Economic and Housing Outlook for 2019

North Texas Chapter

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Recessionary Fears

Stock Market Woes Raise a Nagging Fear: Is a Recession Near?

Nearly half of US CFOs fear a 2019 recession

People Are Really Worried About a Recession.
2018 A Very Good Year - 2019 Definite Slowdown

- Real GDP growth 2018 ~ 3.1%+  2019 ~2.7% – 2.9%
- Jobs expanded ~1.5%   Unemployment rate ~4.0%+
- Interest rates up during the year, but didn’t rise with end-of-year Fed Funds rate hike!
- Inflation approached 2.5% and will probably stay there
- Tax Cuts added positive impacts
- Industrial Production high but less labor
- Income and spending growing
  - Real Disposable Personal Income +2.9% thru 3Q18
  - Real PCE +2.6% thru 3Q18
- Housing improving, not fully recovered; recent stalling
- U.S. became #1 oil producer and net exporter
Inflation Bounced Upward Then Fell Expected to Remain Within Range

4Q fall off from lower oil prices and reduced upward pressure from general economy

Source: BLS (Consumer Price Index for All Urban Consumers: All Items; Y/Y % change in index)
Curb on rate increases from slower global economic growth and restrained inflation.
Expected Interest Rate on a 30-Year, Fixed-Rate Mortgage in 2019

30-Year FRM rate is projected to rise in 2019 by ~70bp

Jan 03 – Jan 07 30-Yr. FRM averaged 6%

Source: FHLMC; Real Estate Center at Texas A&M University
Texas Economy

2015-2016 Oil Decline; Down Years

2017 Recovery – A Good Year

2018: Better than 2017

2019 Some Headwinds, but Not Bad
2018 a Very Good Year Economically For Texas

• Rebound from Harvey in 2017 strong, but dragging
• State GDP +6% (1Q17-2Q18) #1 in U.S. [~5% 2018 total]
• Personal Income +5.1% (3Q17-3Q18)
• Oil Prices >$70 until 4Q; lately $40-$50
• Population increased 379,128 to 28,701,845
  • 190,951 natural increase
  • 104,976 foreign immigration
  • 82,569 domestic immigration
• Jobs increased 391,800 +3.2%
Texas Economic Outlook: 2019
Somewhat Slower Than 2018

Upside

- **U.S. Economy** stays relatively strong
- **Employment:** ~2.7% from 2.9% in 2018
- **GDP:** 4% 2019 from ~5% 2018
- **Energy sector** volatile; oil prices $40-$50/bl., production up
- **Population** expansion continues but at slower pace
- **Exports** doing well and contributing to economy – trade agreements add uncertainty
- **Retail Sales** steady but not significantly higher
Texas Economic Outlook: 2019
Somewhat Slower Than 2018

Downside: U.S. & Global Issues

- Greatest headwinds from psychological impacts and counter-productive political actions
- Stock Market sell off led to lower interest rates as investors seek safer returns
- Yield curve shifts at low- and middle-levels created uncertainty
- Fed Policy, especially sell-off of assets, affecting rates
- Housing market softer, new construction flat & higher unaffordability growing concern
- Global economic flattening
Texas’ Leading Economic Index

A composite of 8 leading indicators: 1) value of the dollar, 2) U.S. leading economic index, 3) real oil price, 4) well permits, 5) initial claims for unemployment insurance, 6) Texas stock index, 7) help-wanted index, and 8) average weekly hours worked in manufacturing.

Solid growth after oil bust, but falling with latest price decline.

Source: Federal Reserve Bank of Dallas, 1987=100
Weekly Active Texas Rig Count & Price of WTI

- Rig Count up 362, +209% since May 2016
- 11/21/2014, 906
- 6/27/2014, $106.69
- 2/12/2016, $28.14

Source: Baker Hughes; EIA; RE Center at Texas A&M University
Current and Futures Monthly Average Price of WTI

Sources: EIA; Haver Analytics
Monthly Texas Oil Production & Price of WTI

Source: EIA; RE Center at Texas A&M University
Texas Annual Jobs

2014-2018 +1,335,550 jobs; average 267,110/year

Sources: Texas Workforce Commission, Real Estate Center at Texas A&M University
Texas Growth

<table>
<thead>
<tr>
<th>Year</th>
<th>Jobs, NSA (Dec-Dec)</th>
<th>Population (July-July)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>215,800</td>
<td>439,887</td>
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<tr>
<td>2011</td>
<td>236,400</td>
<td>402,776</td>
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<tr>
<td>2012</td>
<td>374,400</td>
<td>433,903</td>
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<td>2013</td>
<td>301,400</td>
<td>400,952</td>
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<tr>
<td>2014</td>
<td>420,400</td>
<td>475,157</td>
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<tr>
<td>2015</td>
<td>152,000</td>
<td>500,444</td>
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<tr>
<td>2016</td>
<td>146,200</td>
<td>449,982</td>
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<tr>
<td>2017</td>
<td>258,300</td>
<td>399,734</td>
</tr>
<tr>
<td>2018</td>
<td>391,800</td>
<td>379,128</td>
</tr>
</tbody>
</table>

Sources: US Census Bureau; Texas Workforce Commission; Real Estate Center at Texas A&M University

2010-2018
+3,881,963 people
+2,496,700 jobs
Dallas Economic Outlook
Business Cycle Indexes: Dallas, Houston, Fort Worth, San Antonio & Texas

Months Seasonally Adjusted, 10/1980=100

Sources: Federal Reserve Bank of Dallas; Real Estate Center at Texas A&M University
Texas Metropolitan Areas Ranked by Employment Growth Rate
Percent Growth November 2017 – November 2018

Texas added 365,400 jobs November 2017 to November 2018, +3.0% vs. U.S. 1.7%

Sources: TWC; Real Estate Center at Texas A&M University
Annual Employment Growth Rates
U.S. and Texas MSAs

Source: BLS, Real Estate Center at Texas A&M University
Texas Major MSAs Employment Growth 2017, 2018 & 2019

Percent Growth in Annual Employment

<table>
<thead>
<tr>
<th></th>
<th>2017</th>
<th>2018</th>
<th>2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>Austin</td>
<td>3.2</td>
<td>3.5</td>
<td>3.1</td>
</tr>
<tr>
<td>Dallas</td>
<td>2.8</td>
<td>3.3</td>
<td>2.9</td>
</tr>
<tr>
<td>Fort Worth</td>
<td>2.3</td>
<td>2.4</td>
<td>2.2</td>
</tr>
<tr>
<td>Houston</td>
<td>1.0</td>
<td>3.1</td>
<td>3.0</td>
</tr>
<tr>
<td>San Antonio</td>
<td>2.3</td>
<td>1.6</td>
<td>1.4</td>
</tr>
<tr>
<td>Texas</td>
<td>1.8</td>
<td>2.9</td>
<td>2.5</td>
</tr>
</tbody>
</table>

Sources: TWC; Real Estate Center at Texas A&M University
Dallas-Plano-Irving Annual Jobs

Dallas-Plano-Irving MD: Collin, Dallas, Denton, Ellis, Hunt, Kaufman & Rockwall Counties

Sources: Texas Workforce Commission, Real Estate Center at Texas A&M University
Fort Worth-Arlington Annual Jobs

FW-A MD: Johnson, Parker, Tarrant & Wise Counties

2016 +1.2%
2017 +2.3%
2018 +2.4%
2019p +2.2%

Sources: Texas Workforce Commission, Real Estate Center at Texas A&M University
Texas Demographics
Estimated Population Change, Texas Counties, 2010 to 2017

-2,139 - 0
1 - 1,000
1,001 - 20,000
20,001 - 100,000
100,001 - 560,521

91 counties lost population over the 7 year period.

87% E of I-35

67% in Urban Triangle

Source: U.S. Census Bureau, 2017 Vintage Population Estimates; Texas State Demographer’s Office
Texas Population 1910-2050

2018 Population Projection

From 1970 to 2010 (40 years), Texas added 13.9 million people

From 2010 to 2050 (40 years), Texas will probably add ~22 million people (revised)

Sources: U.S. Census Bureau, Texas State Data Center 2018 Population Projection
D-FW MSA Population
Collin, Dallas, Denton, Ellis, Hood, Hunt, Johnson, Kaufman, Parker, Rockwall, Somervell, Tarrant & Wise Counties

2000-2010 +10,000,751, 157%
2018 Projection +6,807,104, 107%

Sources: U.S. Census Bureau; Texas State Demographer’s Office
2014 Projection; 2000-2010 Scenario
D-P-I Population
Dallas-Plano-Irving MD: Collin, Dallas, Denton, Ellis, Hunt, Kaufman & Rockwall Counties

178% increase 2010-2050
~7,540,000 people

Sources:
- U.S. Census Bureau
- Texas State Demographer's Office 2018 Projection
- 2000-2010 Scenario
- Real Estate Center Texas A&M University
Dallas County Population

Sources: U.S. Census Bureau; Texas State Demographer’s Office 2018 Projection; Real Estate Center Texas A&M University
Collin County Population

2000-2010
~3,020,000, 385%

2018 Revision
~1,662,000, 212%

Sources: U.S. Census Bureau; Texas State Demographer’s Office 2018 Projection & 2000-2010 Scenario; Real Estate Center at Texas A&M University
Denton County Population

2000-2010 + ~2,400,000 358%

2018 + ~1,660,000 251%

Sources: U.S. Census Bureau; Texas State Demographer’s Office 2018 Projection; 2000-2010 Scenario; Real Estate Center at Texas A&M University
FW-A Population
FW-A MD: Johnson, Parker, Tarrant & Wise Counties

2000-2010 Projection
110% increase 2010-2050
~2,359,000 people

2018 Projection
73% increase 2010-2050
~1,558,000 people

Sources: U.S. Census Bureau; Texas State Demographer’s Office 2018
Projection & 2000-2010 Scenario; Real Estate Center Texas A&M University
Texas Housing Market
2018 A Solid Year For Housing Around the State

• **Total Housing Activity: 2018 vs. 2017**
  - **Sales** +1.7%  343,833 vs. 336,502  $97.7B vs. $92.4B
  - **Listings** +1.4%  101,603 vs. 100,664
  - **DoM** 58 vs. 57
  - **MOI** 3.4 vs. 3.1
  - **Average Price** +3.7%  $284,173 vs. $274,580
  - **Median Price** +4.5%  $233,000 vs. $223,990
  - **Md. Price/sq. ft.** +5%  $116.37 vs. $110.55
  - **Avg. Price/sq. ft.** +4.3%  $128 vs. $122

Source: TAR Data Relevance Program; Real Estate Center at Texas A&M University
2018 A Solid Year For Housing Around the State

• New Home Construction lead the nation
  • State 168,500 total starts, ~122k SF  ~47k MF
  • DFW 57.9K (35.1k SF, 22.8k MF); Houston 50.8k (41.3k SF, 9.5k MF)

• New Home Sales stayed strong
  • New home sales +8.1%
  • DoM 93
  • MOI 5.1
  • Average price -0.4%
  • Median price +0.2%
  • Price/sq. ft. +2.9%
## 2018 Percent Changes in Key Housing Measures

<table>
<thead>
<tr>
<th>Region</th>
<th>Sales</th>
<th>Average Price</th>
<th>Median Price</th>
<th>Months Inventory</th>
<th>Median Price/sf</th>
</tr>
</thead>
<tbody>
<tr>
<td>Texas</td>
<td>1.7%</td>
<td>3.7%</td>
<td>4.5%</td>
<td>9.8%</td>
<td>5.0%</td>
</tr>
<tr>
<td>Austin</td>
<td>1.4%</td>
<td>4.2%</td>
<td>3.9%</td>
<td>9.7%</td>
<td>3.9%</td>
</tr>
<tr>
<td>DFW</td>
<td>-2.4%</td>
<td>4.1%</td>
<td>3.9%</td>
<td>19.7%</td>
<td>5.7%</td>
</tr>
<tr>
<td>Houston</td>
<td>3.4%</td>
<td>2.7%</td>
<td>3.1%</td>
<td>13.5%</td>
<td>4.2%</td>
</tr>
<tr>
<td>San Antonio</td>
<td>2.9%</td>
<td>4.2%</td>
<td>5.2%</td>
<td>8.0%</td>
<td>5.5%</td>
</tr>
<tr>
<td>CS-B</td>
<td>-1.6%</td>
<td>5.0%</td>
<td>2.6%</td>
<td>19.7%</td>
<td>2.3%</td>
</tr>
</tbody>
</table>

Source: TAR Data Relevance Program; Real Estate Center at Texas A&M University
2019 Home Market Slowdown
Factors that may create a drag on home-buying demand

• Limited inventory availability
• Higher prices - affordability
• Increasing interest rates
• Concerns about general economy – fear of recession or jobs
• Stock market volatility
• Negative press coming off record year(s)
December Sales in Texas by MSA (Y/Y Percent Change)

Texas (-6.9% Dec., +1.7% Year)

DFW (-10% Dec., -2.4% Year)

Houston (-4.2% Dec., +3.4% Year)

Austin (-12.7% Dec., +1.4% Year)

San Antonio (-3.1% Dec., +2.9% Year)

Sources: Texas Association of Realtors® MarketViewer; Real Estate Center at Texas A&M University
December Avg. Price/sq.ft. by MSA (Y/Y Percent Change)

Prices continue to increase, but a slower rate

Sources: Texas Association of Realtors® MarketViewer; Real Estate Center at Texas A&M University
Annual Texas Home Sales & Prices

2018
Sales 1.7%  Prices ~4%
2019p
Sales ~1%, Prices ~3.5%

Source: TAR Data Relevance Program; Real Estate Center at Texas A&M University
Texas Home Sales per 1,000 Households

1990-2000 Average 20.8

2001-2017 Average 30.6

Source: TAR Data Relevance Program; US Census Bureau; Real Estate Center at Texas A&M University
Texas Median HH Income & Median Home Price Indexed to 1989

1989 Median Price = 2.65 x Median HH Income
2017 Median Price = 3.76 x Median HH Income

Median Home Price +226%
Nominal HH Income +129%
2017 Adjusted HH Income +20%

Sources: U.S. Census Bureau; Haver Analytics; Real Estate Center at Texas A&M University
Texas Months’ Inventory Still Quite Low

“Balanced” Market

Mo. Inventory = Current month’s total listings / 12 mo. moving avg. of monthly sales

Source: Real Estate Center at Texas A&M University (New & Used Homes Sold thru MLS’s)
Texas 2018 Sales and Months Inventory by Price

2018 Sales

- $0 - $69,999: 3.6%
- $70,000 - $99,999: 3.2%
- $100,000 - $149,999: 2.4%
- $150,000 - $199,999: 2.2%
- $200,000 - $249,999: 2.7%
- $250,000 - $299,999: 3.4%
- $300,000 - $399,999: 3.9%
- $400,000 - $499,999: 4.5%
- $500,000 - $749,999: 5.3%
- $750,000 - $999,999: 7.5%
- $1,000,000 +: 10.3%

Current Mos. Inventory

- $0 - $69,999: 3.6%
- $70,000 - $99,999: 3.2%
- $100,000 - $149,999: 2.4%
- $150,000 - $199,999: 2.2%
- $200,000 - $249,999: 2.7%
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- $500,000 - $749,999: 5.3%
- $750,000 - $999,999: 7.5%
- $1,000,000 +: 10.3%

About 61% of sales in $100k to $300k range

Source: TAR Data Relevance Program; Real Estate Center at Texas A&M University
Texas SF Building Permits

1995-2017 average
104,854/year

Source: US Census Bureau; NAHB; Real Estate Center at Texas A&M
Texas SF Building Permits per 1,000 New Households

1995-2015 average 820/year

Source: US Census Bureau, Real Estate Center at Texas A&M
Texas MF Building Permits

1995-2016 average 45,444/year
2017 -1.7%; 2018p -3%

Source: US Census Bureau, Real Estate Center at Texas A&M
Texas Residential Construction Leading and Coincident Indexes

Jan 2000=100

Coincident Index

Leading Index

Total Housing Permits (12-MMA)

Source: Real Estate Center at Texas A&M University
Dallas-Plano-Irving Housing Market
The U.S. Housing Boom Is Coming to an End, Starting in Dallas

Home prices zoomed higher in recent years, and mortgage rates are climbing. Buyers are queasy.

Empty lots and newly built homes in the Edgestone At Legacy development in Frisco, Texas, last week. LAURA BUCKMAN FOR THE WALL STREET JOURNAL
Annual D-P-I Home Sales

Dallas-Plano-Irving MD: Collin, Dallas, Denton, Ellis, Hunt, Kaufman & Rockwall Counties

2018 sales -2.9%, Prices 3%
2019p sales -2%, Prices ~3%

Source: TR Data Relevance Program; Real Estate Center at Texas A&M University
Dallas-Plano-Irving Months’ Inventory

Mo. Inventory = Current month’s total listings / 12 mo. moving avg. of monthly sales

Source: TR Data Relevance Program; Real Estate Center at Texas A&M
Dallas-Plano-Irving MD: Collin, Dallas, Denton, Ellis, Hunt, Kaufman & Rockwall Counties
Since 2010:
Average Price up 59%
Median Price up 78%
D-P-I 2018YTD Sales and Months Inventory by Price

2018 Sales

<table>
<thead>
<tr>
<th>Price Range</th>
<th>Units Sold</th>
<th>Percentage</th>
</tr>
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<tbody>
<tr>
<td>$0 - $69,999</td>
<td>540</td>
<td>0.8%</td>
</tr>
<tr>
<td>$70,000 - $99,999</td>
<td>971</td>
<td>1.5%</td>
</tr>
<tr>
<td>$100,000 - $149,999</td>
<td>3,604</td>
<td>5.6%</td>
</tr>
<tr>
<td>$150,000 - $199,999</td>
<td>8,094</td>
<td>12.6%</td>
</tr>
<tr>
<td>$200,000 - $249,999</td>
<td>11,115</td>
<td>17.3%</td>
</tr>
<tr>
<td>$250,000 - $299,999</td>
<td>10,489</td>
<td>16.3%</td>
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<td>$300,000 - $399,999</td>
<td>14,041</td>
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<tr>
<td>$400,000 - $499,999</td>
<td>7,169</td>
<td>11.1%</td>
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<tr>
<td>$500,000 - $749,999</td>
<td>5,551</td>
<td>8.6%</td>
</tr>
<tr>
<td>$750,000 - $999,999</td>
<td>2,134</td>
<td>2.1%</td>
</tr>
<tr>
<td>$1,000,000 +</td>
<td>1,429</td>
<td>2.2%</td>
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Current MOI

<table>
<thead>
<tr>
<th>Price Range</th>
<th>MOI</th>
</tr>
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<tbody>
<tr>
<td>$0 - $69,999</td>
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</tr>
<tr>
<td>$1,000,000 +</td>
<td>7.4</td>
</tr>
</tbody>
</table>

74% of sales in $100k to $400k range

Source: TR Data Relevance Program; Real Estate Center at Texas A&M University
Dallas County Single-Family Building Permits

2015 +20%; 2016 +7%; 2017 -4%; 2018p +0%

1983-1989 -64%
2005-2011 -76%

Source: US Census Bureau; Real Estate Center at Texas A&M University
Dallas-Plano-Irving MF Permits

Dallas-Plano-Irving MD: Collin, Dallas, Denton, Ellis, Hunt, Kaufman & Rockwall Counties

Source: US Census Bureau; Real Estate Center at Texas A&M University
D-P-I Annual New Home Sales
2017 Big Jump; 2018 Slower

Source: MetroTex AoR, TAR Data Relevance Project; Real Estate Center at Texas A&M University
D-P-I Annual New Home Median Price

2018 Prices Slipping

Source: MetroTex AoR, TR Data Relevance Project; Real Estate Center at Texas A&M University
D-P-I Months Inventory
New & Exiting Homes

Source: MetroTex AoR, TAR Data Relevance Project; Real Estate Center at Texas A&M University
An attitudinal survey of local markets completed by commercial real estate market experts (SIOR members).

Source: Society of Industrial & Office Realtors; Real Estate Center at Texas A&M University
CoStar U.S. Repeat-Sale CRE Price Indices
(Dec. 2000 = 100)

Source: CoStar Group; Real Estate Center at Texas A&M University
CoStar U.S. Repeat-Sale CRE Price Indices
(Dec. 2000 = 100) “Value Weighted” by Property Type

Source: CoStar Group; Real Estate Center at Texas A&M University
DFW & U.S. Industrial Cap Rates


Source: Real Capital Analytics; Real Estate Center at Texas A&M University
2019: Cautious Optimism

• Uncertain interest rates
• Selective, limited inventory available to sell
• Younger, inexperienced buyers with very different tastes & preferences
• Different marketing and communications to prospective buyers
• Builders/Developers Rethinking Designs & Processes
• Changing loan underwriting requirements and standards
• Pricing difficult both for listings and for sales
• Boomers staying in homes longer: remodeling