GREEN BANCORP

Fourth Quarter 2017
Financial Results Presentation

NASDAQ: GNBC
January 25, 2018

Today's Speakers

- Manny Mehos – Chairman and Chief Executive Officer
- Geoff Greenwade – President and Bank Chief Executive Officer
- Terry Earley – Executive Vice President and Chief Financial Officer
- Donald Perschbacher – Executive Vice President and Corporate Chief Credit Officer

Safe Harbor

The following information contains, or may be deemed to contain, "forward-looking statements" (as defined in the U.S. Private Securities Litigation Reform Act of 1995) giving Green Bancorp, Inc.'s ("Green Bancorp") expectations or predictions of future financial or business performance or conditions. Most forward-looking statements contain words that identify them as forward-looking, such as "plan", "seek", "expect", "intend", "estimate", "anticipate", "believe", "project", "opportunity", "target", "goal", "growing", "continue", "positions," "prospects" or "potential," by future conditional verbs such as "will," "would," "should," "could" or "may", or by variations of such words or by similar expressions that relate to future events, as opposed to past or current events, or negatives of such words. By their nature, forward-looking statements are not statements of historical facts and involve risks and uncertainties because they relate to events and depend on circumstances that may or may not occur in the future. These statements give Green Bancorp's current expectation of future events or its future performance and do not relate directly to historical or current events or Green Bancorp's historical or future performance. As such, Green Bancorp's future results may vary from any expectations or goals expressed in, or implied by, the forward-looking statements included in this presentation, possibly to a material degree.

Green Bancorp cannot assure you that the assumptions made in preparing any of the forward-looking statements will prove accurate or that any long-term financial goals will be realized. All forward-looking statements included in this presentation speak only as of the date made, and Green Bancorp undertakes no obligation to update or revise publicly any such forward-looking statements, whether as a result of new information, future events, or otherwise. In particular, Green Bancorp cautions you not to place undue weight on certain forward-looking statements pertaining to potential growth opportunities or long-term financial goals set forth herein. Green Bancorp's business is subject to numerous risks and uncertainties, which may cause future results of operations to vary significantly from those presented herein.

In addition to factors previously disclosed in Green Bancorp's reports filed with the SEC and those identified elsewhere in this communication, the following factors among others, could cause actual results to differ materially from forward-looking statements: changes in asset quality and credit risk; the inability to sustain revenue and earnings growth; changes in interest rates and capital markets; inflation; customer borrowing, repayment, investment and deposit practices; customer disintermediation; the introduction, withdrawal, success and timing of business initiatives; competitive conditions; the inability to realize cost savings or revenues or to implement integration plans and other consequences associated with mergers, acquisitions and divestitures; economic conditions; and the impact, extent and timing of technological changes, capital management activities, and other actions of the Federal Reserve Board and legislative and regulatory actions and reforms. Unlisted factors may present significant additional obstacles to the realization of forward-looking statements.

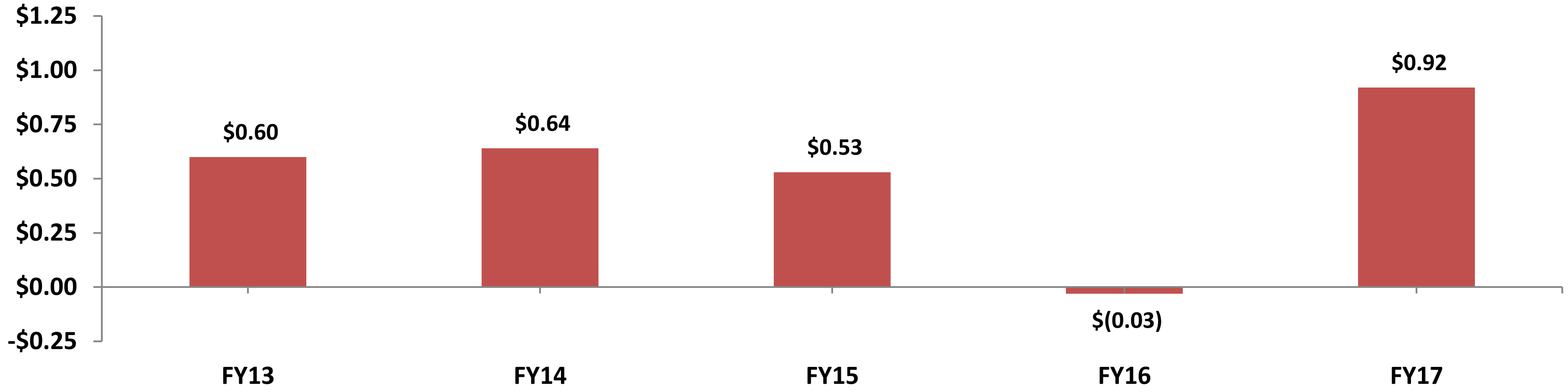
Annualized, pro forma, projected and estimated numbers are used for illustrative purpose only, are not forecasts and may not reflect actual results.

Fourth Quarter 2017 Highlights

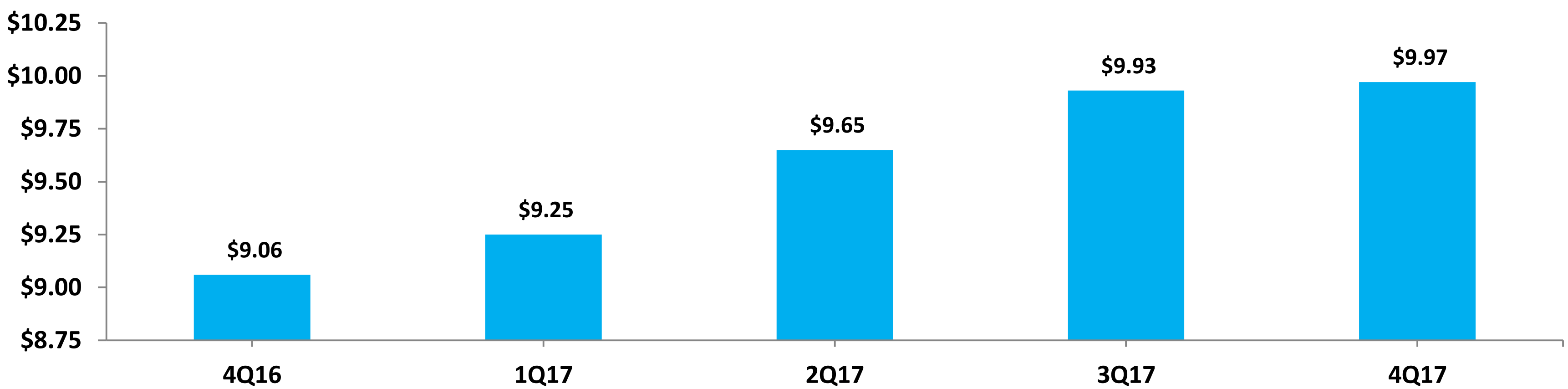
- Fourth quarter 2017 net income totaled $2.6 million, or $0.07 per diluted common share
- Fourth quarter results were negatively impacted by the following:
  - $5.8 million in tax expense, or $0.16 per diluted common share for the deferred tax asset write-off resulting from the 2017 Tax Cuts and Jobs Act
  - $3.1 million in salaries and employee benefits expense, $2.0 million net of the related tax benefit, or $0.05 per diluted common share, for the accelerated vesting of certain performance options
  - $3.2 million in provision for loan losses and $1.1 million in loss on held for sale loans related to the last two E&P relationships in the portfolio impacted EPS by $0.07 per diluted common share (net of tax)
- Total loans, including held for investment and held for sale, increased by $108.2 million, up 14.0% annualized from 3Q17
- Nonperforming assets decreased by $21.0 million to $71.6 million
- The energy portfolio declined $33.3 million to $53.0 million; energy production loans represent only 0.63% and oil field services loans represent only 1.03% of total loans
- Noninterest bearing deposits increased by $118.9 million during 4Q17 and now comprise 23.6% of total deposits
- Pre-tax, pre-provision operating return on average assets (annualized) was 2.01% for 4Q17, representing the third consecutive quarter over 2.00%

Fully Diluted EPS and TBVPS

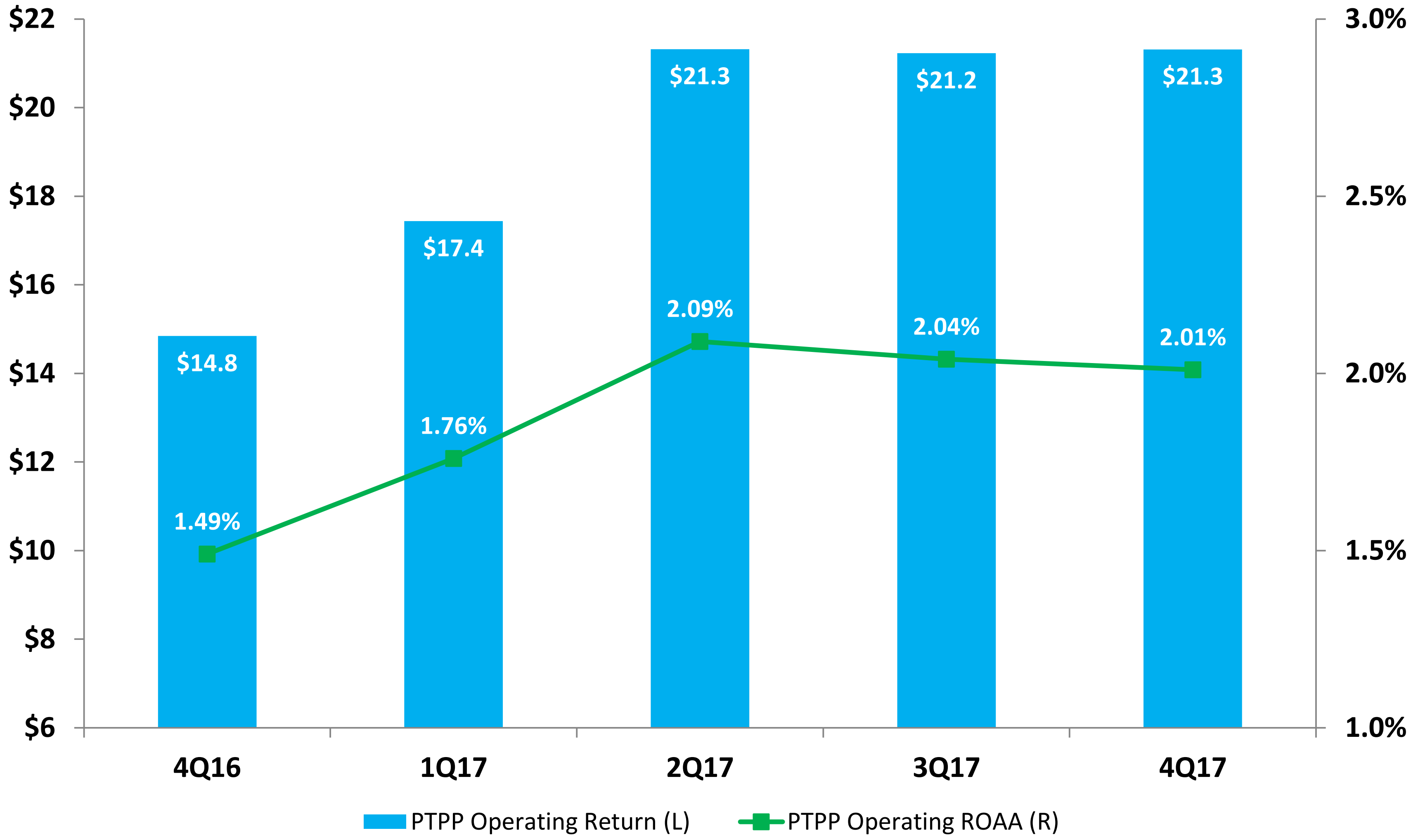
Earnings Per Share



Tangible Book Value Per Share



Pre-Tax, Pre-Provision Operating Return



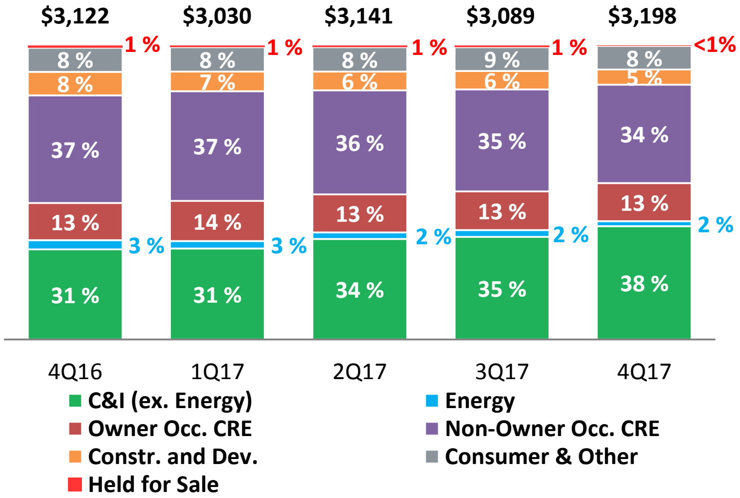
$ in millions

Loan Portfolio Overview

Highlights

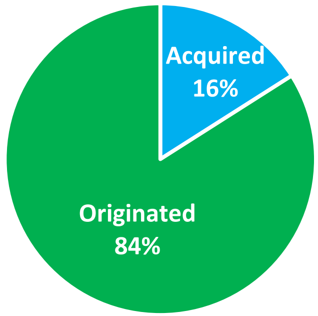
- Commercial-focused loan portfolio with over 98% of the loan portfolio focused on non-energy loans
- In-footprint focus with portfolio primarily distributed across Houston 54% and Dallas 22%
- Diversified loan portfolio with no concentration to any single industry in excess of 10% of total loans
- Only 4.1% of the loan portfolio is classified
- Large number of lending relationships with no significant borrower concentration

Loan Portfolio Composition

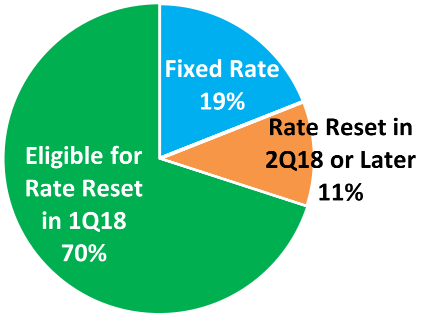


Loan Portfolio Detail as of December 31, 2017

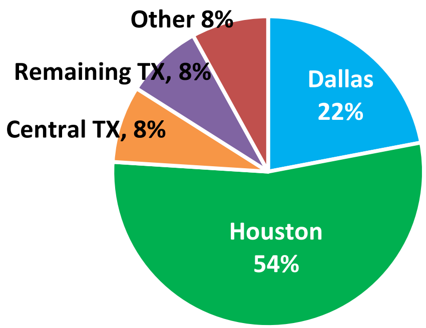
By Class



Loan Repricing



By Regional Distribution*



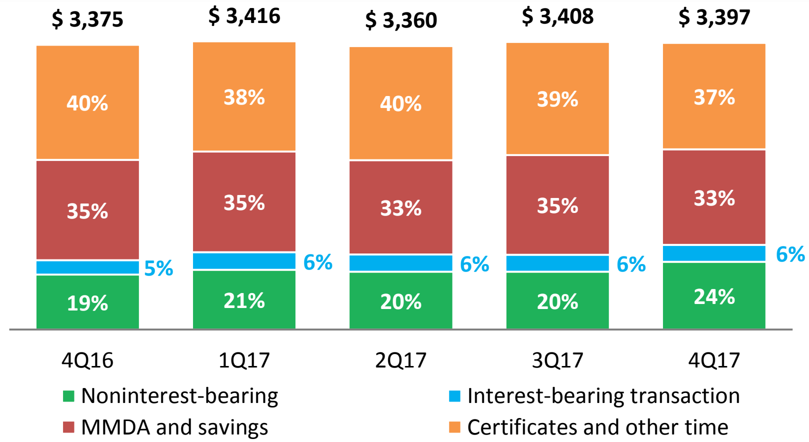
$ in millions, loan balance and corresponding percentages exclude HFS loans, (*) Central TX denotes Austin, San Antonio and San Marcos

Deposits & Liquidity

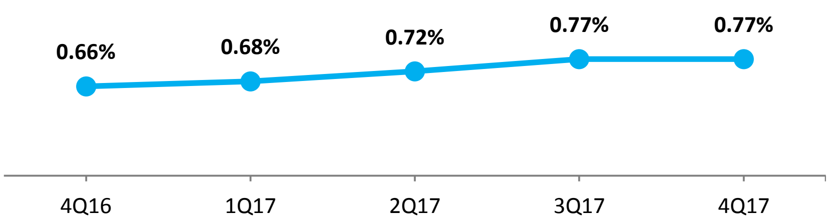
Highlights

- Deposits comprised ~82% of overall funding at December 31, 2017
  - Total deposits decreased by $11 million or 0.3% during 4Q17, to $3.4 billion
  - Cost of deposits was 0.77% in 4Q17 unchanged from 3Q17
- Loan to deposit ratio was 93.9% at December 31, 2017 and is slightly below our targeted level
- Noninterest-bearing deposits increased by $119 million and comprised 24% of deposits as of December 31, 2017

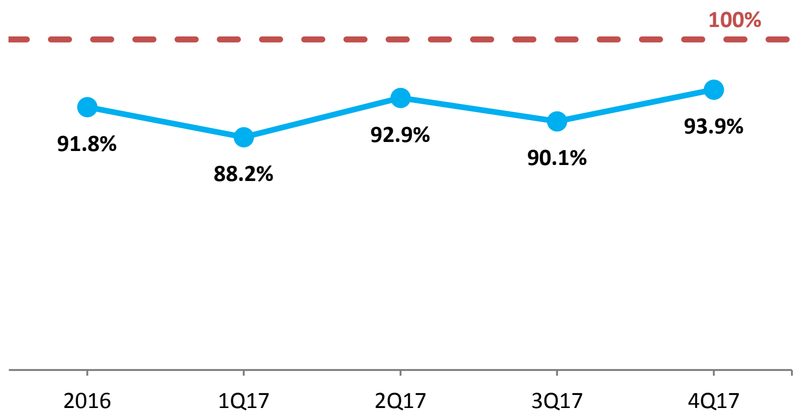
Deposit Composition



Average Cost of Total Deposits



Loan to Deposit Ratio

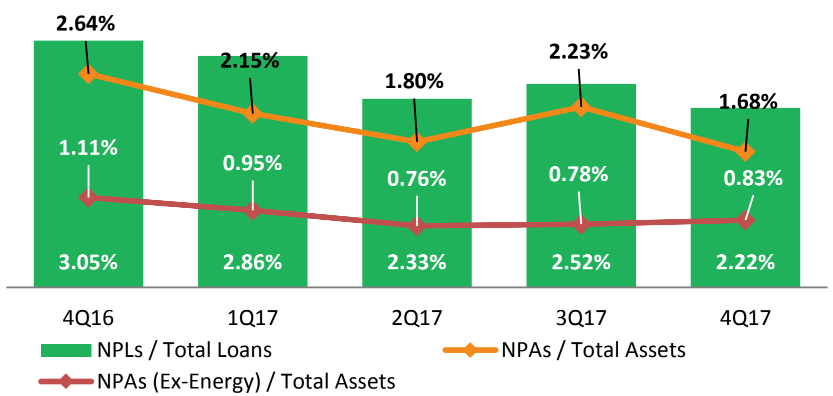


$ in millions

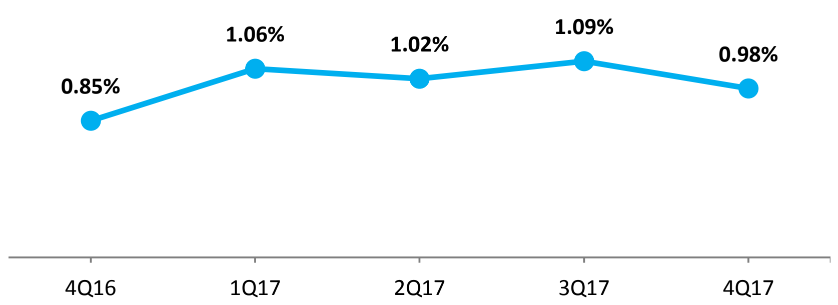
Asset Quality

- Nonperforming assets (NPAs) totaled $71.6 million or 1.68% of period end total assets at December 31, 2017 compared to $92.6 million or 2.23% of period end total assets at September 30, 2017
- Allowance for loan losses was 0.98% of total loans held for investment at December 31, 2017, and the allowance for loan losses plus acquired loan net discount to total loans held for investment adjusted for acquired loan net discount was 1.11%
- Provision expense for the third quarter of 2017 was $4.4 million, primarily related to specific reserves, including $3.2 million related to energy loans

Asset Quality



Allowance for Loan Losses Ratio *

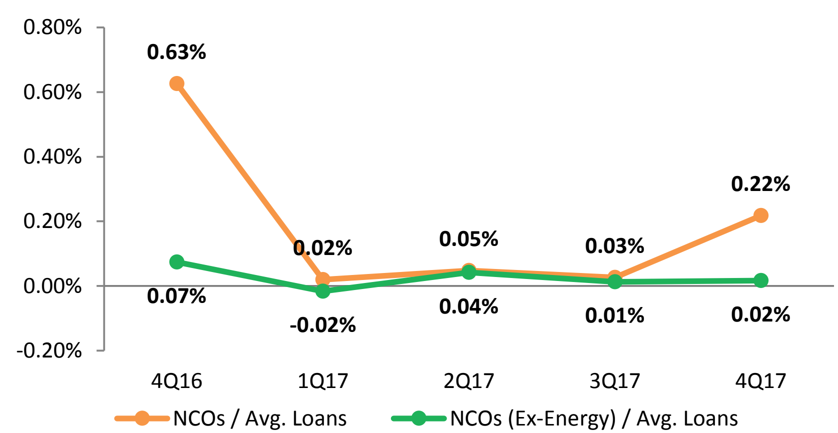


(*) Based on percentage of total gross loans held for investment

Overview of Energy Portfolio Progress

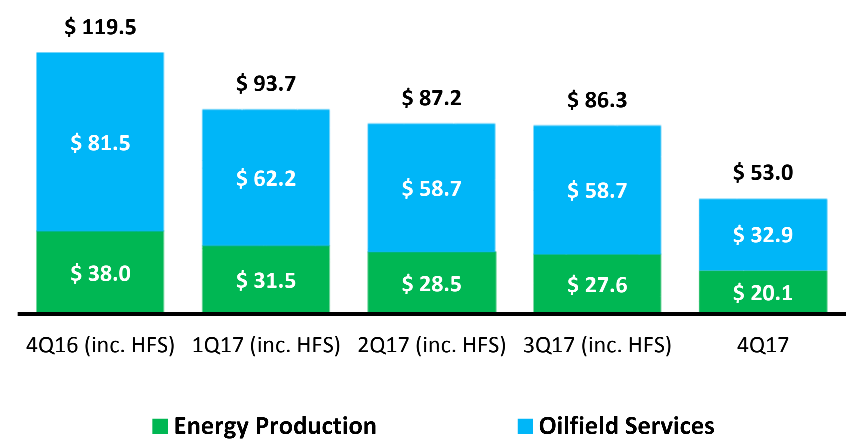
- On April 28, 2016 the Company announced its intent to exit energy lending with $277.4 million of energy loans, the primary objective was to de-risk the loan portfolio, reduce balance sheet volatility and position the company for normalized earnings and growth
- The Company's total energy exposure stood at $53.0 million or 1.7% of total loans as of December 31, 2017 comprised of $20.1 million in energy production loans and $32.9 million in oilfield services loans
  - The $53.0 million of energy loans held for investment are being carried at 67% of outstanding customer principal balance
  - Energy loans of $14.4 million were transferred from loans held for sale to loans held for investment during December 2017

Net Charge Offs



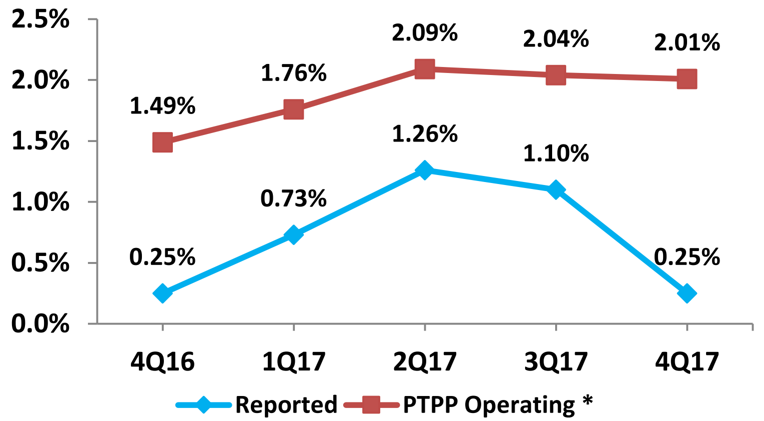
$ in millions

Energy Portfolio Resolution History

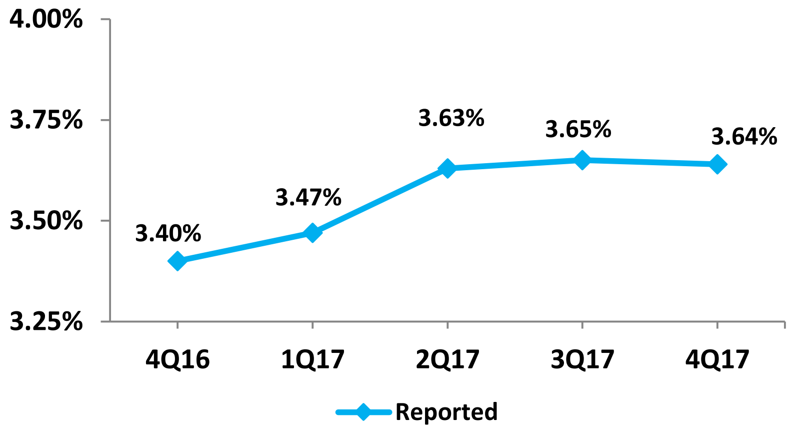


Performance Metrics

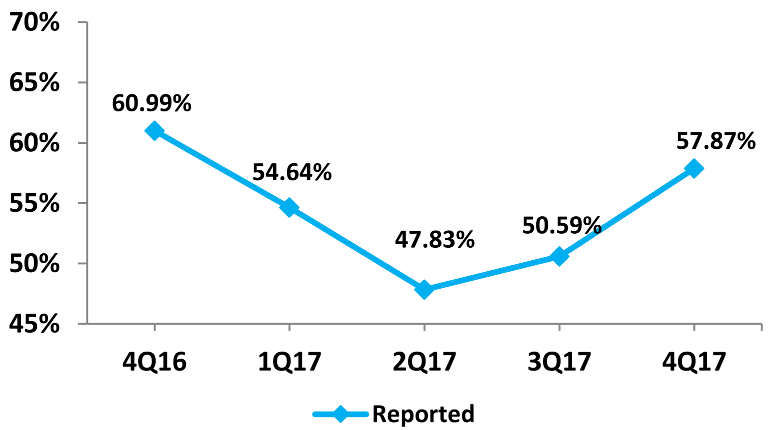
ROAA



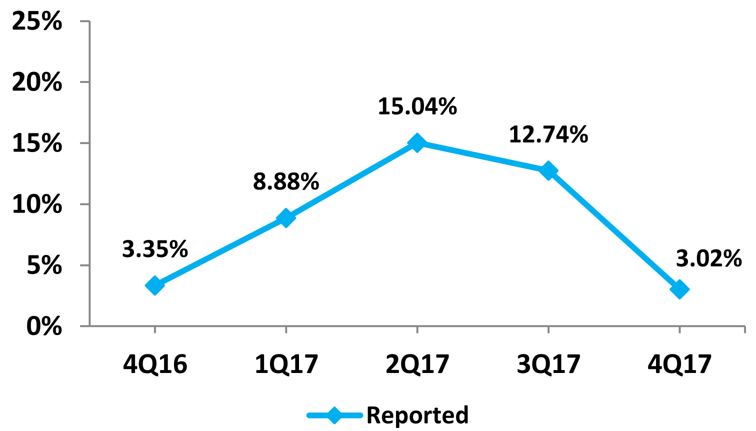
Net Interest Margin



Efficiency Ratio

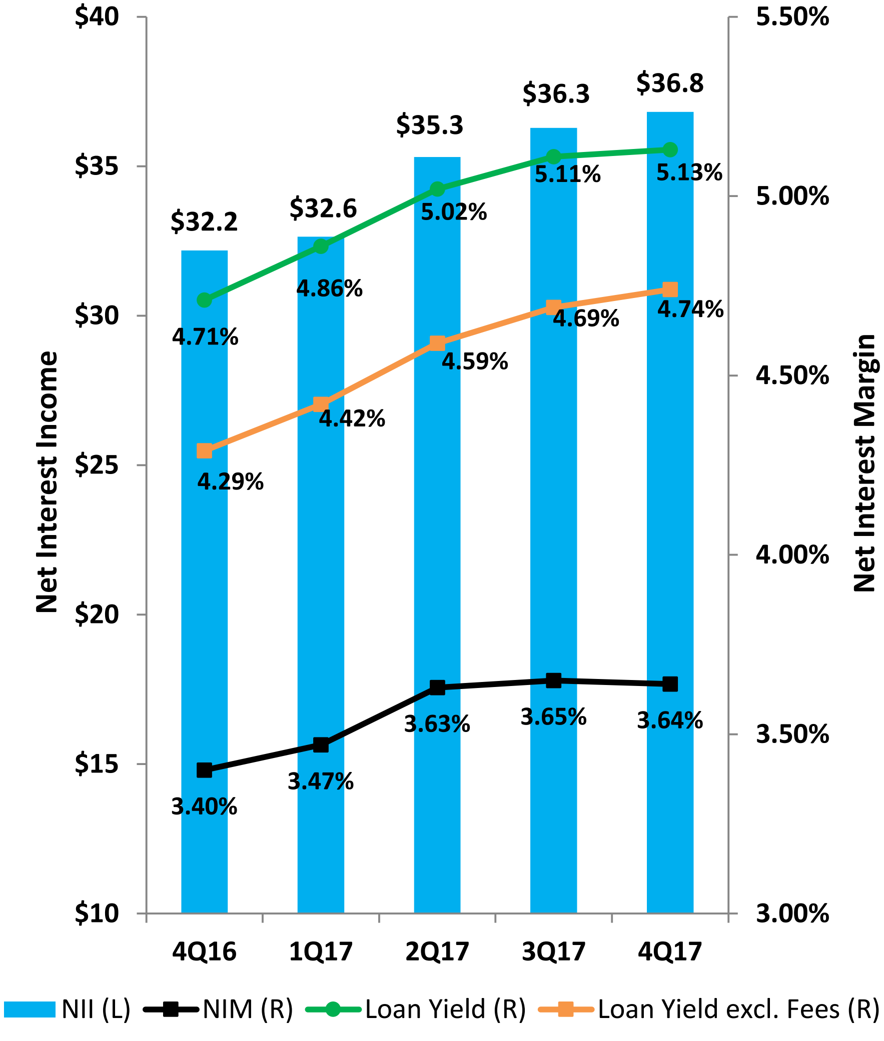


ROATCE



(*) Pre-tax, pre-provision operating return on average assets is a non-GAAP measure used by management to evaluate the Company's financial performance

Net Interest Income & Net Interest Margin

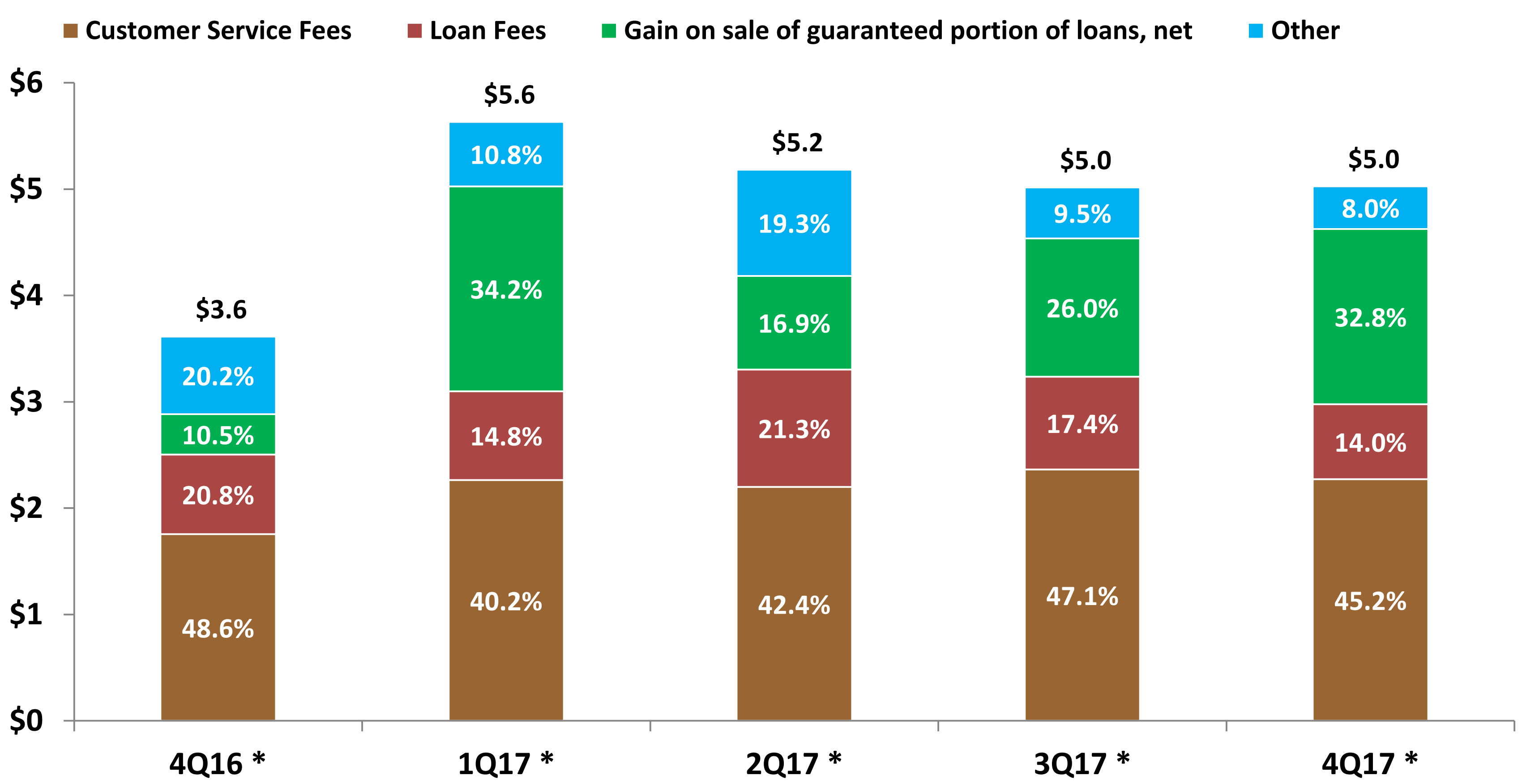


$ in millions

Highlights

- NIM decreased 1 basis point to 3.64% in 4Q17
- Loan yields increased by 2 basis points in 4Q17 driven by the Fed's rate increase in December, in addition to:
  - The benefit from lower non-accruals and related accrual interest reversals
  - Partially offset by an unfavorable mix shift as growth in earning assets was predominantly in interest earning deposits as loan growth occurred late in the quarter
- Cost of deposits including noninterest-bearing was 0.77%, unchanged compared to the prior quarter
  - Supported by a favorable deposit mix shift away from CDs

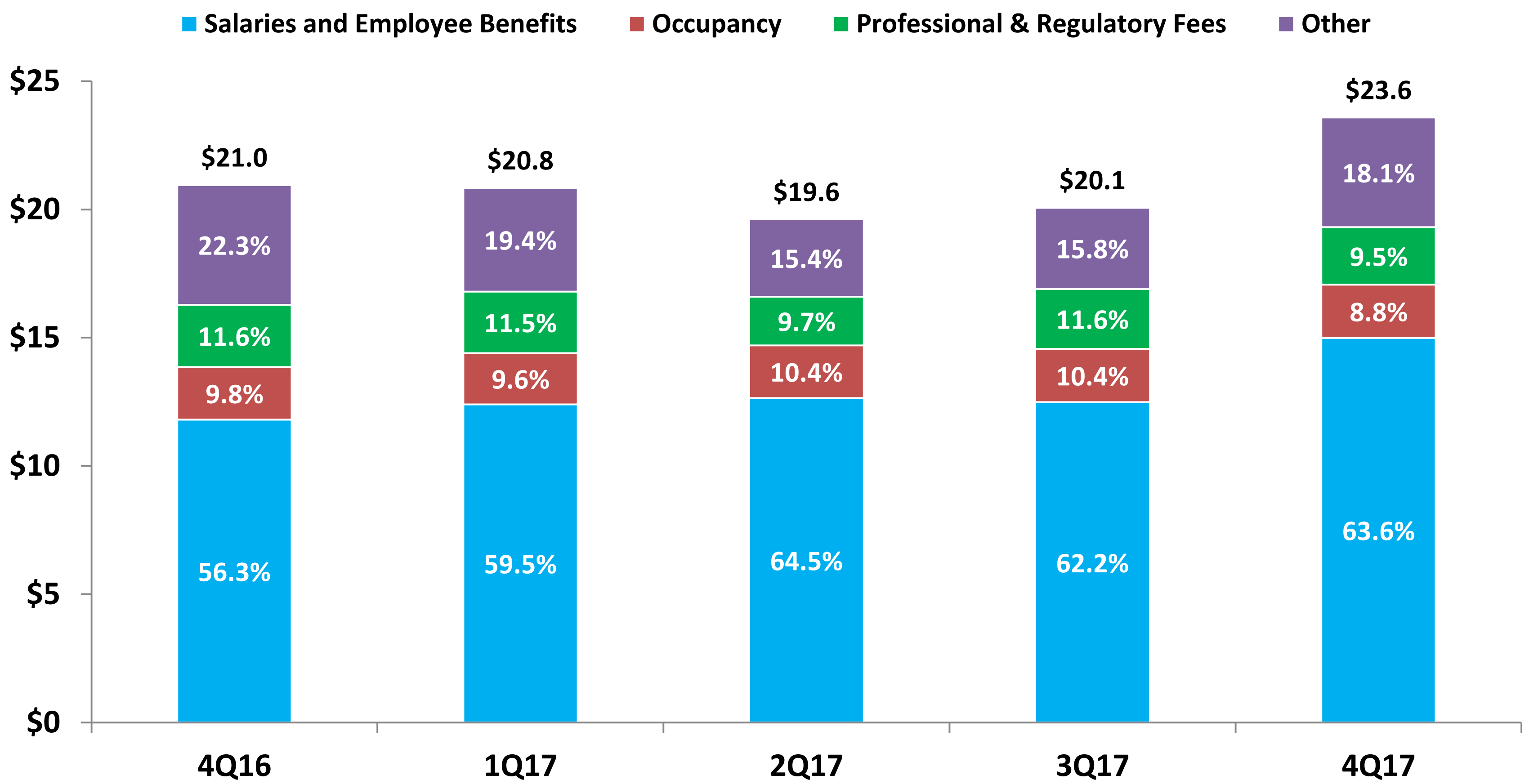
Noninterest Income



(*) Excluding net loss on the sale of held-for-sale loans of $1.4 million in 4Q16 and $0.1 million in 1Q17, net gain on held-for-sale loans of $0.2 million and net gain on the sale of available-for-sale securities of $0.3 million in 2Q17, net loss on held-for-sale loans of $1.3 million and net loss on the sale of available-for-sale securities of $0.3 million in 3Q17, in addition to net loss on held-for-sale loans of $1.1 million in 4Q17

$ in millions

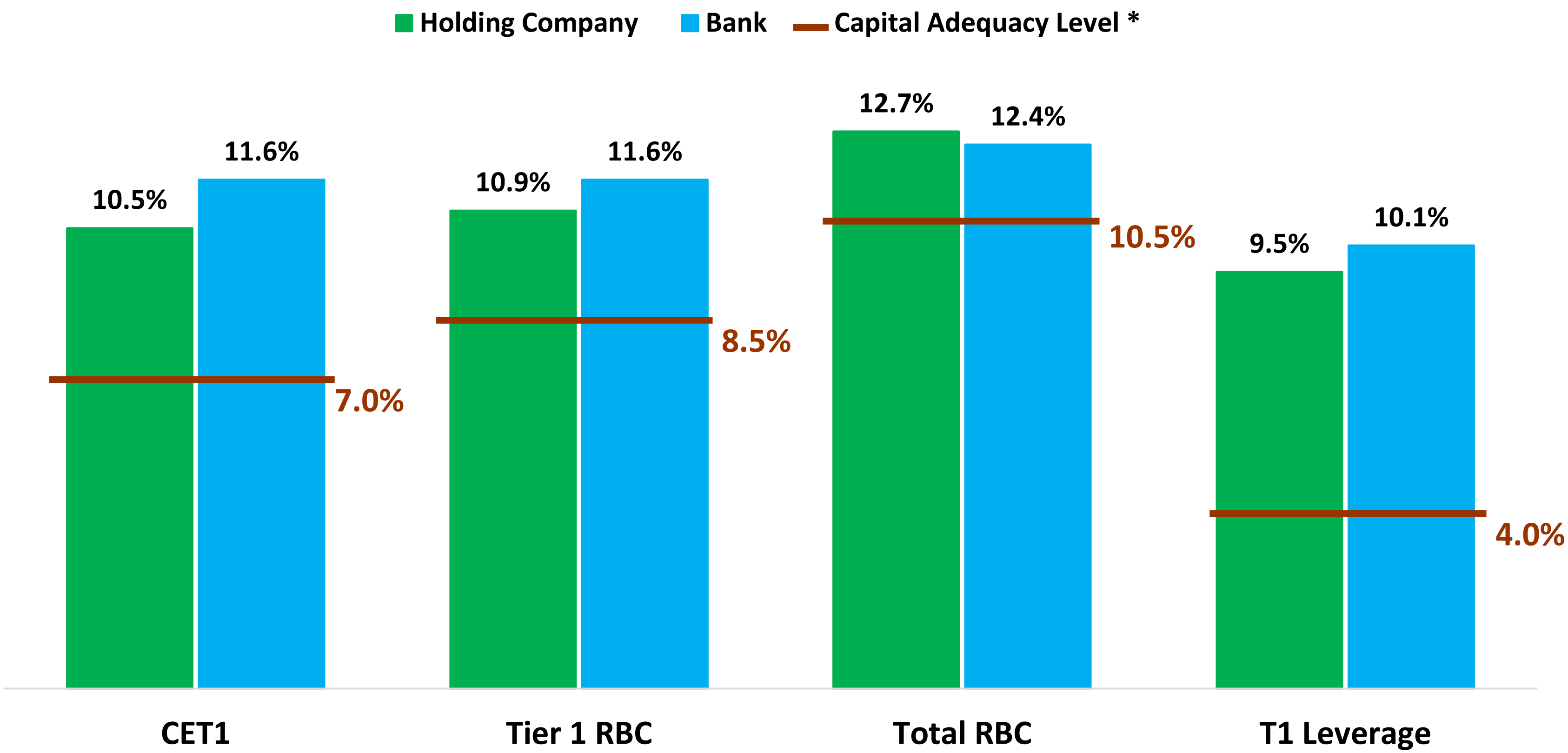
Noninterest Expense



	4Q16	1Q17	2Q17	3Q17	4Q17
Efficiency Ratio	61.0%	54.6%	47.8%	50.6%	57.9%

$ in millions

Capital Position



Capital	$377.3	$415.5	$390.7	$415.5	$455.8	$444.2	$390.7	$415.5

(*) denotes fully phased-in capital adequacy to take effect on January 1, 2019, the Basel III Capital Rules will require GNBC to maintain an additional capital conservation buffer of 2.5% CET1, effectively resulting in minimum ratios of 7.0% CET1, 8.5% Tier 1, 10.5% Total RBC and 4.0% minimum leverage ratio

$ in millions

Financial Guidance - Updated

- FY18 Net Interest Margin in the range of 3.80% – 3.95% *
- FY18 Net Interest Income in the range of $155 – $170 million
- FY18 Provision Expense in the range of $11 – $15 million
- FY18 Noninterest Income in the range of $21 – $25 million **
- FY18 Noninterest Expense in the range of $86 – $90 million
- FY18 EPS target in the range of $1.70 – $1.85
- FY18 Loan growth in the range of 7% - 9%

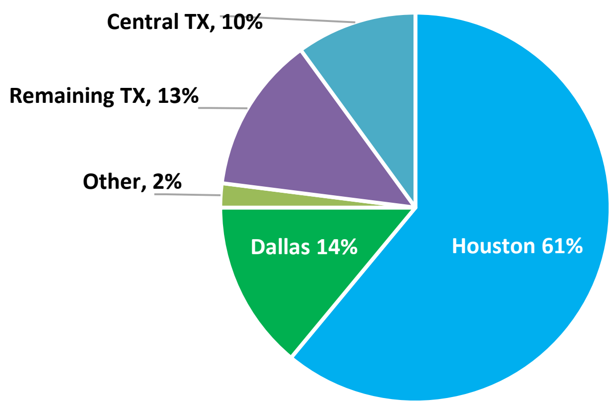
(*) Based on assumption of two 25 basis point increase to the Fed Funds target rate in 2018
(**) Excludes loss on held for sale loans and available for sale securities

Question & Answer Session

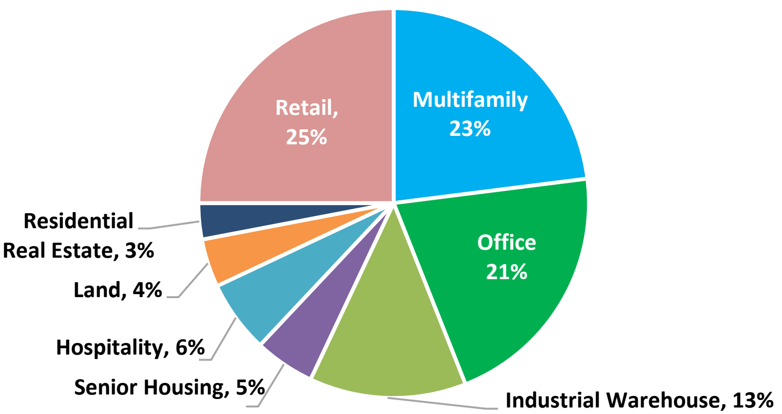
Appendix

Commercial Real Estate (CRE) Portfolio Detail

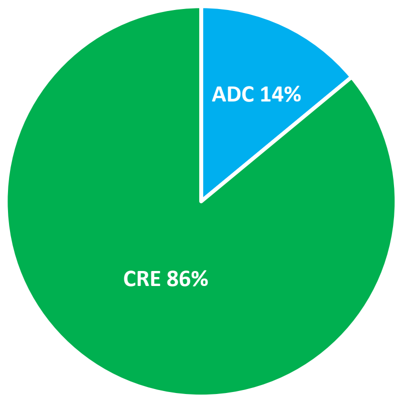
By Regional Distribution as of December 31, 2017 *



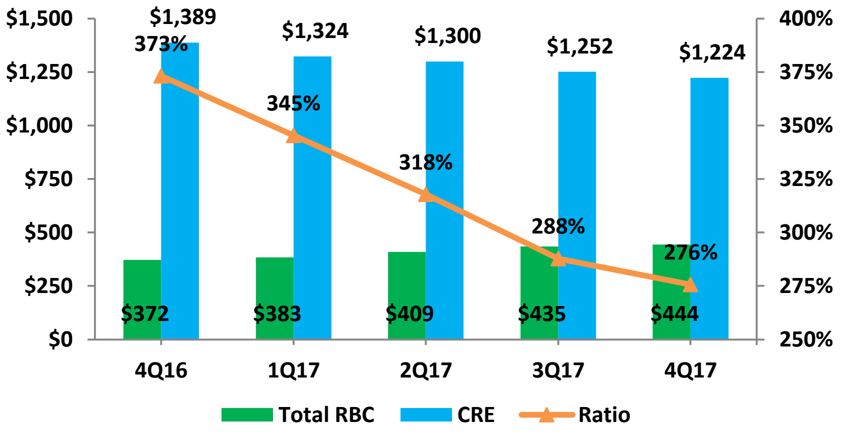
By Product as of December 31, 2017



CRE vs. ADC as of December 31, 2017



Regulatory CRE/Total Risk Based Capital



(*) Central TX denotes Austin, San Antonio and San Marcos

$ in millions, portfolio detail excludes Farmland per CRE guidance regulations, though it is included in financial reporting