven by robust loan growth during 2019. Increased capital was reflective primarily of net income. The decrease in the Bank's tangible common equity to tangible assets ratio was partially attributable to \$733 million in cash dividends paid by the Bank to SVB Financial during 2019. See "SVBFG Stockholders' Equity" above for further details on changes to the individual components of our equity balance.

2018 compared to 2017

SVB Financial's and the Bank's tangible common equity to tangible assets ratio increased due to the proportionally higher increase in tangible common equity relative to changes to tangible assets. Increased capital was reflective primarily of net income. SVB Financial's and the Bank's tangible common equity to risk-weighted assets increased due to the proportionally higher increase

in tangible common equity, reflective primarily of net income, relative to changes in risk-weighted assets. The increase in the Bank's tangible common equity to tangible assets ratio was partially offset as a result of \$140 million in cash dividends paid by the Bank to our bank holding company, SVB Financial, during 2018.

Off-Balance Sheet Arrangements and Aggregate Contractual Obligations

In the normal course of business, we use financial instruments with off-balance sheet risk to meet the financing needs of our customers. These financial instruments include commitments to extend credit, commercial and standby letters of credit and commitments to invest in venture capital and private equity fund investments. These instruments involve, to varying degrees, elements of credit risk. Credit risk is defined as the possibility of sustaining a loss because other parties to the financial instrument fail to perform in accordance with the terms of the contract. The actual liquidity needs and the credit risk that we have experienced have historically been lower than the contractual amount of these commitments because a significant portion of these commitments expire without being drawn upon. Refer to the discussion of our off-balance sheet arrangements in Note 22—"Off-Balance Sheet Arrangements, Guarantees and Other Commitments" of the "Notes to the Consolidated Financial Statements" under Part II, Item 8 of this report.

The following table summarizes our unfunded commercial commitments as of December 31, 2019:

(Dollars in thousands)	Amount of Commitments Expiring per Period				
	Total	Less than 1 year	1-3 years	4-5 years	After 5 years
Commercial commitments:					
Loan commitments available for funding	\$ 21,743,359	\$ 16,983,484	\$ 3,039,575	\$ 1,170,986	\$ 549,314
Standby letters of credit	2,771,441	2,672,616	87,023	8,148	3,654
Commercial letters of credit	7,120	7,120	—	—	—
Total unfunded credit commitments	\$ 24,521,920	\$ 19,663,220	\$ 3,126,598	\$ 1,179,134	\$ 552,968

The following table summarizes our contractual obligations to make future payments as of December 31, 2019:

(Dollars in thousands)	Payments Due By Period				
	Total	Less than 1 year	1-3 years	4-5 years	After 5 years
SVBFG contractual obligations:					
Deposits (1) (2)	\$ 61,757,807	\$ 61,757,807	\$ —	\$ —	\$ —
Borrowings (2)	365,417	17,430	—	—	347,987
Non-cancelable operating leases	240,787	44,791	80,352	63,516	52,128
Commitments to qualified affordable housing projects	302,031	128,494	158,186	3,921	11,430
Other obligations	10,470	7,952	2,518	—	—
Total obligations attributable to SVBFG	\$ 62,676,512	\$ 61,956,474	\$ 241,056	\$ 67,437	\$ 411,545

- (1) Includes time deposits and deposits with no defined maturity, such as noninterest-bearing demand, interest-bearing checking, savings, money market and sweep accounts.
- (2) Amounts exclude contractual interest.

Excluded from the tables above are unfunded commitment obligations of \$19.1 million to our managed funds of funds and other fund investments for which neither the payment, timing, nor eventual obligation is certain. Subject to applicable regulatory requirements, including the Volcker Rule (see "Business - Supervision and Regulation" under Part I, Item 1 of this report), we make commitments to invest in venture capital and private equity funds, which in turn make investments generally in, or in some cases make loans to, privately-held companies. Commitments to invest in these funds are generally made for a 10-year period from the inception of the fund. Although the limited partnership agreements governing these investments typically do not restrict the general partners from calling 100% of committed capital in one year, it is customary for these funds to generally call most of the capital commitments over 5 to 7 years; however in certain cases, the funds may not call 100% of committed capital over the life of the fund. The actual timing of future cash requirements to fund these commitments is generally dependent upon the investment cycle, overall market conditions, and the nature and type of industry in which the privately held companies operate. Additionally, our consolidated managed funds of funds have \$5.3 million of remaining unfunded commitments to venture capital and private equity funds. See Note 9—"Investment Securities" of the "Notes to the Consolidated Financial Statements" under Part II, Item 8 of this report for further disclosure related to non-marketable and other equity securities. Additional discussion

of our off-balance sheet arrangements for these fund investments is included in Note 22—"Off-Balance Sheet Arrangements, Guarantees and Other Commitments" of the "Notes to the Consolidated Financial Statements" under Part II, Item 8 of this report.

Liquidity

The objective of liquidity management is to ensure that funds are available in a timely manner to meet our financial obligations, including, as necessary, paying creditors, meeting depositors' needs, accommodating loan demand and growth, funding investments, repurchasing securities and other operating or capital needs, without incurring undue cost or risk, or causing a disruption to normal operating conditions.

We regularly assess the amount and likelihood of projected funding requirements through a review of factors such as historical deposit volatility and funding patterns, present and forecasted market and economic conditions, individual client funding needs, and existing and planned business activities. Our Asset/Liability Committee ("ALCO"), which is a management committee, provides oversight to the liquidity management process and recommends policy guidelines for the approval of the Finance Committee of our Board of Directors, and courses of action to address our actual and projected liquidity needs. Additionally, we routinely conduct liquidity stress testing as part of our liquidity management practices.

Our deposit base is, and historically has been, our primary source of liquidity. Our deposit levels and cost of deposits may fluctuate from time to time due to a variety of factors, including market conditions, prevailing interest rates, changes in client deposit behaviors, availability of insurance protection, and our offering of deposit products. At December 31, 2019, our period-end total deposit balances increased to \$61.8 billion, compared to \$49.3 billion at December 31, 2018.

Our liquidity requirements can also be met through the use of our portfolio of liquid assets. Our definition of liquid assets includes cash and cash equivalents in excess of the minimum levels necessary to carry out normal business operations, short-term investment securities maturing within one year, AFS securities eligible and available for financing or pledging purposes with a maturity in excess of one year and anticipated near-term cash flows from investments.

We have certain facilities in place to enable us to access short-term borrowings on a secured and unsecured basis. Our secured facilities include collateral pledged to the FHLB of San Francisco and the discount window at the FRB (using both fixed income securities and loans as collateral). Our unsecured facility consists of our uncommitted federal funds lines. As of December 31, 2019, collateral pledged to the FHLB of San Francisco was comprised primarily of fixed income investment securities and loans and had a carrying value of \$4.7 billion, of which \$4.3 billion was available to support additional borrowings. As of December 31, 2019, collateral pledged to the discount window at the FRB was comprised of fixed income investment securities and had a carrying value of \$1.0 billion, all of which was unused and available to support additional borrowings. Our total unused and available borrowing capacity for our uncommitted federal funds lines totaled \$1.9 billion at December 31, 2019. Our total unused and available borrowing capacity under our master repurchase agreements with various financial institutions totaled \$3.3 billion at December 31, 2019.

On a stand-alone basis, SVB Financial's primary liquidity channels include dividends from the Bank, its portfolio of liquid assets, and its ability to raise debt and capital. The ability of the Bank to pay dividends is subject to certain regulations described in "Business—Supervision and Regulation—Restrictions on Dividends" under Part I, Item 1 of this report.

Consolidated Summary of Cash Flows

Below is a summary of our average cash position and statement of cash flows for 2019, 2018 and 2017, respectively: (For further details, see our Consolidated Statements of Cash Flows under "Consolidated Financial Statements and Supplementary Data" under Part II, Item 8 of this report.)

(Dollars in thousands)	Year ended December 31,		
	2019	2018	2017
Average cash and cash equivalents	\$ 6,524,342	\$ 3,301,783	\$ 3,484,651
Percentage of total average assets	10.3%	6.0%	7.2%
Net cash provided by operating activities	\$ 1,164,129	\$ 933,562	\$ 646,865
Net cash used for investing activities	(9,371,882)	(4,800,375)	(5,970,496)
Net cash provided by financing activities	11,417,997	4,515,277	5,700,956
Net increase in cash and cash equivalents	\$ 3,210,244	\$ 648,464	\$ 377,325

Average cash and cash equivalents increased to \$6.5 billion in 2019, compared to \$3.3 billion for 2018. Average deposits increased \$7.0 billion which enabled us to grow our average loan portfolio by \$4.3 billion in 2019.

2019

Cash provided by operating activities of \$1.2 billion in 2019 included net income before noncontrolling interests of \$1.2 billion. These net inflows were offset by \$62 million of adjustments to reconcile net income to net cash and \$82 million from changes in other assets and liabilities.

Cash used for investing activities of \$9.4 billion in 2019 included \$4.8 billion of net outflows from the net increase in loans funded and \$4.4 billion of net outflows from our fixed income securities portfolio due to \$10.4 billion of purchases, offset by fixed income inflows of \$6.0 billion of portfolio cash flows from sales, maturities and paydowns.

Cash provided by financing activities of \$11.4 billion in 2019 was driven primarily by the net increase in deposits of \$12.4 billion and \$0.3 billion in proceeds from issuance of preferred stock, partially offset by a \$1.0 billion decrease in borrowings outstanding as of December 31, 2019 as well as \$0.4 billion in cash outflows from the repurchase of our common stock under the Stock Repurchase Program.

Cash and cash equivalents at December 31, 2019 were \$6.8 billion, compared to \$3.6 billion at December 31, 2018.

2018

Cash provided by operating activities of \$934 million in 2018 included net income before noncontrolling interests of \$1.0 billion. These net inflows were offset by \$20 million of adjustments to reconcile net income to net cash and \$58 million from changes in other assets and liabilities.

Cash used for investing activities of \$4.8 billion in 2018 included \$5.2 billion of net outflows from the net increase in loans funded and \$0.4 billion of net inflows from our fixed income securities portfolio, which had \$5.8 billion of portfolio cash flows from sales, maturities, and paydowns, offset by \$5.4 billion of purchases, during 2018.

Cash provided by financing activities of \$4.5 billion in 2018 was driven primarily by the net increase in deposits of \$5.1 billion, partially offset by a \$0.4 billion decrease in short-term borrowings outstanding as of December 31, 2018 as well as \$0.2 billion in cash outflows from the repurchase of our common stock under the Stock Repurchase Program.

Cash and cash equivalents at December 31, 2018 were \$3.6 billion, compared to \$2.9 billion at December 31, 2017.

2017

Cash provided by operating activities of \$647 million in 2017 included net income before noncontrolling interests of \$519 million. These net inflows also benefited from \$83 million of adjustments to reconcile net income to net cash and \$45 million from changes in other assets and liabilities.

Cash used for investing activities of \$6.0 billion in 2017 included \$3.2 billion of net outflows from the net increase in loans funded and \$2.8 billion of net outflows from our fixed income securities portfolio, which had \$8.4 billion of purchases, partially offset by \$5.6 billion of portfolio cash flows from sales, maturities and paydowns during 2017.

Cash provided by financing activities of \$5.7 billion in 2017 was primarily from the net increase in deposits of \$5.3 billion and a \$521 million increase in short-term borrowings outstanding as of December 31, 2017.

ITEM 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK**Interest Rate Risk Management**

Market risk is defined as the risk of adverse fluctuations in the market value of financial instruments due to changes in market interest rates. Interest rate risk is our primary market risk and can result from timing and volume differences in the repricing of our rate-sensitive assets and liabilities, widening or tightening of credit spreads, changes in the general level of market interest rates and changes in the shape and level of the benchmark LIBOR/SWAP yield curve. Additionally, changes in interest rates can influence the rate of principal prepayments on mortgage securities, which affects the rate of amortization of purchase premiums and discounts. Other market risks include foreign currency exchange risk, equity price risk, including the effect of competition on product pricing. All these risks are important considerations, but are also inherently difficult to predict and to assess the impact of each on the simulation results. Consequently, simulations used to analyze the sensitivity of net interest income to changes in interest rates will differ from actual results due to differences in the timing and frequency of rate resets, the magnitude of changes in market rates, the impact of competition, fluctuating business conditions and the impact of strategies taken by management to mitigate these risks.

Interest rate risk is managed by our ALCO. ALCO reviews the sensitivity of the market valuation on earning assets and funding liabilities and the modeled 12-month projection of net interest income from changes in interest rates, structural changes in investment and funding portfolios, loan and deposit activity and current market conditions. Relevant metrics and guidelines, which are approved by the Finance Committee of our Board of Directors and are included in our Interest Rate Risk Policy, are monitored on an ongoing basis.

Interest rate risk is managed primarily through strategies involving our fixed income securities portfolio, available funding channels and capital market activities. In addition, our policies permit the use of off-balance sheet derivatives, such as interest rate swaps, to assist with managing interest rate risk.

We utilize a simulation model to perform sensitivity analysis on the economic value of equity and net interest income under a variety of interest rate scenarios, balance sheet forecasts and business strategies. The simulation model provides a dynamic assessment of interest rate sensitivity embedded within our balance sheet which measures the potential variability in economic value and net interest income relating solely to changes in market interest rates over time. We review our interest rate risk position and sensitivity to market interest rates regularly.

Model Simulation and Sensitivity Analysis

A specific application of our simulation model involves measurement of the impact of changes in market interest rates on the economic value of equity ("EVE"). EVE is defined as the market value of assets, less the market value of liabilities. Another application of the simulation model measures the impact of changes in market interest rates on net interest income ("NII") assuming a static balance sheet size and composition as of the period-end reporting date. In the NII simulation, the level of market interest rates as well as the size and composition of the balance sheet are held constant over the simulation horizon. Simulated cash flows during the scenario horizon are assumed to be replaced as they occur, which maintains the balance sheet at its current size and composition. Yield and spread assumptions on cash and investment balances reflect current market rates and the shape of the yield curve. Yield and spread assumptions on loans reflect recent market impacts on product pricing. Similarly, we make certain deposit decay rate assumptions on demand deposits and interest-bearing deposits, which are replenished to hold the level and mix of funding liabilities constant. Changes in market interest rates that affect net interest income are principally short-term interest rates and include the following benchmark indexes: (i) the National Prime Rate, (ii) 1-month and 3-month LIBOR and (iii) the Federal Funds target rate. Changes in these short-term rates impact interest earned on our variable rate loans and balances held as cash and cash equivalents. Additionally, simulated changes in deposit pricing relative to changes in market rates, commonly referred to as deposit beta, generally follow overall changes in short-term interest rates, although actual changes may lag in terms of timing and magnitude.

The NII simulation results presented here include an "asymmetric" beta assumption that is applied in the NII and EVE simulation models for interest-bearing deposits. This reflects management expectations that deposit repricing behavior in a falling rate environment would be different than repricing behavior in a rising rate environment. This model assumes the overall beta for interest-bearing deposits in a falling rate environment would be approximately 60 percent. That is, overall changes in interest-bearing deposit rates would be approximately 60 percent of the change in short-term market rates. These repricing assumptions are reflected as changes in interest expense on interest-bearing deposit balances.

The following table presents our EVE and NII sensitivity exposure related to an instantaneous and sustained parallel shift in market interest rates of 100 and 200 basis points ("bps") at December 31, 2019 and December 31, 2018. NII sensitivity for December 31, 2018 reflects the higher beta assumptions discussed above in both increasing and decreasing rate scenarios for purposes of comparison. Modeled EVE for December 31, 2018 has not been adjusted as the assumption change had an immaterial impact.

Change in interest rates (bps) (Dollars in thousands)	Estimated	Estimated Increase/(Decrease) In EVE		Estimated	Estimated Increase/ (Decrease) In NII	
	EVE	Amount	Percent	NII (1)	Amount	Percent
December 31, 2019:						
+200	\$ 9,930,270	\$ (253,659)	(2.5)%	\$ 2,528,158	\$ 421,358	20.0 %
+100	10,056,711	(127,218)	(1.2)	2,314,686	207,886	9.9
—	10,183,929	—	—	2,106,800	—	—
-100	10,138,558	(45,371)	(0.4)	1,927,801	(178,999)	(8.5)
-200	10,000,585	(183,344)	(1.8)	1,760,283	(346,517)	(16.4)
December 31, 2018:						
+200	\$ 9,348,408	\$ 504,405	5.7 %	\$ 2,583,577	\$ 499,257	24.0 %
+100	9,090,781	246,778	2.8	2,334,040	249,720	12.0
—	8,844,003	—	—	2,084,320	—	—
-100	8,470,501	(373,502)	(4.2)	1,840,190	(244,130)	(11.7)
-200	7,590,973	(1,253,030)	(14.2)	1,543,150	(541,170)	(26.0)

(1) Estimated NII sensitivity for December 31, 2018 has been revised from prior period presentations to reflect updated assumptions.

Economic Value of Equity

The estimated EVE in the preceding table is based on a combination of valuation methodologies including a discounted cash flow analysis and a multi-path lattice-based valuation. Both methodologies use publicly available market interest rates to determine discounting factors on projected cash flows. The model simulations and calculations are highly assumption-dependent and will change regularly as the composition of earning assets and funding liabilities change (including the impact of changes in the value of interest rate derivatives), as interest rate environments evolve, and as we change our assumptions in response to relevant market conditions, competition or business circumstances. These calculations do not reflect forecast changes in our balance sheet or changes we may make to reduce our EVE exposure as a part of our overall interest rate risk management strategy.

As with any method of measuring interest rate risk, certain limitations are inherent in the method of analysis presented in the preceding table. We are exposed to yield curve risk, prepayment risk, basis risk and yield spread compression, which cannot be fully modeled and expressed using the above methodology. Accordingly, the results in the preceding table should not be relied upon as a precise indicator of actual results in the event of changing market interest rates. Additionally, the resulting EVE and NII estimates are not intended to represent and should not be construed to represent our estimate of the underlying EVE or forecast of NII.

Our base EVE as of December 31, 2019 increased \$1.3 billion from December 31, 2018, driven by overall balance sheet growth. For the period ended December 31, 2019, as compared to December 31, 2018, fixed income investments in our AFS and HTM portfolios increased by \$4.6 billion, total loan balances increased by \$4.8 billion and total deposits increased by \$12.4 billion.

The growth of \$12.4 billion in total deposits consisted of \$1.7 billion in noninterest bearing deposits and \$10.7 billion in interest-bearing deposits. The significantly larger increase in the growth of our interest-bearing deposits relative to our loan growth, in conjunction with the increase in rates paid on our interest-bearing deposits during 2019, results in a downward impact on our EVE in the +100 bps and +200 bps rate shock scenarios. As of December 31, 2019, interest-bearing deposits represented 63 percent of total loan balances compared to 36 percent at December 31, 2018. In addition, purchases in fixed income investments during 2019 consisted primarily of mortgage-backed securities which have lower prepayment rates during increasing interest rate environments also resulting in a downward impact on EVE in the +100 bps and +200 bps rate shock scenarios reflective of lower reinvestment opportunities in an increasing interest rate environment. The downward EVE impacts in the +100 bps and +200 bps rate shock scenarios from the interest-bearing deposit growth and increase in the mortgage-backed securities are partially offset by the upward EVE impact from loan growth.

The overall change in mix in the composition of our balance sheet as discussed, results in an EVE profile that experiences negative changes in both the upward and downward rate shock environments, and represents a typical profile for a balance sheet that includes primarily mortgage-backed fixed income investments and interest-bearing deposits.

12-Month Net Interest Income Simulation

NII sensitivity is measured as the percentage change in projected 12-month net interest income earned in +/-100 and +/-200 basis point interest rate shock scenarios compared to a base scenario where balances and interest rates are held constant over the forecast horizon. At December 31, 2019, NII sensitivity was 9.9 percent in the +100 bps interest rate scenario, compared to 12.0 percent at December 31, 2018. Our NII sensitivity in the +200 bps interest rate shock scenario was 20.0 percent compared to 24.0 percent at December 31, 2018. NII sensitivity in the -100 bps scenario of negative 8.5 percent was lower at December 31, 2019, compared to a negative 11.7 percent at December 31, 2018. The -200 bps scenario currently indicates a lower percentage change in NII of negative 16.4 percent at December 31, 2019, compared to negative 26.0 percent at December 31, 2018. The December 31, 2019 NII sensitivity percentages are inclusive of the income or expense associated with interest rate swaps that are part of our macro hedging strategy initiated in 2019 as part of the effort to reduce the impact of decreasing rates on NII. The changes in NII sensitivity are primarily the result of the changes in balance sheet composition, combined with the impact of hedges in the respective parallel rate shock scenarios.

Our base case static 12-month NII forecast at December 31, 2019 increased compared to December 31, 2018 by \$22 million. This change is primarily the result of growth in the balance sheet as explained above that has taken place year-to-date combined with an overall relatively lower rate environment compared to last year. Specifically, significant growth in interest-bearing deposit balances has been offset by corresponding growth in loan and fixed income investment security balances. In the 12-month NII simulation, the interest income benefit of growth in the balance sheet was softened by an increase in interest expense associated with growth in interest-bearing deposit balances along with lower overall rate levels across the yield curve. Costs associated with the macro hedging strategy swap portfolio also contributed to the slower growth in the simulated 12-month NII relative to overall balance sheet growth.

A majority of our loans are indexed to Prime and LIBOR. In the positive parallel simulated rate shock scenarios, interest income on assets that are tied to variable rate indexes, primarily our variable rate loans, are expected to benefit our base 12-month NII projections. The opposite is true for negative rate shock scenarios.

The 12-month NII simulations include repricing assumptions on our interest-bearing deposit products which we set at our discretion based on client needs and our overall funding mix. Repricing of interest-bearing deposits impacts estimated interest expense. As noted previously, repricing deposit rates are generally assumed to approximately 60 percent of the amount of simulated changes in short-term market interest rates.

The simulation model used in the above analysis incorporates embedded floors on loans, where present, in our interest rate scenarios, which prevent model benchmark rates from moving below zero percent in the down rate scenarios. The embedded floors are also a factor in the up rate scenarios to the extent a simulated increase in rates is needed before floored rates are cleared. In addition, we assume different deposit balance decay rates based on a historical deposit study of our clients. These assumptions may change in future periods based on changes in client behavior and at management's discretion. Actual changes in our deposit pricing strategies may differ from our current model assumptions and may have an impact on our actual sensitivity overall.

ITEM 8. CONSOLIDATED FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

Report of Independent Registered Public Accounting Firm

To the Stockholders and Board of Directors

SVB Financial Group:

Opinions on the Consolidated Financial Statements and Internal Control over Financial Reporting

We have audited the accompanying consolidated balance sheets of SVB Financial Group and subsidiaries (the Company) as of December 31, 2019 and 2018, the related consolidated statements of income, comprehensive income, stockholders' equity, and cash flows for each of the years in the three-year period ended December 31, 2019, and the related notes (collectively, the consolidated financial statements). We also have audited the Company's internal control over financial reporting as of December 31, 2019, based on criteria established in *Internal Control - Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission".

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of the Company as of December 31, 2019 and 2018, and the results of its operations and its cash flows for each of the years in the three-year period ended December 31, 2019, in conformity with generally accepted accounting principles. Also in our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2019 based on criteria established in *Internal Control - Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission".

Basis for Opinions

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

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audits to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud, and whether effective internal control over financial reporting was maintained in all material respects.

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

Definition and Limitations of Internal Control Over Financial Reporting

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (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.

Critical Audit Matter

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

Assessment of the allowance for loan losses related to loans collectively evaluated for impairment and the allowance for unfunded credit commitments

As discussed in Notes 2 and 10 of the consolidated financial statements, the allowance for loan losses related to loans collectively evaluated for impairment (collectively evaluated ALL) and the allowance for unfunded credit commitments (AUCC) is the Company's estimate of credit losses inherent in the collectively evaluated credit portfolio at the balance sheet date. The collectively evaluated ALL related to the Software/Internet, Hardware, Private Equity/Venture Capital, Life Science/Healthcare, and Premium Wine portfolio segments was \$235.6 million as of December 31, 2019, which comprised 0.82% of the recorded investment in those loans, as well as 77.3% of the total allowance for loan losses. The total AUCC was \$67.7 million as of December 31, 2019, which comprised 0.28% of the balance of commitments to extend credit, most of which was related to the aforementioned portfolio segments. The collectively evaluated ALL is determined based on a formula allocation for similarly risk-rated loans by portfolio segment using segment specific historical loss factors. The AUCC is determined using a similar methodology to the Company's collectively evaluated ALL methodology adjusted by a probability factor of an unfunded credit commitment being funded at the measurement date. Both the collectively evaluated ALL and the AUCC are adjusted for certain qualitative factors.

We identified the assessment of the collectively evaluated ALL and the AUCC for the aforementioned portfolio segments as a critical audit matter. The assessment involved significant measurement uncertainty requiring complex auditor judgment, and knowledge and experience in the industry. In addition, auditor judgment was required to evaluate the sufficiency of audit evidence obtained. The assessment of the collectively evaluated ALL and the AUCC encompassed the evaluation of the methodology to determine the estimates, including certain key assumptions such as the loss emergence period and historical observation periods used in the quantitative loss estimate, and qualitative factors to capture risks not captured by the quantitative model, the most notable being the impact of economic conditions and large loan concentrations. Additionally, auditor judgment, and knowledge and experience in the industry was required to evaluate credit risk ratings.

The following are the primary procedures we performed to address this critical audit matter. We tested certain internal controls over the Company's collectively evaluated ALL and AUCC process, including controls over the (1) periodic review, and approval of the collectively evaluated ALL and AUCC methodology, (2) determination of key assumptions, (3) determination of qualitative factors, and (4) determination of loan grades. In addition, we involved credit risk professionals with specialized skills and knowledge, who assisted in:

- evaluating that the Company's methodology is sufficiently structured, transparent, and repeatable for compliance with U.S. generally accepted accounting principles,
- evaluating the methodology used to determine the loss emergence and historical observation periods used in the quantitative loss estimate,
- evaluating the methodology used to determine the qualitative factors and the effect of those factors on the collectively evaluated ALL and AUCC compared with relevant credit risk factors and consistency with credit trends, and
- testing individual loan grades for a selection of commercial loans by evaluating the financial performance of the borrower and underlying collateral, as applicable.

We evaluated the collective results of the procedures performed to assess the sufficiency of the audit evidence obtained related to the collectively evaluated ALL and AUCC.

/s/ KPMG LLP

We have served as the Company's auditor since 1994.

San Francisco, California
February 28, 2020

SVB FINANCIAL GROUP AND SUBSIDIARIES
CONSOLIDATED BALANCE SHEETS

(Dollars in thousands, except par value and share data)	December 31,	
	2019	2018
Assets		
Cash and cash equivalents	\$ 6,781,783	\$ 3,571,539
Available-for-sale securities, at fair value (cost of \$13,894,348 and \$7,862,311, respectively)	14,014,919	7,790,043
Held-to-maturity securities, at cost (fair value of \$14,115,272 and \$15,188,236, respectively)	13,842,946	15,487,442
Non-marketable and other equity securities	1,213,829	941,104
Total investment securities	29,071,694	24,218,589
Loans, net of unearned income	33,164,636	28,338,280
Allowance for loan losses	(304,924)	(280,903)
Net loans	32,859,712	28,057,377
Premises and equipment, net of accumulated depreciation and amortization	161,876	129,213
Goodwill	137,823	—
Other intangible assets, net	49,417	—
Lease right-of-use assets	197,365	—
Accrued interest receivable and other assets	1,745,233	951,261
Total assets	\$ 71,004,903	\$ 56,927,979
Liabilities and total equity		
Liabilities:		
Noninterest-bearing demand deposits	\$ 40,841,570	\$ 39,103,422
Interest-bearing deposits	20,916,237	10,225,478
Total deposits	61,757,807	49,328,900
Short-term borrowings	17,430	631,412
Lease liabilities	218,847	—
Other liabilities	2,041,752	1,006,359
Long-term debt	347,987	696,465
Total liabilities	64,383,823	51,663,136
Commitments and contingencies (Note 22 and Note 28)		
SVBFG stockholders' equity:		
Preferred stock, \$0.001 par value, 20,000,000 shares authorized; 350,000 shares and no shares issued and outstanding, respectively	340,138	—
Common stock, \$0.001 par value, 150,000,000 shares authorized; 51,655,607 shares and 52,586,498 shares issued and outstanding, respectively	52	53
Additional paid-in capital	1,470,071	1,378,438
Retained earnings	4,575,601	3,791,838
Accumulated other comprehensive income (loss)	84,445	(54,120)
Total SVBFG stockholders' equity	6,470,307	5,116,209
Noncontrolling interests	150,773	148,634
Total equity	6,621,080	5,264,843
Total liabilities and total equity	\$ 71,004,903	\$ 56,927,979

See accompanying notes to the consolidated financial statements.

SVB FINANCIAL GROUP AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF INCOME

(Dollars in thousands, except per share amounts)	Year ended December 31,		
	2019	2018	2017
Interest income:			
Loans	\$ 1,599,165	\$ 1,358,480	\$ 1,025,788
Investment securities:			
Taxable	568,851	541,605	412,133
Non-taxable	44,952	34,616	5,714
Federal funds sold, securities purchased under agreements to resell and other short-term investment securities	96,440	35,208	21,505
Total interest income	2,309,408	1,969,909	1,465,140
Interest expense:			
Deposits	177,672	29,306	8,676
Borrowings	35,135	46,615	36,095
Total interest expense	212,807	75,921	44,771
Net interest income	2,096,601	1,893,988	1,420,369
Provision for credit losses	106,416	87,870	92,304
Net interest income after provision for credit losses	1,990,185	1,806,118	1,328,065
Noninterest income:			
Gains on investment securities, net	134,670	88,094	64,603
Gains on equity warrant assets, net	138,078	89,142	54,555
Client investment fees	182,068	130,360	56,136
Foreign exchange fees	159,262	138,812	115,760
Credit card fees	118,719	94,072	76,543
Deposit service charges	89,200	76,097	58,715
Lending related fees	49,920	41,949	43,265
Letters of credit and standby letters of credit fees	42,669	34,600	28,544
Investment banking revenue	195,177	—	—
Commissions	56,346	—	—
Other	55,370	51,858	59,110
Total noninterest income	1,221,479	744,984	557,231
Noninterest expense:			
Compensation and benefits	989,734	726,980	606,402
Professional services	205,479	158,835	121,935
Premises and equipment	96,770	77,918	71,753
Net occupancy	69,279	54,753	48,397
Business development and travel	68,912	48,180	41,978
FDIC and state assessments	18,509	34,276	35,069
Other	152,579	87,251	85,121
Total noninterest expense	1,601,262	1,188,193	1,010,655
Income before income tax expense	1,610,402	1,362,909	874,641
Income tax expense	425,685	351,561	355,463
Net income before noncontrolling interests	1,184,717	1,011,348	519,178
Net income attributable to noncontrolling interests	(47,861)	(37,508)	(28,672)
Net income available to common stockholders	\$ 1,136,856	\$ 973,840	\$ 490,506
Earnings per common share—basic	\$ 21.90	\$ 18.35	\$ 9.33
Earnings per common share—diluted	21.73	18.11	9.20

See accompanying notes to the consolidated financial statements.

SVB FINANCIAL GROUP AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME

(Dollars in thousands)	Year ended December 31,		
	2019	2018	2017
Net income before noncontrolling interests	\$ 1,184,717	\$ 1,011,348	\$ 519,178
Other comprehensive income (loss), net of tax:			
Change in foreign currency cumulative translation gains and losses:			
Foreign currency translation gains (losses)	3,208	(5,999)	6,355
Related tax (expense) benefit	(889)	1,669	(2,587)
Change in unrealized gains and losses on available-for-sale securities:			
Unrealized holding gains (losses)	189,813	(22,348)	(47,161)
Related tax (expense) benefit	(52,697)	6,315	19,282
Reclassification adjustment for losses included in net income	3,905	740	5,189
Related tax benefit	(1,087)	(205)	(2,098)
Reclassification of unrealized gains on equity securities to retained earnings for ASU 2016-01	—	(40,316)	—
Related tax expense	—	11,145	—
Amortization of unrealized gains on securities transferred from available-for-sale to held-to-maturity	(2,158)	(4,607)	(6,475)
Related tax benefit	600	1,277	2,593
Reclassification of stranded tax effect to retained earnings for ASU 2018-02	—	(319)	—
Change in unrealized gains and losses on cash flow hedges:			
Unrealized losses	(8,305)	—	—
Related tax benefit	2,306	—	—
Reclassification adjustment for losses included in net income	5,358	—	—
Related tax benefit	(1,489)	—	—
Other comprehensive income (loss), net of tax	138,565	(52,648)	(24,902)
Comprehensive income	1,323,282	958,700	494,276
Comprehensive income attributable to noncontrolling interests	(47,861)	(37,508)	(28,672)
Comprehensive income attributable to SVBFG	<u>\$ 1,275,421</u>	<u>\$ 921,192</u>	<u>\$ 465,604</u>

See accompanying notes to the consolidated financial statements.

SVB FINANCIAL GROUP AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY

(Dollars in thousands, except share data)	Preferred Stock	Common Stock		Additional Paid-in Capital	Retained Earnings	Accumulated Other Comprehensive Income (Loss)	Total SVBFG Stockholders' Equity	Noncontrolling Interests	Total Equity
		Shares	Amount						
Balance at December 31, 2016	\$ —	52,254,074	\$ 52	\$ 1,242,741	\$ 2,376,331	\$ 23,430	\$ 3,642,554	\$ 134,483	\$ 3,777,037
Common stock issued under employee benefit plans, net of restricted stock cancellations	—	570,276	1	24,908	—	—	24,909	—	24,909
Common stock issued under ESOP	—	10,838	—	2,094	—	—	2,094	—	2,094
Net income	—	—	—	—	490,506	—	490,506	28,672	519,178
Capital calls and distributions, net	—	—	—	—	—	—	—	(23,535)	(23,535)
Net change in unrealized gains and losses on AFS securities, net of tax	—	—	—	—	—	(24,788)	(24,788)	—	(24,788)
Amortization of unrealized gains on securities transferred from AFS to HTM, net of tax	—	—	—	—	—	(3,882)	(3,882)	—	(3,882)
Foreign currency translation adjustments, net of tax	—	—	—	—	—	3,768	3,768	—	3,768
Share-based compensation, net	—	—	—	44,634	—	—	44,634	—	44,634
Balance at December 31, 2017	\$ —	52,835,188	\$ 53	\$ 1,314,377	\$ 2,866,837	\$ (1,472)	\$ 4,179,795	\$ 139,620	\$ 4,319,415
Cumulative adjustment for ASU 2014-09, net of tax	—	—	—	—	(5,802)	—	(5,802)	—	(5,802)
Cumulative adjustment for ASU 2016-01, net of tax	—	—	—	—	103,766	(29,171)	74,595	—	74,595
Reclassification of stranded tax effect for ASU 2018-02	—	—	—	—	319	(319)	—	—	—
Common stock issued under employee benefit plans, net of restricted stock cancellations	—	456,845	1	15,809	—	—	15,810	—	15,810
Common stock issued under ESOP	—	9,672	—	2,577	—	—	2,577	—	2,577
Net income	—	—	—	—	973,840	—	973,840	37,508	1,011,348
Capital calls and distributions, net	—	—	—	—	—	—	—	(28,494)	(28,494)
Net change in unrealized gains and losses on AFS securities, net of tax	—	—	—	—	—	(15,498)	(15,498)	—	(15,498)
Amortization of unrealized gains on securities transferred from AFS to HTM, net of tax	—	—	—	—	—	(3,330)	(3,330)	—	(3,330)
Foreign currency translation adjustments, net of tax	—	—	—	—	—	(4,330)	(4,330)	—	(4,330)
Share-based compensation, net	—	—	—	45,675	—	—	45,675	—	45,675
Common stock repurchases	—	(715,207)	(1)	—	(147,122)	—	(147,123)	—	(147,123)
Balance at December 31, 2018	\$ —	52,586,498	\$ 53	\$ 1,378,438	\$ 3,791,838	\$ (54,120)	\$ 5,116,209	\$ 148,634	\$ 5,264,843
Cumulative adjustment for the adoption of premium amortization on purchased callable debt securities (ASU 2017-08) (1)	—	—	—	—	(583)	—	(583)	—	(583)
Acquisition of SVB Leerink	—	—	—	—	—	—	—	5,256	5,256
Common stock issued under employee benefit plans, net of restricted stock cancellations	—	586,877	—	21,312	—	—	21,312	—	21,312
Common stock issued under ESOP	—	14,442	—	3,506	—	—	3,506	—	3,506
Issuance of Series A Preferred Stock	340,138	—	—	—	—	—	340,138	—	340,138
Net income	—	—	—	—	1,136,856	—	1,136,856	47,861	1,184,717
Capital calls and distributions, net	—	—	—	—	—	—	—	(50,978)	(50,978)
Net change in unrealized gains and losses on AFS securities, net of tax	—	—	—	—	—	139,934	139,934	—	139,934
Amortization of unrealized gains on securities transferred from AFS to HTM, net of tax	—	—	—	—	—	(1,558)	(1,558)	—	(1,558)
Foreign currency translation adjustments, net of tax	—	—	—	—	—	2,319	2,319	—	2,319
Net change in unrealized gains and losses on cash flow hedges, net of tax	—	—	—	—	—	(2,130)	(2,130)	—	(2,130)
Share-based compensation, net	—	—	—	66,815	—	—	66,815	—	66,815
Common stock repurchases	—	(1,532,210)	(1)	—	(352,510)	—	(352,511)	—	(352,511)
Balance at December 31, 2019	\$ 340,138	51,655,607	\$ 52	\$ 1,470,071	\$ 4,575,601	\$ 84,445	\$ 6,470,307	\$ 150,773	\$ 6,621,080

(1) See Note 2- "Summary of Significant Accounting Policies" of the "Notes to Consolidated Financial Statements" under Part II, Item 8 of this report for additional details.

See accompanying notes to the consolidated financial statements.

SVB FINANCIAL GROUP AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF CASH FLOWS

(Dollars in thousands)	Year ended December 31,		
	2019	2018	2017
Cash flows from operating activities:			
Net income before noncontrolling interests	\$ 1,184,717	\$ 1,011,348	\$ 519,178
Adjustments to reconcile net income to net cash provided by operating activities:			
Provision for credit losses	106,416	87,870	92,304
Change in fair value of equity warrant assets, net of proceeds from exercises	2,240	(24,417)	(11,862)
Changes in fair values of derivatives, net	(18,506)	(11,043)	14,261
Gains on investment securities, net	(134,670)	(88,094)	(45,547)
Distributions of earnings from non-marketable and other equity securities	95,131	72,015	45,867
Depreciation and amortization	82,717	57,906	56,123
Amortization of premiums and discounts on investment securities, net	15,513	(28)	2,530
Amortization of share-based compensation	66,815	45,675	36,900
Amortization of deferred loan fees	(155,429)	(128,077)	(111,738)
Deferred income tax (benefit) expense	(3,072)	(21,061)	25,187
Excess tax benefit from exercise of stock options and vesting of restricted shares	(9,588)	(17,989)	(18,014)
Losses from the write-off of premises and equipment	5,219	7,278	—
Other losses (gains)	8,959	—	(3,308)
Changes in other assets and liabilities:			
Accrued interest receivable and payable, net	(24,189)	(55,834)	(31,372)
Accounts receivable and payable, net	(17,019)	(23,020)	3,481
Income tax receivable and payable, net	(11,630)	(5,820)	46,168
Accrued compensation	(15,253)	56,874	31,689
Foreign exchange spot contracts, net	59,998	24,018	(20,891)
Other, net	(74,240)	(54,039)	15,909
Net cash provided by operating activities	1,164,129	933,562	646,865
Cash flows from investing activities:			
Purchases of available-for-sale securities	(9,872,095)	(668,264)	(2,420,741)
Proceeds from sales of available-for-sale securities	2,189,087	474,482	580,871
Proceeds from maturities and paydowns of available-for-sale securities	1,643,357	3,436,064	3,339,574
Purchases of held-to-maturity securities	(492,502)	(4,726,595)	(5,967,223)
Proceeds from maturities and paydowns of held-to-maturity securities	2,124,513	1,891,761	1,708,001
Purchases of non-marketable and other equity securities	(136,186)	(81,574)	(44,047)
Proceeds from sales and distributions of capital of non-marketable and other equity securities	113,526	95,025	51,052
Net increase in loans	(4,773,775)	(5,175,409)	(3,170,099)
Purchases of premises and equipment	(65,479)	(45,865)	(50,884)
Proceeds from sale of equity valuation services business	—	—	3,000
Acquisition of SVB Leerink	(102,328)	—	—
Net cash used for investing activities	(9,371,882)	(4,800,375)	(5,970,496)
Cash flows from financing activities:			
Net increase in deposits	12,428,907	5,074,825	5,274,207
Net (decrease) increase in short-term borrowings	(613,982)	(402,318)	521,062
Principal payments of long-term debt	(358,395)	—	(97,781)
(Distributions to noncontrolling interests), net of contributions from noncontrolling interests	(50,978)	(28,494)	(23,535)
Net proceeds from the issuance of preferred stock	340,138	—	—
Common stock repurchase	(352,511)	(147,123)	—
Proceeds from issuance of common stock, ESPP and ESOP	24,818	18,387	27,003
Net cash provided by financing activities	11,417,997	4,515,277	5,700,956
Net increase in cash and cash equivalents	3,210,244	648,464	377,325
Cash and cash equivalents at beginning of period	3,571,539	2,923,075	2,545,750
Cash and cash equivalents at end of period	\$ 6,781,783	\$ 3,571,539	\$ 2,923,075
Supplemental disclosures:			

Cash paid during the period for:					
Interest	\$	217,961	\$	75,601	\$ 45,592
Income taxes		422,346		376,425	277,823
Noncash items during the period:					
Changes in unrealized gains and losses on available-for-sale securities, net of tax	\$	139,934	\$	(15,498)	\$ (24,788)
Distributions of stock from investments		8,917		5,277	6,807

See accompanying notes to the consolidated financial statements.

SVB FINANCIAL GROUP AND SUBSIDIARIES

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

1. Nature of Business

SVB Financial Group is a diversified financial services company, as well as a bank holding company and a financial holding company. SVB Financial was incorporated in the state of Delaware in March 1999. Through our various subsidiaries and divisions, we offer a diverse set of banking and financial products and services to support our clients of all sizes and stages throughout their life cycles. In these notes to our consolidated financial statements, when we refer to "SVB Financial Group," "SVBFG," the "Company," "we," "our," "us" or use similar words, we mean SVB Financial Group and all of its subsidiaries collectively, including Silicon Valley Bank (the "Bank"), unless the context requires otherwise. When we refer to "SVB Financial" or the "Parent" we are referring only to the parent company entity, SVB Financial Group (not including subsidiaries).

We offer commercial banking products and services through our principal subsidiary, the Bank, which is a California-chartered bank founded in 1983 and a member of the Federal Reserve System. Through its subsidiaries, the Bank also offers asset management, private wealth management and other investment services. In addition, through SVB Financial's other subsidiaries and divisions, we offer investment banking and non-banking products and services, such as funds management and M&A advisory services. We primarily focus on serving corporate clients in the following niches: technology, life science/healthcare, private equity/venture capital and premium wine. Our corporate clients range widely in terms of size and stage of maturity. Additionally, we focus on cultivating strong relationships with firms within the venture capital and private equity community worldwide, many of which are also our clients and may invest in our corporate clients.

Headquartered in Santa Clara, California, we operate in centers of innovation in the United States and around the world.

For reporting purposes, SVB Financial Group has four operating segments for which we report financial information in this report: Global Commercial Bank, SVB Private Bank, SVB Capital and SVB Leerink. Financial information, results of operations and a description of the services provided by our operating segments are set forth in Note 25—"Segment Reporting" of the "Notes to the Consolidated Financial Statements" under Part II, Item 8 of this report.

2. Summary of Significant Accounting Policies

Use of Estimates and Assumptions

The preparation of consolidated financial statements in conformity with GAAP requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities, the disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates. Estimates may change as new information is obtained. Significant items that are subject to such estimates include measurements of fair value, the valuation of non-marketable and other equity securities, the valuation of equity warrant assets and the adequacy of the allowance for loan losses and the allowance for unfunded credit commitments. The following discussion provides additional background on our significant accounting policies.

Principles of Consolidation and Presentation

Our consolidated financial statements include the accounts of SVB Financial Group and consolidated entities. We consolidate voting entities in which we have control through voting interests or entities through which we have a controlling financial interest in a variable interest entity ("VIE"). We determine whether we have a controlling financial interest in a VIE by determining if we have (a) the power to direct the activities of the VIE that most significantly impact the entity's economic performance, (b) the obligation to absorb the expected losses or (c) the right to receive the expected returns of the entity. Generally, we have significant variable interests if our commitments to a limited partnership investment represent a significant amount of the total commitments to the entity. We also evaluate the impact of related parties on our determination of variable interests in our consolidation conclusions. We consolidate VIEs in which we are the primary beneficiary based on a controlling financial interest. If we are not the primary beneficiary of a VIE, we record our pro-rata interests based on our ownership percentage.

VIEs are entities where investors lack sufficient equity at risk for the entity to finance its activities without additional subordinated financial support or equity investors and, as a group, lack one of the following characteristics: (a) the power to direct the activities that most significantly impact the entity's economic performance, (b) the obligation to absorb the expected losses of the entity or (c) the right to receive the expected returns of the entity. We assess VIEs to determine if we are the primary beneficiary of a VIE. A primary beneficiary is defined as a variable interest holder that has a controlling financial interest. A controlling financial interest requires both: (a) the power to direct the activities that most significantly impact the VIEs economic performance, and (b) the obligation to absorb losses or receive benefits of a VIE that could potentially be significant to a VIE. Under this analysis, we also evaluate kick-out rights and other participating rights, which could provide us a controlling financial interest. The primary beneficiary of a VIE is required to consolidate the VIE.

SVB FINANCIAL GROUP AND SUBSIDIARIES
NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS - (Continued)

We also evaluate fees paid to managers of our limited partnership investments. We exclude those fee arrangements that are not deemed to be variable interests from the analysis of our interests in our investments in VIEs and the determination of a primary beneficiary, if any. Fee arrangements based on terms that are customary and commensurate with the services provided are deemed not to be variable interests and are, therefore, excluded.

All significant intercompany accounts and transactions with consolidated entities have been eliminated. We have not provided financial or other support during the periods presented to any VIE that we were not previously contractually required to provide.

Cash and Cash Equivalents

Cash and cash equivalents consist of cash on hand, cash balances due from banks, interest-earning deposits, Federal Reserve deposits, federal funds sold, securities purchased under agreements to resell and other short-term investment securities. For the consolidated statements of cash flows, we consider cash equivalents to be investments that are readily convertible to known amounts of cash, so near to their maturity that they present an insignificant risk of change in fair value due to changes in market interest rates, and purchased in conjunction with our cash management activities.

Investment Securities

Available-for-Sale Securities

Our available-for-sale securities portfolio is a fixed income investment portfolio that is managed to earn an appropriate portfolio yield over the long-term while maintaining sufficient liquidity and credit diversification and meeting our asset/liability management objectives. Unrealized gains and losses on available-for-sale securities, net of applicable taxes, are reported in accumulated other comprehensive income, which is a separate component of SVBFG's stockholders' equity, until realized.

We analyze available-for-sale securities for other-than-temporary impairment each quarter. Market valuations represent the current fair value of a security at a specified point in time and incorporates the risk of timing of interest due and the return of principal over the contractual life of each security. Gains and losses on securities are realized when there is a sale of the security prior to maturity. A credit downgrade represents an increased level of risk of other-than-temporary impairment, and as a part of our consideration of recording an other-than-temporary impairment we will assess the issuer's ability to service the debt and to repay the principal at contractual maturity.

We apply the other-than-temporary impairment standards of ASC 320, *Investments-Debt and Equity Securities*. For our debt securities, we have the intent and ability to hold these securities until we recover our cost less any credit-related loss. We separate the amount of the other-than-temporary impairment, if any, into the amount that is credit related (credit loss component) and the amount due to all other factors. The credit loss component is recognized in earnings and is the difference between a security's amortized cost basis and the present value of expected future cash flows discounted at the security's effective interest rate. The amount due to all other factors is recognized in other comprehensive income.

We consider numerous factors in determining whether a credit loss exists and the period over which the debt security is expected to recover. The following list is not meant to be all inclusive. All of the following factors are considered:

- The length of time and the extent to which the fair value has been less than the amortized cost basis (severity and duration);
- Adverse conditions specifically related to the security, an industry or geographic area; for example, changes in the financial condition of the issuer of the security, or in the case of an asset-backed debt security, changes in the financial condition of the underlying loan obligors. Examples of those changes include any of the following:
 - Changes in technology;
 - The discontinuance of a segment of the business that may affect the future earnings potential of the issuer or underlying loan obligors of the security; and
 - Changes in the quality of the credit enhancement.
- The historical and implied volatility of the fair value of the security;
- The payment structure of the debt security and the likelihood of the issuer being able to make payments that increase in the future;
- Failure of the issuer of the security to make scheduled interest or principal payments;

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- Any changes to the rating of the security by a rating agency; and
- Recoveries or additional declines in fair value after the balance sheet date.

In accordance with ASC 310-20, *Receivables-Nonrefundable Fees and Other Costs*, we use estimates of future principal prepayments, provided by third-party market-data vendors, in addition to actual principal prepayment experience to calculate the constant effective yield necessary to apply the effective interest method in the amortization of purchase discounts or premiums on mortgage-backed securities and fixed rate collateralized mortgage obligations. The accretion and amortization of discounts and premiums, respectively, are included in interest income over the contractual terms of the underlying securities replicating the effective interest method.

Held-to-Maturity Securities

Debt securities purchased in which we have the positive intent and ability to hold to its maturity are classified as held-to-maturity securities and are recorded at amortized cost.

Transfers of investment securities into the held-to-maturity category from the available-for-sale category are made at fair value at the date of transfer. The net unrealized gains, net of tax, are retained in other comprehensive income, and the carrying value of the held-to-maturity securities are amortized over the life of the securities in a manner consistent with the amortization of a premium or discount.

Non-Marketable and Other Equity Securities

Non-marketable and other equity securities include investments in venture capital and private equity funds, SPD-SVB, debt funds, private and public portfolio companies, including public equity securities held as a result of equity warrant assets exercised, and investments in qualified affordable housing projects. A majority of these investments are managed through our SVB Capital funds business in funds of funds and direct venture funds. Our accounting for investments in non-marketable and other equity securities depends on several factors, including the level of ownership, power to control and the legal structure of the subsidiary making the investment. As further described below, we base our accounting for such securities on: (i) fair value accounting, (ii) other investments without a readily determinable fair value, (iii) equity method accounting and (iv) the proportional amortization method which is used only for qualified affordable housing projects.

Fair Value Accounting

Our managed funds are investment companies under the AICPA Audit and Accounting Guide for Investment Companies (codified in ASC 946) and accordingly, these funds report their investments at estimated fair value, with unrealized gains and losses resulting from changes in fair value reflected as investment gains or losses in our consolidated statements of income. Our non-marketable and other equity securities recorded pursuant to fair value accounting consist of our investments through the following funds:

- Funds of funds, which make investments in venture capital and private equity funds, and
- Direct venture funds, which make equity investments in privately held companies.

A summary of our ownership interests in the investments held under fair value accounting as of December 31, 2019 is presented in the following table:

Limited partnership	Company Direct and Indirect Ownership in Limited Partnership
<u>Managed funds of funds</u>	
Strategic Investors Fund, LP	12.6%
Capital Preferred Return Fund, LP	20.0
Growth Partners, LP	33.0
<u>Managed direct venture funds</u>	
CP I, LP	10.7

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The general partner interests of these funds are controlled, and in some cases, owned by SVB Financial. The limited partners of these funds do not have substantive participating or kick-out rights. Therefore, these funds are consolidated and any gains or losses resulting from changes in the estimated fair value of the investments are recorded as investment gains or losses in our consolidated net income.

Under fair value accounting, investments are carried at their estimated fair value based on financial information obtained as the general partner of the fund or obtained from the funds' respective general partner. For direct private company investments, valuations are based upon consideration of a range of factors including, but not limited to, the price at which the investment was acquired, the term and nature of the investment, local market conditions, values for comparable securities, current and projected operating performance, exit strategies and financing transactions subsequent to the acquisition of the investment. For direct equity investments in public companies, valuations are based on quoted market prices less a discount if the securities are subject to certain sales restrictions. Sales restriction discounts generally range from ten percent to twenty percent depending on the sale restrictions which typically range from three to six months. The valuation of non-marketable securities in shares of private company capital stock and the valuation of other securities in shares of public company stock with certain sales restrictions is subject to significant judgment. The inherent uncertainty in the process of valuing securities for which a ready market does not exist may cause our estimated values of these securities to differ significantly from the values that would have been derived had a ready market for the securities existed, and those differences could be material.

For our fund investments, we utilize the net asset value as obtained from the general partners of the fund investments as the funds do not have a readily determinable fair value. The general partners of our fund investments prepare their financial statements using guidance consistent with fair value accounting. We account for differences between our measurement date and the date of the fund investment's net asset value by using the most recent available financial information from the investee general partner, for example September 30th, for our December 31st consolidated financial statements. We adjust the value of our investments for any contributions paid, distributions received from the investment and known significant fund transactions or market events about which we are aware through information provided by the fund managers or from publicly available transaction data during the reporting period.

Gains or losses resulting from changes in the estimated fair value of the investments and from distributions received are recorded as gains on investment securities, net, a component of noninterest income. The portion of any investment gains or losses attributable to the limited partners is reflected as net income attributable to noncontrolling interests and adjusts our net income to reflect its percentage ownership.

Other Investments without a Readily Determinable Fair Value

Effective January 1, 2018 we adopted ASU 2016-01 Recognition and Measurement of Financial Assets and Financial Liabilities which eliminated the concept of cost method accounting and created an additional method of accounting, other investments without a readily determinable fair value. These investments include direct equity investments in private companies. The carrying value is based on the price at which the investment was acquired less any impairment, if any, plus or minus changes resulting from observable price changes in orderly transactions for identical or similar investments. We consider a range of factors when adjusting the fair value of these investments, including, but not limited to, the term and nature of the investment, local market conditions, values for comparable securities, current and projected operating performance, exit strategies, financing transactions subsequent to the acquisition of the investment and a discount for certain investments that have lock-up restrictions or other features that indicate a discount to fair value is warranted.

Equity Method

Our equity method non-marketable securities consist of investments in venture capital and private equity funds, privately-held companies, debt funds, and joint ventures. Our equity method non-marketable securities and related accounting policies are described as follows:

- Equity securities, such as preferred or common stock in privately-held companies in which we hold a voting interest of at least 20 percent, or in which we have the ability to exercise significant influence over the investees' operating and financial policies through board involvement or other influence, are accounted for under the equity method,
- Investments in limited partnerships in which we hold voting interests of more than 5 percent, or in which we have the ability to exercise significant influence over the partnerships' operating and financial policies, are accounted for using the equity method, and

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- Our China Joint Venture partnership, for which we have 50 percent ownership, is accounted for under the equity method.

We recognize our proportionate share of the results of operations of these equity method investees in our results of operations, based on the most current financial information available from the investee. We review our investments accounted for under the equity method at least quarterly for possible other-than-temporary impairment. Our review typically includes an analysis of facts and circumstances for each investment, the expectations of the investment's future cash flows and capital needs, variability of its business and the company's exit strategy. For our fund investments, we utilize the net asset value per share as provided by the general partners of the fund investments. We account for differences between our measurement date and the date of the fund investment's net asset value by using the most recent available financial information from the investee general partner, for example September 30th, for our December 31st consolidated financial statements. We adjust the value of our investments for any contributions paid, distributions received from the investment, and known significant fund transactions or market events about which we are aware through information provided by the fund managers or from publicly available transaction data during the reporting period.

We reduce our investment value when we consider declines in value to be other-than-temporary and recognize the estimated loss as a loss on investment securities, a component of noninterest income.

Proportional Amortization Method

In order to fulfill our responsibilities under the Community Reinvestment Act, we invest as a limited partner in low income housing partnerships that operate qualified affordable housing projects and generate tax benefits, including federal low income housing tax credits, for investors. The partnerships are deemed to be VIEs because they do not have sufficient equity investment at risk and are structured with non-substantive voting rights. We are not the primary beneficiary of the VIEs and do not consolidate them. Our investments in low income housing partnerships are recorded in non-marketable and other equity securities within our investment securities portfolio on the consolidated balance sheet. As a practical expedient, we amortize the investment in proportion to the allocated tax benefits under the proportional amortization method of accounting and present such benefits net of investment amortization in income tax expense.

Loans

Loans are reported at the principal amount outstanding, net of unearned loan fees. Unearned loan fees reflect unamortized deferred loan origination and commitment fees net of unamortized deferred loan origination costs. In addition to cash loan fees, we often obtain equity warrant assets that give us an option to purchase a position in a client company's stock in consideration for providing credit facilities. The grant date fair values of these equity warrant assets are deemed to be loan fees and are deferred as unearned income and recognized as an adjustment of loan yield through loan interest income. The net amount of unearned loan fees is amortized into loan interest income over the contractual terms of the underlying loans and commitments using the constant effective yield method, adjusted for actual loan prepayment experience, or the straight-line method, as applicable.

Allowance for Loan Losses

The allowance for loan losses considers credit risk and is established through a provision for loan losses charged to expense. Our allowance for loan losses is established for estimated loan losses that are probable and incurred but not yet realized. Our evaluation process is designed to determine that the allowance for loan losses is appropriate at the balance sheet date. The process of estimating loan losses is inherently imprecise.

We maintain a systematic process for the evaluation of individual loans and pools of loans for inherent risk of loan losses. At the time of approval, each loan in our portfolio is assigned a Credit Risk Rating and industry niche. Credit Risk Ratings are assigned on a scale of 1 to 10, with 1 representing loans with a low risk of nonpayment, 9 representing loans with the highest risk of nonpayment, and 10 representing loans which have been charged-off. The credit risk ratings for each loan are monitored and updated on an ongoing basis. This Credit Risk Rating process includes, but is not limited to, consideration of such factors as payment status, the financial condition and operating performance of the borrower, borrower compliance with loan covenants, underlying collateral values and performance trends, the degree of access to additional capital, the presence of credit enhancements such as third party guarantees (where applicable), the degree to which the borrower is sensitive to external factors, the depth and experience of the borrower's management team, potential loan concentrations, and general economic conditions. Our policies require a committee of senior management to review, at least quarterly, credit relationships with a credit risk rating of 5 through 9 that exceed specific dollar values. Our review process evaluates the appropriateness of the credit risk rating and allocation of the allowance for loan losses, as well as other account management functions. The allowance for loan losses is determined based on a qualitative analysis and a formula allocation for similarly risk-rated loans by portfolio segment and

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individually for impaired loans. The formula allocation provides the average loan loss experience for each portfolio segment, which considers our quarterly historical loss experience since the year 2000, both by risk-rating category and client industry sector. The resulting loan loss factors for each risk-rating category and client industry sector are ultimately applied to the respective period-end client loan balances for each corresponding risk-rating category by client industry sector to provide an estimation of the allowance for loan losses. The probable loan loss experience for any one year period of time is reasonably expected to be greater or less than the average as determined by the loss factors. As such, management applies a qualitative allocation to the results of the aforementioned model to ascertain the total allowance for loan losses. This qualitative allocation is based on management's assessment of the risks that may lead to a loan loss experience different from our historical loan loss experience. Based on management's prediction or estimate of changing risks in the lending environment, the qualitative allocation may vary significantly from period to period and includes, but is not limited to, consideration of the following factors:

- Changes in lending policies and procedures, including underwriting standards and collections, and charge-off and recovery practices;
- Changes in national and local economic business conditions, including the market and economic condition of our clients' industry sectors;
- Changes in the nature of our loan portfolio;
- Changes in experience, ability, and depth of lending management and staff;
- Changes in the trend of the volume and severity of past due and classified loans;
- Changes in the trend of the volume of nonaccrual loans, troubled debt restructurings and other loan modifications;
- Reserve floor for portfolio segments that would not draw a minimum reserve based on the lack of historical loan loss experience;
- Reserve for large funded loan exposure;
- Reserve for performing impaired loan exposure; and
- Other factors as determined by management from time to time.

While the evaluation process of our allowance for loan losses uses historical and other objective information, the classification of loans and the establishment of the allowance for loan losses rely, to a great extent, on the judgment and experience of our management.

Allowance for Unfunded Credit Commitments

We record a liability for probable and estimable incurred losses associated with our unfunded credit commitments being funded and subsequently being charged off. Each quarter, every unfunded client credit commitment is allocated to a credit risk-rating in accordance with each client's credit risk rating and portfolio segment. We use the segment specific historical loan loss factors described under our allowance for loan losses to calculate the loan loss experience if unfunded credit commitments are funded. Separately, we use historical trends to calculate a probability of an unfunded credit commitment being funded. We apply the loan funding probability factor to risk-factor adjusted unfunded credit commitments by credit risk-rating and portfolio segment to derive the allowance for unfunded credit commitments, similar to funded loans. The allowance for unfunded credit commitments also includes certain qualitative allocations as deemed appropriate by management. We include the allowance for unfunded credit commitments in other liabilities and the related provision in our provision for credit losses.

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Uncollectible Loans and Write-offs

Our charge-off policy applies to all loans, regardless of portfolio segment. Commercial loans are considered for a full or partial charge-off in the event that principal or interest is over 180 days past due and the loan lacks sufficient collateral and it is not in the process of collection, provided that a loss event has been defined and the charge-off is consistent with GAAP. Consumer loans are considered for a full or partial charge-off in the event that principal or interest is over 120 days past due and the loan lacks sufficient collateral and it is not in the process of collection, provided that a loss event has been defined and the charge-off is consistent with GAAP. We also consider writing off loans in the event of any of the following circumstances: 1) the loan, or a portion of the loan is deemed uncollectible due to: a) the borrower's inability to make recurring payments, b) material changes in the borrower's financial condition, or c) the expected sale of all or a portion of the borrower's business is insufficient to repay the loan in full, or 2) the loan has been identified for charge-off by regulatory authorities.

Troubled Debt Restructurings

A TDR arises from the modification of a loan where we have granted a concession to the borrower related to the borrower's financial difficulties that we would not have otherwise considered for economic or legal reasons. These concessions may include: (1) deferral of payment for more than an insignificant period of time that does not include sufficient offsetting borrower concessions; (2) interest rate reductions; (3) extension of the maturity date outside of ordinary course extension; (4) principal forgiveness; and/or (5) reduction of accrued interest.

We use the factors in ASC 310-40, *Receivables, Troubled Debt Restructurings by Creditors*, in analyzing when a borrower is experiencing financial difficulty, and when we have granted a concession, both of which must be present for a restructuring to meet the criteria of a TDR. If we determine that a TDR exists, we measure impairment based on the present value of expected future cash flows discounted at the loan's effective interest rate, except that as a practical expedient, we may also measure impairment based on a loan's observable market price, or the fair value of the collateral less selling costs if the loan is a collateral-dependent loan.

Impaired Loans

A loan is considered impaired when, based upon currently known information, it is deemed probable that we will be unable to collect all amounts due according to the contractual terms of the agreement. On a quarterly basis, we review our loan portfolio for impairment. Within each class of loans, we review individual loans for impairment based on credit risk ratings. Loans risk-rated 5 through 7 are performing loans; however, we consider them as demonstrating higher risk, which requires more frequent review of the individual exposures; these translate to an internal rating of "Performing (Criticized)" and could be classified as a performing impaired loan.

For each loan identified as impaired, we measure the impairment based upon the present value of expected future cash flows discounted at the loan's effective interest rate. In limited circumstances, we may measure impairment based on the loan's observable market price or the fair value of the collateral less selling costs if the loan is collateral dependent. Impaired collateral-dependent loans will have independent appraisals completed and accepted at least annually. The fair value of the collateral will be determined by the most recent appraisal, as adjusted to reflect a reasonable marketing period for the sale of the asset(s) and an estimate of reasonable selling expenses.

If it is determined that the value of an impaired loan is less than the recorded investment in the loan, net of previous charge-offs and payments collected, we recognize impairment through the allowance for loan losses as determined by our analysis.

Nonaccrual Loans

Loans are placed on nonaccrual status when they become 90 days past due as to principal or interest payments (unless the principal and interest are well secured and in the process of collection); or when we have determined, based upon currently known information, that the timely collection of principal or interest is not probable.

When a loan is placed on nonaccrual status, the accrued interest and fees are reversed against interest income and the loan is accounted for using the cost recovery method thereafter until qualifying for return to accrual status. For a loan to be returned to accrual status, all delinquent principal and interest must become current in accordance with the terms of the loan agreement and future collection of remaining principal and interest must be deemed probable. We apply a cost recovery method in which all cash received is applied to the loan principal until it has been collected. Under this approach, interest income is recognized after total cash flows received exceed the recorded investment at the date of initial nonaccrual. All of our nonaccrual loans have credit risk ratings of 8 or 9 and are classified under the nonperforming impaired category.

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Premises and Equipment

Premises and equipment are reported at cost less accumulated depreciation and amortization. Depreciation and amortization are computed using the straight-line method over the estimated useful lives of the assets or the terms of the related leases, whichever is shorter. The maximum estimated useful lives by asset classification are as follows:

Leasehold improvements	Lesser of lease term or asset life
Furniture and equipment	7 years
Computer software	3-7 years
Computer hardware	3-5 years

We capitalize the costs of computer software developed or obtained for internal use, including costs related to developed software, purchased software licenses and certain implementation costs.

For property and equipment that is retired or otherwise disposed of, the cost and related accumulated depreciation are removed from the accounts and the resulting gain or loss is included in noninterest expense in consolidated net income.

Lease Obligations

We have entered into leases for real estate and various equipment utilized for the business. At the inception of the lease, each lease is evaluated to determine whether the lease will be accounted for as an operating or finance lease. We had no finance lease obligations at December 31, 2019 and 2018. We have made an accounting policy election not to recognize right-of-use assets and lease liabilities that arise from short-term leases for any class of underlying asset. In addition to excluding short-term leases, we have implemented an accounting policy in which non-lease components are not separated from lease components in the measurement of right-of-use ("ROU") asset and lease liabilities for all lease contracts.

ROU assets represent our right to use an underlying asset for the lease term and lease liabilities represent our obligation to make lease payments arising from the lease. Operating lease ROU assets and liabilities are recognized at the commencement date based on the present value of lease payments over the lease term. As most of our leases do not provide an implicit rate, we use our incremental borrowing rate based on the information available at the commencement date in determining the present value of lease payments. We use the implicit rate when readily determinable. The operating lease ROU asset also includes any lease payments made and excludes lease incentives. Our lease terms may include options to extend or terminate the lease when it is reasonably certain that we will exercise that option. Lease expense for lease payments is recognized on a straight-line basis over the lease term.

Business Combinations

Business combinations are accounted for under the acquisition method of accounting. Acquired assets, including separately identifiable intangible assets, and assumed liabilities are recorded at their acquisition-date estimated fair values. The excess of the cost of acquisition over these fair values is recognized as goodwill. During the measurement period, which cannot exceed one year from the acquisition date, changes to estimated fair values are recognized as an adjustment to goodwill. Certain transaction costs are expensed as incurred.

Goodwill and Other Intangible Assets

Goodwill is not amortized and is subject, at a minimum, to an annual impairment assessment. A quantitative assessment will be completed if we have not recently completed a fair value assessment of the associated reporting unit and compared the assessed fair value of that reporting unit with its carrying amount, including goodwill. Should we be required to calculate the fair value of the entity, we would generally apply a discounted cash flow analysis that uses forecasted performance estimates, and a discount rate leveraging a reporting unit specific capital asset pricing model, which in turn uses assumptions related to market performance and various macroeconomic and reporting unit specific risks. If this quantitative assessment was recently completed and if we deem the estimate to be current and reliable, we will not perform a full quantitative assessment of the reporting unit's fair value for that reporting period. Instead, we will qualitatively determine whether it is more likely than not that the fair value of the reporting unit is less than its carrying amount, including goodwill. As part of this qualitative analysis we consider macroeconomic factors that might impact the entity's performance, entity-specific financial performance of the reporting unit, changes in management or strategy and other factors. We will evaluate goodwill for impairment more frequently if circumstances indicate that the fair value of our reporting units is less than their carrying value, including goodwill.

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Intangible assets with finite lives are amortized over their estimated useful lives and all intangible assets are subject to impairment if events or circumstances indicate that the fair value is less than the carrying amount.

Fair Value Measurements

Our available-for-sale securities, derivative instruments and certain non-marketable and other equity securities are financial instruments recorded at fair value on a recurring basis. We make estimates regarding valuation of assets and liabilities measured at fair value in preparing our consolidated financial statements.

Fair Value Measurement-Definition and Hierarchy

Fair value is defined as the price that would be received to sell an asset or paid to transfer a liability (the “exit price”) in an orderly transaction between market participants at the measurement date. There is a three-level hierarchy for disclosure of assets and liabilities recorded at fair value. The classification of assets and liabilities within the hierarchy is based on whether the inputs to the valuation methodology used for measurement are observable or unobservable and on the significance of those inputs in the fair value measurement. Observable inputs reflect market-derived or market-based information obtained from independent sources, while unobservable inputs reflect our estimates about market data and views of market participants. The three levels for measuring fair value are based on the reliability of inputs and are as follows:

Level 1

Fair value measurements based on quoted prices in active markets for identical assets or liabilities that we have the ability to access. Since valuations are based on quoted prices that are readily and regularly available in an active market, valuation of these instruments does not entail a significant degree of judgment. Assets utilizing Level 1 inputs include U.S. Treasury securities, foreign government debt securities, exchange-traded equity securities and certain marketable securities accounted for under fair value accounting.

Level 2

Fair value measurements based on quoted prices in markets that are not active or for which all significant inputs are observable, directly or indirectly. Valuations for the available-for-sale securities are provided by independent pricing service providers who have experience in valuing these securities and are compared to the average of quoted market prices obtained from independent brokers. We perform a monthly analysis on the values received from third parties to ensure that the prices represent a reasonable estimate of the fair value. The procedures include, but are not limited to, initial and ongoing review of third-party pricing methodologies, review of pricing trends and monitoring of trading volumes. Additional corroboration, such as obtaining a non-binding price from a broker, may be obtained depending on the frequency of trades of the security and the level of liquidity or depth of the market. We ensure prices received from independent brokers represent a reasonable estimate of the fair value through the use of observable market inputs including comparable trades, yield curve, spreads and, when available, market indices. If we determine that there is a more appropriate fair value based upon the available market data, the price received from the third party is adjusted accordingly. Below is a summary of the significant inputs used for each class of Level 2 assets and liabilities:

U.S. agency debentures: Fair value measurements of U.S. agency debentures are based on the characteristics specific to bonds held, such as issuer name, issuance date, coupon rate, maturity date and any applicable issuer call option features. Valuations are based on market spreads relative to similar term benchmark market interest rates, generally U.S. Treasury securities.

Agency-issued mortgage-backed securities: Agency-issued mortgage-backed securities are pools of individual conventional mortgage loans underwritten to U.S. agency standards with similar coupon rates, tenor, and other attributes such as geographic location, loan size and origination vintage. Fair value measurements of these securities are based on observable price adjustments relative to benchmark market interest rates taking into consideration estimated loan prepayment speeds.

Agency-issued collateralized mortgage obligations: Agency-issued collateralized mortgage obligations are structured into classes or tranches with defined cash flow characteristics and are collateralized by U.S. agency-issued mortgage pass-through securities. Fair value measurements of these securities incorporate similar characteristics of mortgage pass-through securities such as coupon rate, tenor, geographic location, loan size and origination vintage, in addition to incorporating the effect of estimated prepayment speeds on the cash flow structure of the class or tranche. These measurements incorporate observable market spreads over an estimated average life after considering the inputs listed above.

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Agency-issued commercial mortgage-backed securities: Fair value measurements of these securities are based on spreads to benchmark market interest rates (usually U.S. Treasury rates or rates observable in the swaps market), prepayment speeds, loan default rate assumptions and loan loss severity assumptions on underlying loans.

Foreign exchange forward and option contract assets and liabilities: Fair value measurements of these assets and liabilities are priced based on spot and forward foreign currency rates and option volatility assumptions.

Interest rate derivative and interest rate swap assets and liabilities: Fair value measurements of interest rate derivatives and interest rate swaps are priced considering the coupon rate of the fixed leg of the contract and the variable coupon rate on the floating leg of the contract. Valuation is based on both spot and forward rates on the swap yield curve and the credit worthiness of the contract counterparty.

Other equity securities: Fair value measurements of equity securities of public companies are priced based on quoted market prices less a discount if the securities are subject to certain sales restrictions. Certain sales restriction discounts generally range from 10 percent to 20 percent depending on the duration of the sale restrictions which typically range from three to six months.

Equity warrant assets (public portfolio): Fair value measurements of equity warrant assets of publicly-traded portfolio companies are valued based on the Black-Scholes option pricing model. The model uses the price of publicly-traded companies (underlying stock price), stated strike prices, warrant expiration dates, the risk-free interest rate and market-observable option volatility assumptions.

Level 3

The fair value measurement is derived from valuation techniques that use significant assumptions not observable in the market. These unobservable assumptions reflect our own estimates of assumptions we believe market participants would use in pricing the asset. The valuation techniques are consistent with the market approach, income approach and/or the cost approach used to measure fair value. Below is a summary of the valuation techniques used for each class of Level 3 assets:

Venture capital and private equity fund investments not measured at net asset value: Fair value measurements are based on consideration of a range of factors including, but not limited to, the price at which the investment was acquired, the term and nature of the investment, local market conditions, values for comparable securities, and as it relates to the private company, the current and projected operating performance, exit strategies and financing transactions subsequent to the acquisition of the investment. The significant unobservable inputs used in the fair value measurement include the information about each portfolio company, including actual and forecasted results, cash position, recent or planned transactions and market comparable companies. Significant changes to any one of these inputs in isolation could result in a significant change in the fair value measurement; however, we generally consider all factors available through ongoing communication with the portfolio companies and venture capital fund managers to determine whether there are changes to the portfolio company or the environment that indicate a change in the fair value measurement.

Equity warrant assets (public portfolio): Fair value measurements of equity warrant assets of publicly-traded portfolio companies are valued based on the Black-Scholes option pricing model. The model uses the price of publicly-traded companies (underlying stock price), stated strike prices, warrant expiration dates, the risk-free interest rate and market-observable option volatility assumptions. Modeled asset values are further adjusted by applying a discount of up to 20 percent for certain warrants that have certain sales restrictions or other features that indicate a discount to fair value is warranted. As sale restrictions are lifted, discounts are adjusted downward to zero once all restrictions expire or are removed.

Equity warrant assets (private portfolio): Fair value measurements of equity warrant assets of private portfolio companies are priced based on a Black-Scholes option pricing model to estimate the asset value by using stated strike prices, option expiration dates, risk-free interest rates and option volatility assumptions. Option volatility assumptions used in the Black-Scholes model are based on public market indices whose members operate in similar industries as companies in our private company portfolio. Option expiration dates are modified to account for estimates to actual life relative to stated expiration. Overall model asset values are further adjusted for a general lack of liquidity due to the private nature of the associated underlying company. There is a direct correlation between changes in the volatility and remaining life assumptions in isolation and the fair value measurement while there is an inverse correlation between changes in the liquidity discount assumption and the fair value measurement.

It is our policy to maximize the use of observable inputs and minimize the use of unobservable inputs when developing fair value measurements. When available, we use quoted market prices to measure fair value. If market prices are not available,

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fair value measurement is based upon valuation approaches that use primarily market-based or independently-sourced market parameters, including interest rate yield curves, prepayment speeds, option volatilities and currency rates. Substantially all of our financial instruments use the foregoing methodologies, and are categorized as a Level 1 or Level 2 measurement in the fair value hierarchy. However, in certain cases, when market observable inputs for our valuation techniques may not be readily available, we are required to make judgments about assumptions we believe market participants would use in estimating the fair value of the financial instrument, and based on the significance of those judgments, the measurement may be determined to be a Level 3 fair value measurement.

The degree of management judgment involved in determining the fair value of a financial instrument is dependent upon the availability of quoted market prices or observable market parameters. For financial instruments that trade actively and have quoted market prices or observable market parameters, there is minimal subjectivity involved in measuring fair value. When observable market prices and parameters are not fully available, management judgment is necessary to estimate fair value. For inactive markets, there is little information, if any, to evaluate if individual transactions are orderly. Accordingly, we are required to estimate, based upon all available facts and circumstances, the degree to which orderly transactions are occurring and provide more weighting to price quotes that are based upon orderly transactions. In addition, changes in the market conditions may reduce the availability of quoted prices or observable data. For example, reduced liquidity in the capital markets or changes in secondary market activities could result in observable market inputs becoming unavailable. Therefore, when market data is not available, we use valuation techniques requiring more management judgment to estimate the appropriate fair value measurement. Accordingly, the degree of judgment exercised by management in determining fair value is greater for financial assets and liabilities categorized as Level 3.

Fee-based Services Revenue Recognition

Refer to Note 17—“Noninterest Income” of the “Notes to the Consolidated Financial Statements” under Part II, Item 8 of this report for our fee-based services revenue recognition policies for our contracts with customers.

Income Taxes

Income taxes are accounted for under the asset and liability method. Deferred tax assets and liabilities are recognized for the future tax consequences attributable to differences between the financial statement carrying amounts of existing assets and liabilities and their respective tax bases and operating loss and tax credit carryforwards. Our federal, state and foreign income tax provisions are based upon taxes payable for the current year, current year changes in deferred taxes related to temporary differences between the tax basis and financial statement balances of assets and liabilities, and a reserve for uncertain tax positions. Deferred tax assets and liabilities are included in the consolidated financial statements at currently enacted income tax rates applicable to the period in which the deferred tax assets and liabilities are expected to be realized. As changes in tax laws or rates are enacted, deferred tax assets and liabilities are adjusted through the provision for income taxes. A valuation allowance is provided, when it is determined based upon available evidence, that it is more likely than not that some portion of the deferred tax asset will not be realized. We file a consolidated federal income tax return, and consolidated, combined, or separate state income tax returns as appropriate. Our foreign incorporated subsidiaries file tax returns in the applicable foreign jurisdictions. We record interest and penalties related to unrecognized tax benefits in other noninterest expense, a component of consolidated net income.

Share-Based Compensation

For all stock-based awards granted, stock-based compensation expense is amortized on a straight-line basis over the requisite service period, including consideration of vesting conditions and anticipated forfeitures. The fair value of stock options are measured using the Black-Scholes option-pricing model and the fair value for restricted stock awards and restricted stock units are based on the quoted price of our common stock on the date of grant.

Earnings Per Share

Basic earnings per common share is computed using the weighted average number of common stock shares outstanding during the period. Diluted earnings per common share is computed using the weighted average number of common stock shares and potential common shares outstanding during the period. Potential common shares consist of stock options, ESPP shares and restricted stock units. Common stock equivalent shares are excluded from the computation if the effect is antidilutive.

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Derivative Financial Instruments

All derivative instruments are recorded on the balance sheet at fair value. The accounting for changes in fair value of a derivative financial instrument depends on whether the derivative financial instrument is designated and qualifies as part of a hedging relationship and, if so, the nature of the hedging activity. Changes in fair value are recognized through earnings for derivatives that do not qualify for hedge accounting treatment, or that have not been designated in a hedging relationship.

Cash Flow Hedges

For derivative instruments that are designated and qualify as a cash flow hedge, changes in the fair value of the derivative are recorded in accumulated other comprehensive income and recognized in earnings as the hedged item affects earnings. Derivative amounts affecting earnings are recognized consistent with the classification of the hedged item in the line item "loans" as part of interest income, a component of consolidated net income. We assess hedge effectiveness under ASC 815, *Derivatives and Hedging ("ASC 815")*, on a quarterly basis to ensure all hedges remain highly effective to ensure hedge accounting under ASC 815 can be applied. If the hedging relationship no longer exists or no longer qualifies as a hedge per ASC 815, any amounts remaining as gain or loss in accumulated other comprehensive income are reclassified into earnings in the line item "loans" as part of interest income, a component of consolidated net income.

Equity Warrant Assets

In connection with negotiated credit facilities and certain other services, we may obtain equity warrant assets giving us the right to acquire stock in primarily private, venture-backed companies in the technology and life science/healthcare industries. We hold these assets for prospective investment gains. We do not use them to hedge any economic risks nor do we use other derivative instruments to hedge economic risks stemming from equity warrant assets.

We account for equity warrant assets in certain private and public client companies as derivatives when they contain net settlement terms and other qualifying criteria under ASC 815. In general, equity warrant assets entitle us to buy a specific number of shares of stock at a specific price within a specific time period. Certain equity warrant assets contain contingent provisions, which adjust the underlying number of shares or purchase price upon the occurrence of certain future events. Substantially all of our warrant agreements contain net share settlement provisions, which permit us to receive at exercise a share count equal to the intrinsic value of the warrant divided by the share price (otherwise known as a "cashless" exercise). These equity warrant assets are recorded at fair value and are classified as derivative assets, a component of other assets, on our consolidated balance sheet at the time they are obtained.

The grant date fair values of equity warrant assets received in connection with the issuance of a credit facility are deemed to be loan fees and recognized as an adjustment of loan yield through loan interest income. Similar to other loan fees, the yield adjustment related to grant date fair value of warrants is recognized over the life of that credit facility.

Any changes in fair value from the grant date fair value of equity warrant assets will be recognized as increases or decreases to other assets on our balance sheet and as net gains or losses on equity warrant assets, in noninterest income, a component of consolidated net income. We value our equity warrant assets using a Black-Scholes option pricing model, which incorporates the following significant inputs:

- An underlying asset value, which is estimated based on current information available in valuation reports, including any information regarding subsequent rounds of funding or performance of a company.
- Stated strike price, which can be adjusted for certain warrants upon the occurrence of subsequent funding rounds or other future events.
- Price volatility or risk associated with possible changes in the warrant price. The volatility assumption is based on historical price volatility of publicly traded companies within indices similar in nature to the underlying client companies issuing the warrant. The actual volatility input is based on the mean and median volatility for an individual public company within an index for the past 16 quarters, from which an average volatility was derived.
- Actual data on terminations and exercises of our warrants are utilized as the basis for determining the expected remaining life of the warrants in each financial reporting period. Warrants may be exercised in the event of acquisitions, mergers or IPOs, and cancelled due to events such as bankruptcies, restructuring activities or additional financings. These events cause the expected remaining life assumption to be shorter than the contractual term of the warrants.
- The risk-free interest rate is derived from the Treasury yield curve and is calculated based on a weighted average of the risk-free interest rates that correspond closest to the expected remaining life of the warrant.

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- Other adjustments, including a marketability discount, are estimated based on management's judgment about the general industry environment.
- Number of shares and contingencies associated with obtaining warrant positions such as the funding of associated loans.

When a portfolio company completes an IPO on a publicly reported market or is acquired, we may exercise these equity warrant assets for shares or cash. In the event of an exercise for common stock shares, the basis or value in the common stock shares is reclassified from other assets to investment securities on the balance sheet on the latter of the exercise date or corporate action date. The common stock of public companies are classified as non-marketable and other equity securities. Changes in the fair value of the common stock shares is recorded as gains or losses on investments securities, in noninterest income, a component of consolidated net income. The common stock of private companies are classified as non-marketable and other equity securities. We account for these securities under the methodology under ASU 2016-01, other investments without a readily determinable fair value. The carrying value in the private common stock without a readily determinable fair value is based on the price at which the investment was acquired plus or minus changes resulting from observable price changes in orderly transactions for identical or similar investments and are recorded as gains or losses on investments securities, in noninterest income, a component of consolidated net income.

Foreign Exchange Forwards and Foreign Currency Option Contracts

We enter into foreign exchange forward contracts and foreign currency option contracts with clients involved in international activities, either as the purchaser or seller, depending upon the clients' need. We also enter into an opposite-way forward or option contract with a correspondent bank to economically hedge client contracts to mitigate the fair value risk to us from fluctuations in currency rates. Settlement, credit and operational risks remain. We also enter into forward contracts with correspondent banks to economically hedge currency exposure risk related to certain foreign currency denominated assets and liabilities. These contracts are not designated as hedging instruments and are recorded at fair value in our consolidated balance sheets. The contracts generally have terms of one year or less, although we may have contracts extending for up to five years. Generally, we have not experienced nonperformance on these contracts, have not incurred credit losses and anticipate performance by all counterparties to such agreements. Changes in the fair value of these contracts are recognized in consolidated net income under other noninterest income, a component of noninterest income. Period-end gross positive fair values are recorded in other assets and gross negative fair values are recorded in other liabilities.

Interest Rate Contracts

We sell interest rate contracts to clients who wish to mitigate their interest rate exposure. We economically reduce the interest rate risk from this business by entering into opposite-way contracts with correspondent banks. We do not designate any of these contracts (which are derivative instruments) as qualifying for hedge accounting. Contracts in an asset position are included in other assets and contracts in a liability position are included in other liabilities. The net change in the fair value of these derivatives is recorded through other noninterest income, in noninterest income, a component of consolidated net income.

Adoption of New Accounting Standards

In February 2016, the FASB issued a new Accounting Standard Update (ASU 2016-02, Leases (Topic 842)), which requires for all operating leases the recognition of a right-of-use ("ROU") asset and a corresponding lease liability, in the statement of financial position. For short term leases (term of 12 months or less), a lessee is permitted to make an accounting election not to recognize lease assets and lease liabilities. The lease cost is allocated over the lease term on a straight-line basis. There were further amendments, including practical expedients, with the issuance of ASU 2018-01, "Leases (Topic 842): Land Easement Practical Expedient for Transition to Topic 842" in January 2018. In July 2018 the FASB issued ASU No. 2018-11, "Leases (Topic 842): Targeted Improvements", which provides us with the option to apply the new leasing standard to all open leases as of the adoption date, on a prospective basis.

On January 1, 2019, we adopted the new accounting standard ASU 2016-02, Leases (Topic 842) and all the related amendments ("new lease standard", "ASC 842" or "ASU 2016-02") utilizing the practical expedient to apply the new lease standard as of January 1, 2019 on a prospective basis. We also elected the "package of expedients" and elected as an accounting policy to exclude recording ROU assets and lease liabilities for leases that meet the definition of short-term leases. In addition to excluding short-term leases, we have implemented an accounting policy in which non-lease components are not separated from lease components in the measurement of ROU assets and lease liabilities for all lease contracts. The "package of expedients" allowed us to continue to account for existing leases for which the commencement date is before January 1, 2019, in accordance with

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the previous guidance, Leases (Topic 840), throughout the lease term, including periods after adoption of the new guidance. We recognized \$146 million in ROU assets and \$178 million in lease liabilities as a result of applying the new lease standard as an adjustment to our opening consolidated balance sheet on January 1, 2019. The comparative information has not been restated and continues to be reported under the accounting standards in effect for those periods. See Note 12—"Leases" of the "Notes to the Consolidated Financial Statements" under Part II, Item 8 of this report for additional disclosures related to our leases.

In March 2017, the FASB issued ASU No. 2017-08, Receivables—Nonrefundable Fees and Other Costs (Subtopic 310-20): Premium Amortization on Purchased Callable Debt Securities, which amends the amortization period for certain purchased callable debt securities held at a premium. The ASU requires entities to amortize premiums on debt securities by the first call date when the securities have fixed and determinable call dates and prices. The scope of the ASU includes all accounting premiums, such as purchase premiums and cumulative fair value hedge adjustments. The ASU does not change the accounting for discounts, which continue to be recognized over the contractual life of a security. Adoption of the ASU is on a modified retrospective basis through a cumulative effect adjustment to retained earnings as of the beginning of the year of adoption. Adoption of the ASU primarily affected our HTM portfolio of callable state and municipal debt securities. On January 1, 2019, we adopted the ASU and recognized a net reduction to retained earnings of \$0.6 million.

Reclassifications

Certain prior period amounts related to presentation changes to our financial statement line items have been reclassified to conform to current period presentations.

3. Business Combination

On January 4, 2019, we completed the acquisition of Leerink Holdings LLC, the Boston-based parent company of healthcare and life science investment bank Leerink Partners LLC, now SVB Leerink Holdings LLC ("SVB Leerink"). SVB Leerink is an investment bank specializing in equity and convertible capital markets, M&A, equity research and sales and trading for growth- and innovation-minded healthcare and life science companies and operates as a wholly-owned subsidiary of SVB Financial.

The acquisition was accounted for as a business combination and accordingly, the results of SVB Leerink's operations have been included in the Company's consolidated financial statements for the year ended December 31, 2019 from the date of acquisition. We acquired SVB Leerink for \$273.2 million comprised of cash and share-based replacement award liabilities. In addition, we provided a retention pool for employees of \$60.0 million to be paid over five years comprised of a mix of cash and equity issued under the Company's current Equity Incentive Plan. Refer to Note 5—"Share-Based Compensation" of the "Notes to the Consolidated Financial Statements" under Part II, Item 8 of this report of this report for more information. The following table summarizes the allocation of the purchase price to the net assets of SVB Leerink as of January 4, 2019:

(Dollars in thousands)	January 4, 2019
Cash paid	\$ 265,601
Replacement award liabilities (1)	7,629
Total purchase consideration	\$ 273,230
Fair value of net assets acquired	135,407
Goodwill	\$ 137,823

- (1) The replacement award liabilities recognized as part of the total purchase consideration and the post-combination expenses of \$9.1 million related to share-based replacement awards will be paid out in cash in accordance with SVB Leerink's original grant date vesting schedules.

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The following table summarizes the estimated fair value of assets acquired and liabilities assumed upon the finalization of the purchase:

(Dollars in thousands)	January 4, 2019
Assets acquired:	
Cash and cash equivalents	\$ 163,273
Investment securities	33,644
Accounts receivable	36,538
Intangible assets	60,900
Other assets	35,128
Total assets acquired	<u>329,483</u>
Liabilities assumed:	
Accrued compensation	137,206
Due to broker-dealers	18,483
Other liabilities	33,131
Noncontrolling interests	5,256
Total liabilities assumed	<u>194,076</u>
Fair value of net assets acquired	<u>\$ 135,407</u>

The Company recognized identifiable intangible assets of \$60.9 million and goodwill of \$137.8 million as a result of the acquisition. Intangible assets of \$60.9 million are subject to amortization over their estimated useful lives. The goodwill recorded includes revenue generating synergies expected from collaboration between SVB Leerink and the Company. All reported goodwill amounts have been allocated to the SVB Leerink reporting segment and are expected to be deductible for tax purposes. The fair value of the noncontrolling interests in SVB Leerink Holdings LLC represents the noncontrolling ownership percentage for SVB Leerink's consolidated VIE investment securities which are measured at net asset value.

The following table summarizes the fair value and estimated useful lives of the other intangible assets at the date of acquisition:

(Dollars in thousands)	Estimated Fair Value	Weighted Average Estimated Useful Life - in Years
Other intangible assets:		
Customer relationships	\$ 42,000	11.0
Other	18,900	9.9
Total other intangible assets	<u>\$ 60,900</u>	

SVB Leerink's net income from January 4, 2019 through December 31, 2019 was approximately \$9.5 million. Supplementary pro forma financial information related to the acquisition is not included because the impact to the Company's consolidated statements of income is not material. The following table represents the amount of revenue and earnings attributable to SVB Leerink that is included in our financial results for the year ended December 31, 2019:

(Dollars in thousands)	Year ended December 31, 2019
Net interest income	\$ 1,252
Noninterest income	265,841
Noninterest expense	252,678
Income before income tax expense	14,415
Income tax expense	3,566
Net income attributable to noncontrolling interests	1,325
Net income available to common stockholders	<u>\$ 9,524</u>

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The following table shows the components of acquisition-related activities expense for the year ended December 31, 2019:

(Dollars in thousands)	Year ended December 31, 2019
Professional fees	\$ 919
Other	396
Total acquisition-related expenses	\$ 1,315

4. Stockholders' Equity and EPS

Accumulated Other Comprehensive Income

The following table summarizes the items reclassified out of accumulated other comprehensive income into the Consolidated Statements of Income for 2019, 2018 and 2017:

(Dollars in thousands)	Income Statement Location	Year ended December 31,		
		2019	2018	2017
Reclassification adjustment for losses on available-for-sale securities included in net income	Gains on investment securities, net	\$ 3,905	\$ 740	\$ 5,189
Related tax benefit	Income tax expense	(1,087)	(205)	(2,098)
Reclassification adjustment for losses on cash flow hedges included in net income	Net interest income	5,358	—	—
Related tax benefit	Income tax expense	(1,489)	—	—
Total reclassification adjustment for losses included in net income, net of tax		\$ 6,687	\$ 535	\$ 3,091

The table below summarizes the activity relating to net gains and losses on our cash flow hedges included in accumulated other comprehensive income for 2019, 2018 and 2017. Over the next 12 months, we expect that approximately \$3.2 million in accumulated other comprehensive income ("AOCI") at December 31, 2019, related to our cash flow hedges will be reclassified out of AOCI and recognized in net income.

(Dollars in thousands)	Year ended December 31,		
	2019	2018	2017
Balance, beginning of period, net of tax	\$ —	\$ —	\$ —
Net decrease in fair value, net of tax	(5,999)	—	—
Net realized loss reclassified to net income, net of tax	3,869	—	—
Balance, end of period, net of tax	\$ (2,130)	\$ —	\$ —

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EPS

Basic EPS is the amount of earnings available to each share of common stock outstanding during the reporting period. Diluted EPS is the amount of earnings available to each share of common stock outstanding during the reporting period adjusted to include the effect of potentially dilutive common shares. Potentially dilutive common shares include incremental shares issuable for stock option and restricted stock unit awards outstanding under our 2006 Equity Incentive Plan and our ESPP. Potentially dilutive common shares are excluded from the computation of dilutive EPS in periods in which the effect would be antidilutive. The following is a reconciliation of basic EPS to diluted EPS for 2019, 2018 and 2017:

(Dollars and shares in thousands, except per share amounts)	Year ended December 31,		
	2019	2018	2017
Numerator:			
Net income available to common stockholders	\$ 1,136,856	\$ 973,840	\$ 490,506
Denominator:			
Weighted average common shares outstanding—basic	51,915	53,078	52,588
Weighted average effect of dilutive securities:			
Stock options and ESPP	227	377	385
Restricted stock units	169	317	333
Weighted average common shares outstanding—diluted	52,311	53,772	53,306
Earnings per common share:			
Basic	\$ 21.90	\$ 18.35	\$ 9.33
Diluted	21.73	18.11	9.20

The following table summarizes the weighted average common shares excluded from the diluted EPS calculation due to the antidilutive effect for 2019, 2018 and 2017:

(Shares in thousands)	Year ended December 31,		
	2019	2018	2017
Stock options	167	59	73
Restricted stock units	250	85	1
Total	417	144	74

Stock Repurchase Programs

On November 13, 2018, the Company announced the Stock Repurchase Program to repurchase up to \$500 million of our outstanding common stock. The program completed on July 1, 2019, after we repurchased 2.2 million shares of common stock for \$499.6 million under the Stock Repurchase Program.

On October 24, 2019, our Board of Directors authorized a new stock repurchase program that enables us to repurchase up to \$350 million of our outstanding common stock. This program expires on October 29, 2020. As of December 31, 2019, we have not repurchased any shares of our common stock under the new stock repurchase program.

Preferred Stock

On December 9, 2019, the Company issued depositary shares representing an ownership interest in 350,000 shares of Series A Preferred Stock with \$0.001 par value and liquidation preference of \$1,000 per share, or \$25 per depositary share. All preferred shares were issued in the form of depositary shares, with each depositary share representing a 1/40th ownership interest in a share of the preferred stock. The Series A Preferred Stock has no stated maturity and is not subject to any sinking fund or other obligation of the Company. Dividends are approved by the Board of Directors and, if declared, are payable quarterly, in arrears, at a rate per annum equal to 5.25 percent. The Series A Preferred Stock is redeemable at the Company's option, in whole or in part, on or after February 15, 2025. Prior to February 15, 2025, the Series A Preferred Stock is redeemable at the Company's option, in whole and not in part, following any change in laws or regulations that would not allow the Company to treat the full

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liquidation value of the Series A Preferred Stock as Tier 1 capital for purposes of the capital adequacy guidelines of the FRB. The redemption amount is computed at the per share liquidation preference plus any declared but unpaid dividends. Redemptions are subject to certain regulatory provisions, including approval of FRB.

As of December 31, 2019, there were 350,000 shares issued and outstanding of Series A Preferred Shares, which had a carrying value of \$340.1 million and liquidation preference of \$350.0 million.

The following table summarizes our preferred stock at December 31, 2019:

Series	Description	Amount outstanding (in millions)	Carrying value (in millions)	Shares issued and outstanding	Par Value	Ownership interest per depository share	Liquidation preference per depository share	2019 dividends paid per depository share
Series A	5.250% Fixed-Rate Non-Cumulative Perpetual Preferred Stock	\$ 350	\$ 340.1	350,000	\$ 0.001	1/40th	\$ 25	\$ —

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5. Share-Based Compensation

Share-based compensation expense was recorded net of estimated forfeitures for 2019, 2018 and 2017, such that expense was recorded only for those share-based awards that are expected to vest. In 2019, 2018 and 2017, we recorded share-based compensation and related benefits as follows:

(Dollars in thousands)	Year ended December 31,		
	2019	2018	2017
Share-based compensation expense	\$ 66,815	\$ 45,675	\$ 36,900
Income tax benefit related to share-based compensation expense	(16,152)	(10,997)	(12,845)
Capitalized compensation costs	1,517	1,466	1,071

Equity Incentive Plan

Our 2006 Equity Incentive Plan (the “2006 Incentive Plan”) was adopted in May 2006, and is amended from time to time. The 2006 Incentive Plan provides for the grant of various types of incentive awards, of which the following have been granted: (i) stock options; (ii) restricted stock awards; (iii) restricted stock units (subject to either time-and/or performance-based vesting); and (iv) other cash or stock settled equity awards. Eligible participants in the 2006 Incentive Plan include directors, employees and consultants.

Subject to the provisions of Section 16 of the 2006 Incentive Plan, the maximum aggregate number of shares that may be awarded and sold thereunder is 12,028,505.

Restricted stock awards/units are counted against the available-for-issuance limits of the 2006 Incentive Plan as two shares for every one share awarded. Further, if shares acquired under any such award are forfeited, repurchased by SVB Financial, used to satisfy the tax withholding obligations related to an award or otherwise canceled and would otherwise return to the 2006 Incentive Plan, two times the number of such shares will return to the 2006 Incentive Plan and will again become available for issuance.

Under the terms of the 2006 Incentive Plan and subject to certain exceptions: (i) restricted stock awards/units are subject to a minimum of at least three years of annual vesting, and (ii) performance-based restricted stock awards/units and stock options are subject to a minimum of at least one year of vesting. Generally in practice, restricted stock awards/units vest annually over four years and require continued employment or other service through the vesting period. Performance-based restricted stock awards/units granted to executives generally vest upon meeting certain performance-based objectives over a three year period and, typically the passage of time, and require continued employment or other service through the vesting period. Stock options typically vest annually over four years, from the grant date based on continued employment or other service, and expire no later than seven years after the grant date.

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Employee Stock Purchase Plan

We maintain the 1999 ESPP under which participating employees may annually contribute up to 10 percent of their gross compensation (not to exceed \$25,000) to purchase shares of our common stock at 85 percent of its fair market value at either the beginning or end of each six-month offering period, whichever price is less. To be eligible to participate in the ESPP, an employee must, among other requirements, be employed by the Company on both the date of offering and date of purchase, and be employed customarily for at least 20 hours per week and at least five months per calendar year. We issued 161,410 shares and received \$27.9 million in cash under the ESPP in 2019. At December 31, 2019, a total of 1,337,808 shares of our common stock were still available for future issuance under the ESPP.

Unrecognized Compensation Expense

As of December 31, 2019, unrecognized share-based compensation expense was as follows:

(Dollars in thousands)	Unrecognized Expense	Weighted Average Expected Recognition Period - in Years
Stock options	\$ 14,313	2.52
Restricted stock awards/units	101,310	2.66
Total unrecognized share-based compensation expense	<u>\$ 115,623</u>	

Valuation Assumptions

The fair values of share-based awards for employee stock options and employee stock purchases made under our ESPP were estimated using the Black-Scholes option pricing model. The fair values of restricted stock units were based on our closing stock price on the date of grant. The following weighted average assumptions and fair values were used for our employee stock options and restricted stock units:

Equity Incentive Plan Awards	2019	2018	2017
Weighted average expected term of options - in years	4.6	4.8	4.9
Weighted average expected volatility of the Company's underlying common stock	35.5%	34.7%	33.7%
Risk-free interest rate	2.26	2.82	1.81
Expected dividend yield	—	—	—
Weighted average grant date fair value - stock options	\$ 83.50	\$ 105.81	\$ 57.81
Weighted average grant date fair value - restricted stock units	243.65	294.50	181.23

The following weighted average assumptions and fair values were used for our ESPP:

ESPP	2019	2018	2017
Expected term in years	0.5	0.5	0.5
Weighted average expected volatility of the Company's underlying common stock	38.1%	32.2%	31.2%
Risk-free interest rate	2.40	1.79	0.80
Expected dividend yield	—	—	—
Weighted average grant date fair value	\$ 52.90	\$ 62.76	\$ 41.70

The expected term is based on the implied term of the stock options using factors based on historical exercise behavior. The expected volatilities are based on a blended rate consisting of our historic volatility and our expected volatility over a five-year term which is an indicator of expected volatility and future stock price trends. For 2019, 2018 and 2017, expected volatilities for the ESPP were equal to the historical volatility for the previous six-month periods. The expected risk-free interest rates were based on the yields of U.S. Treasury securities, as reported by the Federal Reserve Bank of New York, with maturities equal to the expected terms of the employee stock options.

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NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS - (Continued)

Share-Based Payment Award Activity

The table below provides stock option information related to the 2006 Equity Incentive Plan for the year ended December 31, 2019:

	Options	Weighted Average Exercise Price	Weighted Average Remaining Contractual Life - in Years	Aggregate Intrinsic Value of In-The-Money Options
Outstanding at December 31, 2018	679,659	\$ 137.19		
Granted	126,945	249.15		
Exercised	(154,897)	86.96		
Forfeited	(25,580)	213.26		
Expired	(720)	64.37		
Outstanding at December 31, 2019	625,407	169.33	3.63	\$ 55,364,613
Vested and expected to vest at December 31, 2019	609,849	167.31	3.58	55,128,404
Exercisable at December 31, 2019	361,503	124.70	2.35	46,760,360

The aggregate intrinsic value of outstanding options shown in the table above represents the pre-tax intrinsic value based on our closing stock price of \$251.04 as of December 31, 2019. The following table summarizes information regarding stock options outstanding and exercisable as of December 31, 2019:

Range of Exercise Prices	Outstanding Options			Exercisable Options	
	Shares	Weighted Average Remaining Contractual Life - in Years	Weighted Average Exercise Price	Shares	Weighted Average Exercise Price
\$71.11 - 105.14	55,724	0.43	\$ 73.67	55,724	\$ 73.67
105.15 - 105.84	114,449	3.33	105.18	79,188	105.18
105.85 - 108.59	99,936	1.33	107.94	99,936	107.94
108.60 - 149.65	67,573	2.26	129.13	67,573	129.13
149.66 - 180.62	80,583	4.34	178.07	37,320	178.04
180.63 - 247.01	11,966	6.18	226.22	1,578	210.73
247.02 - 255.58	117,265	6.33	250.43	—	—
255.59 - 315.12	75,647	5.33	305.18	19,617	304.39
315.13 - 324.77	2,264	5.60	324.77	567	324.77
Total	625,407	3.63	169.33	361,503	124.70

We expect to satisfy the exercise of stock options by issuing shares under the 2006 Incentive Plan. All future awards of stock options and restricted stock units will be issued from the 2006 Incentive Plan. At December 31, 2019, 3,421,734 shares were available for future issuance.

SVB FINANCIAL GROUP AND SUBSIDIARIES
NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS - (Continued)

The table below provides information for restricted stock units under the 2006 Equity Incentive Plan for the year ended December 31, 2019:

	Shares	Weighted Average Grant Date Fair Value
Nonvested at December 31, 2018	597,296	\$ 194.48
Granted (1)	543,938	243.65
Vested	(227,707)	154.96
Forfeited	(65,555)	195.69
Nonvested at December 31, 2019	847,972	236.54

- (1) On February 1, 2019, we granted 125,160 restricted stock awards to SVB Leerink employees at a market price of \$238.28 under the retention plan previously announced on November 13, 2018. The restricted stock awards will vest over a five-year period.

The following table summarizes information regarding stock option and restricted stock unit activity during 2019, 2018 and 2017:

	Year ended December 31,		
(Dollars in thousands)	2019	2018	2017
Total intrinsic value of stock options exercised	\$ 23,088	\$ 40,681	\$ 36,173
Total grant date fair value of stock options vested	5,735	5,823	6,094
Total intrinsic value of restricted stock vested	56,101	63,917	40,925
Total grant date fair value of restricted stock vested	35,191	28,813	23,383

6. Variable Interest Entities

Our involvement with VIEs includes our investments in venture capital and private equity funds, debt funds, private and public portfolio companies and our investments in qualified affordable housing projects.

The following table presents the carrying amounts and classification of significant variable interests in consolidated and unconsolidated VIEs as of December 31, 2019 and December 31, 2018:

SVB FINANCIAL GROUP AND SUBSIDIARIES
NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS - (Continued)

(Dollars in thousands)	Consolidated VIEs	Unconsolidated VIEs	Maximum Exposure to Loss in Unconsolidated VIEs
December 31, 2019:			
Assets:			
Cash and cash equivalents	\$ 7,629	\$ —	\$ —
Non-marketable and other equity securities (1)	270,057	689,360	689,360
Accrued interest receivable and other assets	1,117	—	—
Total assets	<u>\$ 278,803</u>	<u>\$ 689,360</u>	<u>\$ 689,360</u>
Liabilities:			
Other liabilities (1)	2,854	302,031	—
Total liabilities	<u>\$ 2,854</u>	<u>\$ 302,031</u>	<u>\$ —</u>
December 31, 2018:			
Assets:			
Cash and cash equivalents	\$ 9,058	\$ —	\$ —
Non-marketable and other equity securities (1)	221,646	568,272	568,272
Accrued interest receivable and other assets	228	—	—
Total assets	<u>\$ 230,932</u>	<u>\$ 568,272</u>	<u>\$ 568,272</u>
Liabilities:			
Other liabilities (1)	919	205,685	—
Total liabilities	<u>\$ 919</u>	<u>\$ 205,685</u>	<u>\$ —</u>

(1) Included in our unconsolidated non-marketable and other equity securities portfolio at December 31, 2019 and December 31, 2018 are investments in qualified affordable housing projects of \$458.5 million and \$318.6 million, respectively, and related other liabilities consisting of unfunded commitments of \$302.0 million and \$205.7 million, respectively.

Non-marketable and other equity securities

Our non-marketable and other equity securities portfolio primarily represents investments in venture capital and private equity funds, SPD-SVB, debt funds, private and public portfolio companies, including public equity securities held as a result of equity warrant assets exercised and investments in qualified affordable housing projects. A majority of these investments are through third-party funds held by SVB Financial in which we do not have controlling or significant variable interests. These investments represent our unconsolidated VIEs in the table above. Our non-marketable and other equity securities portfolio also includes investments from SVB Capital. SVB Capital is the funds management business of SVB Financial Group, which focuses primarily on venture capital investments. The SVB Capital family of funds is comprised of direct venture funds that invest in companies and funds of funds that invest in other venture capital funds. We have a controlling and significant variable interest in four of these SVB Capital funds and consolidate these funds for financial reporting purposes.

All investments are generally non-redeemable and distributions are expected to be received through the liquidation of the underlying investments throughout the life of the investment fund. Investments may only be sold or transferred subject to the notice and approval provisions of the underlying investment agreement. Subject to applicable regulatory requirements, including the Volcker Rule, we also make commitments to invest in venture capital and private equity funds. For additional details, see Note 22—"Off-Balance Sheet Arrangements, Guarantees and Other Commitments" of the "Notes to the Consolidated Financial Statements" under Part II, Item 8 of this report.

The Bank also has variable interests in low income housing tax credit funds, in connection with fulfilling its responsibilities under the Community Reinvestment Act ("CRA"), that are designed to generate a return primarily through the realization of federal tax credits. These investments are typically limited partnerships in which the general partner, other than the Bank, holds the power over significant activities of the VIE; therefore, these investments are not consolidated. For additional information on our investments in qualified affordable housing projects see Note 9—"Investment Securities" of the "Notes to the Consolidated Financial Statements" under Part II, Item 8 of this report.

As of December 31, 2019, our exposure to loss with respect to the consolidated VIEs is limited to our net assets of \$275.9 million and our exposure to loss for our unconsolidated VIEs is equal to our investment in these assets of \$689.4 million.

SVB FINANCIAL GROUP AND SUBSIDIARIES
NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS - (Continued)

7. Reserves on Deposit with the Federal Reserve Bank and Federal Bank Stock

The Bank is required to maintain reserves against customer deposits by keeping balances with the Federal Reserve. The cash balances at the Federal Reserve are classified as cash and cash equivalents. Additionally, as a member of the FHLB and FRB, we are required to hold shares of FHLB and FRB stock under the Bank's borrowing agreement. FHLB and FRB stock are recorded at cost as a component of other assets, and any cash dividends received are recorded as a component of other noninterest income.

The tables below provide information on the required reserve balances at the Federal Reserve, as well as shares held at the FHLB and FRB for the years ended and as of December 31, 2019 and 2018:

(Dollars in thousands)	Year ended December 31,	
	2019	2018
Average required reserve balances at FRB San Francisco	\$ 315,784	\$ 455,866

(Dollars in thousands)	December 31,	
	2019	2018
FHLB stock holdings	\$ 17,250	\$ 17,250
FRB stock holdings	43,008	41,628

8. Cash and Cash Equivalents

The following table details our cash and cash equivalents at December 31, 2019 and December 31, 2018:

(Dollars in thousands)	December 31, 2019	December 31, 2018
Cash and due from banks (1)	\$ 6,492,443	\$ 3,444,971
Securities purchased under agreements to resell (2)	289,340	123,611
Other short-term investment securities	—	2,957
Total cash and cash equivalents	\$ 6,781,783	\$ 3,571,539

(1) At December 31, 2019 and 2018, \$3.7 billion and \$1.7 billion, respectively, of our cash and due from banks was deposited at the FRB and was earning interest at the Federal Funds target rate, and interest-earning deposits in other financial institutions were \$2.1 billion and \$1.2 billion, respectively.

(2) At December 31, 2019 and 2018, securities purchased under agreements to resell were collateralized by U.S. Treasury securities and U.S. agency securities with aggregate fair values of \$295 million and \$126 million, respectively. None of these securities were sold or repurchased as of December 31, 2019 and 2018.

Additional information regarding our securities purchased under agreements to resell for 2019 and 2018 are as follows:

(Dollars in thousands)	Year ended December 31,	
	2019	2018
Average securities purchased under agreements to resell	\$ 166,205	\$ 132,938
Maximum amount outstanding at any month-end during the year	613,247	375,180

SVB FINANCIAL GROUP AND SUBSIDIARIES
NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS - (Continued)

9. Investment Securities

Our investment securities portfolio consists of (i) an available-for-sale securities portfolio and a held-to-maturity securities portfolio, both of which represent interest-earning investment securities; and (ii) a non-marketable and other equity securities portfolio, which primarily represents investments managed as part of our funds management business as well as public equity securities held as a result of equity warrant assets exercised.

Available-for-Sale Securities

The major components of our AFS investment securities portfolio at 2019 and 2018 are as follows:

(Dollars in thousands)	December 31, 2019			
	Amortized Cost	Unrealized Gains	Unrealized Losses	Carrying Value
Available-for-sale securities, at fair value:				
U.S. Treasury securities	\$ 6,815,874	\$ 82,267	\$ (4,131)	6,894,010
U.S. agency debentures	100,000	—	(453)	99,547
Foreign government debt securities	9,037	1	—	9,038
Residential mortgage-backed securities:				
Agency-issued mortgage-backed securities	4,109,372	39,438	(19)	4,148,791
Agency-issued collateralized mortgage obligations—fixed rate	1,520,414	17,929	—	1,538,343
Agency-issued commercial mortgage-backed securities	1,339,651	1,078	(15,539)	1,325,190
Total available-for-sale securities	<u>\$ 13,894,348</u>	<u>\$ 140,713</u>	<u>\$ (20,142)</u>	<u>\$ 14,014,919</u>

(Dollars in thousands)	December 31, 2018			
	Amortized Cost	Unrealized Gains	Unrealized Losses	Carrying Value
Available-for-sale securities, at fair value:				
U.S. Treasury securities	\$ 4,762,182	\$ 11,638	\$ (35,562)	\$ 4,738,258
U.S. agency debentures	1,090,426	61	(6,370)	1,084,117
Foreign government debt securities	5,815	—	(3)	5,812
Residential mortgage-backed securities:				
Agency-issued collateralized mortgage obligations—fixed rate	1,922,618	—	(42,400)	1,880,218
Agency-issued collateralized mortgage obligations—variable rate	81,270	383	(15)	81,638
Total available-for-sale securities	<u>\$ 7,862,311</u>	<u>\$ 12,082</u>	<u>\$ (84,350)</u>	<u>\$ 7,790,043</u>

The following table summarizes sale activity of available-for-sale securities as recorded in the line item "Gains on investment securities, net," a component of noninterest income:

(Dollars in thousands)	Year ended December 31,		
	2019	2018	2017
Sales proceeds	\$ 2,189,087	\$ 474,482	\$ 580,871
Net realized gains and losses:			
Gross realized gains	1,250	127	5,113
Gross realized losses	(5,155)	(867)	(10,302)
Net realized losses	<u>\$ (3,905)</u>	<u>\$ (740)</u>	<u>\$ (5,189)</u>

SVB FINANCIAL GROUP AND SUBSIDIARIES
NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS - (Continued)

The following tables summarize our unrealized losses on our AFS securities portfolio into categories of less than 12 months, or 12 months or longer as of December 31, 2019 and 2018:

(Dollars in thousands)	December 31, 2019					
	Less than 12 months		12 months or longer (1)		Total	
	Fair Value of Investments	Unrealized Losses	Fair Value of Investments	Unrealized Losses	Fair Value of Investments	Unrealized Losses
Available-for-sale securities:						
U.S. Treasury securities	\$ 971,572	\$ (3,996)	\$ 449,850	\$ (135)	\$ 1,421,422	\$ (4,131)
U.S. agency debentures	99,547	(453)	—	—	99,547	(453)
Residential mortgage-backed securities:						
Agency-issued mortgage-backed securities	4,014	(19)	—	—	4,014	(19)
Agency-issued commercial mortgage-backed securities	1,027,232	(15,539)	—	—	1,027,232	(15,539)
Total temporarily impaired securities (1)	\$ 2,102,365	\$ (20,007)	\$ 449,850	\$ (135)	\$ 2,552,215	\$ (20,142)

- (1) As of December 31, 2019, we identified a total of 58 investments that were in unrealized loss positions, of which 12 investments totaling \$0.4 billion with unrealized losses of \$0.1 million have been in an impaired position for a period of time greater than 12 months. As of December 31, 2019, we do not intend to sell any of our impaired securities prior to recovery of our adjusted cost basis, and it is more likely than not that we will not be required to sell any of our securities prior to recovery of our adjusted cost basis. Based on our analysis as of December 31, 2019, we deem all impairments to be temporary, and therefore changes in value for our temporarily impaired securities as of the same date are included in other comprehensive income. Market valuations and impairment analyses on assets in the AFS securities portfolio are reviewed and monitored on a quarterly basis.

(Dollars in thousands)	December 31, 2018					
	Less than 12 months		12 months or longer (1)		Total	
	Fair Value of Investments	Unrealized Losses	Fair Value of Investments	Unrealized Losses	Fair Value of Investments	Unrealized Losses
Available-for-sale securities:						
U.S. Treasury securities	\$ 494,287	\$ (3,785)	\$ 3,568,119	\$ (31,777)	\$ 4,062,406	\$ (35,562)
U.S. agency debentures	443,790	(1,602)	591,216	(4,768)	1,035,006	(6,370)
Foreign government debt securities	5,812	(3)	—	—	5,812	(3)
Residential mortgage-backed securities:						
Agency-issued collateralized mortgage obligations—fixed rate	13,430	(22)	1,866,788	(42,378)	1,880,218	(42,400)
Agency-issued collateralized mortgage obligations—variable rate	—	—	13,516	(15)	13,516	(15)
Total temporarily impaired securities (1)	\$ 957,319	\$ (5,412)	\$ 6,039,639	\$ (78,938)	\$ 6,996,958	\$ (84,350)

- (1) As of December 31, 2018, we identified a total of 200 investments that were in unrealized loss positions, of which 162 investments totaling \$6.0 billion with unrealized losses of \$78.9 million have been in an impaired position for a period of time greater than 12 months.

The following table summarizes the fixed income securities, carried at fair value, classified as AFS as of December 31, 2019 by the remaining contractual principal maturities. For U.S. Treasury securities, U.S. agency debentures and foreign government debt securities, the expected maturity is the actual contractual maturity of the notes. Expected maturities for mortgage-backed securities may differ significantly from their contractual maturities because mortgage borrowers have the right to prepay outstanding loan obligations with or without penalties. Mortgage-backed securities classified as AFS typically have original contractual maturities from 10 to 30 years whereas expected average lives of these securities tend to be significantly shorter and vary based upon structure and prepayments in lower interest rate environments.

SVB FINANCIAL GROUP AND SUBSIDIARIES
NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS - (Continued)

(Dollars in thousands)	December 31, 2019				
	Total	One Year or Less	After One Year to Five Years	After Five Years to Ten Years	After Ten Years
U.S. Treasury securities	\$ 6,894,010	\$ 1,835,971	\$ 1,890,778	\$ 3,167,261	\$ —
U.S. agency debentures	99,547	—	—	99,547	—
Foreign government debt securities	9,038	9,038	—	—	—
Residential mortgage-backed securities:					
Agency-issued collateralized mortgage-backed securities	4,148,791	—	—	—	4,148,791
Agency-issued collateralized mortgage obligations—fixed rate	1,538,343	—	—	1,858	1,536,485
Agency -issued commercial mortgage-backed securities	1,325,190	—	—	743,874	581,316
Total	<u>\$ 14,014,919</u>	<u>\$ 1,845,009</u>	<u>\$ 1,890,778</u>	<u>\$ 4,012,540</u>	<u>\$ 6,266,592</u>

Held-to-Maturity Securities

The components of our HTM investment securities portfolio at December 31, 2019 and 2018 are as follows:

(Dollars in thousands)	December 31, 2019			
	Amortized Cost	Unrealized Gains	Unrealized Losses	Fair Value
Held-to-maturity securities, at cost:				
U.S. agency debentures (1)	\$ 518,728	\$ 6,640	\$ (668)	\$ 524,700
Residential mortgage-backed securities:				
Agency-issued mortgage-backed securities	6,992,009	142,209	(2,066)	7,132,152
Agency-issued collateralized mortgage obligations—fixed rate	1,608,032	592	(8,502)	1,600,122
Agency-issued collateralized mortgage obligations—variable rate	178,611	94	(259)	178,446
Agency-issued commercial mortgage-backed securities	2,759,615	56,914	(4,508)	2,812,021
Municipal bonds and notes	1,785,951	83,314	(1,434)	1,867,831
Total held-to-maturity securities	<u>\$ 13,842,946</u>	<u>\$ 289,763</u>	<u>\$ (17,437)</u>	<u>\$ 14,115,272</u>

(1) Consists of pools of Small Business Investment Company debentures issued and guaranteed by the U.S. Small Business Administration, an independent agency of the United States.

(Dollars in thousands)	December 31, 2018			
	Amortized Cost	Unrealized Gains	Unrealized Losses	Fair Value
Held-to-maturity securities, at cost:				
U.S. agency debentures (1)	\$ 640,990	\$ 2,148	\$ (4,850)	\$ 638,288
Residential mortgage-backed securities:				
Agency-issued mortgage-backed securities	8,103,638	5,011	(157,767)	7,950,882
Agency-issued collateralized mortgage obligations—fixed rate	2,183,204	—	(62,272)	2,120,932
Agency-issued collateralized mortgage obligations—variable rate	214,483	608	(14)	215,077
Agency-issued commercial mortgage-backed securities	2,769,706	6,969	(64,374)	2,712,301
Municipal bonds and notes	1,575,421	2,304	(26,969)	1,550,756
Total held-to-maturity securities	<u>\$ 15,487,442</u>	<u>\$ 17,040</u>	<u>\$ (316,246)</u>	<u>\$ 15,188,236</u>

(1) Consists of pools of Small Business Investment Company debentures issued and guaranteed by the U.S. Small Business Administration, an independent agency of the United States.

SVB FINANCIAL GROUP AND SUBSIDIARIES
NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS - (Continued)

The following tables summarize our unrealized losses on our HTM securities portfolio into categories of less than 12 months and 12 months or longer as of December 31, 2019 and 2018:

(Dollars in thousands)	December 31, 2019					
	Less than 12 months		12 months or longer (1)		Total	
	Fair Value of Investments	Unrealized Losses	Fair Value of Investments	Unrealized Losses	Fair Value of Investments	Unrealized Losses
Held-to-maturity securities:						
U.S. agency debentures	\$ 125,304	\$ (668)	\$ —	\$ —	\$ 125,304	\$ (668)
Residential mortgage-backed securities:						
Agency-issued mortgage-backed securities	132,042	(420)	181,585	(1,646)	313,627	(2,066)
Agency-issued collateralized mortgage obligations—fixed rate	350,868	(1,131)	872,527	(7,371)	1,223,395	(8,502)
Agency-issued collateralized mortgage obligations—variable rate	143,265	(256)	4,615	(3)	147,880	(259)
Agency-issued commercial mortgage-backed securities	307,087	(1,818)	310,229	(2,690)	617,316	(4,508)
Municipal bonds and notes	160,414	(1,434)	—	—	160,414	(1,434)
Total temporarily impaired securities (1)	<u>\$ 1,218,980</u>	<u>\$ (5,727)</u>	<u>\$ 1,368,956</u>	<u>\$ (11,710)</u>	<u>\$ 2,587,936</u>	<u>\$ (17,437)</u>

(1) As of December 31, 2019, we identified a total of 266 investments that were in unrealized loss positions, of which 143 investments totaling \$1.4 billion with unrealized losses of \$11.7 million have been in an impaired position for a period of time greater than 12 months. As of December 31, 2019, we do not intend to sell any of our impaired securities prior to recovery of our adjusted cost basis, and it is more likely than not that we will not be required to sell any of our securities prior to recovery of our adjusted cost basis, which is consistent with our classification of these securities. Based on our analysis as of December 31, 2019, we deem all impairments to be temporary. Market valuations and impairment analyses on assets in the HTM securities portfolio are reviewed and monitored on a quarterly basis.

(Dollars in thousands)	December 31, 2018					
	Less than 12 months		12 months or longer (1)		Total	
	Fair Value of Investments	Unrealized Losses	Fair Value of Investments	Unrealized Losses	Fair Value of Investments	Unrealized Losses
Held-to-maturity securities:						
U.S. agency debentures	\$ 291,432	\$ (2,915)	\$ 66,624	\$ (1,935)	\$ 358,056	\$ (4,850)
Residential mortgage-backed securities:						
Agency-issued mortgage-backed securities	2,493,156	(34,956)	3,972,690	(122,811)	6,465,846	(157,767)
Agency-issued collateralized mortgage obligations—fixed rate	16,952	(109)	2,103,980	(62,163)	2,120,932	(62,272)
Agency-issued collateralized mortgage obligations—variable rate	3,364	(1)	8,101	(13)	11,465	(14)
Agency-issued commercial mortgage-backed securities	177,697	(1,580)	1,600,277	(62,794)	1,777,974	(64,374)
Municipal bonds and notes	868,751	(17,075)	340,413	(9,894)	1,209,164	(26,969)
Total temporarily impaired securities (1)	<u>\$ 3,851,352</u>	<u>\$ (56,636)</u>	<u>\$ 8,092,085</u>	<u>\$ (259,610)</u>	<u>\$ 11,943,437</u>	<u>\$ (316,246)</u>

(1) As of December 31, 2018, we identified a total of 1,244 investments that were in unrealized loss positions, of which 695 investments totaling \$8.1 billion with unrealized losses of \$259.6 million have been in an impaired position for a period of time greater than 12 months.

SVB FINANCIAL GROUP AND SUBSIDIARIES
NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS - (Continued)

The following table summarizes the remaining contractual principal maturities on fixed income investment securities classified as HTM as of December 31, 2019. For U.S. agency debentures, the expected maturity is the actual contractual maturity of the notes. Expected maturities for mortgage-backed securities may differ significantly from their contractual maturities because mortgage borrowers have the right to prepay outstanding loan obligations with or without penalties. Mortgage-backed securities classified as HTM typically have original contractual maturities from 10 to 30 years whereas expected average lives of these securities tend to be significantly shorter and vary based upon structure and prepayments in lower interest rate environments.

(Dollars in thousands)	December 31, 2019									
	Total		One Year or Less		After One Year to Five Years		After Five Years to Ten Years		After Ten Years	
	Amortized Cost	Fair Value	Amortized Cost	Fair Value	Amortized Cost	Fair Value	Amortized Cost	Fair Value	Amortized Cost	Fair Value
U.S. agency debentures	\$ 518,728	\$ 524,700	\$ —	\$ —	\$ 123,100	\$ 123,969	\$ 395,628	\$ 400,731	\$ —	\$ —
Residential mortgage-backed securities:										
Agency-issued mortgage-backed securities	6,992,009	7,132,152	2,066	2,117	76,759	76,956	726,422	725,854	6,186,762	6,327,225
Agency-issued collateralized mortgage obligations - fixed rate	1,608,032	1,600,122	—	—	—	—	624,128	619,180	983,904	980,942
Agency-issued collateralized mortgage obligations - variable rate	178,611	178,446	—	—	—	—	—	—	178,611	178,446
Agency-issued commercial mortgage-backed securities	2,759,615	2,812,021	—	—	—	—	102,633	110,836	2,656,982	2,701,185
Municipal bonds and notes	1,785,951	1,867,831	13,973	13,984	83,368	84,773	387,278	403,736	1,301,332	1,365,338
Total	<u>\$ 13,842,946</u>	<u>\$ 14,115,272</u>	<u>\$ 16,039</u>	<u>\$ 16,101</u>	<u>\$ 283,227</u>	<u>\$ 285,698</u>	<u>\$ 2,236,089</u>	<u>\$ 2,260,337</u>	<u>\$ 11,307,591</u>	<u>\$ 11,553,136</u>

SVB FINANCIAL GROUP AND SUBSIDIARIES
NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS - (Continued)

Non-marketable and Other Equity Securities

The major components of our non-marketable and other equity securities portfolio at December 31, 2019 and 2018 are as follows:

(Dollars in thousands)	December 31, 2019	December 31, 2018
Non-marketable and other equity securities:		
Non-marketable securities (fair value accounting):		
Consolidated venture capital and private equity fund investments (1)	\$ 87,180	\$ 118,333
Unconsolidated venture capital and private equity fund investments (2)	178,217	201,098
Other investments without a readily determinable fair value (3)	55,255	25,668
Other equity securities in public companies (fair value accounting) (4)	59,200	20,398
Non-marketable securities (equity method accounting) (5):		
Venture capital and private equity fund investments	215,367	129,485
Debt funds	7,271	5,826
Other investments	152,863	121,721
Investments in qualified affordable housing projects, net (6)	458,476	318,575
Total non-marketable and other equity securities	<u>\$ 1,213,829</u>	<u>\$ 941,104</u>

- (1) The following table shows the amounts of venture capital and private equity fund investments held by the following consolidated funds and our ownership percentage of each fund at December 31, 2019 and 2018 (fair value accounting):

(Dollars in thousands)	December 31, 2019		December 31, 2018	
	Amount	Ownership %	Amount	Ownership %
Strategic Investors Fund, LP	\$ 5,729	12.6%	\$ 12,452	12.6%
Capital Preferred Return Fund, LP	45,341	20.0	53,957	20.0
Growth Partners, LP	35,976	33.0	50,845	33.0
CP I, LP	134	10.7	1,079	10.7
Total consolidated venture capital and private equity fund investments	<u>\$ 87,180</u>		<u>\$ 118,333</u>	

- (2) The carrying value represents investments in 205 and 213 funds (primarily venture capital funds) at December 31, 2019 and December 31, 2018, respectively, where our ownership interest is typically less than 5% of the voting interests of each such fund and in which we do not have the ability to exercise significant influence over the partnerships operating activities and financial policies. We carry our unconsolidated venture capital and private equity fund investments at fair value based on the fund investments' net asset values per share as obtained from the general partners of the investments. For each fund investment, we adjust the net asset value per share for differences between our measurement date and the date of the fund investment's net asset value by using the most recently available financial information from the investee general partner, for example September 30th for our December 31st consolidated financial statements, adjusted for any contributions paid, distributions received from the investment, and significant fund transactions or market events during the reporting period.
- (3) These investments include direct equity investments in private companies. The carrying value is based on the price at which the investment was acquired plus or minus changes resulting from observable price changes in orderly transactions for identical or similar investments. We consider a range of factors when adjusting the fair value of these investments, including, but not limited to, the term and nature of the investment, local market conditions, values for comparable securities, current and projected operating performance, exit strategies, financing transactions subsequent to the acquisition of the investment and a discount for certain investments that have lock-up restrictions or other features that indicate a discount to fair value is warranted.

The following table shows the carrying amount of other investments without a readily determinable fair value at December 31, 2019, and the amounts recognized in earnings for the year ended December 31, 2019 and on a cumulative basis:

SVB FINANCIAL GROUP AND SUBSIDIARIES
NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS - (Continued)

(Dollars in thousands)	Year ended December 31, 2019	Cumulative Adjustments
Measurement alternative:		
Carrying value at December 31, 2019	\$ 55,255	
Carrying value adjustments:		
Impairment	\$ (460)	\$ (460)
Upward changes for observable prices	1,929	2,348
Downward changes for observable prices	(3,511)	(5,030)

- (4) Investments classified as other equity securities (fair value accounting) represent shares held in public companies as a result of exercising public equity warrant assets, direct equity investments in public companies held by our consolidated funds, and exchange traded funds held by SVB Leerink. Changes in equity securities measured at fair value are recognized through net income.
- (5) The following table shows the carrying value and our ownership percentage of each investment at December 31, 2019 and 2018 (equity method accounting):

(Dollars in thousands)	December 31, 2019		December 31, 2018	
	Amount	Ownership %	Amount	Ownership %
Venture capital and private equity fund investments:				
Strategic Investors Fund II, LP	\$ 3,612	8.6%	\$ 4,670	8.6%
Strategic Investors Fund III, LP	15,668	5.9	17,396	5.9
Strategic Investors Fund IV, LP	27,064	5.0	28,974	5.0
Strategic Investors Fund V funds	46,830	Various	28,189	Various
CP II, LP (i)	5,907	5.1	7,122	5.1
Other venture capital and private equity fund investments	116,286	Various	43,134	Various
Total venture capital and private equity fund investments	\$ 215,367		\$ 129,485	
Debt funds:				
Gold Hill Capital 2008, LP (ii)	\$ 5,525	15.5%	\$ 3,901	15.5%
Other debt funds	1,746	Various	1,925	Various
Total debt funds	\$ 7,271		\$ 5,826	
Other investments:				
SPD Silicon Valley Bank Co., Ltd.	\$ 74,190	50.0%	\$ 76,412	50.0%
Other investments	78,673	Various	45,309	Various
Total other investments	\$ 152,863		\$ 121,721	

- (i) Our ownership includes direct ownership interest of 1.3 percent and indirect ownership interest of 3.8 percent through our investments in Strategic Investors Fund II, LP.
- (ii) Our ownership includes direct ownership interest of 11.5 percent in the fund and an indirect interest in the fund through our investment in Gold Hill Capital 2008, LLC of 4.0 percent.
- (6) The following table presents the balances of our investments in qualified affordable housing projects and related unfunded commitments included as a component of "other liabilities" on our consolidated balance sheets at December 31, 2019 and 2018:

SVB FINANCIAL GROUP AND SUBSIDIARIES
NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS - (Continued)

(Dollars in thousands)	December 31, 2019	December 31, 2018
Investments in qualified affordable housing projects, net	\$ 458,476	\$ 318,575
Other liabilities	302,031	205,685

The following table presents other information relating to our investments in qualified affordable housing projects for the years ended December 31, 2019, 2018 and 2017:

(Dollars in thousands)	Year ended December 31,		
	2019	2018	2017
Tax credits and other tax benefits recognized	\$ 35,037	\$ 24,047	\$ 17,296
Amortization expense included in provision for income taxes (i)	28,267	18,876	17,362

- (i) All investments are amortized using the proportional amortization method and amortization expense is included in the provision for income taxes. Included in amortization expense for the year ended December 31, 2017 is a one-time cumulative effect adjustment of \$3.8 million due to the decrease in value of deductions in the 2018 tax year and going forward, due to the TCJ Act federal corporate income tax rate reduction.

The following table presents the net gains and losses on non-marketable and other equity securities in 2019, 2018 and 2017 as recorded in the line item "Gains on investment securities, net," a component of noninterest income:

(Dollars in thousands)	Year ended December 31,		
	2019	2018	2017
Net gains (losses) on non-marketable and other equity securities:			
Non-marketable securities (fair value accounting):			
Consolidated venture capital and private equity fund investments	\$ 22,507	\$ 20,999	\$ 27,186
Unconsolidated venture capital and private equity fund investments (1)	31,482	39,075	21,377
Other investments without a readily determinable fair value (1)	2,742	3,206	3,842
Other equity securities in public companies (fair value accounting) (1)	7,772	(25,483)	241
Non-marketable securities (equity method accounting):			
Venture capital and private equity fund investments	73,813	49,341	14,472
Debt funds	1,647	541	8,950
Other investments	(1,388)	1,155	(6,276)
Total net gains on non-marketable and other equity securities	\$ 138,575	\$ 88,834	\$ 69,792
Less: Realized net gains (losses) on the sales and OTTI of non-marketable and other equity securities (2)	4,744	(26,097)	(355)
Net gains on non-marketable and other equity securities still held	\$ 133,831	\$ 114,931	\$ 70,147

- (1) Presentation for year-ended December 31, 2017 amounts are not determined in a manner consistent with the December 31, 2018 and 2019 presentation due to the adoption of ASU 2016-01.
- (2) Realized gains and losses include sales and OTTI of non-marketable and other equity securities. Includes gains of \$5.2 million on sales and \$0.4 million of OTTI for the period ended December 31, 2019. Includes losses of \$20.8 million and gains of \$3.8 million on sales and \$5.3 million and \$4.2 million of OTTI for the periods ended December 31, 2018 and 2017, respectively.

SVB FINANCIAL GROUP AND SUBSIDIARIES
NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS - (Continued)

10. Loans, Allowance for Loan Losses and Allowance for Unfunded Credit Commitments

We serve a variety of commercial clients in the technology, life science/healthcare, private equity/venture capital and premium wine industries. Our technology clients generally tend to be in the industries of hardware (semiconductors, communications, data, storage and electronics), software/internet (such as infrastructure software, applications, software services, digital content and advertising technology), and energy and resource innovation ("ERI"). Because of the diverse nature of ERI products and services, for our loan-related reporting purposes, ERI-related loans are reported under our hardware, software/internet, life science/healthcare and other commercial loan categories, as applicable. Our life science/healthcare clients primarily tend to be in the industries of biotechnology, medical devices, healthcare information technology and healthcare services. Loans made to private equity/venture capital firm clients typically enable them to fund investments prior to their receipt of funds from capital calls. Loans to the premium wine industry focus on vineyards and wineries that produce grapes and wines of high quality.

In addition to commercial loans, we make consumer loans through SVB Private Bank and provide real estate secured loans to eligible employees through our EHOP. Our private banking clients are primarily private equity/venture capital professionals and executive leaders in the innovation companies they support. These products and services include real estate secured home equity lines of credit, which may be used to finance real estate investments and loans used to purchase, renovate or refinance personal residences. These products and services also include restricted stock purchase loans and capital call lines of credit.

We also provide community development loans made as part of our responsibilities under the Community Reinvestment Act. These loans are included within "Construction loans" below and are primarily secured by real estate.

The composition of loans, net of unearned income of \$163 million and \$173 million at December 31, 2019 and 2018, respectively, is presented in the following table:

(Dollars in thousands)	December 31,	
	2019	2018
Commercial loans:		
Software/internet	\$ 6,199,548	\$ 6,154,755
Hardware	1,371,159	1,234,557
Private equity/venture capital	17,801,324	14,110,560
Life science/healthcare	2,368,048	2,385,612
Premium wine	267,487	249,266
Other	420,555	321,978
Total commercial loans	28,428,121	24,456,728
Real estate secured loans:		
Premium wine (1)	820,730	710,397
Consumer loans (2)	3,286,737	2,612,971
Other	38,880	40,435
Total real estate secured loans	4,146,347	3,363,803
Construction loans	100,219	97,077
Consumer loans	489,949	420,672
Total loans, net of unearned income (3)	\$ 33,164,636	\$ 28,338,280

(1) Included in our premium wine portfolio are gross construction loans of \$83 million and \$99 million at December 31, 2019 and 2018, respectively.

SVB FINANCIAL GROUP AND SUBSIDIARIES
NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS - (Continued)

(2) Consumer loans secured by real estate at December 31, 2019 and 2018 were comprised of the following:

(Dollars in thousands)	December 31,	
	2019	2018
Loans for personal residence	\$ 2,829,880	\$ 2,251,292
Loans to eligible employees	401,396	290,194
Home equity lines of credit	55,461	71,485
Consumer loans secured by real estate	<u>\$ 3,286,737</u>	<u>\$ 2,612,971</u>

(3) Included within our total loan portfolio are credit card loans of \$395 million and \$335 million at December 31, 2019 and 2018, respectively.

Credit Quality

The composition of loans, net of unearned income of \$163 million and \$173 million at December 31, 2019 and 2018, respectively, broken out by portfolio segment and class of financing receivable, is as follows:

(Dollars in thousands)	December 31,	
	2019	2018
Commercial loans:		
Software/internet	\$ 6,199,548	\$ 6,154,755
Hardware	1,371,159	1,234,557
Private equity/venture capital	17,801,324	14,110,560
Life science/healthcare	2,368,048	2,385,612
Premium wine	1,088,217	959,663
Other	559,654	459,490
Total commercial loans	<u>29,387,950</u>	<u>25,304,637</u>
Consumer loans:		
Real estate secured loans	3,286,737	2,612,971
Other consumer loans	489,949	420,672
Total consumer loans	<u>3,776,686</u>	<u>3,033,643</u>
Total loans, net of unearned income	<u>\$ 33,164,636</u>	<u>\$ 28,338,280</u>

SVB FINANCIAL GROUP AND SUBSIDIARIES
NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS - (Continued)

The following table summarizes the aging of our gross loans, broken out by portfolio segment and class of financing receivable as of December 31, 2019 and 2018:

(Dollars in thousands)	30 - 59 Days Past Due	60 - 89 Days Past Due	Equal to or Greater Than 90 Days Past Due	Total Past Due	Current	Loans Past Due 90 Days or More Still Accruing Interest
December 31, 2019:						
Commercial loans:						
Software/internet	\$ 19,839	\$ 4,225	\$ —	\$ 24,064	\$ 6,136,230	\$ —
Hardware	104	18,084	—	18,188	1,357,379	—
Private equity/venture capital	97,893	383	3,150	101,426	17,715,964	3,150
Life science/healthcare	445	8,420	—	8,865	2,387,203	—
Premium wine	7,543	—	—	7,543	1,070,111	—
Other	9	24	—	33	579,446	—
Total commercial loans	125,833	31,136	3,150	160,119	29,246,333	3,150
Consumer loans:						
Real estate secured loans	6,282	—	365	6,647	3,271,318	365
Other consumer loans	164	283	—	447	489,831	—
Total consumer loans	6,446	283	365	7,094	3,761,149	365
Total gross loans excluding impaired loans	132,279	31,419	3,515	167,213	33,007,482	3,515
Impaired loans	5,096	6,805	12,473	24,374	128,635	—
Total gross loans	\$ 137,375	\$ 38,224	\$ 15,988	\$ 191,587	\$ 33,136,117	\$ 3,515
December 31, 2018:						
Commercial loans:						
Software/internet	\$ 28,134	\$ 6,944	\$ 378	\$ 35,456	\$ 6,059,672	\$ 378
Hardware	300	34	4	338	1,233,956	4
Private equity/venture capital	59,481	11	—	59,492	14,054,940	—
Life science/healthcare	16,082	817	19	16,918	2,410,091	19
Premium wine	2,953	14	—	2,967	956,285	—
Other	7,391	163	1	7,555	477,442	1
Total commercial loans	114,341	7,983	402	122,726	25,192,386	402
Consumer loans:						
Real estate secured loans	3,598	1,750	1,562	6,910	2,598,496	1,562
Other consumer loans	361	—	—	361	420,359	—
Total consumer loans	3,959	1,750	1,562	7,271	3,018,855	1,562
Total gross loans excluding impaired loans	118,300	9,733	1,964	129,997	28,211,241	1,964
Impaired loans	2,843	1,181	25,092	29,116	140,958	—
Total gross loans	\$ 121,143	\$ 10,914	\$ 27,056	\$ 159,113	\$ 28,352,199	\$ 1,964

SVB FINANCIAL GROUP AND SUBSIDIARIES
NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS - (Continued)

The following table summarizes our impaired loans as they relate to our allowance for loan losses, broken out by portfolio segment and class of financing receivable for the years ended December 31, 2019 and 2018:

(Dollars in thousands)	Impaired loans for which there is a related allowance for loan losses	Impaired loans for which there is no related allowance for loan losses	Total carrying value of impaired loans	Total unpaid principal of impaired loans
December 31, 2019:				
Commercial loans:				
Software/internet	\$ 64,100	\$ 31,472	\$ 95,572	\$ 109,736
Hardware	2,143	3,315	5,458	10,049
Private equity/venture capital	—	—	—	—
Life science/healthcare	25,941	5,671	31,612	70,600
Premium wine	204	11,718	11,922	12,010
Other	1,284	1,681	2,965	3,114
Total commercial loans	93,672	53,857	147,529	205,509
Consumer loans:				
Real estate secured loans	1,766	3,714	5,480	8,527
Total consumer loans	1,766	3,714	5,480	8,527
Total	\$ 95,438	\$ 57,571	\$ 153,009	\$ 214,036
December 31, 2018:				
Commercial loans:				
Software/internet	\$ 49,625	\$ 65,225	\$ 114,850	\$ 131,858
Hardware	1,256	10,250	11,506	12,159
Private equity/venture capital	—	3,700	3,700	3,700
Life science/healthcare	17,791	16,276	34,067	44,446
Premium wine	—	1,301	1,301	1,365
Other	411	—	411	411
Total commercial loans	69,083	96,752	165,835	193,939
Consumer loans:				
Real estate secured loans	3,919	320	4,239	5,969
Total consumer loans	3,919	320	4,239	5,969
Total	\$ 73,002	\$ 97,072	\$ 170,074	\$ 199,908

SVB FINANCIAL GROUP AND SUBSIDIARIES
NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS - (Continued)

The following table summarizes our average impaired loans and interest income recognized on impaired loans, broken out by portfolio segment and class of financing receivable during 2019, 2018 and 2017:

Year ended December 31, (Dollars in thousands)	Average impaired loans			Interest income recognized on impaired loans		
	2019	2018	2017	2019	2018	2017
Commercial loans:						
Software/internet	\$ 88,628	\$ 112,493	\$ 119,557	\$ 2,813	\$ 1,513	\$ 2,263
Hardware	12,500	28,540	35,022	464	312	1,061
Private equity/venture capital	2,264	1,327	556	—	—	—
Life science/healthcare	44,827	30,144	30,842	919	756	90
Premium wine	2,912	2,605	3,249	311	68	152
Other	2,050	171	576	21	—	—
Total commercial loans	153,181	175,280	189,802	4,528	2,649	3,566
Consumer loans:						
Real estate secured loans	7,159	4,028	1,514	54	15	—
Other consumer loans	7	358	1,804	—	—	—
Total consumer loans	7,166	4,386	3,318	54	15	—
Total average impaired loans	\$ 160,347	\$ 179,666	\$ 193,120	\$ 4,582	\$ 2,664	\$ 3,566

The following tables summarize the activity relating to our allowance for loan losses for 2019, 2018 and 2017 broken out by portfolio segment:

Year ended December 31, 2019 (Dollars in thousands)	Beginning Balance December 31, 2018	Charge-offs	Recoveries	Provision for Loan Losses	Foreign Currency Translation Adjustments	Ending Balance December 31, 2019
Commercial loans:						
Software/internet	\$ 103,567	\$ (46,930)	\$ 11,363	\$ 31,766	\$ 457	\$ 100,223
Hardware	19,725	(10,056)	7,069	2,740	166	19,644
Private equity/venture capital	98,581	(2,047)	2,047	16,989	235	115,805
Life science/healthcare	32,180	(31,950)	267	38,178	570	39,245
Premium wine	3,355	(174)	—	1,813	154	5,148
Other	3,558	(415)	36	328	(154)	3,353
Total commercial loans	260,966	(91,572)	20,782	91,814	1,428	283,418
Consumer loans	19,937	(1,031)	256	2,369	(25)	21,506
Total allowance for loan losses	\$ 280,903	\$ (92,603)	\$ 21,038	\$ 94,183	\$ 1,403	\$ 304,924

SVB FINANCIAL GROUP AND SUBSIDIARIES
NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS - (Continued)

Year ended December 31, 2018 (Dollars in thousands)	Beginning Balance December 31, 2017	Charge-offs	Recoveries	Provision for (Reduction of) Loan Losses	Foreign Currency Translation Adjustments	Ending Balance December 31, 2018
Commercial loans:						
Software/internet	\$ 96,104	\$ (42,315)	\$ 5,664	\$ 45,068	\$ (954)	\$ 103,567
Hardware	27,614	(16,148)	1,849	6,555	(145)	19,725
Private equity/venture capital	82,468	(112)	13	16,485	(273)	98,581
Life science/healthcare	24,924	(6,662)	348	14,347	(777)	32,180
Premium wine	3,532	—	—	(182)	5	3,355
Other	3,941	(2,391)	3,275	(1,320)	53	3,558
Total commercial loans	238,583	(67,628)	11,149	80,953	(2,091)	260,966
Consumer loans	16,441	(289)	487	3,339	(41)	19,937
Total allowance for loan losses	\$ 255,024	\$ (67,917)	\$ 11,636	\$ 84,292	\$ (2,132)	\$ 280,903

Year ended December 31, 2017 (Dollars in thousands)	Beginning Balance December 31, 2016	Charge-offs	Recoveries	Provision for (Reduction of) Loan Losses	Foreign Currency Translation Adjustments	Ending Balance December 31, 2017
Commercial loans:						
Software/internet	\$ 97,388	\$ (45,012)	\$ 4,649	\$ 38,462	\$ 617	\$ 96,104
Hardware	31,166	(10,414)	487	6,051	324	27,614
Private equity/venture capital	50,299	(323)	—	31,625	867	82,468
Life science/healthcare	25,446	(8,210)	189	7,414	85	24,924
Premium wine	4,115	—	—	(540)	(43)	3,532
Other	4,768	(1,156)	1,850	(1,459)	(62)	3,941
Total commercial loans	213,182	(65,115)	7,175	81,553	1,788	238,583
Consumer loans	12,184	(1,567)	1,363	4,386	75	16,441
Total allowance for loan losses	\$ 225,366	\$ (66,682)	\$ 8,538	\$ 85,939	\$ 1,863	\$ 255,024

The following table summarizes the activity relating to our allowance for unfunded credit commitments for 2019, 2018 and 2017:

(Dollars in thousands)	Year ended December 31,		
	2019	2018	2017
Allowance for unfunded credit commitments, beginning balance	\$ 55,183	\$ 51,770	\$ 45,265
Provision for unfunded credit commitments	12,233	3,578	6,365
Foreign currency translation adjustments	240	(165)	140
Allowance for unfunded credit commitments, ending balance (1)	\$ 67,656	\$ 55,183	\$ 51,770

- (1) The “allowance for unfunded credit commitments” is included as a component of “other liabilities” on our consolidated balance sheets. See Note 22—“Off-Balance Sheet Arrangements, Guarantees and Other Commitments” of the “Notes to the Consolidated Financial Statements” under Part II, Item 8 of this report for additional disclosures related to our commitments to extend credit.

SVB FINANCIAL GROUP AND SUBSIDIARIES
NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS - (Continued)

The following table summarizes the allowance for loan losses individually and collectively evaluated for impairment as of December 31, 2019 and 2018, broken out by portfolio segment:

(Dollars in thousands)	December 31, 2019				December 31, 2018			
	Individually Evaluated for Impairment		Collectively Evaluated for Impairment		Individually Evaluated for Impairment		Collectively Evaluated for Impairment	
	Allowance for loan losses	Recorded investment in loans	Allowance for loan losses	Recorded investment in loans	Allowance for loan losses	Recorded investment in loans	Allowance for loan losses	Recorded investment in loans
Commercial loans:								
Software/internet	\$ 26,613	\$ 95,572	\$ 73,610	\$ 6,103,976	\$ 28,527	\$ 114,850	\$ 75,040	\$ 6,039,905
Hardware	1,214	5,458	18,430	1,365,701	1,253	11,506	18,472	1,223,051
Private equity/venture capital	—	—	115,805	17,801,324	—	3,700	98,581	14,106,860
Life science/healthcare	16,414	31,612	22,831	2,336,436	7,484	34,067	24,696	2,351,545
Premium wine	204	11,922	4,944	1,076,295	—	1,301	3,355	958,362
Other	203	2,965	3,150	556,689	411	411	3,147	459,079
Total commercial loans	44,648	147,529	238,770	29,240,421	37,675	165,835	223,291	25,138,802
Total consumer loans	211	5,480	21,295	3,771,206	266	4,239	19,671	3,029,404
Total	\$ 44,859	\$ 153,009	\$ 260,065	\$ 33,011,627	\$ 37,941	\$ 170,074	\$ 242,962	\$ 28,168,206

Credit Quality Indicators

For each individual client, we establish an internal credit risk rating for that loan, which is used for assessing and monitoring credit risk as well as performance of the loan and the overall portfolio. Our internal credit risk ratings are also used to summarize the risk of loss due to failure by an individual borrower to repay the loan. For our internal credit risk ratings, each individual loan is given a risk rating of 1 through 10. Loans risk-rated 1 through 4 are performing loans and translate to an internal rating of “Pass,” with loans risk-rated 1 being cash secured. Loans risk-rated 5 through 7 are performing loans; however, we consider them as demonstrating higher risk, which requires more frequent review of the individual exposures; these translate to an internal rating of “Performing (Criticized).” When full repayment of a criticized loan has been deemed improbable under the original contractual terms but full repayment remains probable overall, the loan is considered to be a “Performing Impaired (Criticized)” loan. All of our nonaccrual loans are risk-rated 8 or 9 and are classified under the nonperforming impaired category. (For a further description of nonaccrual loans, refer to Note 2—“Summary of Significant Accounting Policies” of the “Notes to the Consolidated Financial Statements” under Part II, Item 8 of this report). Loans rated 10 are charged-off and are not included as part of our loan portfolio balance. We review our credit quality indicators for performance and appropriateness of risk ratings as part of our evaluation process for our allowance for loan losses.

SVB FINANCIAL GROUP AND SUBSIDIARIES
NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS - (Continued)

The following table summarizes the credit quality indicators, broken out by portfolio segment and class of financing receivables as of December 31, 2019 and 2018:

(Dollars in thousands)	Pass	Performing (Criticized)	Performing Impaired (Criticized)	Nonperforming Impaired (Nonaccrual)	Total
December 31, 2019:					
Commercial loans:					
Software/internet	\$ 5,704,283	\$ 456,011	\$ 28,417	\$ 67,155	\$ 6,255,866
Hardware	1,266,077	109,490	3,315	2,143	1,381,025
Private equity/venture capital	17,813,128	4,262	—	—	17,817,390
Life science/healthcare	2,197,679	198,389	5,211	26,401	2,427,680
Premium wine	1,053,021	24,633	11,717	205	1,089,576
Other	571,040	8,439	1,680	1,285	582,444
Total commercial loans	28,605,228	801,224	50,340	97,189	29,553,981
Consumer loans:					
Real estate secured loans	3,266,748	11,217	—	5,480	3,283,445
Other consumer loans	489,903	375	—	—	490,278
Total consumer loans	3,756,651	11,592	—	5,480	3,773,723
Total gross loans	\$ 32,361,879	\$ 812,816	\$ 50,340	\$ 102,669	\$ 33,327,704
December 31, 2018:					
Commercial loans:					
Software/internet	\$ 5,574,332	\$ 520,796	\$ 48,069	\$ 66,781	\$ 6,209,978
Hardware	1,146,985	87,309	10,250	1,256	1,245,800
Private equity/venture capital	14,098,281	16,151	—	3,700	14,118,132
Life science/healthcare	2,291,356	135,653	16,276	17,791	2,461,076
Premium wine	909,965	49,287	1,017	284	960,553
Other	467,653	17,344	—	411	485,408
Total commercial loans	24,488,572	826,540	75,612	90,223	25,480,947
Consumer loans:					
Real estate secured loans	2,584,261	21,145	320	3,919	2,609,645
Other consumer loans	419,771	949	—	—	420,720
Total consumer loans	3,004,032	22,094	320	3,919	3,030,365
Total gross loans	\$ 27,492,604	\$ 848,634	\$ 75,932	\$ 94,142	\$ 28,511,312

SVB FINANCIAL GROUP AND SUBSIDIARIES
NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS - (Continued)

Troubled Debt Restructurings

As of December 31, 2019 we had 23 TDRs with a total carrying value of \$109.0 million where concessions have been granted to borrowers experiencing financial difficulties, in an attempt to maximize collection. This compares to 17 TDRs with a total carrying value of \$83.7 million as of December 31, 2018. There were unfunded commitments available for funding of \$0.8 million to the clients associated with these TDRs as of December 31, 2019. The following table summarizes our loans modified in TDRs, broken out by portfolio segment and class of financing receivables at December 31, 2019 and 2018:

(Dollars in thousands)	December 31,	
	2019	2018
Loans modified in TDRs:		
Commercial loans:		
Software/internet	\$ 71,136	\$ 58,089
Hardware	1,685	9,665
Life science/healthcare	20,600	12,738
Premium wine	13,457	2,883
Total commercial loans	106,878	83,375
Consumer loans:		
Other consumer loans	2,104	320
Total loans modified in TDRs	\$ 108,982	\$ 83,695

The following table summarizes the recorded investment in loans modified in TDRs, broken out by portfolio segment and class of financing receivable, for modifications made during 2019, 2018 and 2017:

(Dollars in thousands)	Year ended December 31,		
	2019	2018	2017
Loans modified in TDRs during the period:			
Commercial loans:			
Software/internet	\$ 62,367	\$ 30,429	\$ 42,184
Hardware	1,685	9,665	51,132
Private equity/venture capital	—	—	350
Life science/healthcare	13,309	660	—
Premium wine	11,017	—	177
Total commercial loans	88,378	40,754	93,843
Consumer loans:			
Other consumer loans	1,793	320	—
Total loans modified in TDRs during the period (1)	\$ 90,171	\$ 41,074	\$ 93,843

(1) There were \$11.3 million, \$4.6 million and \$3.0 million of partial charge-offs during 2019, 2018 and 2017, respectively.

During 2019, \$86.9 million of new TDRs were modified through payment deferrals granted to our clients and \$3.3 million were modified through partial forgiveness of principal. During 2018, all new TDRs of \$41.1 million were modified through payment deferrals granted to our clients. During 2017, \$93.5 million of new TDRs were modified through payment deferrals granted to our clients and \$0.3 million were modified through partial forgiveness of principal.

The related allowance for loan losses for the majority of our TDRs is determined on an individual basis by comparing the carrying value of the loan to the present value of the estimated future cash flows, discounted at the pre-modification contractual interest rate. For certain TDRs, the related allowance for loan losses is determined based on the fair value of the collateral if the loan is collateral dependent.

SVB FINANCIAL GROUP AND SUBSIDIARIES
NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS - (Continued)

The following table summarizes the recorded investment in loans modified in TDRs within the previous 12 months that subsequently defaulted during their respective periods, broken out by portfolio segment and class of financing receivable, during 2019, 2018 and 2017:

(Dollars in thousands)	December 31,		
	2019	2018	2017
TDRs modified within the previous 12 months that defaulted during the period:			
Commercial loans:			
Software/internet	\$ 37,294	\$ —	\$ —
Life science/healthcare	10,639	—	—
Total TDRs modified within the previous 12 months that defaulted in the period	\$ 47,933	\$ —	\$ —

Charge-offs and defaults on previously restructured loans are evaluated to determine the impact to the allowance for loan losses, if any. The evaluation of these defaults may impact the assumptions used in calculating the reserve on other TDRs and impaired loans as well as management's overall outlook of macroeconomic factors that affect the reserve on the loan portfolio as a whole. After evaluating the charge-offs and defaults experienced on our TDRs we determined that no change to our reserving methodology for TDRs was necessary to determine the allowance for loan losses as of December 31, 2019.

11. Premises and Equipment

Premises and equipment at December 31, 2019 and 2018 consisted of the following:

(Dollars in thousands)	December 31,	
	2019	2018
Computer software	\$ 261,643	\$ 217,017
Computer hardware	82,643	70,247
Leasehold improvements	121,907	98,237
Furniture and equipment	46,300	42,319
Total	512,493	427,820
Accumulated depreciation and amortization	(350,617)	(298,607)
Premises and equipment, net	\$ 161,876	\$ 129,213

Depreciation and amortization expense for premises and equipment was \$42.0 million, \$38.1 million and \$38.0 million for the years ended 2019, 2018 and 2017, respectively.

12. Leases

We have operating leases for our corporate offices, data centers and certain equipment utilized at those properties. We are obligated under a number of noncancelable operating leases for premises and equipment that expire at various dates, through 2030, and in most instances, include options to renew or extend at market rates and terms. Such leases may provide for periodic adjustments of rentals during the term of the lease based on changes in various economic indicators.

On January 1, 2019, we adopted the new lease standard ASC 842 and all the related amendments. There were no significant assumptions or judgments required upon applying the new lease standard. We have no leases that meet the definition of a finance lease under ASC 842 and our lessor accounting treatment for subleases is not material. The comparative information below has not been restated and continues to be reported under the accounting standards in effect for those periods.

SVB FINANCIAL GROUP AND SUBSIDIARIES
NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS - (Continued)

Total recorded balances for the lease assets and liabilities are as follows:

(Dollars in thousands)	December 31, 2019
Assets:	
Right-of-use assets - operating leases (1)	\$ 197,365
Liabilities:	
Lease liabilities - operating leases (1)	218,847

(1) Included in these amounts are \$21.7 million and \$30.0 million of ROU assets and lease liabilities, respectively, attributable to the inclusion of SVB Leerink in our financial results at December 31, 2019.

The components of our lease cost and supplemental cash flow information related to leases for the year ended December 31, 2019 were as follows:

(Dollars in thousands)	2019
Operating lease cost	\$ 41,049
Short-term lease cost	1,823
Variable lease cost	3,477
Less: sublease income	(4,492)
Total lease expense, net	\$ 41,857
Supplemental cash flows information:	
Cash paid for amounts included in the measurement of lease liabilities:	
Cash paid for operating leases	\$ 44,976
Noncash items during the period:	
Lease obligations in exchange for obtaining right-of-use assets:	
Operating leases	\$ 33,167

The table below presents additional information related to the Company's leases as of December 31, 2019:

	December 31, 2019
Weighted-average remaining term (in years) - operating leases	6.29
Weighted-average discount rate - operating leases (1)	2.92%

(1) The incremental borrowing rate used to calculate the lease liability was determined based on the facts and circumstances of the economic environment and the Company's credit standing as of the effective date of ASC 842. Additionally, the total lease term and total lease payments were also considered in determining the rate. Based on these considerations the Company identified credit terms available under its existing credit lines which represent a collateralized borrowing rate that has varying credit terms that could be matched to total lease terms and total lease payments in ultimately determining the implied borrowing rate in each lease contract.

SVB FINANCIAL GROUP AND SUBSIDIARIES
NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS - (Continued)

The following table presents our undiscounted future cash payments for our operating lease liabilities as of December 31, 2019:

Years ended December 31, (Dollars in thousands)	Operating Leases
2020	\$ 44,791
2021	42,683
2022	37,669
2023	36,914
2024	26,602
2025 and thereafter	52,128
Total lease payments (1)	\$ 240,787
Less: imputed interest	(21,940)
Total lease liabilities	\$ 218,847

(1) As of December 31, 2019, we have additional leases that have not yet commenced. We estimate that we will record additional lease liabilities of \$29.1 million upon commencement. These leases will commence in 2020 with lease terms of two to five years.

The following table presents minimum future payments under noncancelable operating leases under ASC 840 as of December 31, 2018:

(Dollars in thousands)	Amount
2019	\$ 38,609
2020	37,575
2021	35,854
2022	31,659
2023	30,904
2024 and thereafter	49,071
Total minimum future payments	\$ 223,672

Rent expense for premises and equipment leased under operating leases, under ASC 840 totaled \$34.6 million and \$31.3 million in 2018 and 2017, respectively.

13. Goodwill and Other Intangible Assets

Goodwill

On January 4, 2019, we completed the acquisition of Leerink Holdings LLC, now SVB Leerink. We recognized identifiable intangible assets of \$60.9 million and goodwill of \$137.8 million as a result of the acquisition. For additional information, refer to Note 3—"Business Combination" of the "Notes to the Consolidated Financial Statements" under Part II, Item 8 of this report. The goodwill of \$137.8 million includes revenue generating synergies expected from collaboration between SVB Leerink and the Company.

The changes in goodwill were as follows for the year ended December 31, 2019:

(Dollars in thousands)	Goodwill
Beginning balance at December 31, 2018	\$ —
Acquisitions (1)	137,823
Ending balance at December 31, 2019	\$ 137,823

(1) All reported goodwill amounts have been allocated to the SVB Leerink reporting segment and are expected to be deductible for tax purposes. Refer to Note 25—"Segment Reporting" of the "Notes to the Consolidated Financial Statements" under Part II, Item 8 of this report for additional information.

During 2019, we completed our annual goodwill impairment test as of September 30, 2019. As a result, we determined there was no impairment as of December 31, 2019. For more information on our annual impairment policies, see Note 2—“Summary of Significant Accounting Policies” of the “Notes to the Consolidated Financial Statements” under Part II, Item 8 of this report.

Other Intangible Assets

The components of net other intangible assets related to the acquisition of SVB Leerink were as follows:

SVB FINANCIAL GROUP AND SUBSIDIARIES
NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS - (Continued)

(Dollars in thousands)	December 31, 2019		
	Gross Amount	Accumulated Amortization	Net Carrying Amount
Other intangible assets:			
Customer relationships	\$ 42,000	\$ 3,818	\$ 38,182
Other	18,900	7,665	11,235
Total other intangible assets	<u>\$ 60,900</u>	<u>\$ 11,483</u>	<u>\$ 49,417</u>

For the year ended December 31, 2019, we recorded amortization expense of \$11.5 million. Assuming no future impairments of other intangible assets or additional acquisitions or dispositions, the following table presents the Company's future expected amortization expense for other intangible assets that will continue to be amortized as of December 31, 2019:

Years ended December 31, (Dollars in thousands)	Other Intangible Assets
2020	\$ 5,382
2021	4,732
2022	4,732
2023	4,732
2024	4,732
2025 and thereafter	25,107
Total future amortization expense	<u>\$ 49,417</u>

14. Deposits

The following table presents the composition of our deposits at December 31, 2019 and 2018:

(Dollars in thousands)	December 31,	
	2019	2018
Noninterest-bearing demand	\$ 40,841,570	\$ 39,103,422
Interest-bearing checking and savings accounts	568,256	648,468
Money market	17,749,736	7,498,205
Money market deposits in foreign offices	352,437	152,781
Sweep deposits in foreign offices	2,057,715	1,875,298
Time	188,093	50,726
Total deposits	<u>\$ 61,757,807</u>	<u>\$ 49,328,900</u>

The aggregate amount of time deposit accounts individually equal to or greater than \$250,000 totaled \$180 million and \$42 million at December 31, 2019 and 2018, respectively. At December 31, 2019, time deposit accounts individually equal to or greater than \$250,000 totaling \$177 million were scheduled to mature within one year.

15. Short-Term Borrowings and Long-Term Debt

The following table represents outstanding short-term borrowings and long-term debt at December 31, 2019 and 2018:

SVB FINANCIAL GROUP AND SUBSIDIARIES
NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS - (Continued)

(Dollars in thousands)	Maturity	Principal value at December 31, 2019	Carrying Value	
			December 31, 2019	December 31, 2018
Short-term borrowings:				
Short-term FHLB advances			\$ —	\$ 300,000
Securities sold under agreement to repurchase	(1)		—	319,414
Other short-term borrowings	(2)	\$ 17,430	17,430	11,998
Total short-term borrowings			<u>\$ 17,430</u>	<u>\$ 631,412</u>
Long-term debt:				
3.50% Senior Notes	January 29, 2025	\$ 350,000	\$ 347,987	\$ 347,639
5.375% Senior Notes			—	348,826
Total long-term debt			<u>\$ 347,987</u>	<u>\$ 696,465</u>

(1) Securities sold under repurchase agreements are effectively short-term borrowings collateralized by U.S. Treasury securities.

(2) Represents cash collateral received from certain counterparties in relation to market value exposures of derivative contracts in our favor.

The aggregate annual maturities of long-term debt obligations as of December 31, 2019 are as follows:

Year ended December 31, (Dollars in thousands)	Amount
2020	\$ —
2021	—
2022	—
2023	—
2024	—
2025 and thereafter	347,987
Total	\$ 347,987

Interest expense related to short-term borrowings and long-term debt was \$35.1 million, \$46.6 million and \$36.1 million in 2019, 2018 and 2017, respectively. For the year ended December 31, 2017, interest expense is net of the hedge accounting impact from our interest rate swap agreements related to our 6.05% Subordinated Notes. The weighted average interest rate associated with our short-term borrowings was 2.62 percent as of December 31, 2018. There were no overnight short-term borrowings as of December 31, 2019.

3.50% Senior Notes

In January 2015, SVB Financial issued \$350 million of 3.50% Senior Notes due in January 2025. We received net proceeds of approximately \$346.4 million after deducting underwriting discounts and commissions and issuance costs. The balance of our 3.50% Senior Notes at December 31, 2019 was \$348.0 million, which is reflective of \$1.8 million of debt issuance costs and a \$0.2 million discount.

5.375% Senior Notes

In September 2010, SVB Financial issued \$350 million of 5.375% Senior Notes due in September 2020. We received net proceeds of \$345 million after deducting underwriting discounts and commissions and other expenses. We used approximately \$250 million of the net proceeds from the sale of the notes to meet obligations due on our 3.875% Convertible Notes, which matured in April 2011. The remaining net proceeds were used for general corporate purposes, including working capital. On December 20, 2019, we redeemed in full the outstanding aggregate principle amount of our \$350 million 5.375% Senior Notes due 2020 at a redemption price of \$358.4 million. The amount paid in excess of the principal amount of the 5.375% Senior Notes represented a \$9.0 million premium due to holders upon early redemption and was recorded as a loss in other noninterest income.

SVB FINANCIAL GROUP AND SUBSIDIARIES
NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS - (Continued)

Short-term Borrowings

We have certain facilities in place to enable us to access short-term borrowings on a secured and unsecured basis. Our secured facilities include collateral pledged to the FHLB of San Francisco and the discount window at the FRB (using both fixed income securities and loans as collateral). Our unsecured facility consists of our uncommitted federal funds lines. As of December 31, 2019, collateral pledged to the FHLB of San Francisco was comprised primarily of fixed income investment securities and loans and had a carrying value of \$4.7 billion, of which \$4.3 billion was available to support additional borrowings. As of December 31, 2019, collateral pledged to the discount window at the FRB was comprised of fixed income investment securities and had a carrying value of \$1.0 billion, all of which was unused and available to support additional borrowings. Our total unused and available borrowing capacity for our uncommitted federal funds lines totaled \$1.9 billion at December 31, 2019. Our total unused and available borrowing capacity under our master repurchase agreements with various financial institutions totaled \$3.3 billion at December 31, 2019.

16. Derivative Financial Instruments

We primarily use derivative financial instruments to manage interest rate risk, currency exchange rate risk and to assist customers with their risk management objectives, which may include currency exchange rate risks and interest rate risks. Also, in connection with negotiating credit facilities and certain other services, we often obtain equity warrant assets giving us the right to acquire stock in private, venture-backed companies in the technology and life science/healthcare industries.

Interest Rate Risk

Interest rate risk is our primary market risk and can result from timing and volume differences in the repricing of our interest rate sensitive assets and liabilities and changes in market interest rates. To manage interest rate risk on our variable-interest rate loan portfolio, we enter into interest rate swap contracts to hedge against future changes in interest rates by using hedging instruments to lock in future cash inflows that would otherwise be impacted by movements in the market interest rates. We designate these interest rate swap contracts as cash flow hedges that qualify for hedge accounting under ASC 815, *Derivatives and Hedging* ("ASC 815"), and record them in other assets and other liabilities. For qualifying cash flow hedges, changes in the fair value of the derivative are recorded in accumulated other comprehensive income and recognized in earnings as the hedged item affects earnings. Derivative amounts affecting earnings are recognized consistent with the classification of the hedged item in the line item "loans" as part of interest income, a component of consolidated net income.

We assess hedge effectiveness under ASC 815 on a quarterly basis to ensure all hedges remain highly effective to ensure hedge accounting under ASC 815 can be applied. If the hedging relationship no longer exists or no longer qualifies as a hedge per ASC 815, any amounts remaining as gain or loss in accumulated other comprehensive income are reclassified into earnings in the line item "loans" as part of interest income, a component of consolidated net income. As of December 31, 2019, no derivatives classified as hedges were terminated or were disqualified for hedge accounting. The maximum length of time over which the forecasted transactions are hedged is approximately five years.

Currency Exchange Risk

We enter into foreign exchange forward contracts to economically reduce our foreign exchange exposure risk associated with the net difference between foreign currency denominated assets and liabilities. We do not designate any foreign exchange forward contracts as derivative instruments that qualify for hedge accounting. Gains or losses from changes in currency rates on foreign currency denominated instruments are recorded in the line item "other" as part of noninterest income, a component of consolidated net income. We may experience ineffectiveness in the economic hedging relationship, because the instruments are revalued based upon changes in the currency's spot rate on the principal value, while the forwards are revalued on a discounted cash flow basis. We record forward agreements in gain positions in other assets and loss positions in other liabilities, while net changes in fair value are recorded in the line item "other" as part of noninterest income, a component of consolidated net income.

Other Derivative Instruments

Also included in our derivative instruments are equity warrant assets and client forward and option contracts, and client interest rate contracts. For further description of these other derivative instruments, refer to Note 2—"Summary of Significant Accounting Policies" of the "Notes to the Consolidated Financial Statements" under Part II, Item 8 of this report.

SVB FINANCIAL GROUP AND SUBSIDIARIES
NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS - (Continued)

Counterparty Credit Risk

We are exposed to credit risk if counterparties to our derivative contracts do not perform as expected. We mitigate counterparty credit risk through credit approvals, limits, monitoring procedures and obtaining collateral, as appropriate. With respect to measuring counterparty credit risk for derivative instruments, we measure the fair value of a group of financial assets and financial liabilities on a net risk basis by counterparty portfolio.

The total notional or contractual amounts and fair value of our derivative financial instruments at December 31, 2019 and 2018 were as follows:

	December 31, 2019			December 31, 2018		
	Notional or Contractual Amount	Fair Value		Notional or Contractual Amount	Fair Value	
(Dollars in thousands)		Derivative Assets (1)	Derivative Liabilities (1)		Derivative Assets (1)	Derivative Liabilities (1)
Derivatives designated as hedging instruments:						
Interest rate risks:						
Interest rate swaps	\$ 1,915,000	\$ 22,676	\$ —	\$ —	\$ —	\$ —
Interest rate swaps	3,085,000	—	25,623	—	—	—
Derivatives not designated as hedging instruments:						
Currency exchange risks:						
Foreign exchange forwards	—	—	—	263,733	4,767	—
Foreign exchange forwards	300,250	—	2,154	178,310	—	1,094
Other derivative instruments:						
Equity warrant assets	225,893	165,473	—	223,532	149,238	—
Client foreign exchange forwards	4,661,517	114,546	—	2,759,878	93,876	—
Client foreign exchange forwards	4,326,059	—	94,745	2,568,085	—	85,706
Client foreign currency options	154,985	1,308	—	93,556	1,759	—
Client foreign currency options	154,985	—	1,308	93,579	—	1,759
Client interest rate derivatives (2)	1,275,190	28,811	—	1,020,416	8,499	—
Client interest rate derivatives (2)	1,372,914	—	14,154	1,337,328	—	9,491
Total Derivatives not designated as hedging instruments		310,138	112,361		258,139	98,050
Total derivatives		\$ 332,814	\$ 137,984		\$ 258,139	\$ 98,050

- (1) Derivative assets and liabilities are included in "accrued interest receivable and other assets" and "other liabilities", respectively, on our consolidated balance sheets.
- (2) The amount reported reflects reductions of approximately \$17.4 million of derivative liabilities and \$0.4 million of derivative assets at December 31, 2019 and 2018, respectively, reflecting variation margin treated as settlement of the related derivative fair values for legal and accounting purposes as required by central clearing houses.

SVB FINANCIAL GROUP AND SUBSIDIARIES
NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS - (Continued)

A summary of our derivative activity and the related impact on our consolidated statements of income for 2019, 2018 and 2017 is as follows:

(Dollars in thousands)	Statement of income location	Year ended December 31,		
		2019	2018	2017
Derivatives designated as hedging instruments:				
Interest rate risks:				
Amounts reclassified from accumulated other comprehensive income into income	Interest income—loans	\$ (5,358)	\$ —	\$ —
Net cash benefit associated with interest rate swaps	Interest expense—borrowings	—	—	1,053
Changes in fair value of interest rate swaps	Other noninterest income	—	—	(7)
Net (losses) gains associated with interest rate risk derivatives		\$ (5,358)	\$ —	\$ 1,046
Derivatives not designated as hedging instruments:				
Currency exchange risks:				
Gains (losses) on revaluations of internal foreign currency instruments, net	Other noninterest income	\$ 1,444	\$ (373)	\$ 33,161
(Losses) gains on internal foreign exchange forward contracts, net	Other noninterest income	(1,853)	52	(32,286)
Net (losses) gains associated with internal currency risk		\$ (409)	\$ (321)	\$ 875
Other derivative instruments:				
(Losses) gains on revaluations of client foreign currency instruments, net	Other noninterest income	\$ (15,146)	\$ 4,998	\$ 10,882
Gains (losses) on client foreign exchange forward contracts, net	Other noninterest income	15,900	(4,011)	(9,969)
Net gains associated with client currency risk		\$ 754	\$ 987	\$ 913
Net gains on equity warrant assets	Gains on equity warrant assets, net	\$ 138,078	\$ 89,142	\$ 54,555
Net losses on other derivatives	Other noninterest income	\$ (1,190)	\$ (179)	\$ (564)

SVB FINANCIAL GROUP AND SUBSIDIARIES
NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS - (Continued)

Balance Sheet Offsetting

Certain of our derivative and other financial instruments are subject to enforceable master netting arrangements with our counterparties. These agreements provide for the net settlement of multiple contracts with a single counterparty through a single payment, in a single currency, in the event of default on or termination of any one contract. The following table summarizes our assets subject to enforceable master netting arrangements as of December 31, 2019 and 2018:

(Dollars in thousands)	Gross Amounts of Recognized Assets	Gross Amounts offset in the Statement of Financial Position	Net Amounts of Assets Presented in the Statement of Financial Position	Gross Amounts Not Offset in the Statement of Financial Position But Subject to Master Netting Arrangements		
				Financial Instruments	Cash Collateral Received (1)	Net Amount
December 31, 2019:						
Derivative Assets:						
Interest rate swaps	\$ 22,676	\$ —	\$ 22,676	\$ (22,598)	\$ —	\$ 78
Foreign exchange forwards	114,546	—	114,546	(36,855)	(17,095)	60,596
Foreign currency options	1,308	—	1,308	(848)	(335)	125
Client interest rate derivatives	28,811	—	28,811	(28,811)	—	—
Total derivative assets:	167,341	—	167,341	(89,112)	(17,430)	60,799
Reverse repurchase, securities borrowing, and similar arrangements	289,340	—	289,340	(289,340)	—	—
Total	\$ 456,681	\$ —	\$ 456,681	\$ (378,452)	\$ (17,430)	\$ 60,799
December 31, 2018:						
Derivative Assets:						
Foreign exchange forwards	\$ 98,643	\$ —	\$ 98,643	\$ (38,213)	\$ (11,825)	\$ 48,605
Foreign currency options	1,759	—	1,759	(613)	(90)	1,056
Client interest rate derivatives	8,499	—	8,499	(8,416)	(83)	—
Total derivative assets:	108,901	—	108,901	(47,242)	(11,998)	49,661
Reverse repurchase, securities borrowing, and similar arrangements	123,611	—	123,611	(123,611)	—	—
Total	\$ 232,512	\$ —	\$ 232,512	\$ (170,853)	\$ (11,998)	\$ 49,661

- (1) Cash collateral received from our counterparties in relation to market value exposures of derivative contracts in our favor is recorded as a component of “short-term borrowings” on our consolidated balance sheets.

SVB FINANCIAL GROUP AND SUBSIDIARIES
NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS - (Continued)

The following table summarizes our liabilities subject to enforceable master netting arrangements as of December 31, 2019 and 2018:

(Dollars in thousands)	Gross Amounts of Recognized Liabilities	Gross Amounts offset in the Statement of Financial Position	Net Amounts of Liabilities Presented in the Statement of Financial Position	Gross Amounts Not Offset in the Statement of Financial Position But Subject to Master Netting Arrangements		
				Financial Instruments	Cash Collateral Pledged (1)	Net Amount
December 31, 2019:						
Derivative Liabilities:						
Interest rate swaps	\$ 25,623	\$ —	\$ 25,623	\$ (22,676)	\$ (2,947)	\$ —
Foreign exchange forwards	96,899	—	96,899	(33,314)	(22,030)	41,555
Foreign currency options	1,308	—	1,308	(531)	—	777
Client interest rate derivatives	14,154	—	14,154	—	(13,936)	218
Total derivative liabilities:	137,984	—	137,984	(56,521)	(38,913)	42,550
Repurchase, securities lending, and similar arrangements	—	—	—	—	—	—
Total	\$ 137,984	\$ —	\$ 137,984	\$ (56,521)	\$ (38,913)	\$ 42,550
December 31, 2018:						
Derivative Liabilities:						
Foreign exchange forwards	\$ 86,800	\$ —	\$ 86,800	\$ (24,778)	\$ (20,732)	\$ 41,290
Foreign currency options	1,759	—	1,759	(1,054)	—	705
Client interest rate derivatives	9,491	—	9,491	—	(9,207)	284
Total derivative liabilities:	98,050	—	98,050	(25,832)	(29,939)	42,279
Repurchase, securities lending, and similar arrangements	319,414	—	319,414	—	—	319,414
Total	\$ 417,464	\$ —	\$ 417,464	\$ (25,832)	\$ (29,939)	\$ 361,693

- (1) Cash collateral pledged to our counterparties in relation to market value exposures of derivative contracts in a liability position and repurchase agreements are recorded as a component of "cash and cash equivalents" on our consolidated balance sheets.

17. Noninterest Income

On January 1, 2018, we adopted accounting standard ASU 2014-09, Revenue from Contracts with Customers and all the related amendments ("ASC 606" or "ASU 2014-09"). Results for the reporting periods ended December 31, 2019 and 2018 are presented under ASC 606, while prior period amounts are not adjusted and continue to be reported in accordance with our previous accounting methodology under ASC 605. A summary of noninterest income for the years ended December 31, 2019, 2018 and 2017 is as follows:

SVB FINANCIAL GROUP AND SUBSIDIARIES
NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS - (Continued)

(Dollars in thousands)	Year ended December 31,		
	2019	2018	2017
Noninterest income:			
Gains on investment securities, net	\$ 134,670	\$ 88,094	\$ 64,603
Gains on equity warrant assets, net	138,078	89,142	54,555
Client investment fees	182,068	130,360	56,136
Foreign exchange fees	159,262	138,812	115,760
Credit card fees	118,719	94,072	76,543
Deposit service charges	89,200	76,097	58,715
Lending related fees	49,920	41,949	43,265
Letters of credit and standby letters of credit fees	42,669	34,600	28,544
Investment banking revenue	195,177	—	—
Commissions	56,346	—	—
Other	55,370	51,858	59,110
Total noninterest income	<u>\$ 1,221,479</u>	<u>\$ 744,984</u>	<u>\$ 557,231</u>

Gains on investment securities, net

Net gains on investment securities include both gains and losses from our non-marketable and other equity securities, gains and losses from sales of our AFS debt securities portfolio, when applicable, and carried interest.

Our non-marketable and other equity securities portfolio primarily represents investments in venture capital and private equity funds, our China Joint Venture, debt funds, private and public portfolio companies, which include public equity securities held as a result of exercised equity warrant assets, and investments in qualified affordable housing projects. We experience variability in the performance of our non-marketable and other equity securities from period to period, which results in net gains or losses on investment securities (both realized and unrealized). This variability is due to a number of factors, including unrealized changes in the values of our investments, changes in the amount of realized gains from distributions, changes in liquidity events and general economic and market conditions. Unrealized gains from non-marketable and other equity securities for any single period are typically driven by valuation changes.

The extent to which any unrealized gains or losses will become realized is subject to a variety of factors, including, among other things, the expiration of certain sales restrictions to which these equity securities may be subject to (i.e., lock-up agreements), changes in prevailing market prices, market conditions, the actual sales or distributions of securities, and the timing of such actual sales or distributions, which, to the extent such securities are managed by our managed funds, are subject to our funds' separate discretionary sales/distributions and governance processes.

Carried interest is comprised of preferential allocations of profits recognizable when the return on assets of our individual managed fund of funds and direct venture funds exceeds certain performance targets and is payable to us, as the general partners of the managed funds. The carried interest we earn is often shared with employees, who are also members of the general partner entities. We record carried interest on a quarterly basis by measuring fund performance to date versus the performance target. For our unconsolidated managed funds, carried interest is recorded as gains on investment securities, net. For our consolidated managed funds, it is recorded as a component of net income attributable to noncontrolling interests. Carried interest allocated to others is recorded as a component of net income attributable to noncontrolling interests. Any carried interest paid to us (or our employees) may be subject to reversal to the extent fund performance declines to a level where inception to date carried interest is lower than actual payments made by the funds. The limited partnership agreements for our funds provide that carried interest is generally not paid to the general partners until the funds have provided a full return of contributed capital to the limited partners. Accrued, but unpaid carried interest may be subject to reversal to the extent that the fund performance declines to a level where inception-to-date carried interest is less than prior amounts recognized. Carried interest income is accounted for under an ownership model based on ASC 323 — *Equity Method of Accounting* and ASC 810 — *Consolidation*.

Our available-for-sale securities portfolio is a fixed income investment portfolio that is managed with the objective of earning an appropriate portfolio yield over the long-term while maintaining sufficient liquidity and credit diversification as well as addressing our asset/liability management objectives. Though infrequent, sales of debt securities in our AFS securities portfolio

SVB FINANCIAL GROUP AND SUBSIDIARIES
NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS - (Continued)

may result in net gains or losses and are conducted pursuant to the guidelines of our investment policy related to the management of our liquidity position and interest rate risk.

Gains on investment securities are recognized outside of the scope of the new revenue standard as it explicitly excludes noninterest income earned from our investment-related activities. A summary of gains and losses on investment securities for 2019, 2018 and 2017 is as follows:

(Dollars in thousands)	Year ended December 31,		
	2019	2018	2017
Gains on non-marketable and other equity securities, net	\$ 138,575	\$ 88,834	\$ 69,792
Losses on sales of available-for-sale debt securities, net	(3,905)	(740)	(5,189)
Total gains on investment securities, net	<u>\$ 134,670</u>	<u>\$ 88,094</u>	<u>\$ 64,603</u>

Gains on equity warrant assets, net

In connection with negotiating credit facilities and certain other services, we often obtain rights to acquire stock in the form of equity warrant assets in primarily private, venture-backed companies in the technology and life science/healthcare industries. Any changes in fair value from the grant date fair value of equity warrant assets will be recognized as increases or decreases to other assets on our balance sheet and as net gains or losses on equity warrant assets, in noninterest income, a component of consolidated net income.

Gains on equity warrant assets are recognized outside of the scope of the new revenue standard as it explicitly excludes noninterest income earned from our derivative-related activities. A summary of net gains on equity warrant assets for 2019, 2018 and 2017 is as follows:

(Dollars in thousands)	Year ended December 31,		
	2019	2018	2017
Equity warrant assets:			
Gains on exercises, net	\$ 107,168	\$ 58,186	\$ 48,275
Terminations	(3,502)	(5,964)	(4,422)
Changes in fair value, net	34,412	36,920	10,702
Total net gains on equity warrant assets	<u>\$ 138,078</u>	<u>\$ 89,142</u>	<u>\$ 54,555</u>

Client investment fees

Client investment fees include fees earned from discretionary investment management services for substantially all clients, managing clients' portfolios based on their investment policies, strategies and objectives and investment advisory fees. Revenue is recognized on a monthly basis upon completion of our performance obligation and consideration is typically received in the subsequent month. Included in our sweep money market fees are Rule 12(b)-1 fees, revenue sharing and customer transactional-based fees. Rule 12(b)-1 fees and revenue sharing are recognized as earned based on client funds that are invested in the period, typically monthly. Transactional based fees are earned and recognized on fixed income securities when the transaction is executed on the clients' behalf. Amounts paid to third-party service providers are predominantly expensed, such that client investment fees are recorded gross of payments made to third parties. A summary of client investment fees by instrument type for 2019, 2018 and 2017 is as follows:

(Dollars in thousands)	Year ended December 31,		
	2019	2018	2017
Client investment fees by type:			
Sweep money market fees	\$ 104,236	\$ 75,654	\$ 28,485
Asset management fees (1)	28,665	23,882	16,831
Repurchase agreement fees	49,167	30,824	10,820
Total client investment fees (2)	<u>\$ 182,068</u>	<u>\$ 130,360</u>	<u>\$ 56,136</u>

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NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS - (Continued)

- (1) Represents fees earned from investments in third-party money market mutual funds and fixed-income securities managed by SVB Asset Management.
(2) Represents fees earned on client investment funds which are maintained at third-party financial institutions and are not recorded on our balance sheet.

Foreign exchange fees

Foreign exchange fees represent the income differential between purchases and sales of foreign currency on behalf of our clients, primarily from spot contracts. Foreign exchange spot contract fees are recognized upon the completion of the single performance obligation, the execution of a spot trade in exchange for a fee. In line with customary business practice, the legal right transfers to the client upon execution of a foreign exchange contract on the trade date, and as such, we currently recognize our fees based on the trade date and are typically settled within two business days.

Forward contract and option premium fees are recognized outside of the scope of the new revenue standard as it explicitly excludes noninterest income earned from our derivative-related activities. A summary of foreign exchange fee income by instrument type for 2019, 2018 and 2017 is as follows:

(Dollars in thousands)	Year ended December 31,		
	2019	2018	2017
Foreign exchange fees by instrument type:			
Spot contract commissions	\$ 145,915	\$ 127,459	\$ 104,344
Forward contract commissions	13,068	10,940	10,934
Option premium fees	279	413	482
Total foreign exchange fees	<u>\$ 159,262</u>	<u>\$ 138,812</u>	<u>\$ 115,760</u>

Credit card fees

Credit card fees include interchange income from credit and debit cards and fees earned from processing transactions for merchants. Interchange income is earned after satisfying our performance obligation of providing nightly settlement services to a payment network. Costs related to rewards programs are recorded when the rewards are earned by the customer and presented as a reduction to interchange fee income. Rewards programs continue to be accounted for under ASC 310 - *Receivables*. Our performance obligations for merchant service fees are to transmit data and funds between the merchant and the payment network. Credit card interchange and merchant service fees are earned daily upon completion of transaction settlement services.

Annual card service fees are recognized on a straight-line basis over a 12-month period and continue to be accounted for under ASC 310 - *Receivables*. A summary of credit card fees by instrument type for 2019, 2018 and 2017 is as follows:

(Dollars in thousands)	Year ended December 31,		
	2019	2018	2017
Credit card fees by instrument type:			
Card interchange fees, net	\$ 93,553	\$ 74,381	\$ 60,224
Merchant service fees	18,355	14,420	11,584
Card service fees	6,811	5,271	4,735
Total credit card fees	<u>\$ 118,719</u>	<u>\$ 94,072</u>	<u>\$ 76,543</u>

Deposit service charges

Deposit service charges include fees earned from performing cash management activities and other deposit account services. Deposit services include, but are not limited to, the following: receivables services, which include merchant services, remote capture, lockbox, electronic deposit capture, and fraud control services. Payment and cash management products and services include wire transfer and automated clearing house payment services to enable clients to transfer funds more quickly, as well as business bill pay, business credit and debit cards, account analysis, and disbursement services. Deposit service charges

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NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS - (Continued)

are recognized over the period in which the related performance obligation is provided, generally on a monthly basis, and are presented in the "Disaggregation of Revenue from Contracts with Customers" table below.

Lending related fees

Unused commitment fees, minimum finance fees and unused line fees are recognized as earned on a monthly basis. Fees that qualify for syndication treatment are recognized at the completion of the syndicated loan deal for which the fees were received.

Lending related fees are recognized outside of the scope of the new revenue standard as it explicitly excludes noninterest income earned from our lending-related activities. A summary of lending related fees by instrument type for 2019, 2018 and 2017 is as follows:

(Dollars in thousands)	Year ended December 31,		
	2019	2018	2017
Lending related fees by instrument type:			
Unused commitment fees	\$ 34,829	\$ 32,452	\$ 34,110
Other	15,091	9,497	9,155
Total lending related fees	<u>\$ 49,920</u>	<u>\$ 41,949</u>	<u>\$ 43,265</u>

Letters of credit and standby letters of credit fees

Commercial and standby letters of credit represent conditional commitments issued by us on behalf of a client to guarantee the performance of the client to a third party when certain specified future events have occurred. Fees generated from letters of credit and standby letters of credit are deferred as a component of other liabilities and recognized in noninterest income over the commitment period using the straight-line method, based on the likelihood that the commitment being drawn down will be remote. Letters of credit and standby letters of credit fees are recognized outside of the scope of the new revenue standard as it explicitly excludes noninterest income earned from our lending related activities.

Investment banking revenue

We earn investment banking revenue from clients for providing services related to securities underwriting, private placements and advisory services on strategic matters such as mergers and acquisitions. Underwriting fees are attributable to public and private offerings of equity and debt securities and are recognized at the point in time when the offering has been deemed to be completed by the lead manager of the underwriting group. Once the offering is completed, the performance obligation has been satisfied; we recognize the applicable management fee as well the underwriting fee, net of consideration payable to customers. Private placement fees are recognized at the point in time when the private placement is completed, which is generally when the client accepts capital from the fund raise. Advisory fees from mergers and acquisitions engagements are generally recognized at the point in time when the related transaction is completed. Expenses are deferred only to the extent they are explicitly reimbursable by the client and the related revenue is recognized at a point in time. All other deal-related expenses are expensed as incurred. We have determined that we act as principal in the majority of these transactions and therefore presents expenses gross within other operating expenses.

A summary of investment banking revenue by instrument type for 2019, 2018 and 2017 is as follows:

(Dollars in thousands)	Year ended December 31,		
	2019	2018	2017
Investment banking revenue:			
Underwriting fees	\$ 153,306	\$ —	\$ —
Advisory fees	37,846	—	—
Private placements and other	4,025	—	—
Total investment banking revenue	<u>\$ 195,177</u>	<u>\$ —</u>	<u>\$ —</u>

Commissions

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NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS - (Continued)

Commissions include commissions received from clients for the execution of agency-based brokerage transactions in listed and over-the-counter equities. The execution of each trade order represents a distinct performance obligation and the transaction price is fixed at the point in time or trade order execution. Trade execution is satisfied at the point in time that the customer has control of the asset and as such, fees are recorded on a trade date basis. Commissions are presented in the "Disaggregation of revenue from contracts with customers" table below.

Other

Other noninterest income primarily includes income from fund management fees and service revenue. Fund management fees are comprised of fees charged directly to our managed funds of funds and direct venture funds. Fund management fees are based upon the contractual terms of the limited partnership agreements and are generally recognized as earned over the specified contract period, which is generally equal to the life of the individual fund. Fund management fees are calculated as a percentage of committed capital and collected in advance and are received quarterly. Fund management fees for certain of our limited partnership agreements are calculated as a percentage of distributions made by the funds and revenue is recorded only at the time of a distribution event. As distribution events are not predetermined for these certain funds, management fees are considered variable and constrained under the new revenue standard.

Other service revenue primarily consists of dividend income on FHLB/FRB stock, correspondent bank rebate income, incentive fees related to carried interest, gains or losses on early debt redemption and other fee income. We recognize revenue when our performance obligations are met and record revenues on a daily/monthly basis, quarterly, semi-annually or annual basis. For event driven revenue sources, we recognize revenue when: (i) persuasive evidence of an arrangement exists, (ii) we have performed the service, provided we have no other remaining obligations to the customer, (iii) the fee is fixed or determinable and (iv) collectability is probable.

A summary of other noninterest income by instrument type for 2019, 2018 and 2017 is as follows:

(Dollars in thousands)	Year ended December 31,		
	2019	2018	2017
Other noninterest income by instrument type:			
Fund management fees	\$ 32,522	\$ 23,016	\$ 21,214
Net gains on revaluation of foreign currency instruments, net of foreign exchange forward contracts (1)	345	666	1,788
(Losses) gains on extinguishment of debt	(8,960)	—	2,731
Other service revenue	31,463	28,176	33,377
Total other noninterest income	<u>\$ 55,370</u>	<u>\$ 51,858</u>	<u>\$ 59,110</u>

- (1) Represents the net revaluation of client and internal foreign currency denominated financial instruments. We enter into foreign exchange forward contracts to economically reduce our foreign exchange exposure related to client and internal foreign currency denominated financial instruments.

SVB FINANCIAL GROUP AND SUBSIDIARIES
NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS - (Continued)

Disaggregation of Revenue from Contracts with Customers

The following tables present our revenues from contracts with customers disaggregated by revenue source and segment for the years ended December 31, 2019 and 2018:

(Dollars in thousands)	Global Commercial Bank (2)	SVB Private Bank	SVB Capital (2)	SVB Leerink (2)	Other Income	Total
Revenue from contracts with customers:						
Client investment fees	\$ 180,152	\$ 1,916	\$ —	\$ —	\$ —	\$ 182,068
Spot contract commissions	144,930	510	—	—	475	145,915
Card interchange fees, gross	154,197	—	—	—	756	154,953
Merchant service fees	18,355	—	—	—	—	18,355
Deposit service charges	88,136	137	—	—	927	89,200
Investment banking revenue	—	—	—	195,177	—	195,177
Commissions	—	—	—	56,346	—	56,346
Fund management fees	—	—	26,850	5,672	—	32,522
Correspondent bank rebates	6,415	—	—	—	—	6,415
Total revenue from contracts with customers	\$ 592,185	\$ 2,563	\$ 26,850	\$ 257,195	\$ 2,158	\$ 880,951
Revenues outside the scope of ASC 606 (1)	45,737	803	95,544	7,321	191,123	340,528
Total noninterest income	\$ 637,922	\$ 3,366	\$ 122,394	\$ 264,516	\$ 193,281	\$ 1,221,479

(1) Amounts are accounted for under separate guidance than ASC 606.

(2) Global Commercial Bank's, SVB Capital's and SVB Leerink's components of noninterest income are shown net of noncontrolling interests. Noncontrolling interest is included within "Other Items."

(Dollars in thousands)	Global Commercial Bank (2)	SVB Private Bank	SVB Capital (2)	Other Income	Total
Revenue from contracts with customers:					
Client investment fees (3)	\$ 128,834	\$ 1,526	\$ —	\$ —	\$ 130,360
Spot contract commissions	126,445	691	—	323	127,459
Card interchange fees, gross	134,074	—	—	428	134,502
Merchant service fees	14,415	4	—	1	14,420
Deposit service charges	74,348	108	—	1,641	76,097
Fund management fees	—	—	23,016	—	23,016
Correspondent bank rebates	5,802	—	—	—	5,802
Total revenue from contracts with customers	\$ 483,918	\$ 2,329	\$ 23,016	\$ 2,393	\$ 511,656
Revenues outside the scope of ASC 606 (1)	36,384	(48)	78,165	118,827	233,328
Total noninterest income	\$ 520,302	\$ 2,281	\$ 101,181	\$ 121,220	\$ 744,984

(1) Amounts are accounted for under separate guidance than ASC 606.

(2) Global Commercial Bank's and SVB Capital's components of noninterest income are shown net of noncontrolling interests. Noncontrolling interest is included within "Other Items."

(3) For the year ended December 31, 2018, the amount of client investment fees previously reported as "Other Items" has been correctly allocated to the reportable segment "Global Commercial Bank" to properly reflect the source of such revenue. The correction of this immaterial error had no impact on the "Total" amount of client investment fees.

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NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS - (Continued)

18. Other Noninterest Expense

A summary of other noninterest expense for 2019, 2018 and 2017 is as follows:

(Dollars in thousands)	Year ended December 31,		
	2019	2018	2017
Lending and other client related processing costs	\$ 28,491	\$ 24,237	\$ 23,768
Correspondent bank fees	14,503	13,713	12,976
Investment banking activities	13,733	—	—
Trade order execution costs	10,813	—	—
Data processing services	12,536	10,811	10,251
Telephone	9,861	9,404	10,647
Dues and publications	4,603	4,605	3,263
Postage and supplies	3,198	2,799	2,797
Other	54,841	21,682	21,419
Total other noninterest expense	<u>\$ 152,579</u>	<u>\$ 87,251</u>	<u>\$ 85,121</u>

19. Income Taxes

We are subject to income tax in the U.S. federal jurisdiction and various state and foreign jurisdictions. The components of our provision for income taxes for 2019, 2018 and 2017 were as follows:

(Dollars in thousands)	Year ended December 31,		
	2019	2018	2017
Current provision:			
Federal	\$ 296,400	\$ 249,358	\$ 263,231
State	132,357	123,264	67,046
Deferred (benefit) expense:			
Federal	(1,530)	(11,777)	24,654
State	(1,542)	(9,284)	532
Income tax expense	<u>\$ 425,685</u>	<u>\$ 351,561</u>	<u>\$ 355,463</u>

Our effective tax rate is calculated by dividing income tax expense by the sum of income before income tax expense and the net income attributable to noncontrolling interests. The reconciliation between the federal statutory income tax rate and our effective income tax rate for 2019, 2018 and 2017, is as follows:

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NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS - (Continued)

(Dollars in thousands)	December 31,		
	2019	2018	2017
Federal statutory income tax rate	21.0 %	21.0 %	35.0 %
State income taxes, net of the federal tax effect	7.0	7.2	5.8
Net deferred tax assets revaluation (TCJ Act)	—	—	4.3
Meals and entertainment	0.4	0.3	0.3
Disallowed officers' compensation	0.2	0.2	0.1
FDIC premiums	0.2	0.5	—
Share-based compensation expense on incentive stock options and ESPP	(0.6)	(1.4)	(2.1)
Qualified affordable housing project tax credits	(0.3)	(0.3)	(0.4)
Tax-exempt interest income	(0.6)	(0.6)	(0.3)
Other, net	(0.1)	(0.4)	(0.7)
Effective income tax rate	27.2 %	26.5 %	42.0 %

Deferred tax assets and liabilities at December 31, 2019 and 2018, consisted of the following:

(Dollars in thousands)	December 31,	
	2019	2018
Deferred tax assets:		
Allowance for loan losses	\$ 103,267	\$ 93,580
Net unrealized losses on AFS debt securities	—	19,704
Share-based compensation expense	14,233	10,642
State income taxes	16,097	13,854
Accrued compensation	22,578	8,291
Deferred rent	—	7,940
Lease liability	60,635	—
Other accruals	12,383	7,061
Net operating loss	6,386	2,447
Goodwill and intangibles	3,141	—
Other	7,923	11,339
Deferred tax assets	246,643	174,858
Valuation allowance	(5,919)	(2,107)
Net deferred tax assets after valuation allowance	240,724	172,751
Deferred tax liabilities:		
Derivative equity warrant assets	(45,533)	(32,861)
Change in accounting method (section 481(a))	(1,841)	(8,034)
Net unrealized gains on AFS debt securities	(33,480)	—
Non-marketable and other equity securities	(54,239)	(45,759)
Premises and equipment and other intangibles	(16,459)	(10,284)
Right-of-use asset and deferred rent assets	(50,493)	—
Other	(10,246)	(10,380)
Deferred tax liabilities	(212,291)	(107,318)
Net deferred tax assets	\$ 28,433	\$ 65,433

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Net Deferred Tax Assets

U.S. federal net operating loss carryforwards totaled \$2.2 million for both December 31, 2019 and 2018. Our foreign net operating loss carryforwards totaled \$20.8 million and \$7.6 million at December 31, 2019 and 2018, respectively. These net operating loss carryforwards expire at various dates beginning in 2022.

Currently, we believe that it is more likely than not that the benefit from the foreign net operating loss carryforwards, which are associated with our Germany and Canada operations, will not be realized in the near term due to uncertainties in the timing of future profitability in the course of business. In recognition of this, our valuation allowance is \$5.9 million on the deferred tax assets related to our German and Canadian net operating loss carryforwards as of December 31, 2019. We believe it is more likely than not that the remaining deferred tax assets will be realized through recovery of taxes previously paid and/or future taxable income. Therefore, no valuation allowance was provided for the remaining deferred tax assets.

We are subject to income tax in the U.S. federal jurisdiction and various state and foreign jurisdictions and have identified our federal and California tax returns as major tax filings. Our U.S. federal tax returns for 2016 and subsequent years remain open to full examination. Our California tax returns for 2015 and subsequent tax years remain open to full examination.

At December 31, 2019, our unrecognized tax benefit was \$12.6 million, the recognition of which would reduce our income tax expense by \$9.9 million. We do not expect that our unrecognized tax benefit will materially change in the next 12 months.

We recognize interest and penalties related to income tax matters as part of income before income taxes. Interest and penalties were not material for the years ended December 31, 2019, 2018 and 2017.

A summary of changes in our unrecognized tax benefit (including interest and penalties) for December 31, 2019, 2018 and 2017 is as follows:

(Dollars in thousands)	Reconciliation of Unrecognized Tax Benefit	Interest and Penalties	Total
Balance at December 31, 2016	\$ 5,269	\$ 442	\$ 5,711
Additions for tax positions for current year	3,141	—	3,141
Additions for tax positions for prior years	3,378	754	4,132
Reduction for tax positions for prior years	(223)	(1)	(224)
Lapse of the applicable statute of limitations	(60)	(17)	(77)
Balance at December 31, 2017	\$ 11,505	\$ 1,178	\$ 12,683
Additions for tax positions for current year	4,171	—	4,171
Additions for tax positions for prior years	631	823	1,454
Reduction for tax positions for prior years	(1,865)	(243)	(2,108)
Lapse of the applicable statute of limitations	(435)	(86)	(521)
Reduction as a result of settlement	(1,318)	(222)	(1,540)
Balance at December 31, 2018	\$ 12,689	\$ 1,450	\$ 14,139
Additions for tax positions for current year	3,712	—	3,712
Additions for tax positions for prior years	63	826	889
Reduction for tax positions for prior years	(884)	(524)	(1,408)
Lapse of the applicable statute of limitations	(1,826)	(569)	(2,395)
Reduction as a result of settlement	(1,142)	(17)	(1,159)
Balance at December 31, 2019	\$ 12,612	\$ 1,166	\$ 13,778

20. Employee Compensation and Benefit Plans

Our employee compensation and benefit plans include: (i) Incentive Compensation Plan; (ii) Direct Drive Incentive Compensation Plan; (iii) Retention Program; (iv) Warrant Incentive Plan; (v) Deferred Compensation Plan; (vi) 401(k) and ESOP; (vii) SVB Leerink Incentive Compensation Plan; (viii) SVB Leerink Retention Award; (ix) EHOP; (x) 2006 Incentive Plan; and (xi) ESPP.

SVB FINANCIAL GROUP AND SUBSIDIARIES
NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS - (Continued)

The 2006 Incentive Plan and the ESPP are described in Note 5—“Share-Based Compensation” of the “Notes to the Consolidated Financial Statements” under Part II, Item 8 of this report.

A summary of expenses incurred under certain employee compensation and benefit plans for 2019, 2018 and 2017 is as follows:

(Dollars in thousands)	Year ended December 31,		
	2019	2018	2017
Incentive Compensation Plan	\$ 143,888	\$ 160,293	\$ 125,584
Direct Drive Incentive Compensation Plan	37,315	40,578	18,721
Retention Program	2,438	1,438	1,317
Warrant Incentive Plan	14,881	9,112	15,386
Deferred Compensation Plan	—	—	203
SVBFG 401(k) Plan	25,687	21,323	17,860
SVBFG ESOP	4,197	6,435	4,719
SVB Leerink Incentive Compensation Plan	106,871	—	—
SVB Leerink Retention Award	12,015	—	—

Incentive Compensation Plan

Our Incentive Compensation Plan (“ICP”) is an annual cash incentive plan that rewards performance based on our financial results and other performance criteria. Awards are made based on company performance, the employee's target bonus level and management's assessment of individual employee performance.

Direct Drive Incentive Compensation Plan

The Direct Drive Incentive Compensation Plan (“Direct Drive”) is an annual sales cash incentive program. Awards are based on sales teams' performance as to predetermined financial targets and other company/individual performance criteria. Actual awards for each sales team member under Direct Drive are based on: (i) the actual results and financial performance with respect to the incentive gross profit targets; (ii) the sales team payout targets; and (iii) the sales team member's sales position and team payout allocation.

Retention Program

The Retention Program (“RP”) is a long-term incentive plan that allows designated employees to share directly in our investment success. Plan participants were granted an interest in the distributions of gains from certain designated investments made by us during the applicable year. Specifically, participants share in: (i) returns from designated investments made by us, including investments in certain venture capital and private equity funds, debt funds and direct equity investments in companies; (ii) net income realized from the exercise of, and the subsequent sale of shares obtained through the exercise of, warrants held by us; and (iii) other designated amounts as determined by us. Since 2009, no new participants have been added and no new investments have been designated to the plan.

Warrant Incentive Plan

The Warrant Incentive Plan provides individual and team awards to those employees who negotiate warrants on our behalf. Designated participants, as determined by the Company, share in the cash proceeds received by the Company from the exercise of equity warrant assets.

Deferred Compensation Plan

Under the Deferred Compensation Plan (the “DC Plan”), eligible employees may elect to defer up to 50 percent of their base salary and/or up to 100 percent of any eligible bonus payment earned during the plan year. Any amounts deferred under the DC Plan will be invested and administered by us (or such person we designate). We generally do not match employee deferrals to the DC Plan. From time to time, we may also offer deferred special retention incentives and employer contributions under

SVB FINANCIAL GROUP AND SUBSIDIARIES
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this plan to key plan participants. The deferred incentives and employer contributions are eligible for investment in the DC Plan during the retention qualifying period or vesting period.

Voluntary deferrals under the DC Plan were \$6.9 million in 2019 and \$5.5 million in both 2018 and 2017. The DC Plan overall, had investment gains of \$6.9 million, losses of \$1.7 million and gains of \$4.7 million in 2019, 2018 and 2017, respectively.

401(k) and ESOP

The 401(k) Plan and ESOP, collectively referred to as the “Plan”, is a combined 401(k) tax-deferred savings plan and employee stock ownership plan in which all regular U.S. employees are eligible to participate.

Employees participating in the 401(k) Plan are allowed to contribute up to 75 percent of their pre-tax pay as defined in the Plan, up to the maximum annual amount allowable under federal income tax regulations of \$19,000 for 2019, \$18,500 for 2018 and \$18,000 for 2017. We match the employee's contributions dollar-for-dollar, up to five percent of the employee's pre-tax pay as defined in the Plan. Our matching contributions vest immediately. The amount of salary deferred, up to the allowed maximum, is not subject to federal or state income taxes at the time of deferral.

Discretionary ESOP contributions, based on our company performance, are made by us to all eligible individuals employed by us on the last day of the fiscal year. We may elect to contribute cash or our common stock (or a combination of cash and stock), in an amount not exceeding ten percent of the employee's eligible pay earned in the fiscal year. The ESOP contributions vest in equal annual increments over a participant's first five years of service (thereafter, all subsequent ESOP contributions are fully vested).

SVB Leerink Incentive Compensation Plan

Our SVB Leerink Incentive Compensation Plan is an annual cash incentive plan that rewards performance of SVB Leerink employees based on SVB Leerink's financial results. This plan requires employees who exceed certain compensation levels to defer a portion of their compensation, of which, 25% will be settled in the form of restricted stock awards and 75% will be settled in the form of cash. The deferred compensation vests over a period of up to five years.

SVB Leerink Retention Award

The SVB Leerink Retention Award is an incentive award that granted designated SVB Leerink employees restricted stock awards and cash after the close of the acquisition of SVB Leerink in January 2019. The aggregate amount of the awards was \$60 million, of which 50% will be settled in the form of cash and 50% in the form of restricted stock awards. The awards vest in equal annual increments over five years.

EHOP Program

The EHOP is a benefit plan that provides for the issuance of mortgage loans at discounted interest rates to eligible employees. Eligible employees may apply for either an adjustable rate mortgage (ARM) or a fixed rate loan for their primary residence. The ARM is a 30 year loan and has an initial fixed interest rate for five, seven or ten years after which a floating rate will be set annually. The fixed rate loan program offers a 15 or 30 years loan and the interest rate is fixed for the life of the loan. Applicants must qualify for a loan through the normal mortgage review and approval process, which is typical of industry standards. The maximum loan amount generally cannot be greater than 85 percent of the lesser of the purchase price or the appraised value. The interest rate on the fixed-rate loan is written at a discount to SVB Private Bank client mortgage rates and determined at SVB's discretion. Floating rates applied at the end of the fixed-rate period will be reset annually at 12 month LIBOR plus two and one quarter percent. For additional details, see Note 10—“Loans, Allowance for Loan Losses and Allowance for Unfunded Credit Commitments” of the “Notes to the Consolidated Financial Statements” under Part II, Item 8 of this report.

21. Related Parties

We have no material related party transactions requiring disclosure. In the ordinary course of business, the Bank may extend credit to related parties, including executive officers, directors, principal shareholders and their related interests. Additionally, we also provide real estate secured loans to eligible employees through our EHOP. For additional details, see Note 20—“Employee Compensation and Benefit Plans” of the “Notes to the Consolidated Financial Statements” under Part II, Item 8 of this report.

SVB FINANCIAL GROUP AND SUBSIDIARIES
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22. Off-Balance Sheet Arrangements, Guarantees and Other Commitments

In the normal course of business, we use financial instruments with off-balance sheet risk to meet the financing needs of our customers. These financial instruments include commitments to extend credit, commercial and standby letters of credit and commitments to invest in venture capital and private equity fund investments. These instruments involve, to varying degrees, elements of credit risk. Credit risk is defined as the possibility of sustaining a loss because other parties to the financial instrument fail to perform in accordance with the terms of the contract.

Commitments to Extend Credit

A commitment to extend credit is a formal agreement to lend funds to a client as long as there is no violation of any condition established in the agreement. Such commitments generally have fixed expiration dates, or other termination clauses, and usually require a fee paid by the client upon us issuing the commitment. The following table summarizes information related to our commitments to extend credit at December 31, 2019 and 2018, respectively:

(Dollars in thousands)	December 31,	
	2019	2018
Loan commitments available for funding: (1)		
Fixed interest rate commitments	\$ 2,434,042	\$ 1,839,190
Variable interest rate commitments	19,309,317	14,821,815
Total loan commitments available for funding	21,743,359	16,661,005
Commercial and standby letters of credit (2)	2,778,561	2,252,016
Total unfunded credit commitments	\$ 24,521,920	\$ 18,913,021
Commitments unavailable for funding (3)	\$ 3,051,075	\$ 2,723,835
Allowance for unfunded credit commitments (4)	67,656	55,183

- (1) Represents commitments which are available for funding, due to clients meeting all collateral, compliance and financial covenants required under loan commitment agreements.
- (2) See below for additional information on our commercial and standby letters of credit.
- (3) Represents commitments which are currently unavailable for funding due to clients failing to meet all collateral, compliance and financial covenants under loan commitment agreements.
- (4) Our allowance for unfunded credit commitments includes an allowance for both our unfunded loan commitments and our letters of credit.

Our potential exposure to credit loss for commitments to extend credit, in the event of nonperformance by the other party to the financial instrument, is the contractual amount of the available unused loan commitment. We use the same credit approval and monitoring process in extending credit commitments as we do in making loans. The actual liquidity needs and the credit risk that we have experienced have historically been lower than the contractual amount of commitments to extend credit because a significant portion of these commitments expire without being drawn upon. We evaluate each potential borrower and the necessary collateral on an individual basis. The type of collateral varies, but may include real property, intellectual property, bank deposits or business and personal assets. The credit risk associated with these commitments is considered in the allowance for unfunded credit commitments.

Commercial and Standby Letters of Credit

Commercial and standby letters of credit represent conditional commitments issued by us on behalf of a client to guarantee the performance of the client to a third party when certain specified future events have occurred. Commercial letters of credit are issued primarily for inventory purchases by a client and are typically short-term in nature. We provide two types of standby letters of credit: performance and financial standby letters of credit. Performance standby letters of credit are issued to guarantee the performance of a client to a third party when certain specified future events have occurred and are primarily used to support performance instruments such as bid bonds, performance bonds, lease obligations, repayment of loans and past due notices. Financial standby letters of credit are conditional commitments issued by us to guarantee the payment by a client to a third party (beneficiary) and are primarily used to support many types of domestic and international payments. These standby letters of credit have fixed expiration dates and generally require a fee to be paid by the client at the time we issue the commitment.

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The credit risk involved in issuing letters of credit is essentially the same as that involved with extending credit commitments to clients, and accordingly, we use a credit evaluation process and collateral requirements similar to those for credit commitments. Our standby letters of credit often are cash secured by our clients. The actual liquidity needs and the credit risk that we have experienced historically have been lower than the contractual amount of letters of credit issued because a significant portion of these conditional commitments expire without being drawn upon.

The table below summarizes our commercial and standby letters of credit at December 31, 2019. The maximum potential amount of future payments represents the amount that could be remitted under letters of credit if there were a total default by the guaranteed parties, without consideration of possible recoveries under recourse provisions or from the collateral held or pledged.

(Dollars in thousands)	Expires In One Year or Less	Expires After One Year	Total Amount Outstanding	Maximum Amount of Future Payments
Financial standby letters of credit	\$ 2,566,623	\$ 79,207	\$ 2,645,830	\$ 2,645,830
Performance standby letters of credit	105,993	19,618	125,611	125,611
Commercial letters of credit	7,120	—	7,120	7,120
Total	<u>\$ 2,679,736</u>	<u>\$ 98,825</u>	<u>\$ 2,778,561</u>	<u>\$ 2,778,561</u>

Deferred fees related to financial and performance standby letters of credit were \$17.2 million at December 31, 2019 and \$14.1 million at December 31, 2018. At December 31, 2019, collateral in the form of cash of \$1.6 billion was available to us to reimburse losses, if any, under financial and performance standby letters of credit.

Commitments to Invest in Venture Capital and Private Equity Funds

We make commitments to invest in venture capital and private equity funds, which generally makes investments in privately-held companies. Commitments to invest in these funds are generally made for a 10-year period from the inception of the fund. Although the limited partnership agreements governing these investments typically do not restrict the general partners from calling 100% of committed capital in one year, it is customary for these funds to call most of the capital commitments over 5 to 7 years, and in certain cases, the funds may not call 100% of committed capital. The actual timing of future cash requirements to fund these commitments is generally dependent upon the investment cycle, overall market conditions, and the nature and type of industry in which the privately held companies operate. The following table details our total capital commitments, unfunded capital commitments, and our ownership percentage in each fund at December 31, 2019:

(Dollars in thousands)	SVBFG Capital Commitments	SVBFG Unfunded Commitments	SVBFG Ownership of each Fund (3)
CP I, LP	\$ 6,000	\$ 270	10.7%
CP II, LP (1)	1,200	162	5.1
Capital Preferred Return Fund, LP	12,688	—	20.0
Growth Partners, LP	24,670	1,340	33.0
Strategic Investors Fund, LP	15,300	688	12.6
Strategic Investors Fund II, LP	15,000	1,050	8.6
Strategic Investors Fund III, LP	15,000	1,275	5.9
Strategic Investors Fund IV, LP	12,239	2,325	5.0
Strategic Investors Fund V funds	515	131	Various
Other venture capital and private equity fund investments (equity method accounting)	21,801	5,732	Various
Debt funds (equity method accounting)	58,493	—	Various
Other fund investments (2)	284,758	6,119	Various
Total	<u>\$ 467,664</u>	<u>\$ 19,092</u>	

(1) Our ownership includes direct ownership of 1.3 percent and indirect ownership of 3.8 percent through our investment in Strategic Investors Fund II, LP.

SVB FINANCIAL GROUP AND SUBSIDIARIES
NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS - (Continued)

- (2) Represents commitments to 211 funds (primarily venture capital funds) where our ownership interest is generally less than five percent of the voting interests of each such fund.
- (3) We are subject to the Volcker Rule which restricts or limits us from sponsoring or having ownership interests in “covered” funds including venture capital and private equity funds. See “Business - Supervision and Regulation” under Part I, Item 1 of this report.

The following table details the amounts of remaining unfunded commitments to venture capital and private equity funds by our consolidated managed funds of funds (including our interest and the noncontrolling interests) at December 31, 2019:

(Dollars in thousands)	Unfunded Commitments	
Strategic Investors Fund, LP	\$	1,338
Capital Preferred Return Fund, LP		1,540
Growth Partners, LP		2,468
Total	\$	5,346

SVB FINANCIAL GROUP AND SUBSIDIARIES
NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS - (Continued)

23. Fair Value of Financial Instruments

Fair Value Measurements

Our available-for-sale securities, derivative instruments and certain non-marketable and other equity securities are financial instruments recorded at fair value on a recurring basis. We make estimates regarding valuation of assets and liabilities measured at fair value in preparing our consolidated financial statements. We disclose our method and approach for fair value measurements of assets and liabilities in Note 2—“Summary of Significant Accounting Policies” of the “Notes to the Consolidated Financial Statements” under Part II, Item 8 of this report.

The following fair value hierarchy table presents information about our assets and liabilities that are measured at fair value on a recurring basis as of December 31, 2019:

(Dollars in thousands)	Level 1	Level 2	Level 3	Balance at December 31, 2019
Assets				
Available-for-sale securities:				
U.S. Treasury securities	\$ 6,894,010	\$ —	\$ —	\$ 6,894,010
U.S. agency debentures	—	99,547	—	99,547
Foreign government debt securities	9,038	—	—	9,038
Residential mortgage-backed securities:				
Agency-issued mortgage-backed securities	—	4,148,791	—	4,148,791
Agency-issued collateralized mortgage obligations— fixed rate	—	1,538,343	—	1,538,343
Agency-issued commercial mortgage-backed securities	—	1,325,190	—	1,325,190
Total available-for-sale securities	6,903,048	7,111,871	—	14,014,919
Non-marketable and other equity securities (fair value accounting):				
Non-marketable securities:				
Venture capital and private equity fund investments measured at net asset value	—	—	—	265,263
Venture capital and private equity fund investments not measured at net asset value (1)	—	—	134	134
Other equity securities in public companies	17,290	41,910	—	59,200
Total non-marketable and other equity securities (fair value accounting)	17,290	41,910	134	324,597
Other assets:				
Foreign exchange forward and option contracts	—	115,854	—	115,854
Equity warrant assets	—	4,435	161,038	165,473
Interest rate swaps	—	22,676	—	22,676
Client interest rate derivatives	—	28,811	—	28,811
Total assets	\$ 6,920,338	\$ 7,325,557	\$ 161,172	\$ 14,672,330
Liabilities				
Foreign exchange forward and option contracts	\$ —	\$ 98,207	\$ —	\$ 98,207
Interest rate swaps	—	25,623	—	25,623
Client interest rate derivatives	—	14,154	—	14,154
Total liabilities	\$ —	\$ 137,984	\$ —	\$ 137,984

SVB FINANCIAL GROUP AND SUBSIDIARIES
NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS - (Continued)

(1) Included in Level 3 assets is \$120 thousand attributable to noncontrolling interests calculated based on the ownership percentages of the noncontrolling interests.

The following fair value hierarchy table presents information about our assets and liabilities that are measured at fair value on a recurring basis as of December 31, 2018:

(Dollars in thousands)	Level 1	Level 2	Level 3	Balance at December 31, 2018
Assets				
Available-for-sale securities:				
U.S. Treasury securities	\$ 4,738,258	\$ —	\$ —	\$ 4,738,258
U.S. agency debentures	—	1,084,117	—	1,084,117
Foreign government debt securities	5,812	—	—	5,812
Residential mortgage-backed securities:				
Agency-issued collateralized mortgage obligations— fixed rate	—	1,880,218	—	1,880,218
Agency-issued collateralized mortgage obligations— variable rate	—	81,638	—	81,638
Total available-for-sale securities	4,744,070	3,045,973	—	7,790,043
Non-marketable and other equity securities (fair value accounting):				
Non-marketable securities:				
Venture capital and private equity fund investments measured at net asset value	—	—	—	318,352
Venture capital and private equity fund investments not measured at net asset value (1)	—	—	1,079	1,079
Other equity securities in public companies (1)	1,181	19,217	—	20,398
Total non-marketable and other equity securities (fair value accounting)	1,181	19,217	1,079	339,829
Other assets:				
Foreign exchange forward and option contracts	—	100,402	—	100,402
Equity warrant assets	—	4,039	145,199	149,238
Client interest rate derivatives	—	8,499	—	8,499
Total assets	\$ 4,745,251	\$ 3,178,130	\$ 146,278	\$ 8,388,011
Liabilities				
Foreign exchange forward and option contracts	\$ —	\$ 88,559	\$ —	\$ 88,559
Client interest rate derivatives	—	9,491	—	9,491
Total liabilities	\$ —	\$ 98,050	\$ —	\$ 98,050

(1) Included in Level 3 assets is \$964 thousand attributable to noncontrolling interests calculated based on the ownership percentages of the noncontrolling interests.

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The following table presents additional information about Level 3 assets measured at fair value on a recurring basis for 2019, 2018 and 2017, respectively:

(Dollars in thousands)	Beginning Balance	Total Realized and Unrealized Gains, net Included in Income	Purchases	Sales/Exits	Issuances	Distributions and Other Settlements	Transfers Out of Level 3	Ending Balance
Year ended December 31, 2019:								
Non-marketable and other equity securities (fair value accounting):								
Venture capital and private equity fund investments not measured at net asset value (1)	\$ 1,079	\$ 12	\$ —	\$ (960)	\$ —	\$ 3	\$ —	\$ 134
Other assets:								
Equity warrant assets (2)	145,199	133,910	575	(130,392)	16,453	—	(4,707)	161,038
Total assets	<u>\$ 146,278</u>	<u>\$ 133,922</u>	<u>\$ 575</u>	<u>\$ (131,352)</u>	<u>\$ 16,453</u>	<u>\$ 3</u>	<u>\$ (4,707)</u>	<u>\$ 161,172</u>
Year ended December 31, 2018:								
Non-marketable and other equity securities (fair value accounting):								
Venture capital and private equity fund investments not measured at net asset value (1)	\$ 919	\$ 457	\$ —	\$ —	\$ —	\$ (297)	\$ —	\$ 1,079
Other assets:								
Equity warrant assets (2)	121,331	87,982	—	(78,752)	17,941	—	(3,303)	145,199
Total assets	<u>\$ 122,250</u>	<u>\$ 88,439</u>	<u>\$ —</u>	<u>\$ (78,752)</u>	<u>\$ 17,941</u>	<u>\$ (297)</u>	<u>\$ (3,303)</u>	<u>\$ 146,278</u>
Year ended December 31, 2017:								
Non-marketable and other equity securities (fair value accounting):								
Venture capital and private equity fund investments not measured at net asset value (1)	\$ 2,040	\$ 971	\$ —	\$ (2,092)	\$ —	\$ —	\$ —	\$ 919
Other assets:								
Equity warrant assets (2)	128,813	54,263	—	(74,769)	14,537	—	(1,513)	121,331
Total assets	<u>\$ 130,853</u>	<u>\$ 55,234</u>	<u>\$ —</u>	<u>\$ (76,861)</u>	<u>\$ 14,537</u>	<u>\$ —</u>	<u>\$ (1,513)</u>	<u>\$ 122,250</u>

- (1) Realized and unrealized gains (losses) are recorded in the line item "Gains on investment securities, net," a component of noninterest income.
(2) Realized and unrealized gains (losses) are recorded in the line item "Gains on equity warrant assets, net," a component of noninterest income.

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NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS - (Continued)

The following table presents the amount of unrealized gains (losses) included in earnings (which is inclusive of noncontrolling interest) attributable to Level 3 assets still held at December 31, 2019 and 2018, respectively:

(Dollars in thousands)	Year ended December 31,	
	2019	2018
Non-marketable and other equity securities (fair value accounting):		
Venture capital and private equity fund investments not measured at net asset value (1)	\$ (222)	\$ 160
Other assets:		
Equity warrant assets (2)	34,691	37,564
Total unrealized gains, net	\$ 34,469	\$ 37,724
Unrealized (losses) gains attributable to noncontrolling interests (1)	\$ (199)	\$ 143

(1) Unrealized gains are recorded in the line item "Gains on investment securities, net," a component of noninterest income.

(2) Unrealized gains are recorded in the line item "Gains on equity warrant assets, net," a component of noninterest income.

The extent to which any unrealized gains or losses will become realized is subject to a variety of factors, including, among other things, the expiration of current sales restrictions to which these securities are subject, the actual sales of securities and the timing of such actual sales.

The following table presents quantitative information about the significant unobservable inputs used for certain of our Level 3 fair value measurements at December 31, 2019 and 2018. We have not included in this table our venture capital and private equity fund investments (fair value accounting) as we use net asset value per share (as obtained from the general partners of the investments) as a practical expedient to determine fair value.

(Dollars in thousands)	Fair Value	Valuation Technique	Significant Unobservable Inputs	Weighted Average
December 31, 2019:				
Venture capital and private equity fund investments (fair value accounting)	\$ 134	Private company equity pricing	(1)	(1)
Equity warrant assets (public portfolio)	346	Black-Scholes option pricing model	Volatility	50.7%
			Risk-Free interest rate	1.9
			Sales restrictions discount (2)	13.6
Equity warrant assets (private portfolio)	160,692	Black-Scholes option pricing model	Volatility	38.2
			Risk-Free interest rate	1.6
			Marketability discount (3)	17.5
			Remaining life assumption (4)	45.0
December 31, 2018:				
Venture capital and private equity fund investments (fair value accounting)	\$ 1,079	Private company equity pricing	(1)	(1)
Equity warrant assets (public portfolio)	2,757	Black-Scholes option pricing model	Volatility	54.7%
			Risk-Free interest rate	2.6
			Sales restrictions discount (2)	18.5
Equity warrant assets (private portfolio)	142,442	Black-Scholes option pricing model	Volatility	38.5
			Risk-Free interest rate	2.5
			Marketability discount (3)	17.7
			Remaining life assumption (4)	45.0

(1) In determining the fair value of our venture capital and private equity fund investment portfolio (not measured at net asset value), we evaluate a variety of factors related to each underlying private portfolio company including, but not limited to, actual and forecasted results, cash position, recent or planned transactions and market comparable companies. Additionally, we have ongoing communication with the portfolio companies and venture capital fund managers, to determine whether there is a material change in fair value. We use company provided valuation reports, if available, to support our valuation

SVB FINANCIAL GROUP AND SUBSIDIARIES
NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS - (Continued)

- assumptions. These factors are specific to each portfolio company and a weighted average or range of values of the unobservable inputs is not meaningful.
- (2) We adjust quoted market prices of public companies, which are subject to certain sales restrictions. Sales restriction discounts generally range from 10 percent to 20 percent depending on the duration of the sales restrictions which typically range from three to six months.
 - (3) Our marketability discount is applied to all private company warrants to account for a general lack of liquidity due to the private nature of the associated underlying company. The quantitative measure used is based upon various option-pricing models. On a quarterly basis, a sensitivity analysis is performed on our marketability discount.
 - (4) We adjust the contractual remaining term of private company warrants based on our estimate of the actual remaining life, which we determine by utilizing historical data on terminations and exercises. At December 31, 2019, the weighted average contractual remaining term was 6.1 years, compared to our estimated remaining life of 2.8 years. On a quarterly basis, a sensitivity analysis is performed on our remaining life assumption.

During 2019, 2018 and 2017, we did not have any transfers between Level 2 and Level 1 or transfers between Level 3 and Level 1. All other transfers from Level 3 to Level 2 during 2019, 2018 and 2017 were due to the transfer of equity warrant assets from our private portfolio to our public portfolio (see our Level 3 reconciliation above). All amounts reported as transfers represent the fair value as of the date of the change in circumstances that caused the transfer.

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NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS - (Continued)

Financial Instruments not Carried at Fair Value

FASB guidance over financial instruments requires that we disclose estimated fair values for our financial instruments not carried at fair value. The following fair value hierarchy table presents the estimated fair values of our financial instruments that are not carried at fair value at December 31, 2019 and 2018:

		Estimated Fair Value			
(Dollars in thousands)	Carrying Amount	Total	Level 1	Level 2	Level 3
December 31, 2019:					
Financial assets:					
Cash and cash equivalents	\$ 6,781,783	\$ 6,781,783	\$ 6,781,783	\$ —	\$ —
Held-to-maturity securities	13,842,946	14,115,272	—	14,115,272	—
Non-marketable securities not measured at net asset value	195,405	195,405	—	—	195,405
Non-marketable securities measured at net asset value	235,351	235,351	—	—	—
Net commercial loans	29,104,532	29,615,176	—	—	29,615,176
Net consumer loans	3,755,180	3,820,804	—	—	3,820,804
FHLB and Federal Reserve Bank stock	60,258	60,258	—	—	60,258
Financial liabilities:					
Short-term borrowings	17,430	17,430	—	17,430	—
Non-maturity deposits (1)	61,569,714	61,569,714	61,569,714	—	—
Time deposits	188,093	187,980	—	187,980	—
3.50% Senior Notes	347,987	366,856	—	366,856	—
Off-balance sheet financial assets:					
Commitments to extend credit	—	27,197	—	—	27,197
December 31, 2018:					
Financial assets:					
Cash and cash equivalents	\$ 3,571,539	\$ 3,571,539	\$ 3,571,539	\$ —	\$ —
Held-to-maturity securities	15,487,442	15,188,236	—	15,188,236	—
Non-marketable securities not measured at net asset value	131,453	131,453	—	—	131,453
Non-marketable securities measured at net asset value	151,247	151,247	—	—	—
Net commercial loans	25,043,671	25,463,968	—	—	25,463,968
Net consumer loans	3,013,706	3,064,093	—	—	3,064,093
FHLB and Federal Reserve Bank stock	58,878	58,878	—	—	58,878
Financial liabilities:					
Short-term borrowings	631,412	631,412	—	631,412	—
Non-maturity deposits (1)	49,278,174	49,278,174	49,278,174	—	—
Time deposits	50,726	50,337	—	50,337	—
3.50% Senior Notes	347,639	336,088	—	336,088	—
5.375% Senior Notes	348,826	361,281	—	361,281	—
Off-balance sheet financial assets:					
Commitments to extend credit	—	22,930	—	—	22,930

(1) Includes noninterest-bearing demand deposits, interest-bearing checking accounts, money market accounts and interest-bearing sweep deposits.

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Investments in Entities that Calculate Net Asset Value Per Share

FASB guidance over certain fund investments requires that we disclose the fair value of funds, significant investment strategies of the investees, redemption features of the investees, restrictions on the ability to sell investments, estimate of the period of time over which the underlying assets are expected to be liquidated by the investee, and unfunded commitments related to the investments.

Our investments in debt funds and venture capital and private equity fund investments generally cannot be redeemed. Alternatively, we expect distributions, if any, to be received primarily through IPOs and M&A activity of the underlying assets of the fund. Subject to applicable requirements under the Volcker Rule, we do not have any plans to sell any of these fund investments. If we decide to sell these investments in the future, the investee fund's management must approve of the buyer before the sale of the investments can be completed. The fair values of the fund investments have been estimated using the net asset value per share of the investments, adjusted for any differences between our measurement date and the date of the fund investment's net asset value by using the most recently available financial information from the investee general partner, for example September 30th, for our December 31st consolidated financial statements, adjusted for any contributions paid, distributions received from the investment, and significant fund transactions or market events during the reporting period.

The following table is a summary of the estimated fair values of these investments and remaining unfunded commitments for each major category of these investments as of December 31, 2019:

(Dollars in thousands)	Carrying Amount	Fair Value	Unfunded Commitments
Non-marketable securities (fair value accounting):			
Venture capital and private equity fund investments (1)	\$ 265,263	\$ 265,263	\$ 10,579
Non-marketable securities (equity method accounting):			
Venture capital and private equity fund investments (2)	215,367	215,367	10,675
Debt funds (2)	7,271	7,271	—
Other investments (2)	12,713	12,713	886
Total	\$ 500,614	\$ 500,614	\$ 22,140

- (1) Venture capital and private equity fund investments within non-marketable securities (fair value accounting) include investments made by our managed funds of funds and one of our direct venture funds (consolidated VIEs) and investments in venture capital and private equity fund investments (unconsolidated VIEs). Collectively, these investments in venture capital and private equity funds are primarily in U.S. and global technology and life science/healthcare companies. Included in the fair value and unfunded commitments of fund investments under fair value accounting are \$64.6 million and \$4.0 million, respectively, attributable to noncontrolling interests. It is estimated that we will receive distributions from the fund investments over the next 10 to 13 years, depending on the age of the funds and any potential extensions of terms of the funds.
- (2) Venture capital and private equity fund investments, debt funds and other fund investments within non-marketable securities (equity method accounting) include funds that invest in or lend money to primarily U.S. and global technology and life science/healthcare companies. It is estimated that we will receive distributions from the funds over the next 5 to 8 years, depending on the age of the funds and any potential extensions of the terms of the funds.

SVB FINANCIAL GROUP AND SUBSIDIARIES
NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS - (Continued)

24. Regulatory Matters

SVB Financial and the Bank are subject to various regulatory capital adequacy requirements administered by the Federal Reserve Board and the DBO. The Federal Deposit Insurance Corporation Improvement Act of 1991 required that the federal regulatory agencies adopt regulations defining five capital categories for banks: well-capitalized, adequately capitalized, undercapitalized, significantly undercapitalized and critically undercapitalized.

In July 2013, the Federal Reserve, the FDIC and the Office of the Comptroller of the Currency published final rules establishing a comprehensive capital framework for U.S. banking organizations (the “Capital Rules”), which implement the Basel III regulatory capital reforms and changes required by the Dodd-Frank Act. “Basel III” refers to the internationally agreed regulatory capital framework adopted by the Basel Committee.

There are three categories of capital under the new Basel III standards; CET 1, additional Tier 1 and Tier 2. CET 1 includes common stock plus related surplus and retained earnings, less certain deductions. Additional Tier 1 capital includes qualifying preferred stock and trust preferred securities, less certain deductions. Additional Tier 1, together with CET 1, equal total Tier 1 capital. Tier 2 capital includes primarily certain qualifying unsecured subordinated debt and qualifying allowances for loan and lease losses. Tier 1 capital together with Tier 2 capital equal total capital.

Under the Capital Rules, the minimum capital ratios applicable to SVB Financial and the Bank are as follows: 4.5% CET1 capital, 6.0% Tier 1 capital, 8.0% Total capital and 4.0% Tier 1 leverage. In addition, banking organizations must meet a 2.5% CET1 risk-based capital conservation buffer requirement in order to avoid constraints on capital distributions, such as dividends and equity repurchases, and certain bonus compensation for executive officers. The severity of the constraints would depend on the amount of the shortfall and the banking organization’s “eligible retained income” (that is, four-quarter trailing net income, net of distributions and tax effects not reflected in net income).

SVB FINANCIAL GROUP AND SUBSIDIARIES
NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS - (Continued)

As of December 31, 2019, both SVB Financial and the Bank exceed the required ratios under the Capital Rules and were considered “well-capitalized” for regulatory purposes under existing capital guidelines as well. The following table presents the capital ratios for the Company and the Bank under federal regulatory guidelines, compared to the minimum regulatory capital requirements, as of December 31, 2019 and 2018:

(Dollars in thousands)	Capital Ratios			Capital Amounts		
	Actual	Required Minimum (1)	Well Capitalized Minimum	Actual	Required Minimum (1)	Well Capitalized Minimum
December 31, 2019:						
CET 1 risk-based capital:						
SVB Financial	12.58%	7.0%	N/A	\$ 5,857,744	\$ 3,260,424	N/A
Bank	11.12	7.0	6.5	4,949,393	3,115,151	\$ 2,892,640
Tier 1 risk-based capital:						
SVB Financial	13.43	8.5	6.0	6,257,442	3,959,086	2,794,649
Bank	11.12	8.5	8.0	4,949,393	3,782,683	3,560,172
Total risk-based capital:						
SVB Financial	14.23	10.5	10.0	6,630,022	4,890,636	4,657,748
Bank	11.96	10.5	10.0	5,321,850	4,672,726	4,450,215
Tier 1 leverage:						
SVB Financial	9.06	4.0	N/A	6,257,442	2,763,146	N/A
Bank	7.30	4.0	5.0	4,949,393	2,713,367	3,391,709
December 31, 2018:						
CET 1 risk-based capital:						
SVB Financial	13.41%	6.4%	N/A	\$ 5,167,270	\$ 2,456,151	N/A
Bank	12.41	6.4	6.5	4,604,689	2,365,385	\$ 2,411,765
Tier 1 risk-based capital:						
SVB Financial	13.58	7.9	6.0	5,231,476	3,034,068	2,311,671
Bank	12.41	7.9	8.0	4,604,689	2,921,946	2,968,326
Total risk-based capital:						
SVB Financial	14.45	9.9	10.0	5,567,562	3,804,625	3,852,785
Bank	13.32	9.9	10.0	4,940,776	3,664,028	3,710,408
Tier 1 leverage:						
SVB Financial	9.06	4.0	N/A	5,231,476	2,308,592	N/A
Bank	8.10	4.0	5.0	4,604,689	2,272,912	2,841,139

N/A "Well-Capitalized Minimum" CET 1 risk-based capital and Tier 1 leverage ratios are not formally defined under applicable banking regulations for bank holding companies.

(1) The percentages as of December 31, 2019 represent the minimum capital ratios plus, the fully phased-in 2.5% CET1 capital conservation buffer under the Capital Rules.

SVB FINANCIAL GROUP AND SUBSIDIARIES
NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS - (Continued)

25. Segment Reporting

We have four reportable segments for management reporting purposes: Global Commercial Bank, SVB Private Bank, SVB Capital and SVB Leerink. SVB Leerink is a new reportable segment and was created as a result of the acquisition of Leerink Holdings LLC effective January 4, 2019. The results of our operating segments are based on our internal management reporting process.

Our Global Commercial Bank and SVB Private Bank segments' primary source of revenue is from net interest income, which is primarily the difference between interest earned on loans, net of funds transfer pricing ("FTP") and interest paid on deposits, net of FTP. Accordingly, these segments are reported using net interest income, net of FTP. FTP is an internal measurement framework designed to assess the financial impact of a financial institution's sources and uses of funds. It is the mechanism by which an earnings credit is given for deposits raised, and an earnings charge is made for funded loans. FTP is calculated at an instrument level based on account characteristics.

We also evaluate performance based on provision for credit losses, noninterest income and noninterest expense, which are presented as components of segment operating profit or loss. In calculating each operating segment's noninterest expense, we consider the direct costs incurred by the operating segment as well as certain allocated direct costs. As part of this review, we allocate certain corporate overhead costs to a corporate account. We do not allocate income tax expense or the provision for unfunded credit commitments (included in provision for credit losses) to our segments. Additionally, our management reporting model is predicated on average asset balances; therefore, period-end asset balances are not presented for segment reporting purposes. Changes in an individual client's primary relationship designation have resulted, and in the future may result, in the inclusion of certain clients in different segments in different periods.

Unlike financial reporting, which benefits from the comprehensive structure provided by GAAP, our internal management reporting process is highly subjective, as there is no comprehensive, authoritative guidance for management reporting. Our management reporting process measures the performance of our operating segments based on our internal operating structure, which is subject to change from time to time, and is not necessarily comparable with similar information for other financial services companies. For reporting purposes, SVB Financial Group has four operating segments for which we report our financial information (for further description of these reportable segments, refer to "Business—Business Overview" under Part I, Item 1 of this report):

- **Global Commercial Bank** is comprised of results from the following:
 - Our **Commercial Bank** products and services are provided by the Bank and its subsidiaries to commercial clients primarily in the technology, life science/healthcare and private equity/venture capital industries. The Bank provides solutions to the financial needs of commercial clients through credit, treasury management, foreign exchange, trade finance and other services. We broadly serve clients within the U.S., as well as non-U.S. clients in key international innovation markets. In addition, the Bank and its subsidiaries offer a variety of investment services and solutions to its clients that enable them to effectively manage their assets.
 - Our **Global Funds Banking (formerly Private Equity) Division** provides banking products and services primarily to our private equity and venture capital clients.
 - **SVB Wine** provides banking products and services to our premium wine industry clients, including vineyard development loans.
 - **Debt Fund Investments** is comprised of our investments in certain debt funds in which we are a strategic investor.
- **SVB Private Bank** is the private banking division of the Bank, which provides a range of personal financial solutions for consumers. Our clients are primarily private equity/venture capital professionals and executive leaders of the innovation companies they support. We offer a customized suite of private banking services, including mortgages, home equity lines of credit, restricted stock purchase loans, capital call lines of credit and other secured and unsecured lending products, as well as cash and wealth management services.
- **SVB Capital** is the funds management business of SVBFG, which focuses primarily on venture capital investments. SVB Capital manages funds (primarily venture capital funds) on behalf of third-party limited partners and, on a more limited basis, SVB Financial Group. The SVB Capital family of funds is comprised of direct venture funds that invest in companies and funds of funds that invest in other venture capital funds. SVB Capital generates income for the Company primarily from investment returns (including carried interest allocations) and management fees.
- **SVB Leerink** is an investment bank specializing in the equity and convertible capital markets, mergers and acquisitions, equity research and sales and trading for growth and innovation-minded healthcare and life science companies and operates as a wholly-owned subsidiary of SVB Financial. SVB Leerink provides investment banking

SVB FINANCIAL GROUP AND SUBSIDIARIES
NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS - (Continued)

services across all subsectors of healthcare including biotechnology, pharmaceuticals, medical devices, diagnostic and life science tools, healthcare services and digital health. SVB Leerink focuses on two primary lines of business: (i) investment banking focused on providing companies with capital-raising services, financial advice on mergers and acquisitions, sales and trading services and equity research, and (ii) sponsorship of private investment funds.

The summary financial results of our operating segments are presented along with a reconciliation to our consolidated results.

Our segment information for 2019, 2018 and 2017 is as follows:

(Dollars in thousands)	Global Commercial Bank (1)	SVB Private Bank	SVB Capital (1)	SVB Leerink (1)	Other Items (2)	Total
Year ended December 31, 2019						
Net interest income	\$ 1,850,391	\$ 51,022	\$ 38	\$ 1,252	\$ 193,898	\$ 2,096,601
Provision for credit losses	(91,814)	(2,369)	—	—	(12,233)	(106,416)
Noninterest income	637,922	3,366	122,394	264,516	193,281	1,221,479
Noninterest expense (3)	(874,854)	(40,151)	(30,798)	(252,678)	(402,781)	(1,601,262)
Income (loss) before income tax expense (4)	\$ 1,521,645	\$ 11,868	\$ 91,634	\$ 13,090	\$ (27,835)	\$ 1,610,402
Total average loans, net of unearned income	\$ 26,031,284	\$ 3,341,188	\$ —	\$ —	\$ 543,735	\$ 29,916,207
Total average assets (5) (6)	56,043,321	3,371,052	405,152	397,650	2,994,455	63,211,630
Total average deposits	53,053,665	1,524,232	—	—	479,053	55,056,950
Year ended December 31, 2018						
Net interest income	\$ 1,623,488	\$ 64,902	\$ 23	\$ —	\$ 205,575	\$ 1,893,988
Provision for credit losses	(80,953)	(3,339)	—	—	(3,578)	(87,870)
Noninterest income (7)	520,302	2,281	101,181	—	121,220	744,984
Noninterest expense (3)	(793,159)	(25,064)	(22,792)	—	(347,178)	(1,188,193)
Income (loss) before income tax expense (4)	\$ 1,269,678	\$ 38,780	\$ 78,412	\$ —	\$ (23,961)	\$ 1,362,909
Total average loans, net of unearned income	\$ 22,354,305	\$ 2,850,271	\$ —	\$ —	\$ 425,944	\$ 25,630,520
Total average assets (5) (8)	48,854,416	2,871,743	380,543	—	3,122,358	55,229,060
Total average deposits	46,039,570	1,502,308	—	—	533,466	48,075,344
Year ended December 31, 2017						
Net interest income	\$ 1,274,366	\$ 58,131	\$ 48	\$ —	\$ 87,824	\$ 1,420,369
Provision for credit losses	(81,553)	(4,386)	—	—	(6,365)	(92,304)
Noninterest income (7)	392,101	2,175	58,992	—	103,963	557,231
Noninterest expense (3)	(707,666)	(17,693)	(19,340)	—	(265,956)	(1,010,655)
Income (loss) before income tax expense (4)	\$ 877,248	\$ 38,227	\$ 39,700	\$ —	\$ (80,534)	\$ 874,641
Total average loans, net of unearned income	\$ 18,479,793	\$ 2,423,078	\$ —	\$ —	\$ 256,523	\$ 21,159,394
Total average assets (5) (8)	43,704,667	2,445,220	325,939	—	1,904,446	48,380,272
Total average deposits	41,043,731	1,303,542	—	—	397,875	42,745,148

(1) Global Commercial Bank's, SVB Capital's and SVB Leerink's components of net interest income, noninterest income, noninterest expense and total average assets are shown net of noncontrolling interests for all periods presented. Noncontrolling interest is included within "Other Items."

(2) The "Other Items" column reflects the adjustments necessary to reconcile the results of the operating segments to the consolidated financial statements prepared in conformity with GAAP. Net interest income consists primarily of interest

SVB FINANCIAL GROUP AND SUBSIDIARIES
NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS - (Continued)

earned from our fixed income investment portfolio, net of FTP. Noninterest income consists primarily of gains on equity warrant assets and gains or losses on the sale of fixed income investments and equity securities from exercised warrant assets. Noninterest expense consists primarily of expenses associated with corporate support functions such as finance, human resources, marketing, legal and other expenses.

- (3) The Global Commercial Bank segment includes direct depreciation and amortization of \$20.4 million, \$21.8 million and \$25.3 million for 2019, 2018 and 2017, respectively.
- (4) The internal reporting model used by management to assess segment performance does not calculate income tax expense by segment. Our effective tax rate is a reasonable approximation of the segment rates.
- (5) Total average assets equal the greater of total average assets or the sum of total average liabilities and total average stockholders' equity for each segment to reconcile the results to the consolidated financial statements prepared in conformity with GAAP.
- (6) Included in the total average assets for SVB Leerink is goodwill of \$137.8 million for the year ended December 31, 2019 related to the acquisition effective January 4, 2019.
- (7) For the years ended December 31, 2018 and 2017, amounts of client investment fees included in the line item "Noninterest Income" previously reported as "Other Items" have been correctly allocated to our reportable segment "Global Commercial Bank" to properly reflect the source of such revenue. The correction of this immaterial error had no impact on the "Total" amount of noninterest income.
- (8) For the years ended December 31, 2018 and 2017, amounts for average assets previously reported as "Other Items" have been correctly allocated to the reportable segments "Global Commercial Bank" and "SVB Private Bank" to properly reflect the greater of total average assets or the sum of total average liabilities and total average stockholders' equity for "Global Commercial Bank" and "SVB Private Bank." The correction of this immaterial error had no impact on the "Total" amount of average assets.

SVB FINANCIAL GROUP AND SUBSIDIARIES
NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS - (Continued)

26. Parent Company Only Condensed Financial Information

The condensed balance sheets of SVB Financial at December 31, 2019 and 2018, and the related condensed statements of income, comprehensive income and cash flows for 2019, 2018 and 2017, are presented below:

Condensed Balance Sheets

(Dollars in thousands)	December 31,	
	2019	2018
Assets:		
Cash and cash equivalents	\$ 800,926	\$ 553,049
Investment securities	474,842	510,836
Loans, net of unearned income	15,245	—
Lease right-of-use assets	71,847	—
Other assets	214,167	204,301
Investment in subsidiaries:		
Bank subsidiary	5,034,095	4,554,813
Nonbank subsidiaries	432,073	116,968
Total assets	<u>\$ 7,043,195</u>	<u>\$ 5,939,967</u>
Liabilities and SVBFG stockholders' equity:		
3.50% Senior Notes	\$ 347,987	\$ 347,639
5.375% Senior Notes	—	348,826
Lease liabilities	87,999	—
Other liabilities	136,903	127,293
Total liabilities	<u>\$ 572,889</u>	<u>\$ 823,758</u>
SVBFG stockholders' equity	6,470,306	5,116,209
Total liabilities and SVBFG stockholders' equity	<u>\$ 7,043,195</u>	<u>\$ 5,939,967</u>

Condensed Statements of Income

(Dollars in thousands)	Year ended December 31,		
	2019	2018	2017
Interest income	\$ 4,473	\$ 3,307	\$ 2,077
Interest expense	(31,666)	(32,037)	(34,932)
Dividend income from bank subsidiary	733,000	140,000	90,000
Gains on equity warrant assets, net	138,078	89,142	54,555
Gains on investment securities, net	45,345	13,546	37,132
Fund management fees and other noninterest income	21,567	26,388	24,613
General and administrative expenses	(94,712)	(70,976)	(63,077)
Income tax (expense) benefit	(40,218)	(14,383)	10,367
Income before net income of subsidiaries	<u>775,867</u>	<u>154,987</u>	<u>120,735</u>
Equity in undistributed net income of bank subsidiary	303,618	793,641	356,769
Equity in undistributed net income of nonbank subsidiaries	57,371	25,212	13,002
Net income available to common stockholders	<u>\$ 1,136,856</u>	<u>\$ 973,840</u>	<u>\$ 490,506</u>

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Condensed Statements of Comprehensive Income

(Dollars in thousands)	Year ended December 31,		
	2019	2018	2017
Net income available to common stockholders	\$ 1,136,856	\$ 973,840	\$ 490,506
Other comprehensive income (loss), net of tax:			
Foreign currency translation gains (losses)	2,319	(4,107)	3,769
Changes in fair value on cash flow hedges	(2,130)	—	—
Changes in unrealized holding gains and losses on AFS securities	2,310	120	22,285
Equity in other comprehensive income (loss) of bank and nonbank subsidiaries	136,066	(19,171)	(50,956)
Reclassifications to retained earnings for the adoption of new accounting guidance	—	(29,490)	—
Other comprehensive income (loss), net of tax	138,565	(52,648)	(24,902)
Total comprehensive income	<u>\$ 1,275,421</u>	<u>\$ 921,192</u>	<u>\$ 465,604</u>

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Condensed Statements of Cash Flows

(Dollars in thousands)	Year ended December 31,		
	2019	2018	2017
Cash flows from operating activities:			
Net income available to common stockholders	\$ 1,136,856	\$ 973,840	\$ 490,506
Adjustments to reconcile net income to net cash provided by operating activities:			
Gains on equity warrant assets, net	(138,078)	(89,142)	(54,555)
Gains on investment securities, net	(45,345)	(13,546)	(17,060)
Distributions of earnings from investment securities	49,776	47,596	14,015
Net income of bank subsidiary	(1,036,618)	(933,641)	(446,769)
Net income on nonbank subsidiaries	(57,371)	(25,212)	(13,002)
Cash dividends from bank subsidiary	733,000	140,000	90,000
Amortization of share-based compensation	66,815	45,675	36,900
Decrease in other assets	27,205	51,169	12,959
Increase in other liabilities	21,391	21,619	11,774
Other, net	8,084	(31,024)	316
Net cash provided by operating activities	765,715	187,334	125,084
Cash flows from investing activities:			
Net decrease (increase) in investment securities from purchases, sales and maturities	128,635	73,742	(152,015)
Net (increase) decrease in loans	(15,245)	—	13,337
Increase in investment in bank subsidiary	(42,952)	(31,292)	(38,927)
Decrease (increase) in investment in nonbank subsidiaries	23,275	(5,323)	34,374
Acquisition of SVB Leerink	(265,601)	—	—
Net cash (used for) provided by investing activities	(171,888)	37,127	(143,231)
Cash flows from financing activities:			
Principal payments of long-term debt	(358,395)	—	(51,546)
Proceeds from issuance of common stock, ESPP and ESOP	24,818	18,387	27,003
Net proceeds from the issuance of preferred stock	340,138	—	—
Common stock repurchase	(352,511)	(147,123)	—
Net cash (used for) by financing activities	(345,950)	(128,736)	(24,543)
Net increase (decrease) in cash and cash equivalents	247,877	95,725	(42,690)
Cash and cash equivalents at beginning of period	553,049	457,324	500,014
Cash and cash equivalents at end of period	\$ 800,926	\$ 553,049	\$ 457,324

SVB FINANCIAL GROUP AND SUBSIDIARIES
NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS - (Continued)

27. Unaudited Quarterly Financial Data

Our supplemental consolidated financial information for each three month period in 2019 and 2018 are as follows:

(Dollars in thousands, except per share amounts)	Three months ended			
	March 31,	June 30,	September 30,	December 31,
2019:				
Interest income	\$ 551,014	\$ 585,767	\$ 583,892	\$ 588,735
Interest expense	38,128	56,364	63,248	55,067
Net interest income	512,886	529,403	520,644	533,668
Provision for credit losses	28,551	23,946	36,536	17,383
Noninterest income	280,376	333,750	294,009	313,344
Noninterest expense	365,664	383,522	391,324	460,752
Income before income tax expense	399,047	455,685	386,793	368,877
Income tax expense	107,435	119,114	105,075	94,061
Net income before noncontrolling interests	291,612	336,571	281,718	274,816
Net income attributable to noncontrolling interests	(2,880)	(18,584)	(14,437)	(11,960)
Net income available to common stockholders	\$ 288,732	\$ 317,987	\$ 267,281	\$ 262,856
Earnings per common share—basic	\$ 5.49	\$ 6.12	\$ 5.19	\$ 5.10
Earnings per common share—diluted	5.44	6.08	5.15	5.06
2018:				
Interest income	\$ 432,398	\$ 481,301	\$ 513,313	\$ 542,897
Interest expense	12,535	14,858	20,091	28,437
Net interest income	419,863	466,443	493,222	514,460
Provision for credit losses	27,972	29,080	17,174	13,644
Noninterest income	155,518	192,689	210,070	186,707
Noninterest expense	265,417	305,739	309,445	307,592
Income before income tax expense	281,992	324,313	376,673	379,931
Income tax expense	73,966	77,287	95,308	105,000
Net income before noncontrolling interests	208,026	247,026	281,365	274,931
Net income attributable to noncontrolling interests	(13,065)	(9,228)	(6,548)	(8,667)
Net income available to common stockholders	\$ 194,961	\$ 237,798	\$ 274,817	\$ 266,264
Earnings per common share—basic	\$ 3.69	\$ 4.48	\$ 5.16	\$ 5.01
Earnings per common share—diluted	3.63	4.42	5.10	4.96

28. Legal Matters

Certain lawsuits and claims arising in the ordinary course of business have been filed or are pending against us and/or our affiliates, and we may from time to time be involved in other legal or regulatory proceedings. In accordance with applicable accounting guidance, we establish accruals for all such matters, including expected settlements, when we believe it is probable that a loss has been incurred and the amount of the loss is reasonably estimable. When a loss contingency is not both probable and estimable, we do not establish an accrual. Any such loss estimates are inherently uncertain, based on currently available information and are subject to management's judgment and various assumptions. Due to the inherent subjectivity of these estimates and unpredictability of outcomes of legal proceedings, any amounts accrued may not represent the ultimate resolution of such matters.

To the extent we believe any potential loss relating to such matters may have a material impact on our liquidity, consolidated financial position, results of operations and/or our business as a whole and is reasonably possible but not probable, we aim to

SVB FINANCIAL GROUP AND SUBSIDIARIES
NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS - (Continued)

disclose information relating to such potential loss. We also aim to disclose information relating to any material potential loss that is probable but not reasonably estimable. In such cases, where reasonably practicable, we aim to provide an estimate of loss or range of potential loss. No disclosures are generally made for any loss contingencies that are deemed to be remote.

Based upon information available to us, our review of lawsuits and claims filed or pending against us to date and consultation with our outside legal counsel, we have not recognized a material liability for any such matters, nor do we currently expect that these matters will result in a material liability to the Company. However, the outcome of litigation and other legal and regulatory matters is inherently uncertain, and it is possible that one or more of such matters currently pending or threatened could have an unanticipated material adverse effect on our liquidity, consolidated financial position, results of operations and/or our business as a whole, in the future.

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

None.

ITEM 9A. CONTROLS AND PROCEDURES

(a) Disclosure Controls and Procedures

Disclosure controls and procedures are the controls and other procedures that are designed to ensure that information required to be disclosed in the reports that the Company files or submits under the Securities Exchange Act of 1934, as amended, is recorded, processed, summarized, and reported within the time periods specified in the SEC rules and forms. Disclosure controls and procedures include, among other things, processes, controls and procedures designed to ensure that information required to be disclosed in the reports that the Company files or submits under the Exchange Act is accumulated and communicated to management, including the Chief Executive Officer and Chief Financial Officer, as appropriate, to allow timely decisions regarding required disclosure.

The Company carried out an evaluation, under the supervision and with the participation of management, including the Chief Executive Officer and the Chief Financial Officer, of the effectiveness of the design and operation of our disclosure controls and procedures as of December 31, 2019, pursuant to Exchange Act Rule 13a-15(b). Based on this evaluation, the Chief Executive Officer and Chief Financial Officer have concluded that the Company's disclosure controls and procedures were effective as of December 31, 2019.

(b) Management's Report on Internal Control over Financial Reporting

Management is responsible for establishing and maintaining adequate internal control over financial reporting at the Company. Our internal control over financial reporting is a process designed under the supervision of the Chief Executive Officer and the Chief Financial Officer to provide reasonable assurance regarding the reliability of financial reporting and the preparation of the Company's financial statements for external reporting purposes in accordance with GAAP. A company's internal control over financial reporting includes policies and procedures that (i) pertain to the maintenance of records that accurately and fairly reflect, in reasonable detail, transactions and dispositions of the company's assets, (ii) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with GAAP and that receipts and expenditures are being made only in accordance with authorization of management and the directors of the company, and (iii) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the Company's financial statements.

Because of its inherent limitations, internal control over financial reporting cannot provide absolute assurance of achieving financial reporting objectives. 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.

As of December 31, 2019, the Company carried out an assessment, under the supervision and with the participation of the Company's management, including the Company's Chief Executive Officer and Chief Financial Officer, of the effectiveness of the Company's internal control over financial reporting pursuant to Rule 13a-15(c), as adopted by the SEC under the Exchange Act. In evaluating the effectiveness of the Company's internal control over financial reporting, management used the framework established in "Internal Control-Integrated Framework (2013)," issued by the Committee of Sponsoring Organizations of the Treadway Commission ("COSO"). Based on this assessment, management has concluded that, as of December 31, 2019, the Company's internal control over financial reporting was effective.

KPMG LLP, the independent registered public accounting firm that audited the consolidated financial statements of the Company included in this Annual Report on Form 10-K, has issued an attestation report on the effectiveness of the Company's internal control over financial reporting as of December 31, 2019. The report, which expresses an unqualified opinion on the effectiveness of the Company's internal control over financial reporting as of December 31, 2019, is included in "Consolidated Financial Statements and Supplementary Data" under Part II, Item 8 of this report under the heading "Report of Independent Registered Public Accounting Firm."

(c) Changes in Internal Control over Financial Reporting

There were no changes in our internal control over financial reporting identified in management's evaluation during the fourth quarter of the period covered by this Annual Report on Form 10-K that materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

ITEM 9B. OTHER INFORMATION

None.

PART III.

ITEM 10. DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE

The information set forth under the sections titled “Proposal No. 1-Election of Directors,” “Information on Executive Officers,” “Board Committees,” and “Corporate Governance and Board Matters” contained in the definitive proxy statement for SVB Financial’s 2020 Annual Meeting of Stockholders is incorporated herein by reference.

As of September 2019, we replaced our standalone Code of Ethics for the Principal Executive Officer and Senior Financial Officers with an integrated Code of Conduct that applies to all of our directors, executive officers and senior financial officers as well as our U.S. employees. A copy of the Code of Conduct is available on our website at www.svb.com under “About Us-Investor Relations-Corporate Governance,” or can be obtained without charge by any person requesting it. To request a copy of our Code of Conduct, please contact: Corporate Secretary, SVB Financial Group, 3003 Tasman Drive, Santa Clara, California 95054, or by telephone (408) 654-7400. We intend to disclose any waivers from our Code of Conduct granted to our directors, executive officers and senior financial officers, and any material substantive changes to our Code of Conduct by posting such information on our website. No such waivers or substantive changes were made during fiscal year 2019.

ITEM 11. EXECUTIVE COMPENSATION

The information set forth under the sections titled “Information on Executive Officers,” “Compensation Discussion and Analysis,” “Compensation for Named Executive Officers,” “Compensation for Directors,” “Compensation Committee Interlocks and Insider Participation” and “Compensation Committee Report” contained in the definitive proxy statement for SVB Financial’s 2020 Annual Meeting of Stockholders is incorporated herein by reference.

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

The information set forth under the sections titled “Security Ownership of Directors and Executive Officers” and “Security Ownership of Principal Stockholders” contained in the definitive proxy statement for SVB Financial’s 2020 Annual Meeting of Stockholders is incorporated herein by reference.

Our stockholders have approved each of our active equity compensation plans. The following table provides certain information as of December 31, 2019 with respect to our equity compensation plans:

Plan category	Number of securities to be issued upon exercise of outstanding options, warrants and rights (1)	Weighted average exercise price of outstanding options, warrants and rights	Number of securities remaining available for future issuance under equity compensation plans (2)
Equity compensation plans approved by stockholders	625,407	\$ 169.33	4,759,542
Equity compensation plans not approved by stockholders	n/a	n/a	n/a
Total	625,407	\$ 169.33	4,759,542

- (1) Represents options granted under our 2006 Equity Incentive Plan. This number does not include securities to be issued for unvested restricted stock units of 847,972 shares.
- (2) Includes shares available for issuance under our 2006 Equity Incentive Plan and 1,337,808 shares available for issuance under the 1999 Employee Stock Purchase Plan. This amount excludes securities already granted under our 2006 Equity Incentive Plan (as discussed above).

For additional information concerning our equity compensation plans, refer to Note 5—“Share-Based Compensation” of the “Notes to the Consolidated Financial Statements” under Part II, Item 8 of this report.

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

The information set forth under the sections titled “Certain Relationships and Related Transactions” and “Corporate Governance and Board Matters-Board Independence and Leadership” in the definitive proxy statement for SVB Financial’s 2020 Annual Meeting of Stockholders is incorporated herein by reference.

ITEM 14. PRINCIPAL ACCOUNTING FEES AND SERVICES

The information set forth under the section titled “Principal Audit Fees and Services” contained in the definitive proxy statement for SVB Financial’s 2020 Annual Meeting of Stockholders is incorporated herein by reference.

PART IV.

ITEM 15. EXHIBITS AND FINANCIAL STATEMENT SCHEDULES

(a) Financial Statements and Exhibits:

	Page
(1) Financial Statements. The following consolidated financial statements of the registrant and its subsidiaries are included in Part II Item 8:	
Report of Independent Registered Public Accounting Firm	94
Consolidated Balance Sheets as of December 31, 2019 and 2018	96
Consolidated Statements of Income for the three years ended December 31, 2019	97
Consolidated Statements of Comprehensive Income for the three years ended December 31, 2019	98
Consolidated Statements of Stockholders' Equity for the three years ended December 31, 2019	99
Consolidated Statements of Cash Flows for the three years ended December 31, 2019	100
Notes to the Consolidated Financial Statements	101
(2) Financial Statement Schedule. The consolidated financial statements and supplementary data are contained in Part II Item 8. All schedules other than as set forth above are omitted because of the absence of the conditions under which they are required or because the required information is included in the consolidated financial statements or related notes in Part II Item 8.	94
(3) Exhibits.	187

ITEM 16. FORM 10-K SUMMARY

None.

INDEX TO EXHIBITS

Exhibit Number	Exhibit Description	Incorporated by Reference				Filed Herewith
		Form	File No.	Exhibit	Filing Date	
3.1	Amended and Restated Certificate of Incorporation	10-Q	000-15637	3.1	May 9, 2019	
3.2	Amended and Restated Bylaws, effective as of February 19, 2019	8-K	000-15637	3.2	February 20, 2019	
3.2	Certificate of Designations of the Registrant with respect to the Series A Preferred Stock, dated December 6, 2019, filed with the Secretary of State of the State of Delaware and effective December 6, 2019	8-A	000-15637	3.2	December 6, 2019	
4.1	Indenture, dated September 20, 2010, by and between SVB Financial and U.S. Bank National Association, as trustee	8-K	000-15637	4.1	September 20, 2010	
4.2	Officer's Certificate, dated as of January 29, 2015, relating to the 3.50% Senior Note Due 2025	8-K	000-15637	4.2	January 29, 2015	
4.2	Deposit Agreement, dated December 9, 2019, among SVB Financial Group and American Stock Transfer and Trust Company, LLC, acting as depository, and the holders from time to time of the Depositary Receipts described therein	8-K	000-15637	4.2	December 9, 2019	
4.3	Form of 3.50% Senior Note due 2025	8-K	000-15637	4.2	January 29, 2015	
4.4	Description of Registrant's Securities					X
10.1	Office Lease Agreement, dated as of September 15, 2004, between CA-Lake Marriott Business Park Limited Partnership and Silicon Valley Bank: 3001, 3003 and 3101 Tasman Drive, Santa Clara, CA 95054	8-K	000-15637	10.28	September 20, 2004	
*10.2	401(k) and Employee Stock Ownership Plan	10-K	000-15637	10.2	February 27, 2014	
*10.3	Amended and Restated Retention Program Plan (RP Years 1999 - 2007)	10-Q	000-15637	10.4	August 7, 2008	
*10.4	1999 Employee Stock Purchase Plan	10-Q	000-15637	10.1	August 8, 2016	
*10.5	Form of Indemnification Agreement	10-Q	000-15637	10.7	November 6, 2009	
*10.6	Incentive Compensation Plan	10-Q	000-15637	10.1	August 7, 2018	
*10.7	Deferred Compensation Plan	10-K	000-15637	10.7	February 28, 2019	
*10.8	Change in Control Severance Plan	8-K	000-15637	10.14	March 15, 2012	
*10.9	2006 Equity Incentive Plan	10-Q	000-15637	10.1	May 10, 2016	
*10.10	Form of Incentive Stock Option Agreement under 2006 Equity Incentive Plan+	10-Q	000-15637	10.16	August 7, 2009	
*10.11	Form of Nonqualified Stock Option Agreement under 2006 Equity Incentive Plan+	10-Q	000-15637	10.17	August 7, 2009	
*10.12	Form of Restricted Stock Unit Agreement under 2006 Equity Incentive Plan (for Executives)+	10-Q	000-15637	10.18	August 7, 2009	
*10.13	Form of Restricted Stock Unit Agreement for Employees under 2006 Equity Incentive Plan+	10-Q	000-15637	10.19	August 7, 2009	
*10.14	Form of Restricted Stock Award Agreement under 2006 Equity Incentive Plan+	10-Q	000-15637	10.20	August 7, 2009	
*10.15	Offer Letter dated November 2, 2006, for Michael Descheneaux	8-K	000-15637	10.31	April 17, 2007	
*10.16	Offer Letter dated April 25, 2007, for Michael Descheneaux	8-K/A	000-15637	10.32	May 2, 2007	
*10.17	Form of Restricted Stock Unit Agreement under 2006 Equity Incentive Plan (for Directors)+	10-Q	000-15637	10.23	August 7, 2009	
*10.18	Form of Restricted Stock Unit Election to Defer Settlement under 2006 Equity Incentive Plan (for Directors)+	10-Q	000-15637	10.24	November 10, 2008	
*10.19	Form of Restricted Stock Unit Election to Defer Settlement under 2006 Equity Incentive Plan (for Executives)+	10-Q	000-15637	10.27	November 10, 2008	
*10.20	Retention Program Plan (RP Years Beginning 2008)	10-Q	000-15637	10.26	August 7, 2008	
*10.21	Form of Letter Agreement with Michael Descheneaux re: Salary Changes	8-K	000-15637	10.31	May 14, 2009	
*10.22	Form of Stock Appreciation Right Agreement under 2006 Equity Incentive Plan+	10-Q	000-15637	10.32	August 7, 2009	
*10.23	Form of Restricted Stock Unit Agreement for Cash Settlement for Employees under 2006 Equity Incentive Plan+	10-Q	000-15637	10.33	August 7, 2009	

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Exhibit Number	Exhibit Description	Incorporated by Reference				Filed Herewith
		Form	File No.	Exhibit	Filing Date	
*10.24	Form of Restricted Stock Unit Agreement for Cash Settlement for Directors under 2006 Equity Incentive Plan+	10-Q	000-15637	10.34	August 7, 2009	
*10.25	Form of Restricted Stock Award Agreement under 2006 Equity Incentive Plan++	10-K	000-15637	10.33	February 27, 2014	
*10.26	Form of Incentive Stock Option Agreement under 2006 Equity Incentive Plan++	10-K	000-15637	10.34	February 27, 2014	
*10.27	Form of Nonqualified Stock Option Agreement under 2006 Equity Incentive Plan++	10-K	000-15637	10.35	February 27, 2014	
*10.28	Form of Restricted Stock Unit Agreement under 2006 Equity Incentive Plan++	10-K	000-15637	10.36	February 27, 2014	
*10.29	Form of Restricted Stock Unit Award Agreement under 2006 Equity Incentive Plan (Performance-Based)++	10-K	000-15637	10.37	February 27, 2014	
*10.30	Form of Stock Appreciation Rights Agreement under 2006 Equity Incentive Plan++	10-K	000-15637	10.38	February 27, 2014	
*10.31	UK Sub-Plan of the 2006 Equity Incentive Plan++	10-Q	000-15637	10.3	May 9, 2014	
*10.32	Form of U.K. Approved Stock Options and Award Agreement under the UK Sub-Plan++	10-Q	000-15637	10.4	May 9, 2014	
*10.33	Israeli Sub-Plan of the 2006 Equity Incentive Plan++	10-Q	000-15637	10.5	May 9, 2014	
*10.34	Form of Incentive Stock Option Agreement under 2006 Equity Incentive Plan+++	8-K	000-15637	10.2	January 9, 2015	
*10.35	Form of Nonqualified Stock Option Agreement under 2006 Equity Incentive Plan+++	8-K	000-15637	10.3	January 9, 2015	
*10.36	Form of Restricted Stock Unit Agreement under 2006 Equity Incentive Plan (Subject to Time-Based Vesting)+++	8-K	000-15637	10.4	January 9, 2015	
*10.37	Form of Restricted Stock Unit Agreement under 2006 Incentive Plan (Subject to Performance-Based Vesting)+++	8-K	000-15637	10.5	January 9, 2015	
*10.38	Form of Restricted Stock Award Agreement under 2006 Equity Incentive Plan+++	8-K	000-15637	10.6	January 9, 2015	
*10.39	Form of Stock Appreciation Rights Agreement under 2006 Equity Incentive Plan+++	8-K	000-15637	10.7	January 9, 2015	
*10.40	Form of U.K.-Approved Stock Option Agreement+++	8-K	000-15637	10.8	January 9, 2015	
*10.41	Service Agreement, dated July 14, 2009, between SVB Financial Group UK Limited and Philip Cox	10-K	000-15637	10.47	February 26, 2015	
*10.42	Offer Agreement dated April 28, 2017, by and between Daniel Beck and SVB Financial Group	8-K	000-15637	10.1	May 12, 2017	
*10.43	Letter Agreement dated May 11, 2017, by and between Michael Descheneaux and SVB Financial Group	8-K	000-15637	10.2	May 12, 2017	
21.1	Subsidiaries of SVB Financial					X
23.1	Consent of KPMG LLP, independent registered public accounting firm					X
31.1	Rule 13a-14(a) / 15(d)-14(a) Certification of Principal Executive Officer					X
31.2	Rule 13a-14(a) / 15(d)-14(a) Certification of Principal Financial Officer					X
32.1	Section 1350 Certifications					X
101.INS	XBRL Instance Document					X
101.SCH	XBRL Taxonomy Extension Schema Document					X
101.CAL	XBRL Taxonomy Extension Calculation Linkbase Document					X
101.DEF	XBRL Taxonomy Extension Definition Linkbase Document					X
101.LAB	XBRL Taxonomy Extension Label Linkbase Document					X
101.PRE	XBRL Taxonomy Extension Presentation Linkbase Document					X
*	Denotes management contract or any compensatory plan, contract or arrangement.					
+	Forms applicable to grants made under the 2006 Equity Incentive Plan during 2013 and prior years.					
++	Forms applicable to grants made under the 2006 Equity Incentive Plan during 2014.					
+++	Forms applicable to grants made under the 2006 Equity Incentive Plan beginning in 2015.					

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.

SVB Financial Group

/s/ GREG W. BECKER

Greg W. Becker

President and Chief Executive Officer

Dated: February 28, 2020

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

<u>Signature</u>	<u>Title</u>	<u>Date</u>
<u>/s/ ROGER F. DUNBAR</u> Roger F. Dunbar	Chairman of the Board of Directors and Director	February 28, 2020
<u>/s/ GREG W. BECKER</u> Greg W. Becker	President, Chief Executive Officer and Director (Principal Executive Officer)	February 28, 2020
<u>/s/ DANIEL J. BECK</u> Daniel J. Beck	Chief Financial Officer (Principal Financial Officer)	February 28, 2020
<u>/s/ KAREN HON</u> Karen Hon	Interim Chief Accounting Officer (Principal Accounting Officer)	February 28, 2020
<u>/s/ ERIC A. BENHAMOU</u> Eric A. Benhamou	Director	February 28, 2020
<u>/s/ JOHN S. CLENDENING</u> John S. Clendening	Director	February 28, 2020
<u>/s/ JOEL P. FRIEDMAN</u> Joel P. Friedman	Director	February 28, 2020
<u>/s/ KIMBERLY A. JABAL</u> Kimberly A. Jabal	Director	February 28, 2020
<u>/s/ JEFFREY N. MAGGIONCALDA</u> Jeffrey N. Maggioncalda	Director	February 28, 2020
<u>/s/ KAY MATTHEWS</u> Kay Matthews	Director	February 28, 2020
<u>/s/ MARY J. MILLER</u> Mary J. Miller	Director	February 28, 2020
<u>/s/ KATE D. MITCHELL</u> Kate D. Mitchell	Director	February 28, 2020
<u>/s/ JOHN F. ROBINSON</u> John F. Robinson	Director	February 28, 2020
<u>/s/ GAREN K. STAGLIN</u> Garen K. Staglin	Director	February 28, 2020

DESCRIPTION OF REGISTERED SECURITIES

As of December 31, 2019, SVB Financial Group (the “Company,” “we” or “us”) has two classes of securities registered under Section 12 of the Securities Exchange Act of 1934 (the “Exchange Act”): (i) our common stock and (ii) depositary shares (the “Depositary Shares”), each representing a 1/40th interest in a share of 5.250% fixed rate non-cumulative perpetual preferred stock, Series A (the “Series A Preferred Stock”). The Company’s common stock and Depositary Shares are listed on the Nasdaq Global Select Market.

DESCRIPTION OF COMMON STOCK

The following description of the Company’s common stock and the relevant provisions of the Company’s Amended and Restated Certificate of Incorporation and Amended and Restated Bylaws are summaries and are qualified in their entirety by reference to the Company’s Amended and Restated Certificate of Incorporation and Amended and Restated Bylaws.

General

Under our Amended and Restated Certificate of Incorporation, we are authorized to issue a total of 150,000,000 shares of common stock having a par value of \$0.001 per share. Shares of our common stock are not redeemable or subject to sinking fund provisions, and have no subscription, conversion, preemptive or preferential rights.

Dividends

Subject to the prior rights of holders of any other class or series of preferred stock outstanding having prior rights as to dividends, holders of our common stock are entitled to receive dividends if, as and when declared by our board of directors out of funds legally available for dividends.

Voting Rights

Holders of our common stock are entitled to one vote for each share that they hold and are vested with all of the voting power except as our board of directors (or a committee thereof) has provided, or may provide in the future, with respect to any class or series of preferred stock that the board of directors (or a committee thereof) may authorize, including the Series A Preferred Stock. Holders of our common stock do not have the right to cumulate their voting power.

Liquidation Rights

In the event of our liquidation, dissolution or winding-up, holders of common stock have the right under Section 281 of the Delaware General Corporation Law to a ratable portion of assets remaining after satisfaction in full of the prior rights of our creditors, all liabilities and the total liquidation preferences of any outstanding shares of preferred stock.

DESCRIPTION OF PREFERRED STOCK AND DEPOSITARY SHARES

The following description of the Company’s Series A Preferred Stock, related Depositary Shares and the relevant provisions of the Company’s Amended and Restated Certificate of Incorporation and Amended and Restated Bylaws are summaries and are qualified in their entirety by reference to (i) the Company’s Amended and Restated Certificate of Incorporation, (ii) the Amended and Restated Bylaws, (iii) the Deposit Agreement (the “Deposit Agreement”), dated as of December 9, 2019, among the Company, as issuer, American Stock Transfer & Trust Company, LLC, as depositary (the “Depositary”), and the holders from time to time of the depositary receipts described therein and (iv) the Certificate of Designations of the Company with respect to the Series A Preferred Stock, dated December 6, 2019 (the “Certificate of Designations”).

General

Under our Amended and Restated Certificate of Incorporation, we are authorized to issue a total of 20,000,000 shares of preferred stock having a par value of \$0.001 per share. Holders of our Series A Preferred Stock and Depositary Shares do not have any preemptive or conversion rights. The number of authorized shares of Series A Preferred Stock under the Certificate of Designations is 350,000, with a “Stated Amount” per share of \$1,000.

We have issued Depositary Shares each representing a 1/40th fractional interest in a share of Series A Preferred Stock, which are evidenced by depositary receipts. We have deposited the underlying shares of the Series A Preferred Stock represented by the Depositary Shares with a depositary pursuant to the Deposit Agreement. Subject to the terms of the Deposit Agreement, each holder of a Depositary Share is entitled to all the rights and preferences of the underlying Series A Preferred Stock in proportion to the applicable fraction of a share of Series A Preferred Stock represented by the Depositary Share. These rights include dividend, voting, redemption and liquidation rights.

Ranking

With respect to the payment of dividends and distributions of assets upon any liquidation, dissolution or winding-up of the Company, the Series A Preferred Stock will rank:

- senior to our common stock and any other class or series of our stock that ranks junior to the Series A Preferred Stock in the payment of dividends or in the distribution of assets upon the liquidation, dissolution or winding-up of the Company;
- senior to or on a parity with each other series of our preferred stock we may issue (except for any senior series that may be issued upon the requisite vote or consent of the holders of at least two-thirds of the shares of the Series A Preferred Stock at the time outstanding and entitled to vote, voting together as a single class with any other series of preferred stock entitled to vote thereon (to the exclusion of all other series of preferred stock)) with respect to the payment of dividends and distributions of assets upon any liquidation, dissolution or winding-up of the Company; and
- with respect to distributions of assets upon any liquidation, dissolution or winding-up of the Company, junior to all existing and future indebtedness and other non-equity claims on us.

Dividends

Holders of Series A Preferred Stock are entitled to receive, when, as and if declared by our board of directors (or a duly authorized committee of our board of directors), but only out of funds legally available therefor, non-cumulative cash dividends at an annual rate of 5.250% of the Stated Amount per share, payable quarterly in arrears, on February 15, May 15, August 15 and November 15 of each year (a "Dividend Payment Date"), beginning on February 15, 2020. Subject to the terms of the Deposit Agreement, the dividend payable on each Depositary Share will be in an amount equal to 1/40th of the dividend declared and payable on the related share of Series A Preferred Stock.

So long as any share of Series A Preferred Stock remains outstanding, unless dividends on all outstanding shares of Series A Preferred Stock for the most recently completed dividend period have been paid in full or declared and a sum sufficient for the payment thereof has been set aside for payment, (i) no dividend may be declared or paid or set aside for payment, and no distribution may be made, on any share of common stock, (ii) no monies may be paid or made available for a sinking fund for the redemption or retirement of common stock, and (iii) no shares of common stock may be purchased, redeemed or otherwise acquired for consideration by the Company, subject to certain exceptions.

Company Redemption

The Company may, at its option, redeem the shares of Series A Preferred Stock (i) in whole or in part, from time to time, on any Dividend Payment Date on or after the Dividend Payment Date on February 15, 2025 or (ii) in whole but not in part at any time within 90 days following a Regulatory Capital Treatment Event (as defined in the Certificate of Designations), in each case, at a cash redemption price equal to the Stated Amount, together with any declared and unpaid dividends, without regard to any undeclared dividends, to but excluding the redemption date.

If we redeem the Series A Preferred Stock, the Depositary Shares will be redeemed from the proceeds received by the Depositary resulting from the redemption of the Series A Preferred Stock held by the Depositary. The redemption price per Depositary Share will be equal to 1/40th of the redemption price per share payable with respect to the Series A Preferred Stock (equivalent to \$25 per Depositary Share), plus any declared and unpaid dividends, without accumulation of any undeclared dividends, on the shares of Series A Preferred Stock. Whenever we redeem shares of the Series A Preferred Stock held by the Depositary, the Depositary will redeem, as of the same redemption date, the number of the Depositary Shares representing shares of the Series A Preferred Stock so redeemed.

In case of any redemption of less than all of the outstanding Depositary Shares, the Depositary Shares to be redeemed will be selected either pro rata or by lot. In any case, the Depositary will redeem the Depositary Shares only in increments of 40 Depositary Shares and any integral multiple thereof. The Depositary will provide notice of redemption to record holders of the Depositary

Shares not less than 30 and not more than 60 days prior to the date fixed for redemption of the Series A Preferred Stock and the related Depositary Shares.

Voting

The holders of Series A Preferred Stock will have no voting rights except as set forth in the Certificate of Designations or as otherwise from time to time required by law. If holders of Series A Preferred Stock are entitled to vote on a particular matter, holders of Depositary Shares will be entitled to the applicable fraction of a vote per depositary share they hold representing those shares of preferred stock.

To the extent possible, the Depositary will vote the amount of the Series A Preferred Stock represented by the Depositary Shares in accordance with the instructions it receives. We will agree to take all reasonable actions that the Depositary determines are necessary to enable the Depositary to vote as instructed. If the Depositary does not receive specific instructions from the holders of any Depositary Shares, it will vote all Depositary Shares held by it proportionately with instructions received.

Right to Elect Two Directors upon Nonpayment. If and when dividends on Series A Preferred Stock have not been declared and paid in full for at least six quarterly dividend periods, the authorized number of directors then constituting our board of directors will automatically be increased by two. Holders of Series A Preferred Stock (together with the holders of all other voting preferred stock then outstanding), voting as a single class, will be entitled to elect the two additional members of the board of directors. These voting rights will continue until dividends on the shares of the Series A Preferred Stock and any such other series of voting preferred stock for at least four consecutive quarterly dividend periods, in the case of the Series A Preferred Stock, or the equivalent thereof, in the case of any other series of voting preferred stock, as applicable, following the nonpayment shall have been fully paid. Then, the holders of the Series A Preferred Stock and all other holders of voting preferred stock shall be divested of the foregoing voting rights (subject to revesting in the event of each subsequent nonpayment), the term of office of each preferred stock director so elected shall terminate and the number of directors on the board of directors shall automatically decrease by two.

Other Matters. The affirmative vote or consent of the holders of at least two-thirds of all of the then-outstanding shares of Series A Preferred Stock entitled to vote, voting separately as a single class with any other series of preferred stock entitled to vote thereon, is required to:

- authorize or increase the authorized amount of, or issue shares of, any class or series of our capital stock ranking senior to the class of Series A Preferred Stock with respect to the payment of dividends or in the distribution of assets on any liquidation, dissolution or winding-up of the Company;
- amend the provisions of our Amended and Restated Certificate of Incorporation, the Amended and Restated Bylaws or the Certificate of Designations that would alter or change the voting powers, preferences or special rights of the Series A Preferred Stock so as to affect them adversely; or
- consummate a binding share-exchange or reclassification involving the Series A Preferred Stock, or a merger or consolidation of us with or into another entity unless the shares of Series A Preferred Stock (i) remain outstanding or (ii) are converted into or exchanged for preference securities of the surviving entity or any entity controlling such surviving entity and such new preference securities have terms that are not materially less favorable than the Series A Preferred Stock, taken as a whole.

Liquidation Rights

In the event of our liquidation, dissolution or winding-up, holders of Series A Preferred Stock have the right to a ratable portion of assets remaining after satisfaction in full of the prior rights of our creditors, all liabilities and prior rights of holders of any securities ranking senior to our preferred stock. Holders of Depositary Shares will generally receive distributions in proportion to the number of Depositary Shares they hold.

Charges of Depositary

We will pay all transfer and other taxes and governmental charges arising solely from the existence of the depositary arrangements. We will pay associated charges of the Depositary in connection with the initial deposit of the Series A Preferred Stock and any redemption of the Series A Preferred Stock. Holders of the Depositary Shares will pay transfer, income and other taxes and governmental charges and such other charges as are expressly provided in the Deposit Agreement to be for their accounts. If these charges have not been paid by the holders of the Depositary Shares, the Depositary may refuse to transfer Depositary Shares, withhold dividends and distributions, and sell the Depositary Shares.

CERTAIN PROVISIONS THAT MAY HAVE AN ANTI-TAKOVER EFFECT

The following descriptions of certain provisions that may have an anti-takeover effect are summaries and are qualified in their entirety by reference to (i) the Company's Amended and Restated Certificate of Incorporation, (ii) the Amended and Restated Bylaws and (iii) the Delaware General Corporation Law.

Restrictions on Ownership

The Bank Holding Company Act requires any "bank holding company," as defined in the Bank Holding Company Act, to obtain the approval of the Board of Governors of the Federal Reserve ("Federal Reserve Board") prior to the acquisition of 5% or more of our common stock. Any person, other than a bank holding company, is required to obtain prior approval of the Federal Reserve Board to acquire 10% or more of our common stock under the Change in Bank Control Act. Any holder of 25% or more of our common stock, or a holder of 5% or more if such holder otherwise exercises a "controlling influence" over us, is subject to regulation as a bank holding company under the Bank Holding Company Act.

Before acquiring control of a California state-chartered bank or its parent company, a person or entity must obtain the prior approval of the California Department of Business Oversight under the California Banking Law. "Control" means the power to vote 25% or more of the outstanding voting securities or the power to direct the management and policies of a bank or parent company. In addition, direct or indirect ownership, control or power to vote 10% or more of the outstanding voting securities of the bank or parent company is presumed to constitute control of the bank or parent company unless the acquiring person provides the California Department of Business Oversight with sufficient information to rebut this presumption.

Under the regulations of the Federal Reserve Board implementing the Bank Holding Company Act, if any holder of any series of preferred stock (including the Series A Preferred Stock) is or becomes entitled to vote for the election of directors, such series will be deemed a class of voting securities and a company holding 25% or more of the series, or such lower amount of the Series A Preferred Stock, may be deemed, when coupled with other factors, to constitute a "controlling influence" over the issuer, and will be subject to regulation as a bank holding company under the Bank Holding Company Act. In addition, at the time the series is deemed a class of voting securities, any other bank holding company will be required to obtain the approval of the Federal Reserve Board under the Bank Holding Company Act to acquire or maintain more than 5% of that series. Any other person (other than the bank holding company) will be required to obtain the non-objection of the Federal Reserve Board under the Change in Bank Control Act of 1978, as amended, to acquire or maintain 10% or more of that series.

SVB Financial Group Annual Report on Form 10-K

Exhibit 21.1-Subsidiaries of SVB Financial Group

The following is a list of the direct and indirect subsidiaries of SVB Financial Group as of December 31, 2019:

Subsidiary	Jurisdiction of Incorporation or Organization
Gold Hill Venture Lending Partners 03, LLC	California
Gold Hill Venture Lending 03, LP	Delaware
Gold Hill Venture Lending 03-A, LP	Delaware
Gold Hill Venture Lending 03-B, LP	Delaware
Gold Hill Venture Lending 03-C, LP	Delaware
GHVL 03-C, Inc.	Delaware
GHVL, LP	Delaware
Silicon Valley Bank	California
SVB Asset Management	California
SVB Securities	California
SPD Silicon Valley Bank Co., Ltd.	China
SVB Wealth Advisory, Inc.	Delaware
SVB International Finance, Inc.	United States*
The Silicon Valley Bank Foundation	California
SVB Financial Group UK Limited	United Kingdom
SVB Global Financial, Inc.	Delaware
SVB Israel Advisors, Ltd.	Israel
SVB India Advisors, Pvt. Ltd.	India
SVB Global Services India LLP	India
SVB Business Partners (Beijing) Co. Ltd.	China
SVB Leerink Holdings LLC	Delaware
Leerink Partners Co-Investment Fund, LLC	Delaware
PharmaShares Advisors, LLC	Delaware
SVB Leerink LLC	Delaware
Silicon Valley BancVentures, Inc.	California
CP I, L.P.	California
SVB Capital Partners II, LLC	Delaware
CP II, L.P.	Delaware
SVB Capital Partners III, LLC	Delaware
Capital Partners III, L.P.	Delaware
SVB Capital Partners IV, LLC	Delaware
Capital Partners IV, L.P.	Delaware
SVB Venture Capital Investment Management (Shanghai) Co. Limited	China
Shanghai Yangpu Venture Capital Fund (LP)	China
Shengwei Shengxiang Capital Hangzhou Venture Capital Fund (LP)	China
Shanghai Shengyu Enterprise Management Ltd Co.	China
Beijing Zhongguancun Science City New Growth Driver Investment Management Co., Ltd	China
Shanghai Sheng Wei Dong Fang Jia Rui Equity Investment Fund Partnership	China
Qualified Investors Fund, LLC	California
Qualified Investors Fund II, LLC	Delaware
Qualified Investors Fund III, LLC	Delaware
Qualified Investors Fund IV, LLC	Delaware
Qualified Investors Fund V, LLC	Delaware
SVB Growth Investors, LLC	Delaware
Capital Preferred Return Fund, L.P.	Delaware
Growth Partners, L.P.	Delaware
SVB Strategic Investors, LLC	California

Strategic Investors Fund, L.P.	California
SVB Strategic Investors II, LLC	Delaware
Strategic Investors Fund II, L.P.	Delaware
SVB Strategic Investors III, LLC	Delaware
Strategic Investors Fund III, L.P.	Delaware
SVB Strategic Investors IV, LLC	Delaware
Strategic Investors Fund IV, L.P.	Delaware
Venture Investment Managers, L.P.	Delaware
SVB Strategic Investors V, LLC	Delaware
Strategic Investors Fund V, L.P.	Delaware
Strategic Investors Fund V-A, L.P	Delaware
Strategic Investors Fund V-A Opportunity, L.P	Delaware

Subsidiary	Jurisdiction of Incorporation or Organization
Strategic Investors Fund V-B, L.P.	Delaware
SVB Strategic Investors VI, LLC	Delaware
Strategic Investors Fund VI, L.P.	Delaware
Strategic Investors Fund VI-A, L.P.	Delaware
SVB Strategic Investors VII, LLC	Delaware
Strategic Investors Fund VII, L.P.	Delaware
Strategic Investors Fund VII-A, L.P.	Delaware
SVB Strategic Investors VIII, LLC	Delaware
Strategic Investors Fund VIII, L.P.	Delaware
Strategic Investors Fund VIII-A, L.P.	Delaware
Strategic Investors Fund VIII-B, L.P.	Delaware
Strategic Investors Fund VIII Cayman, L.P.	Cayman Islands
Strategic Investors Fund IX, LLC	Delaware
Strategic Investors Fund IX Cayman, L.P.	Cayman Islands
Strategic Investors Fund IX-A Cayman, L.P.	Cayman Islands
Strategic Investors Fund IX, L.P.	Delaware
Strategic Investors Fund IX-A, L.P.	Delaware
Strategic Investors Fund IX-B, L.P.	Delaware
Strategic Investors Fund IX Master, L.P.	Delaware
Sprout Endurance Partners, LLC	Delaware
Sprout Endurance Partners, L.P.	Delaware
Sprout Endurance Partners Cayman, L.P.	Cayman Islands
SVB Capital Venture Overage, LLC	Delaware
Venture Overage Fund, L.P.	Delaware
SVB Strategic Investors X, LLC	Delaware
Strategic Investors Fund X LS SPV, L.P.	Delaware
SVB Leerink Capital LLC	Delaware
Leerink Transformation Fund I GP LLC	Delaware
LTP K Holdings L.P.	Delaware
Leerink Transformation Investors I L.P.	Delaware
Leerink Transformation Fund I (Cayman Feeder) L.P.	Cayman Islands
Leerink Transformation Fund I GP L.P.	Delaware
Leerink Transformation Partners Strategic Fund L.P.	Delaware
Leerink Transformation Fund I L.P.	Delaware
Massachusetts Innovation Catalyst Fund I L.P.	Delaware
LTP BHE LP	Delaware
LTP Feeder BHE LP	Delaware
LTP BHE Corporation	Delaware
Leerink Kieger Capital Partners LLC	Delaware
Leerink Transformation Carry Vehicle L.P.	Delaware
Leerink Transformation Partners LLC	Delaware
Leerink Revelation Carry Vehicle LP	Delaware
* Edge Act Corporation	

Consent of Independent Registered Public Accounting Firm

The Stockholders and Board of Directors
SVB Financial Group:

We consent to the incorporation by reference in the registration statements (Nos. 333-234694, 333-213281, 333-213279, 333-198147, 333-192471, 333-188707, 333-183323, 333-176232, 333-168836, 333-134655, 333-133262, 333-118091, 333-108434, 333-92410, 333-59590, 333-39680, 333-89641, 333-68857, 333-28185, 333-05489, 033-60467) on Form S-8 and registration statement (No. 333-234713) on Form S-3 of SVB Financial Group and subsidiaries (the Company) of our report dated February 28, 2020, with respect to the consolidated balance sheets of SVB Financial Group and subsidiaries as of December 31, 2019 and 2018, the related consolidated statements of income, comprehensive income, stockholders' equity, and cash flows for each of the years in the three-year period ended December 31, 2019, and the related notes (collectively, the consolidated financial statements), and the effectiveness of internal control over financial reporting as of December 31, 2019, which report appears in the December 31, 2019 annual report on Form 10-K of the Company.

/s/ KPMG LLP

San Francisco, California
February 28, 2020

RULE 13a-14(a)/15d-14(a) CERTIFICATION

I, Greg Becker, certify that:

1. I have reviewed this annual report on Form 10-K of SVB Financial Group;
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 periods 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(s) 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(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's Board of Directors (or persons performing the equivalent functions):
 - (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: February 28, 2020

/s/ GREG BECKER

Greg Becker

President and Chief Executive Officer

(Principal Executive Officer)

RULE 13a-14(a)/15d-14(a) CERTIFICATION

I, Daniel Beck, certify that:

1. I have reviewed this annual report on Form 10-K of SVB Financial Group;
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 periods 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(s) 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(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's Board of Directors (or persons performing the equivalent functions):
 - (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: February 28, 2020

/s/ DANIEL BECK

Daniel Beck

Chief Financial Officer

(Principal Financial Officer)

SECTION 1350 CERTIFICATIONS

I, Greg Becker, certify, pursuant to 18 U.S.C. Section 1350, that, to my knowledge, the annual report of SVB Financial Group on Form 10-K for the annual period ended December 31, 2019, (i) fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934 and (ii) that the information contained in such Form 10-K fairly presents, in all material respects, the financial condition and results of operations of SVB Financial Group.

Date: February 28, 2020

/s/ GREG BECKER

Greg Becker

President and Chief Executive Officer

(Principal Executive Officer)

I, Daniel Beck, certify, pursuant to 18 U.S.C. Section 1350, that, to my knowledge, the annual report of SVB Financial Group on Form 10-K for the annual period ended December 31, 2019, (i) fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934 and (ii) that the information contained in such Form 10-K fairly presents, in all material respects, the financial condition and results of operations of SVB Financial Group.

Date: February 28, 2020

/s/ DANIEL BECK

Daniel Beck

Chief Financial Officer

(Principal Financial Officer)