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
<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
U.S. Real Personal Income

Source: U.S. Bureau of Economic Analysis
U.S. Real Gross Domestic Product

$ Trillions

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

Source: U.S. Bureau of Labor Statistics

56 months

Jobs (Millions)
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
1-Month Net Change

Source: U.S. Bureau of Labor Statistics
Initial Claims for Unemployment Insurance

4-Week Moving Average, Seasonally Adjusted, 000s

Source: U.S. Employment and Training Administration
Source: U.S. Bureau of Labor Statistics

* seasonally adjusted
U.S. Labor Force Participation Rate

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
Growth Rate, % Change from Previous Quarter

Source: U.S. Bureau of Economic Analysis
Source: Federal Reserve Bank of Philadelphia
Future Capital Expenditures Index*

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

Source: Federal Reserve Bank of Philadelphia
U.S. Housing Permits

Seasonally Adjusted Annual Rate

Source: U.S. Census Bureau
U.S. Vehicle Sales

New, Light-Duty Vehicles, Millions

Source: National Automobile Dealers Association
U.S. Retail Sales

Billions of Dollars, Monthly, Seasonally Adjusted*

Source: U.S. Bureau of the Census

* excludes food services
So, what about Houston?
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
12-Month Running Totals

Source: Texas Workforce Commission
Source: Baker Hughes
## Energy Employment in Houston

<table>
<thead>
<tr>
<th>Sector</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>
</tr>
<tr>
<td>Oilfield Services</td>
<td>-20,800</td>
<td>9,200</td>
<td>41.8</td>
</tr>
<tr>
<td>Oilfield Equipment Mfg</td>
<td>18,000</td>
<td>5,100</td>
<td>22.9</td>
</tr>
<tr>
<td>Fab Metal Products</td>
<td>-20,800</td>
<td>8,700</td>
<td>44.2</td>
</tr>
<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
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?

<table>
<thead>
<tr>
<th>Area</th>
<th>WTI Oil Price</th>
<th>Number of Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Permian (Midland)</td>
<td>$47</td>
<td>15</td>
</tr>
<tr>
<td>Permian (Delaware)</td>
<td>$49</td>
<td>13</td>
</tr>
<tr>
<td>Bakken</td>
<td>$50</td>
<td>4</td>
</tr>
<tr>
<td>Permian (Other)</td>
<td>$52</td>
<td>18</td>
</tr>
<tr>
<td>SCOOP/STACK</td>
<td>$53</td>
<td>7</td>
</tr>
<tr>
<td>Other U.S. (Shale)</td>
<td>$54</td>
<td>7</td>
</tr>
<tr>
<td>Other U.S. (Non-shale)</td>
<td>$55</td>
<td>34</td>
</tr>
</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.
Q3 2018 | HOUSTON
OFFICE MARKET

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*

Source: Texas Comptroller of Public Accounts

* excludes gasoline purchases
12-Month Moving Total

Source: Houston Association of Realtors
Source: Institute for Supply Management - Houston
The energy business is profitable again.
Financial Performance in Q3/16

Lost Money

- Anadarko
- NEWPARK
- BAKER HUGHES
- Apache
- eog resources
- Marathon Oil
- OCEANEERING
- Oil States

Earned a Profit

- ExxonMobil
- Schlumberger
- ConocoPhillips
- N.Y.
- FMC
- bp
- Shell
- SWN
- Weatherford

Southwestern Energy
Financial Performance in Q3/18

Lost Money
- Oceaneering
- SWN
- Weatherford
- States

Earned a Profit
- Anadarko
- Apache
- ConocoPhillips
- eog resources
- Bamer
- ConocoPhillips
- Baker Hughes
- Chevron
- Hess
- Schlumberger
- Marathon Oil
- ExxonMobil
- FMC
- NEWPARK
- Shell
- Oxy
U.S. Economy

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.
Population

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

Source: U.S. Census Bureau
Corporate Relocations

Companies continue to move to Houston.
Significant Relocations and Expansions

[Logos of various companies]
Construction
Construction Contracts ($ Billions)

For the 12 months ending October of each year.

Source: Dodge Data & Analytics
What, Me Worry?
Source: U.S. Energy Information Administration (E.I.A.)
U.S. Crude Output vs. Houston Oil Jobs*

Source: U.S. E.I.A., Texas Workforce Commission
* Exploration, oil field services, related manufacturing, engineering
Exports and GDP

Exports Share of Houston GDP

'03: 8.9%

'17: 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>
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<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<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>
<td></td>
<td></td>
</tr>
<tr>
<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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<tr>
<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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<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</td>
<td>3.7</td>
<td>3.5</td>
</tr>
<tr>
<td>G-20</td>
<td>3.8</td>
<td>3.7</td>
</tr>
<tr>
<td>Australia</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Canada</td>
<td></td>
<td></td>
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<tr>
<td>Euro</td>
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</tr>
<tr>
<td>Germany</td>
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<tr>
<td>France</td>
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<tr>
<td>Italy</td>
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<td></td>
</tr>
<tr>
<td>Japan</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Korea</td>
<td>2.1</td>
<td>2.5</td>
</tr>
<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>
</tr>
<tr>
<td>Saudi Arabia</td>
<td>1.1</td>
<td>2.6</td>
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<tr>
<td>South Africa</td>
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<td>1.7</td>
</tr>
<tr>
<td>Turkey</td>
<td>3.3</td>
<td>0.4</td>
</tr>
</tbody>
</table>
NABE Outlook

Economic Growth Continuing in 2019,
But with Trade Tensions Adding to Downside Risk

“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
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>Industry</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)

Source: Greater Houston Partnership Forecast
Thank you