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.
Longest U.S. Expansions

- Tech Boom '91 - '01: 120 months
- Current Boom June '09 to Present: 114 months
- 60s Boom '61 - '69: 106 months
- Reagan Years '82 - '90: 92 months
- World War II Economy '38 - '45: 80 months
- Housing Bubble '01 - '07: 73 months

Source: National Bureau for Economic Research
“Expansions don’t die of old age.”

Janet Yellen

Chair, Board of Governors
U.S. the Federal Reserve System, 2014–2018
Typical Recession Causes

- Bursting of an asset bubble
- Financial institution failures
- Credit crunch
- Commodity price spikes
- Loss of consumer confidence
- Government spending cuts
- Reductions in business investment
- Loss of business confidence
- Debt accumulation
- RISING INTEREST RATES
## Six Most Recent Recessions

<table>
<thead>
<tr>
<th>When?</th>
<th>Cause</th>
</tr>
</thead>
<tbody>
<tr>
<td>’69 – ’70</td>
<td>Interest rate hikes, fiscal austerity</td>
</tr>
<tr>
<td>’73 – ’75</td>
<td>Stock market crash, oil price spike</td>
</tr>
<tr>
<td>’80 - ’82</td>
<td>Interest rate hikes, oil price spike</td>
</tr>
<tr>
<td>’90 – ’91</td>
<td>High debt levels, consumer pessimism, oil price spike,</td>
</tr>
<tr>
<td>’01 – ’02</td>
<td>Dot-com bust, weak business investment, 9/11</td>
</tr>
<tr>
<td>’08 – ’09</td>
<td>Subprime mortgage crisis</td>
</tr>
</tbody>
</table>
Information on Recessions and Recoveries, the NBER Business Cycle Dating Committee, and related topics

US Business Cycle Expansions and Contractions

Register for future Business Cycle announcements

Statement of the NBER Business Cycle Dating Committee on the Determination of the Dates of Turning Points in the U.S. Economy

The NBER's Business Cycle Dating Procedure: FREQUENTLY ASKED QUESTIONS

Members of the Business Cycle Dating Committee

September 20, 2010 announcement of June 2009 business cycle trough/end of last recession

April 12, 2010 Memo from the Business Cycle Dating Committee

December 1, 2008 announcement of December 2007 business cycle peak/beginning of last recession

January 7, 2008 Memo from the Business Cycle Dating Committee

October 21, 2003 Memo from the Business Cycle Dating Committee

July 17, 2003 announcement of November 2001 business cycle trough/end of last recession

November 26, 2001 announcement of March 2001 business cycle peak/beginning of last recession
What NBER considers when dating a business cycle

- Real Gross Domestic Product
- Employment
- Real Personal Income
- Real Sales (business and retail)
- Industrial Production
NBER Business Cycle

Real GDP

Time

Peak

Recession

Trough

Expansion
Jankowski Business Cycle

- **Peak**
- **Recession**
- **Trough**
- **Expansion**
- **Recovery**

<table>
<thead>
<tr>
<th>Real GDP</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>
U.S. Real Personal Income

Source: U.S. Bureau of Economic Analysis
Source: U.S. Bureau of Economic Analysis
U.S. Payroll Employment

Source: U.S. Bureau of Labor Statistics
U.S. Industrial Production Index

Source: Board of Governors of the Federal Reserve System
What the current data tells us about the economy.
The Consumer Side of the Economy
U.S. Job Growth

1-Month Net Change

Source: U.S. Bureau of Labor Statistics
U.S. Unemployment Rate*

Source: U.S. Bureau of Labor Statistics

* seasonally adjusted
Percent Population 16 and Older in the Workforce

Source: U.S. Bureau of Labor Statistics
Consumer Confidence

1966:Q1=100, Not Seasonally Adjusted

Source: University of Michigan
The Financial Side of the Economy
Delinquencies Single-Family Mortgages

Percent, Quarterly, Seasonally Adjusted

Source: Board of Governors of the Federal Reserve System
Credit Card Delinquencies

Percent, Quarterly, Seasonally Adjusted

Source: Board of Governors of the Federal Reserve System
Delinquencies Commercial & Industrial Loans

Percent, Quarterly, Seasonally Adjusted

Source: Board of Governors of the Federal Reserve System
Household Debt as Percent of Personal Income

Percent, Quarterly, Seasonally Adjusted

Source: Board of Governors of the Federal Reserve System (US)
The Business Side of the Economy
U.S. Real Gross Domestic Product

Growth Rate, % Change from Previous Quarter

Source: U.S. Bureau of Economic Analysis
Future Capital Expenditures Index*

*Calculated by subtracting percent reporting increases from percentage reporting decreases.

Source: Federal Reserve Bank of Philadelphia
Seasonally Adjusted Annual Rate

Source: U.S. Census Bureau
New, Light-Duty Vehicles, Millions

<table>
<thead>
<tr>
<th>Year</th>
<th>Sales (Millions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>'11</td>
<td>12.7</td>
</tr>
<tr>
<td>'12</td>
<td>14.4</td>
</tr>
<tr>
<td>'13</td>
<td>15.5</td>
</tr>
<tr>
<td>'14</td>
<td>16.4</td>
</tr>
<tr>
<td>'15</td>
<td>17.4</td>
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<tr>
<td>'16</td>
<td>17.5</td>
</tr>
<tr>
<td>'17</td>
<td>17.1</td>
</tr>
<tr>
<td>'18</td>
<td>17.5</td>
</tr>
</tbody>
</table>

Source: National Automobile Dealers Association
Billions of Dollars, Monthly, Seasonally Adjusted*

Source: U.S. Bureau of the Census

* excludes food services
So, what about Houston?
Payroll Employment

12-Month Running Totals

Source: Texas Workforce Commission
In my 2016 forecast . . .
What Will the Recovery Look Like?

Quick Rebound

Slow, Gradual Rebound

Wide Bottom, Then Quick Rebound
Payroll Employment

12-Month Running Totals

Source: Texas Workforce Commission
U.S. Rig Count

Source: Baker Hughes
<table>
<thead>
<tr>
<th>Industry</th>
<th>Jobs Lost Peak to Trough*</th>
<th>Recouped To Date</th>
<th>% Recouped</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exploration &amp; Production</td>
<td>-22,300</td>
<td>500</td>
<td>2.2</td>
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<tr>
<td>Oilfield Services</td>
<td>-20,800</td>
<td>9,200</td>
<td>41.8</td>
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<tr>
<td>Oilfield Equipment Mfg</td>
<td>18,000</td>
<td>5,100</td>
<td>22.9</td>
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<tr>
<td>Fab Metal Products</td>
<td>-20,800</td>
<td>8,700</td>
<td>44.2</td>
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<tr>
<td>Engineering</td>
<td>-11,200</td>
<td>5,300</td>
<td>47.3</td>
</tr>
</tbody>
</table>

* Peaks and troughs vary by sector

Source: Greater Houston Partnership calculations based on Texas Workforce Commission data
West Texas Intermediate

Crude Spot Price, Weekly Average

Source: U.S Energy Information Administration
In the top two areas in which your firm is active:
What WTI oil price does your firm need to profitably drill a new well?

Dollars per barrel

<table>
<thead>
<tr>
<th>Area</th>
<th>Mean Price</th>
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</thead>
<tbody>
<tr>
<td>Permian (Midland)</td>
<td>$47</td>
</tr>
<tr>
<td>Permian (Delaware)</td>
<td>$49</td>
</tr>
<tr>
<td>Bakken</td>
<td>$50</td>
</tr>
<tr>
<td>Permian (Other)</td>
<td>$52</td>
</tr>
<tr>
<td>SCOOP/STACK</td>
<td>$53</td>
</tr>
<tr>
<td>Other U.S. (Shale)</td>
<td>$54</td>
</tr>
<tr>
<td>Other U.S. (Non-shale)</td>
<td>$55</td>
</tr>
</tbody>
</table>

Number of responses

<table>
<thead>
<tr>
<th>Area</th>
<th>Responses</th>
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<tbody>
<tr>
<td>Permian (Midland)</td>
<td>15</td>
</tr>
<tr>
<td>Permian (Delaware)</td>
<td>13</td>
</tr>
<tr>
<td>Bakken</td>
<td>4</td>
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<tr>
<td>Permian (Other)</td>
<td>18</td>
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<tr>
<td>SCOOP/STACK</td>
<td>7</td>
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<tr>
<td>Other U.S. (Shale)</td>
<td>7</td>
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<tr>
<td>Other U.S. (Non-shale)</td>
<td>34</td>
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</tbody>
</table>

NOTES: Lines show the mean, and bars show the range of responses. Executives from 65 exploration and production firms answered this question during the survey collection period, March 14–22, 2018.

SOURCE: Federal Reserve Bank of Dallas.
Office Market Shows Signs of Improvement
Absorption Turns Positive on Strong Job Growth

OVERVIEW
Office Market Returning One Step at a Time
The third quarter saw the Houston office market record positive absorption for the first time in 2018 and only the second time over the previous two years. Leasing activity increased significantly, fueled by strong job growth in the office-using sector. After struggling through several years following the energy downturn, office-using job growth is returning to form with 37,800 jobs created in the 12 months ending in August. Even more impressive, vacancy for the market declined for the first time

Source: Transwestern
Houston Retail Sales*

4-Quarter Moving Total

Source: Texas Comptroller of Public Accounts

* excludes gasoline purchases
Houston Home Sales

12-Month Moving Total

Source: Houston Association of Realtors
What’s driving Houston’s Economy?
The energy business is profitable again.
Financial Performance in Q3/16

Lost Money
- Anadarko
- NEWPARK
- BAKER HUGHES
- Apache
- Hess
- eog resources
- Marathon Oil
- ConocoPhillips
- NOV
- Ocean Engineering
- Oil States
- SWN
- Weatherford

Earned a Profit
- ExxonMobil
- Chevron
- Schlumberger
- FMC
- bp
- Shell
Financial Performance in Q3/18

Lost Money

- OCEANERING
- SWN
- Weatherford
- Eagle States

Earned a Profit

- Anadarko
- Halliburton
- bp
- Apache
- ConocoPhillips
- Chevron
- Baker Hughes
- Schlumberger
- eog resources
- NOV
- Hess
- Marathon Oil
- ExxonMobil
- FMC
- SHELL
- OXY
- NEWPARK
Strongest U.S. growth since Q4/14.
U.S. Real Gross Domestic Product

Growth Rate, % Change from Previous Quarter

Source: U.S. Bureau of Economic Analysis
Trade remains robust.
Houston Customs District Traffic

12-Month Moving Total

$ Billions

Source: WISERTrade
People continue to move to Houston.
Net Migration (000s)

Source: U.S. Census Bureau
Companies continue to move to Houston.
Significant Relocations and Expansions
Construction
Construction Contracts ($ Billions)

For the 12 months ending October of each year.

Source: Dodge Data & Analytics
What, Me Worry?
U.S. Crude Output

Source: U.S. Energy Information Administration (E.I.A.)
Exports Share of Houston GDP

- 2003: 8.9%
- 2017: 17.3%

Source: The Brookings Institution
US-China trade war could soon pose a serious economic threat

Twelve executives break down how the US-China tariffs are hurting their US companies
Executive Order 13678
  - Enhancing Public Safety in the Interior of the United States

Executive Order 13769, 13780
  - Protecting the Nation from Foreign Terrorist Entry into the United States

Executive Order 13767
  - Border Security and Immigration Enforcement Improvements

Reforming American Immigration for Strong Employment Act

Deferred Action for Childhood Arrivals

Immigrant Investor Program (EB-5)

H1-B Visas
Net Migration (000s)

Source: U.S. Census Bureau
Approx. 600,000 residents joined local workforce (’06 – ’16)

Native-Born: 338,650
Foreign-Born: 261,350

Source: Partnership calculations based on U.S. Census Bureau data
A self-fulfilling prophesy?
Global growth has peaked and will slow in 2019 according to OECD

The Telegraph

OECD Sees Trade Tensions Hindering Global Growth

THE WALL STREET JOURNAL

Trade Tariffs, Higher Interest Rates Slowing Global Growth, OECD Says
## OECD Economic Outlook projections

### Real GDP growth revised down

Year-on-year, %. Arrows for 2018 and 2019 indicate the direction of revisions since September 2018. *

<table>
<thead>
<tr>
<th></th>
<th></th>
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<th></th>
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<tr>
<td>World</td>
<td>3.7</td>
<td>3.5</td>
<td>3.5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>G-20</td>
<td>3.8</td>
<td>3.7</td>
<td>3.7</td>
<td></td>
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<td>Australia</td>
<td>3.1</td>
<td>2.9</td>
<td>2.6</td>
<td>-2.8</td>
<td>-1.9</td>
<td>2.3</td>
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<td>Canada</td>
<td>2.1</td>
<td>2.2</td>
<td>1.9</td>
<td>1.2</td>
<td>2.1</td>
<td>2.4</td>
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<tr>
<td>Euro area</td>
<td>1.9</td>
<td>1.8</td>
<td>1.6</td>
<td>6.6</td>
<td>6.3</td>
<td>6.0</td>
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<tr>
<td>Germany</td>
<td>1.6</td>
<td>1.6</td>
<td>1.4</td>
<td>7.5</td>
<td>7.3</td>
<td>7.4</td>
</tr>
<tr>
<td>France</td>
<td>1.6</td>
<td>1.6</td>
<td>1.5</td>
<td>5.2</td>
<td>5.2</td>
<td>5.1</td>
</tr>
<tr>
<td>Italy</td>
<td>1.0</td>
<td>0.9</td>
<td>0.9</td>
<td>2.2</td>
<td>2.5</td>
<td>2.8</td>
</tr>
<tr>
<td>Japan</td>
<td>0.9</td>
<td>1.0</td>
<td>0.7</td>
<td>1.6</td>
<td>1.5</td>
<td>1.8</td>
</tr>
<tr>
<td>Korea</td>
<td>2.7</td>
<td>2.8</td>
<td>2.9</td>
<td>1.7</td>
<td>2.6</td>
<td>2.5</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>1.3</td>
<td>1.4</td>
<td>1.1</td>
<td>0.7</td>
<td>1.7</td>
<td>1.8</td>
</tr>
<tr>
<td>United States</td>
<td>2.9</td>
<td>2.7</td>
<td>2.1</td>
<td>3.3</td>
<td>-0.4</td>
<td>2.7</td>
</tr>
</tbody>
</table>
OECD Economic Outlook projections

Year-on-year, %. Arrows for 2018 and 2019

<table>
<thead>
<tr>
<th>Region</th>
<th>2018</th>
<th>2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>World G-20</td>
<td>3.7</td>
<td>3.5</td>
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<tr>
<td>Korea</td>
<td>2.7</td>
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<tr>
<td>United Kingdom</td>
<td>1.3</td>
<td>1.4</td>
</tr>
<tr>
<td>United States</td>
<td>2.9</td>
<td>2.7</td>
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<tr>
<td>Saudi Arabia</td>
<td>1.7</td>
<td>2.6</td>
</tr>
<tr>
<td>South Africa</td>
<td>0.7</td>
<td>1.7</td>
</tr>
<tr>
<td>Turkey</td>
<td>3.3</td>
<td>-0.4</td>
</tr>
</tbody>
</table>
NABE Outlook panelists continue to view the economy as having solid momentum entering 2019, but they foresee GDP growth cooling from 2.9% this year to 2.7% in 2019,” said NABE President Kevin Swift . . .
Houston’s 2019 Economic Outlook.
All align in Houston’s favor

- Energy
- U.S. Expansion
- Global Growth*
- Net Migration
- Construction
- Consumer Confidence
Employment Forecast for ’19

Adding Jobs

Losing Jobs
Employment Forecast for ’19

- Health Care
- Construction
- Administrative Support
- Professional Services
- Manufacturing
- Restaurants
- Retail
- Government
- Transportation
- Wholesale
- Oil and Gas
- Real Estate
- Other Services
- Educational Services
- Finance and Insurance
- Arts & Entertainment
- Hotels
- Information
71,000 Jobs
Houston Job Growth, 000s

Source: U.S. Bureau Labor Statistics

* Though November ‘18
** Partnership forecast
Extent of Revisions

Source: Partnership calculations based on U.S. Bureau of Labor Statistics data
Job growth will still be well above trend.
Employment Forecast for ’19

Jobs Added (000s)

<table>
<thead>
<tr>
<th>Sector</th>
<th>Jobs Added</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health care</td>
<td>9.0</td>
</tr>
<tr>
<td>Construction</td>
<td>8.9</td>
</tr>
<tr>
<td>Administrative Support</td>
<td>7.6</td>
</tr>
<tr>
<td>Professional Services</td>
<td>7.2</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>6.3</td>
</tr>
<tr>
<td>Restaurants</td>
<td>6.0</td>
</tr>
<tr>
<td>Retail</td>
<td>5.6</td>
</tr>
<tr>
<td>Government</td>
<td>5.1</td>
</tr>
</tbody>
</table>

Source: Greater Houston Partnership Forecast
Employment Forecast for ’19

Jobs Added (000s)

- Transportation: 2.6
- Wholesale Trade: 2.4
- Oil & Gas: 1.9
- Real Estate: 1.8
- Other Services: 1.8
- Education Services: 1.5
- Finance & Insurance: 1.4
- Arts/Entertainment: 1.0
- Hotels: 0.7
- Information: 0.2

Source: Greater Houston Partnership Forecast
Thank you
Houston Economic Outlook
Prepared by Patrick Jankowski
SVP Research