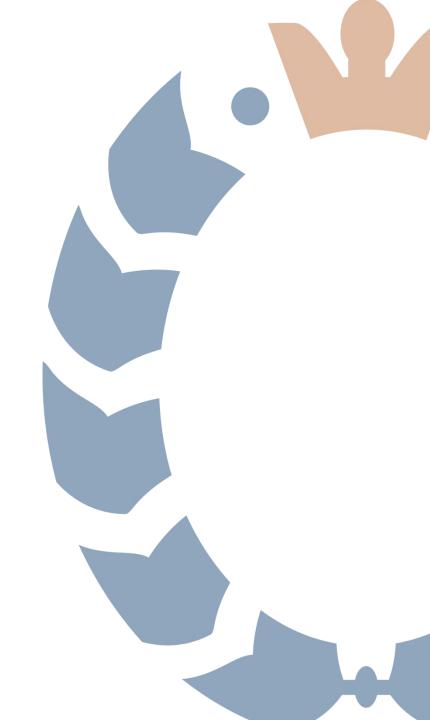


Investor Presentation

Second Quarter 2023 ——



"Safe Harbor" Statement

Under the Private Securities Litigation Reform Act of 1995

"Safe Harbor" Statement under the Private Securities Litigation Reform Act of 1995: This presentation contains, and the remarks by Prosperity's management on the conference call may contain, forward-looking statements within the meaning of the federal securities laws, including Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended. From time to time, oral or written forward-looking statements may also be included in other information released to the public. Such forward-looking statements are typically, but not exclusively, identified by the use in the statements of words or phrases such as "aim," "anticipate," "believe," "estimate," "expect," "goal," "guidance," "intend," "is anticipated," "is expected," "is intended," "objective," "plan," "projected," "projection," "will affect," "will be," "will continue," "will decrease," "will grow," "will impact," "will increase," "will only impact," "will increase," "will only impact," "will impact," "will increase," "will only impact," "will impact," "will increase," "will only impact," " incur," "will reduce," "will remain," "will result," "would be," variations of such words or phrases (including where the word "could," "may," or "would" is used rather than the word "will" in a phrase) and similar words and phrases indicating that the statement addresses some future result, occurrence, plan or objective. Forward-looking statements include all statements other than statements of historical fact, including forecasts or trends, and are based on current expectations, assumptions, estimates and projections about Prosperity Bancshares and its subsidiaries. These forward-looking statements may include information about Prosperity's possible or assumed future economic performance or future results of operations, including future revenues, income, expenses, provision for loan losses, provision for taxes, effective tax rate, earnings per share and cash flows and Prosperity's future capital expenditures and dividends, future financial condition and changes therein, including changes in Prosperity's loan portfolio and allowance for loan losses, changes in deposits, borrowings and the investment securities portfolio, future capital structure or changes therein, as well as the plans and objectives of management for Prosperity's future operations, future or proposed acquisitions, including the pending transaction with Lone Star, the future or expected effect of acquisitions on Prosperity's operations, results of operations, financial condition, and future economic performance, statements about the anticipated benefits of each of the proposed transactions, and statements about the assumptions underlying any such statement. These forward-looking statements are not guarantees of future performance and are based on expectations and assumptions Prosperity currently believes to be valid. Because forward-looking statements relate to future results and occurrences, many of which are outside of Prosperity's control, they are subject to inherent uncertainties, risks and changes in circumstances that are difficult to predict. These risks and uncertainties include, but are not limited to whether Prosperity can: successfully identify acquisition targets and integrate the businesses of acquired companies and banks, including Lone Star; continue to sustain its current internal growth rate or total growth rate; provide products and services that appeal to its customers; continue to have access to debt and equity capital markets; and achieve its sales objectives. Other risks include, but are not limited to: the possibility that credit quality could deteriorate; actions of competitors; changes in laws and regulations (including changes in governmental interpretations of regulations and changes in accounting standards); the possibility that the anticipated benefits of an acquisition transaction, including the pending transaction with Lone Star, are not realized when expected or at all, including as a result of the impact of, or problems arising from, the integration of two companies or as a result of the strength of the economy and competitive factors generally; a deterioration or downgrade in the credit quality and credit agency ratings of the securities in Prosperity's securities portfolio; customer and consumer demand, including customer and consumer response to marketing; effectiveness of spending, investments or programs; fluctuations in the cost and availability of supply chain resources; economic conditions, including currency rate, interest rate and commodity price fluctuations; and the effect, impact, potential duration or other implications of weather an climate-elated events. Prosperity disclaims any obligation to update such factors or to publicly announce the results of any revisions to any of the forward-looking statements included herein to reflect future events or developments. These and various other factors are discussed in Prosperity's Annual Report on Form 10-K for the year ended December 31, 2022, and other reports and statements Prosperity has filed with the Securities and Exchange Commission ("SEC"). Copies of the SEC filings for Prosperity may be downloaded from the Internet at no charge from http://www.prosperitybankusa.com.

Second Quarter Highlights

- Net income of \$86.9 million, or \$111.8 million excluding after-tax merger related provision and expenses
- Earnings per share (diluted) of \$0.94, or \$1.21 excluding after-tax merger related provision and expenses
- Assets of \$39.9 billion, total loans of \$21.7 billion, and deposits of \$27.4 billion at June 30, 2023
- Common equity tier 1 ratio of 14.48% and leverage ratio of 9.96% at June 30, 2023
- Loans, excluding Warehouse Purchase Program loans, increased \$2.0 billion or 10.6%
- Deposits increased \$376.7 million or 1.4%
- Sound asset quality with annualized net charge-offs / quarterly average loans of 0.31%
- Nonperforming assets to average earning assets remain low at 0.18% or \$62.7 million
- Allowance for credit losses on loans and on off-balance sheet credit exposure of \$381.7 million
- Allowance for credit losses to total loans, excluding Warehouse Purchase Program loans, of 1.68%
- Repurchased 595,000 shares of common stock during the second quarter 2023, and 1.2 million shares during the first six months of 2023
- Completed the merger and operational conversion of First Bancshares of Texas, Inc.
- Pending merger with Lone Star State Bancshares, Inc.
- Declared cash dividend of \$0.55 for the third quarter 2023



Strong Presence in Texas and Oklahoma

A Texas-based financial holding company with \$39.9 billion in total assets

 Prosperity has been ranked in the Top 10 of Forbes America's Best Banks since the list's inception in 2010, and was ranked #6 in 2023

Ranked #2 in deposit market share in Texas (1)

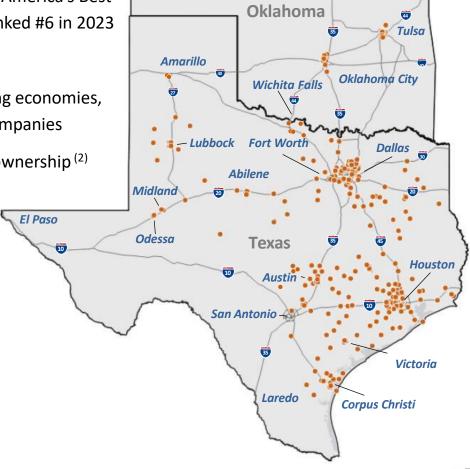
 Texas and Oklahoma continue to benefit from strong economies, and are home to 61 Fortune 500 headquartered companies

Shareholder driven with 4.2% fully diluted insider ownership (2)

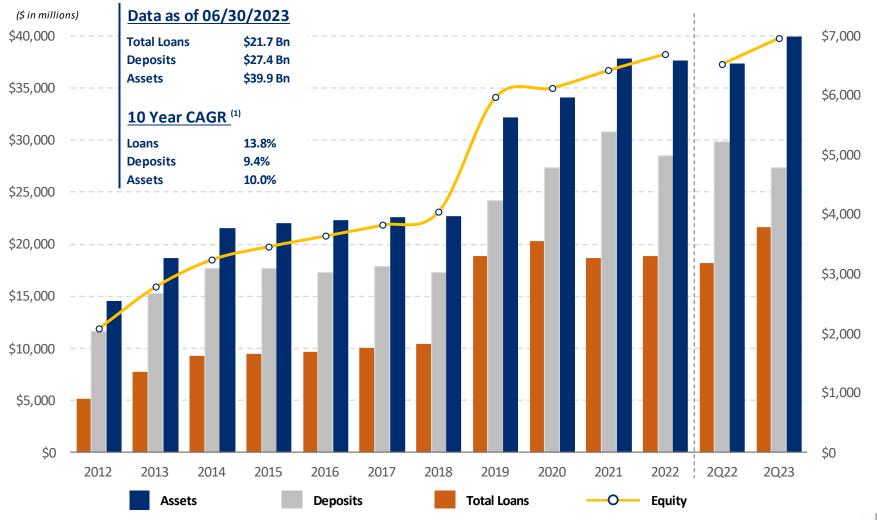
 Successful completion of 44 acquisitions (whole bank, branch and failed bank transactions)

286 Full-Service Locations

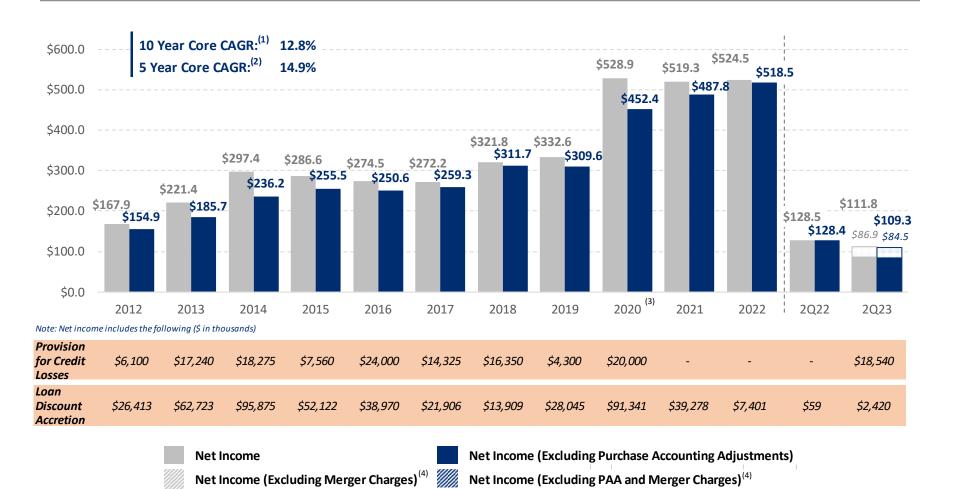
- in Bryan/College Station Area
- 6 in Central Oklahoma Area
- 32 in Central Texas Area
- 62 in Dallas/Fort Worth Area
- 22 in East Texas Area
- 65 in Houston Area
- 30 in South Texas Area
- 8 in Tulsa Area
- 44 in West Texas Area



Balance Sheet Summary



Net Income



Source: Company Documents



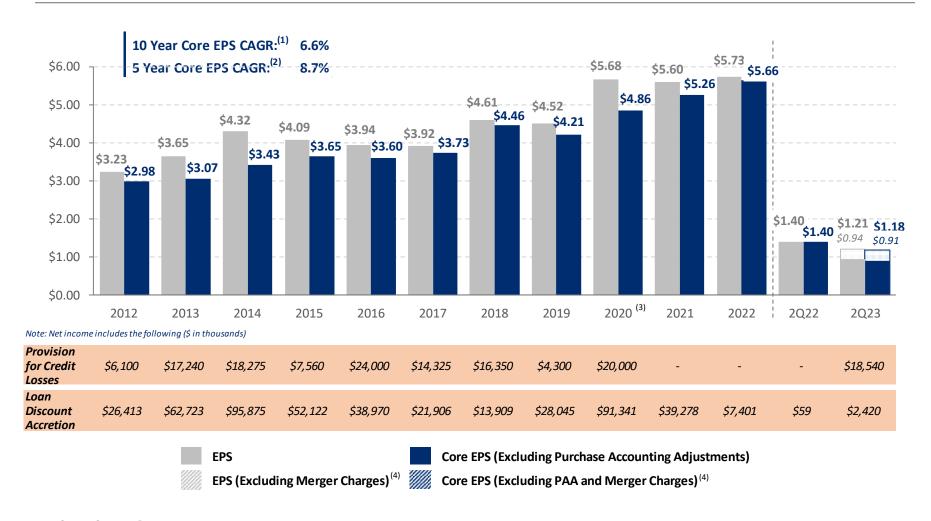
⁽¹⁾ Represents the Compound Annual Growth Rate of net income (excluding purchase accounting adjustments) from 12/31/2012 - 12/31/2022

²⁾ Represents the Compound Annual Growth Rate of net income (excluding purchase accounting adjustments) from 12/31/2017 – 12/31/2022

⁽³⁾ Includes NOL tax benefit of \$20.145 million related to the CARES Act

Excludes after-tax merger related provision and expenses related to the recently completed First Bancshares of Texas, Inc. acquisition.

Earnings Per Share



Source: Company Documents



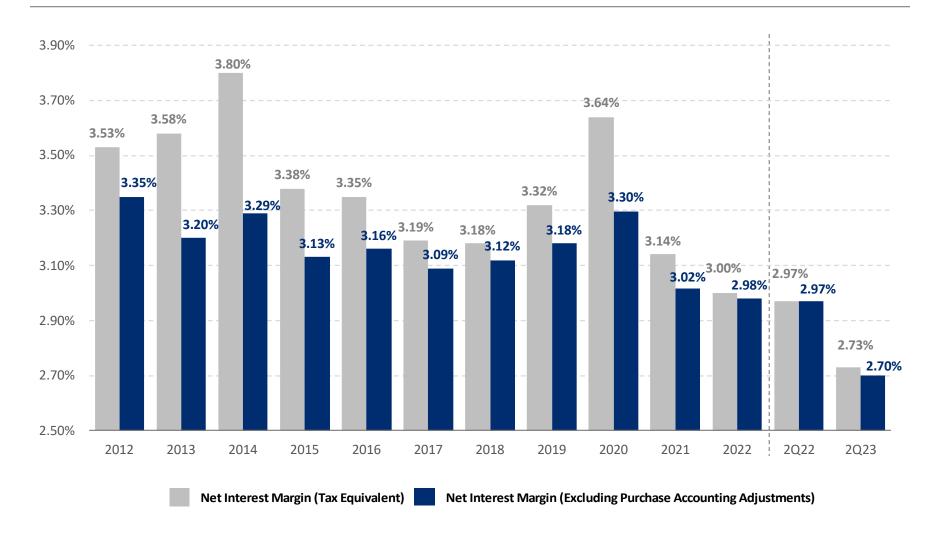
⁽¹⁾ Represents the Compound Annual Growth Rate for EPS (excluding purchase accounting adjustments) from 12/31/2012 – 12/31/2022

²⁾ Represents the Compound Annual Growth Rate for EPS (excluding purchase accounting adjustments) from 12/31/2017 – 12/31/2022

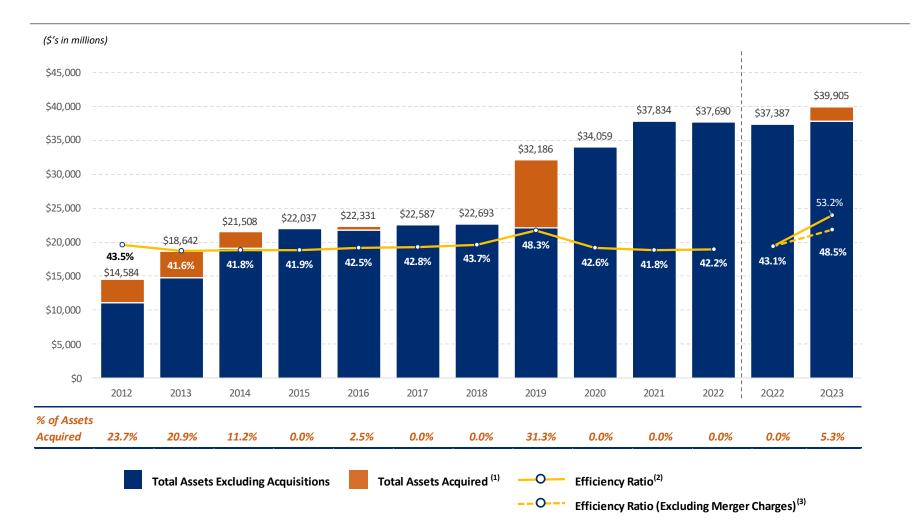
⁽³⁾ Includes NOL tax benefit of \$20.145 million related to the CARES Act

Excludes after-tax merger related provision and expenses related to the recently completed First Bancshares of Texas, Inc. acquisition

Net Interest Margin



Acquisitions & Efficiency Ratio

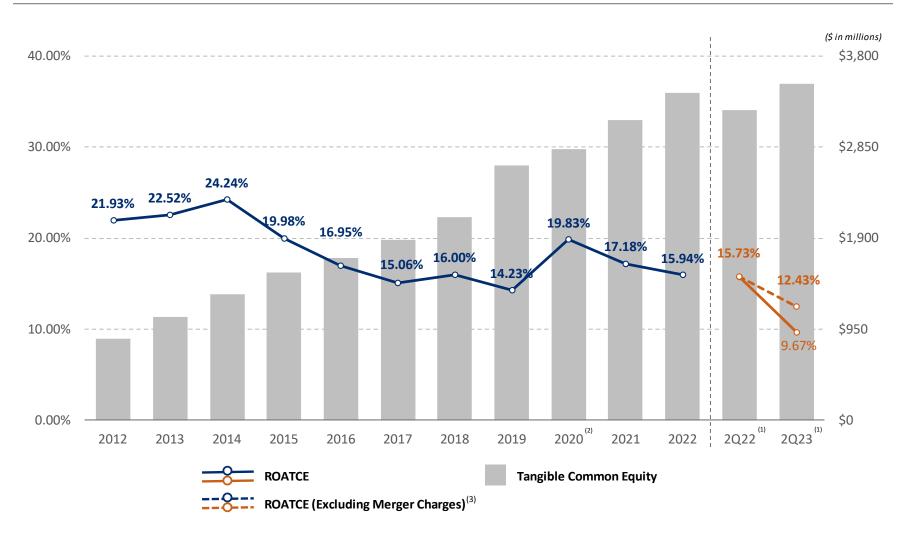


Source: Company Documents

- (1) Representative of target assets at closing
- Calculated by dividing total noninterest expense, excluding credit loss provisions, by net interest income plus noninterest income, excluding net gains and losses on the sale or write down of assets and securities. Additionally, taxes are not part of this calculation.
- Excludes after-tax merger related provision and expenses related to the recently completed First Bancshares of Texas, Inc. acquisition



Return on Average Tangible Common Equity

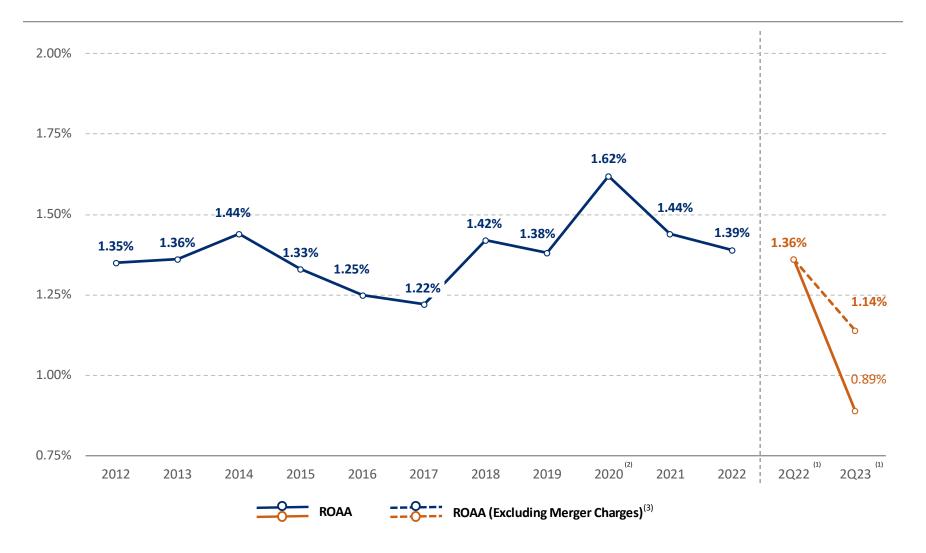


⁽¹⁾ Interim periods shown on an annualized basis

⁽²⁾ Includes NOL tax benefit of \$20.145 million related to the CARES Act

Excludes after-tax merger related provision and expenses related to the recently completed First Bancshares of Texas, Inc. acquisition

Return on Average Assets



⁽¹⁾ Interim periods shown on an annualized basis

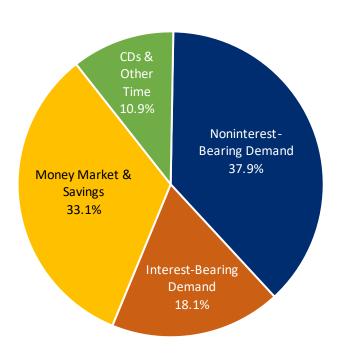


⁽²⁾ Includes NOL tax benefit of \$20.145 million related to the CARES Act

Excludes after-tax merger related provision and expenses related to the recently completed First Bancshares of Texas, Inc. acquisition.

Deposit Composition

As of June 30, 2023 (\$ in millions)



	\$mm	Cost (%) ⁽¹⁾
Noninterest-Bearing Demand	\$10,365	0.00%
Interest-Bearing Demand	\$4,953	0.30%
Money Market & Savings	\$9,084	1.88%
CDs & Other Time	\$2,979	2.59%

Total Deposits: \$27.4Bn

Total Cost of Deposits: 0.94% (1)

Cost of Interest-Bearing Deposits: 1.51% (1)

Additional Information:

Average Deposit Size: \$33,600

Number of Deposit Accounts: > 815,000

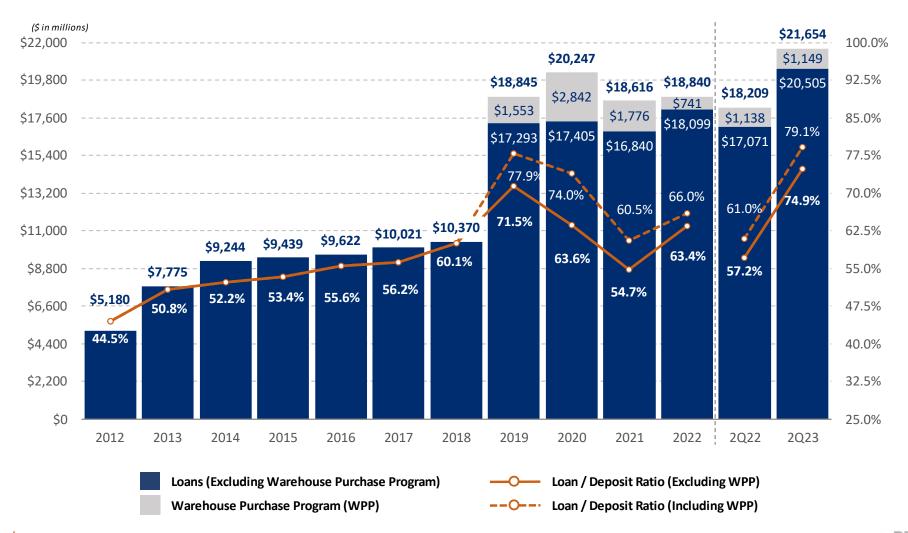
FDIC Insured & Collateralized Deposits: 70.4% (2)



⁽¹⁾ Data for the three months ended June 30, 2023

⁽²⁾ Includes deposits of public fund entities which are fully collateralized deposits with securities

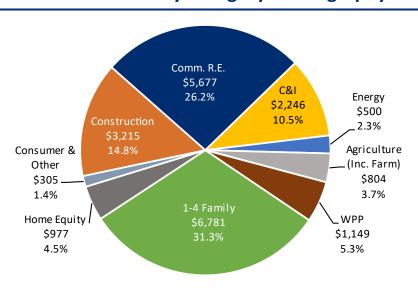
Loan Growth



Loan Portfolio Overview

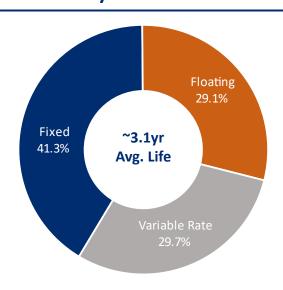
As of June 30, 2023 (\$\\$ in millions)

Loan Portfolio by Category & Geography



Loans By Area	Amount (2)(4)	% of Total
Bryan / College Station	\$810	4.0%
Central Oklahoma	\$653	3.2%
Central Texas	\$2,572	12.6%
Dallas / Ft. Worth	\$6,685	32.7%
East Texas	\$721	3.5%
Houston	\$4,646	22.7%
South Texas	\$1,468	7.2%
Tulsa	\$604	3.0%
West Texas	\$2,296	11.2%

Loans by Rate Structure



Total Loans: \$21.7Bn Loans HFI (Excl. WPP): \$20.5Bn

Yield on Total Loans: 5.55%⁽¹⁾
Yield on Loans HFI (Excl. WPP): 5.48%⁽¹⁾
Core Yield on Loans HFI (Excl. WPP): 5.43%⁽¹⁾⁽³⁾

Source: Company Documents

- (1) Data for the three months ended June 30, 2023
- (2) Excludes \$50 million in loans assigned to the Corporate Group
- (3) Core yield excludes purchase accounting adjustments
- (4) Excludes Warehouse Purchase Program (WPP) loans

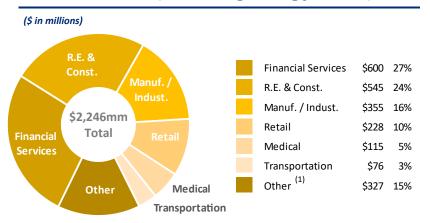
Loan Portfolio Detail

As of June 30, 2023 (\$\\$ in millions)

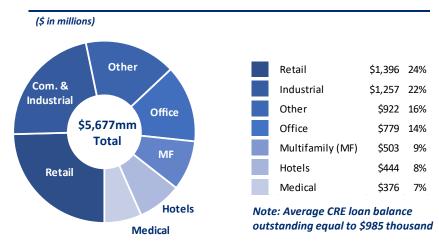
Portfolio Commentary

- Loan portfolio is diversified across the Bank's market areas and by underlying collateral type
- CRE and construction loans conservatively underwritten to cost of collateral
- 35% of commercial real estate is owner occupied
- Average total CRE loan-to value of 51%
- Average office CRE loan-to-value of 52%
- Non-owner-occupied office CRE of \$506 million, or 2.4% of total loans

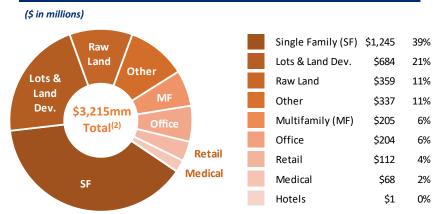
C&I Detail (Excluding Energy Loans)



Commercial Real Estate Detail



Construction Detail





⁽¹⁾ Includes State & Political loans

⁽²⁾ Total includes a net unaccreted discount of (\$1,051,000) not shown in graph

Changes to Allowance for Credit Losses

(\$ in millions)

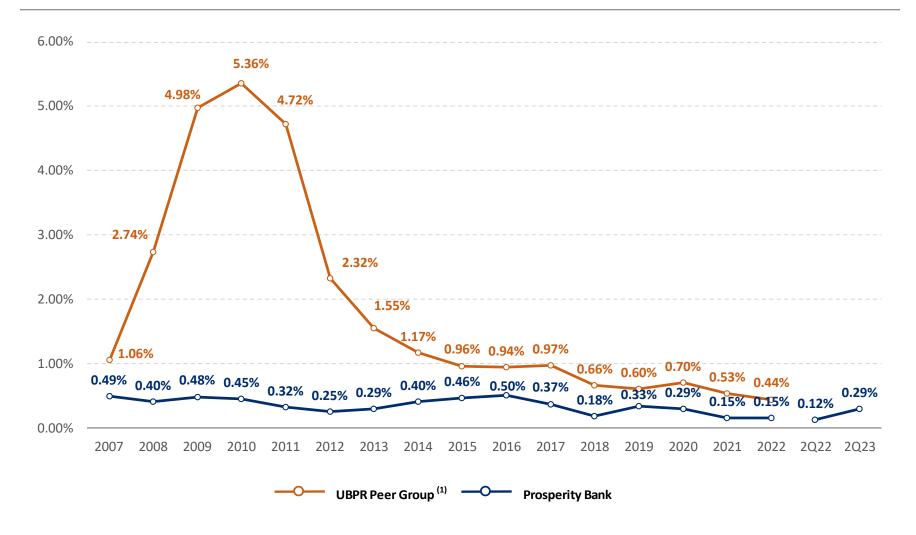
\$312.1 million **Total Allowance for Credit Losses and Unfunded Commitments** \$381.7 million 1.52% ACL to Total 1.68% ACL to Total Loans (1) Loans (1) \$3.4 \$12.0 \$63.6 \$345.2 \$0.3 Allowance for Net increased Increase in **Credit Losses** reserve related to \$6.2 allowance for Nonchanges in macro-\$282.2 PCD loans related (\$16.1) economic recent acquisitions Increase in allowance Allowance for conditions, of \$12.0 million for PCD loans related **Credit Losses** qualitative Net charge-offs (provision expense) to recent acquisitions economic outlook, Includes a (\$15.0) Increase in of \$67.1 million outstanding million charge allowance for Non-(goodwill) balances and related to acquired PCD unfunded historical loss rates (\$3.5) million loan from previous commitments released related to merger related recent resolved PCD loans acquisitions of \$0.4 without any charge million (provision offs during the expense) Allowance for second quarter Allowance for **Unfunded** Unfunded Increase in allowance Commitments for PCD unfunded Commitments (Other Liabilities) commitments related (Other Liabilities) to recent acquisitions of \$6.2 million (provision expense) \$36.5 \$29.9

> PB MSNED NYSE

16

Asset Quality

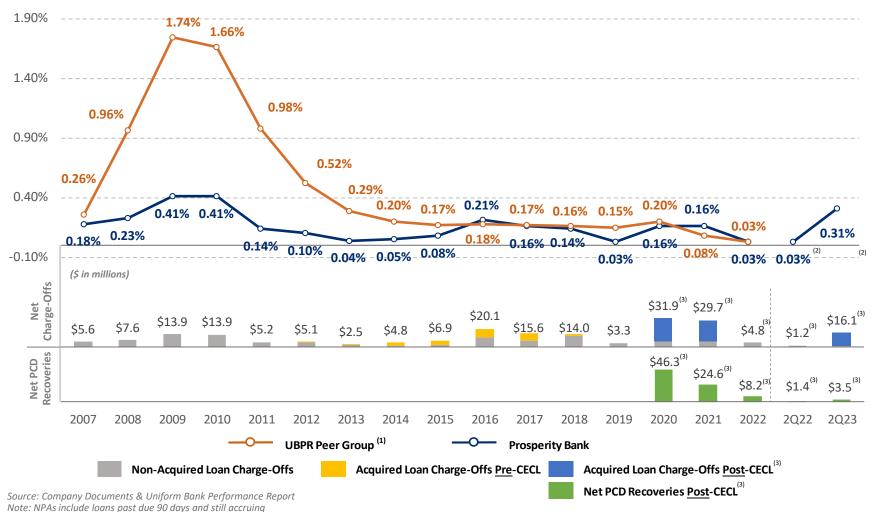
NPAs / Loans + OREO





Asset Quality

Net Charge-Offs / Average Loans



(1) UBPR = Uniform Bank Performance Report; Peer Group 2 (112 banks) – Insured commercial banks having assets between \$10 billion and \$100 billion

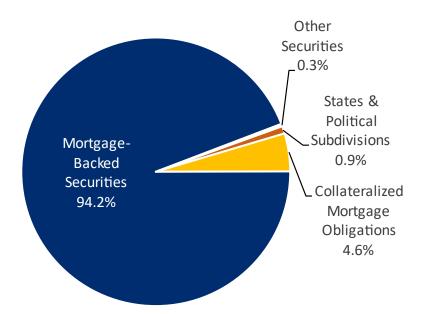
Reflects all charge-offs and recoveries on acquired loans in accordance with CECL accounting practices; Prior to the adoption of CECL in the first quarter of 2020, PCD loans were classified as Purchased Credit Impaired (PCI) loans and their assigned fair-value marks were netted against the outstanding loan balance with a charge-off only being recorded when the loss exceeded the amount of fair-value marks remaining.



Interim period net charge-off ratios shown on an annualized basis

Securities Portfolio Detail

As of June 30, 2023 (\$ in millions)



96.6% Held to Maturity 3.4% Available for Sale

	\$mm
Mortgage-Backed Securities	\$12,880
Collateralized Mortgage Obligations	\$624
States & Political Subdivisions	\$122
Other Securities	\$34

Total Securities: \$13.7Bn

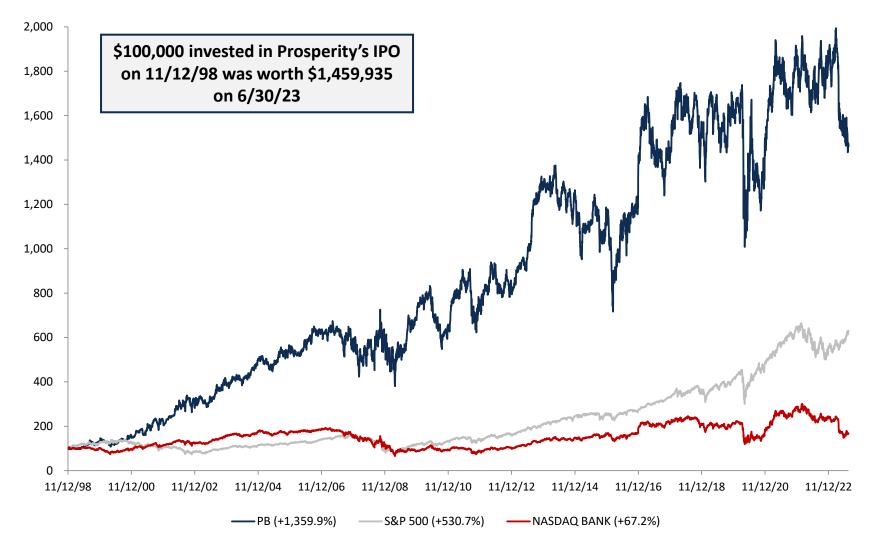
Yield on Securities: 2.07%⁽¹⁾
Duration: ~4.4 Yrs.⁽²⁾

Avg. Yearly Cash Flow: ~\$2.2Bn



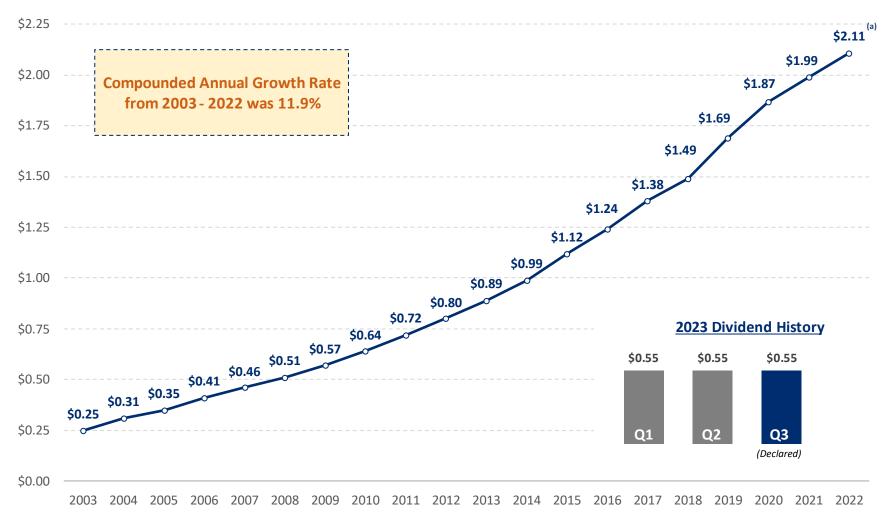
Total Return Performance

IPO (November 12, 1998) to June 30, 2023





Dividend History



Presence in Fast-Growing Markets

Positioned in Strong Markets



- Today, Texas is the 2nd largest state in the U.S by population with over 30 million residents
- Ranked #1 on the Fortune 500 list with 55 headquartered companies in 2023
- Ranked #1 state for business for the 9th consecutive time by U.S. corporate executives in an International Economic Development Council survey



- Oklahoma City and Tulsa MSAs comprise over 60% of the state's population
- Oklahoma is home to 6 of the 2023 Fortune 500 Companies
- Top 5 state for production of natural gas and production of crude oil
- Oklahoma is one of the top 5 producers of wheat in the United States

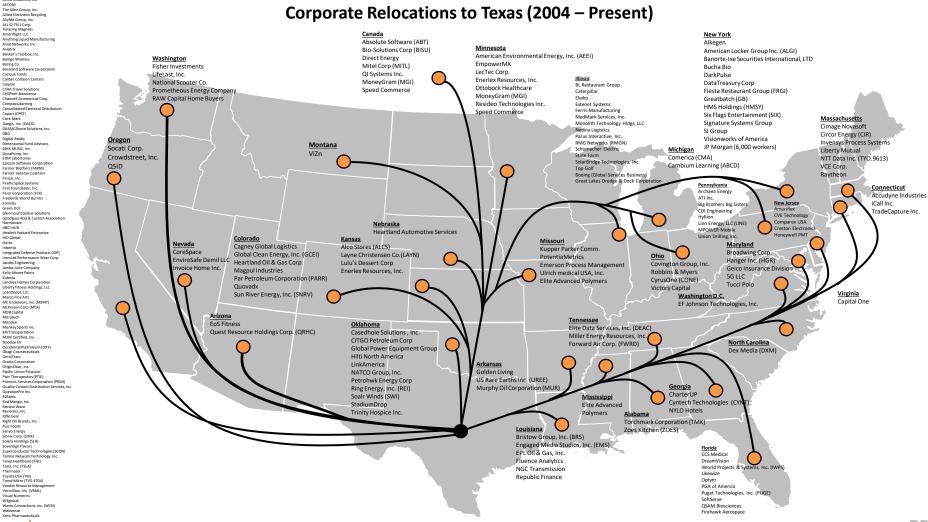
Top 10 Fastest Growing MSAs in the U.S. (1)

Metropolitan Statistical Area	Prosperity Presence	Prosperity Deposits (\$mm)	2023 - 2028 Population Growth
Austin-Round Rock-Georgetown, TX	✓	\$1,491	7.8%
Raleigh-Cary, NC			7.4%
Jacksonville, FL			6.9%
Orlando-Kissimmee-Sanford, FL			6.3%
Nashville-DavidsonMurfreesboroFranklin, TN			6.1%
Charlotte-Concord-Gastonia, NC-SC			5.8%
Tampa-St. Petersburg-Clearwater, FL			5.2%
San Antonio-New Braunfels, TX	✓	\$585	5.0%
Dallas-Fort Worth-Arlington, TX	✓	\$8,161	5.0%
Houston-The Woodlands-Sugar Land, TX	✓	\$6,677	4.8%

 Presence in the top four fastest growing MSAs in the United States



Corporate Relocations to Texas



Aatonomy AccentCare Active Networks AEND Industries, Inc.

Allied Electronic Recyclin AllyMe Group, Inc ALL-Q-TELL Corp.

Boreland Software Corporation

Caliber Collision Centers

Channell Commercial Corp

Consolidated Electrical Distr Copart (CPRT) Core-Mark Daegis, Inc. (DAEG) DASAN Zhone Solutions, Inc.

Dimensional Fund Advisors DMX MUSIC, Inc.

Enicore Software Corporation

Fluor Corporation (FLR) Freebirds World Burrito

Hewlett Packard Enterprise

Kubota Landsea Homes Corporatio

Liberty Fitness Holdings, LLC

Noodoe EV Occidental Ptetroleum (OXY) Obagi Cosmeceuticals OmniTracs Oracle Corporation

Pain Therapeutics (PTIE)

LoanDepot, LLC

Marco Fine Arts MC Endeavors, Inc. (MSMY

Noodoe EV

OriginClear, Inc.

Sanyo Energy

Tesla, Inc. (TSLA)

Green Dot

HBCI HUB

CompassLearning Consolidated Electrical Distributor

CCRA Travel Solutions

Cacique Foods

Digital Realty

DynaPump, Inc. EDM Labortories

Houston Market Highlights

Market Highlights

- Houston MSA is the 5th largest in the United States by population with nearly 7.4 million residents
 - Population is expected to grow 4.8% from 2023 2028
- Home to NASA's Johnson Space Center and Texas Medical Center the world's largest medical complex
- As of May 2023, total nonfarm employment has increased 3.7% YoY, compared to the 12 month statewide increase of 3.9% and the nationwide increase of 2.6%
 - Employment in Houston has increased 4.3% YoY in the professional and business services sector and 5.9% YoY in the education and health services sector, compared to 3.9% and 4.7% statewide, respectively
- Houston has the largest export market in the U.S.
 - The four seaports of Houston area Freeport, Galveston, Houston, and Texas City – handled 244.5 million metric tons of cargo valued at \$278.8 billion, in the 12 months ending April 2023

Select Fortune 500 Companies









































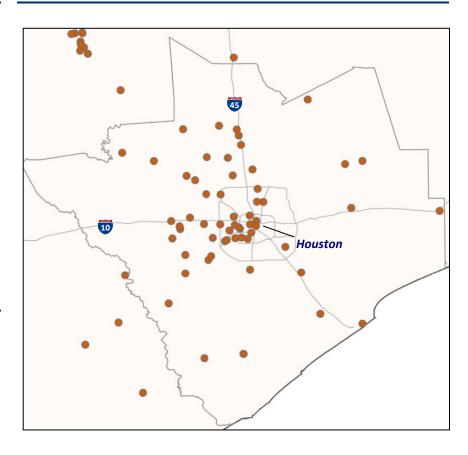








Houston Franchise



Dallas/Ft. Worth Market Highlights

Market Highlights

- Dallas/Ft. Worth MSA is the 4th largest in the United States by population with over 7.9 million residents
 - Population is expected to grow 5.0% from 2023 2028
- As of May 2023, total nonfarm employment has increased 4.2% YoY, compared to the 12 month statewide increase of 3.9% and the nationwide increase of 2.6%
- As of May 2023, employment increased 5.3% YoY in Mining, Logging and Construction and 5.0% in Education and Health Services
 - Dallas/Ft. Worth MSA had the largest gain of 14,300 jobs in the professional and business services sector amongst metropolitan area's private-industry supersectors
- Headquarters to 24 Fortune 500 companies
- Dallas/Ft. Worth MSA is an emerging leader in the life sciences market, with its labor pool growing at 17% since 2019 and funding over \$1.6 billion in life sciences VC in the last 5 years

Select Fortune 500 Companies





































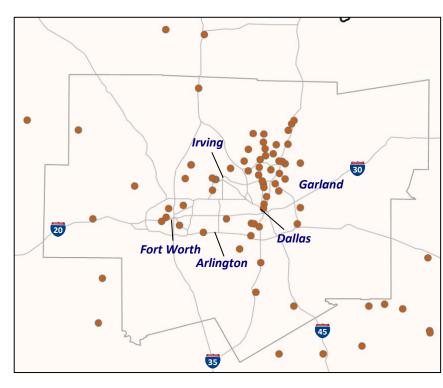








Dallas / Ft. Worth Franchise





Austin Market Highlights

Market Highlights

- Population grew by 40% from 2010 to 2022, the highest of any major MSA in the country
 - Ranks first among MSAs for new residents as a percent of total population
- Expected population growth of 7.8% from 2023 2028
- As of May 2023, total nonfarm employment has increased 4.0% YoY, compared to the 12 month statewide increase of 3.9% and the nationwide increase of 2.6%
 - As of May 2023 employment in Austin has increased 8.7% YoY in the leisure and hospitality sector and 4.6% YoY in manufacturing, compared to 4.7% and 2.8% statewide, respectively
- 6 companies have begun operations and 13 companies expanded their existing operations in the Austin-Round Rock MSA in Q2 2023
- Austin-Round Rock ranks 2nd for best MSA for STEM professionals amongst the top 100 MSAs

Select Fortune 500 Companies

















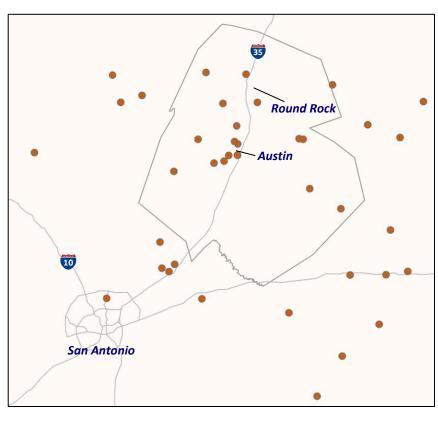








Austin Franchise





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