General Meeting
February 27, 2019
Trini Mendenhall Community Center

Houston Outlook 2019

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Chief Economist

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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
Consumer Confidence Index

Source: The Conference Board (1985=100; NSA); Haver Analytics
NFIB Small Business Optimism Index
(Overall Index SA 1986 = 100)

Source: National Federation of Independent Businesses; based on ten survey indicators
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)
Fed Funds Rate, 10-Year Treasury, 30-Year FMR & Inflation

Source: Haver Analytics; FHLMC; St. Louis FED; 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% (2Q18) #1 in U.S. [estimate ~4.5% 2018 total]
- Personal Income +5.1% (3Q17-3Q18)
- Oil Prices >$70 until 4Q
- Population increased 379,128 to 28,701,845
  - 190,951 natural increase (50.3%)
  - 104,976 foreign immigration (27.7%)
  - 82,569 domestic immigration (22%)
- Jobs increased 391,800 +3.2%
Texas Economic Outlook: 2019
Positive but Slower Growth Than 2018

- **U.S. Economy** stays relatively strong
- **Employment:** ~2.7% from 2.9% in 2018
- **GDP:** 4% 2019 from ~4.5% 2018
- **Energy sector** neutral; oil prices $40-$60/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
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.
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
Monthly Change in Total Nonfarm Employment Texas

Average of ~23,700 jobs per month since January 2011

Sources: TWC; 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>
</tr>
<tr>
<td>2011</td>
<td>236,400</td>
<td>402,776</td>
</tr>
<tr>
<td>2012</td>
<td>374,400</td>
<td>433,903</td>
</tr>
<tr>
<td>2013</td>
<td>301,400</td>
<td>400,952</td>
</tr>
<tr>
<td>2014</td>
<td>420,400</td>
<td>475,157</td>
</tr>
<tr>
<td>2015</td>
<td>152,000</td>
<td>500,444</td>
</tr>
<tr>
<td>2016</td>
<td>146,200</td>
<td>449,982</td>
</tr>
<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>

2010-2018:
+3,881,963 people
+2,496,700 jobs

Sources: US Census Bureau; Texas Workforce Commission; Real Estate Center at Texas A&M University
Houston Economic Outlook
Weekly Active Texas Rig Count & Price of WTI

Rig Count (left)

WTI $/bl. (right)

Rig Count up 341, +197% since May 2016

11/21/2014, 906

6/27/2014, $106.69

2/12/2016, $28.14

5/20/2016, 173

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
Houston Oil Jobs in the Fracking Era

- Houston is technological and engineering heart of oil industry
- Industry consolidation has favored Houston for decades
- Rigs are fewer, but much bigger and more intensively used
  - Need for Houston-based engineering, oil services, machinery and fabricated metals does not fall nearly as fast as number of rigs.
Annual Employment Growth Rates
U.S. and Houston MSA

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

Source: TWC; Real Estate Center at Texas A&M University
Houston Annual Jobs

2016 +0%
2017 +1.0%
2018 +3.1%
2019p +3.0%

Sources: Texas Workforce Commission; Real Estate Center at Texas A&M University
Houston Monthly Jobs

Sources: Texas Workforce Commission, Real Estate Center at Texas A&M University
Houston Economic Summary

• Upstream energy relatively stable; expect mostly neutral impacts; Oil prices $40 - $60/bl.

• Around $50B in downstream construction finished or near completion

• Expect good employment growth but slower rate (70,000 – 90,000 jobs, 3% growth) in 2019
  • Healthcare, Construction, Admin. Support, Professional Services, Manufacturing, Restaurants, Retail & Government

• Trade at Port of Houston remains robust, key upside for future as well (~17% of Houston GDP); trade agreements uncertainty may create problems

• U.S. and Global economies fuel Houston’s growth
Texas Demographics
Estimated Population Change, Texas Counties, 2010 to 2017

91 counties lost population over the 7 year period.

87% of I-35

67% in Urban Triangle

Source: U.S. Census Bureau, 2017 Vintage Population Estimates; Texas State Demographer's Office
From 1970 to 2010 (40 years), Texas added 13.9 million people.

From 2010 to 2050 (40 years), Texas will probably add ~17-30 million people.

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

Revised 2018 Projection (2010-2015 Rate)

2017 Texas State Water Plan

2000-2010 Projection

54,369,297

47,342,417

41,928,264

2018 Population Projection & 2017 Texas Water Plan
Projected Population Change, Texas Counties, 2010-2050

Legend:
-6,200 - 0
1 - 2,000
2,001 - 10,000
10,001 - 100,000
100,001 - 1,000,000
1,000,001 - 3,480,000

90%+ in the Urban Triangle

Source: Texas State Data Center 2012 Population Projections . 2000-2010 Migration Scenario
Houston MSA Population
Brazoria, Chambers, Fort Bend, Galveston, Liberty & Montgomery Counties

2000-2010 +8,300,851, 140%
2018 Projection
+7,235,577, 122%

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

2000-2010 +1,606,226, 352%
2018 +1,027,730, 226%

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

2010 – 2050 +2,153,178, 368%
2018 +1,669,588, 285%

Sources: U.S. Census Bureau; Texas State Demographer’s Office 2018 Projection & 2000-2010 Scenario; Real Estate Center at Texas A&M University
Texas Housing Market
## 2018 Percent Changes in Key Housing Measures

<table>
<thead>
<tr>
<th>City</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>
</tbody>
</table>

Source: TR 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)

Sales -5.3% Statewide

Price +4% Statewide

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

Source: TR Data Relevance Program; US Census Bureau; Real Estate Center at Texas A&M University

1990-2000 Average 20.8

2001-2017 Average 30.6
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

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 SF Building Permits

1995-2017 average
104,854/year

2015 +2.3%
2016 +1.0%
2017 +9.6%
2018e +5.7%
2019p +2.1%

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

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

Jan 2000=100

Source: Real Estate Center at Texas A&M University
Houston Market
Annual Houston Home Sales, Average & Median Prices

2018 Sales +3.4%; Md. Price +3.1%
2019p Sales +1.1%; Prices +4.5%

Source: HAR, Texas Realtors® Data Relevance Project; Real Estate Center at Texas A&M University
Houston 2018 Sales and Months Inventory by Price

### 2018 Sales

<table>
<thead>
<tr>
<th>Price Range</th>
<th>Quantity</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>$0 - $69,999</td>
<td>2,687</td>
<td>3.1%</td>
</tr>
<tr>
<td>$70,000 - $99,999</td>
<td>1,767</td>
<td>2.0%</td>
</tr>
<tr>
<td>$100,000 - $149,999</td>
<td>8,463</td>
<td>9.7%</td>
</tr>
<tr>
<td>$150,000 - $199,999</td>
<td>15,976</td>
<td>21.3%</td>
</tr>
<tr>
<td>$200,000 - $249,999</td>
<td>11,361</td>
<td>18.3%</td>
</tr>
<tr>
<td>$250,000 - $299,999</td>
<td>13,799</td>
<td>15.8%</td>
</tr>
<tr>
<td>$300,000 - $399,999</td>
<td>6,193</td>
<td>7.1%</td>
</tr>
<tr>
<td>$400,000 - $499,999</td>
<td>5,117</td>
<td>5.9%</td>
</tr>
<tr>
<td>$500,000 - $749,999</td>
<td>1,767</td>
<td>2.0%</td>
</tr>
<tr>
<td>$750,000 - $999,999</td>
<td>1,489</td>
<td>1.7%</td>
</tr>
<tr>
<td>$1,000,000 +</td>
<td>1,692</td>
<td>1.9%</td>
</tr>
</tbody>
</table>

### Current Mos. Inventory

<table>
<thead>
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<th>Price Range</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
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</tr>
<tr>
<td>$300,000 - $399,999</td>
<td>4.6%</td>
</tr>
<tr>
<td>$400,000 - $499,999</td>
<td>5.4%</td>
</tr>
<tr>
<td>$500,000 - $749,999</td>
<td>6.2%</td>
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<tr>
<td>$750,000 - $999,999</td>
<td>7.8%</td>
</tr>
<tr>
<td>$1,000,000 +</td>
<td>9.8%</td>
</tr>
</tbody>
</table>

Source: TR Data Relevance Program; Real Estate Center at Texas A&M University

About 62% of sales in $100k to $300k range

Sales -9.9%
Price +4.6%

Source: HAR, TR Data Relevance Program; Real Estate Center at Texas A&M University

Sales & Prices by Local Market Areas

Sales -9.4%
Price +4.2%

Source: HAR, TR Data Relevance Program; Real Estate Center at Texas A&M University

Sales & Prices by Zip Codes

Sales -9.4%

Price +4.2%

Source: HAR, TR Data Relevance Program; Real Estate Center at Texas A&M University
Recent pause in sales activity calmed home price appreciation

Source: Real Estate Center at Texas A&M University
Houston SF Building Permits

2018e +3.5%
2019p +1%

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

1997-2018 average 12,639

2015 -21%
2016 -54%
2017 -36%
2018e +150%
2019p +2%

Source: US Census Bureau; Real Estate Center at Texas A&M University
2019 Single-Family Housing Sales Projected to Slowdown

<table>
<thead>
<tr>
<th>Single Family Forecast</th>
<th>2018 (%)</th>
<th>2019 (%)</th>
<th>2020 (%)</th>
<th>1991-2018 (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Texas</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Housing Permits</td>
<td>5.7</td>
<td>2.1</td>
<td>1.0</td>
<td>5.4</td>
</tr>
<tr>
<td>Sales</td>
<td>1.8</td>
<td>0.9</td>
<td>3.4</td>
<td>4.6</td>
</tr>
<tr>
<td>Price per square foot</td>
<td>4.4</td>
<td>4.0</td>
<td>4.7</td>
<td>4.8</td>
</tr>
<tr>
<td>Houston</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Housing Permits</td>
<td>4.1</td>
<td>0.1</td>
<td>3.0</td>
<td>5.9</td>
</tr>
<tr>
<td>Sales</td>
<td>3.5</td>
<td>1.1</td>
<td>4.3</td>
<td>3.9</td>
</tr>
<tr>
<td>Price per square foot</td>
<td>3.1</td>
<td>4.6</td>
<td>5.1</td>
<td>5.3</td>
</tr>
</tbody>
</table>

Note: Estimated with October/December 2018 data. 2018 Housing Permits are forecasted.

- Slowing economic and employment growth causing housing demand to soften.
- Price pressures projected to ease as housing demand weakens.
- Homebuilders stretch to increase production in entry and first move-up markets.

Source: Real Estate Center at Texas A&M University
# 2019 Outlook for Commercial Real Estate is Positive

## Projected Overall Vacancy Rates and Asking Rents

<table>
<thead>
<tr>
<th>Property Type</th>
<th>Natural Vacancy Rate</th>
<th>Vacancy Rates (%)</th>
<th>Asking Rents (y-o-y %)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Office</td>
<td>14.0</td>
<td>19.5</td>
<td>20.1</td>
</tr>
<tr>
<td>Retail</td>
<td>7.0</td>
<td>5.7</td>
<td>5.6</td>
</tr>
<tr>
<td>Warehouse</td>
<td>8.0</td>
<td>6.9</td>
<td>6.8</td>
</tr>
</tbody>
</table>

Note: Annual numbers represent the four-quarter average of the seasonally adjusted data. Rent growth is nominally estimated from the previous year’s average.

Sources: Co-Star; Real Estate Center at Texas A&M University
2019: Cautious Optimism

- Economy is still doing fine; 2019 Positive Growth at Slower Rate
- Uncertain interest rates
- Selective, limited housing inventory available to sell
- 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
- Office market seems to have reached bottom, while retail and warehouse will continue to register strong growth