The Houston Economy

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The Federal Reserve Bank of Dallas, Houston Branch
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NOTES: Chart shows annualized percent growth by employment supersector. Numbers in parentheses are shares of total employment and may not sum to 100 percent due to rounding.
Employment

Gulf Metros Level Off
In 2014:2H

Index, 2008:Q3=100


Houston
Texas
Victoria
Corpus Christi
Beaumont

Employment

Biggest drop in Houston labor force since 2000

Note: Labor force is a six-month annual growth rate.
Oil & Gas Extraction
Drilling in Doldrums as Production Plateaus.

Oil-directed U.S. Crude Production (SA)
Direct Energy Jobs

Energy jobs tumble in first half.
Round 2 coming soon...

Percent Change

2013 2014 2015

Support activities for mining
Extraction
Agriculture, construction, & mining machinery
Architectural, Engineering, & Related
Fabricated metals

NOTE: data are three-month annual percent change.
Durable Goods manufacturing

Manufacturing still hemorrhaging.

NOTES: Data show the annualized and seasonally adjusted change from December to February. Sorted from largest to smallest industry.
Refining & Petrochemicals
Refining & Petrochemicals

- Cheaper raw materials
  - Crude oil and NGLs

- Cheaper Heat and electricity
  - NGLs, Natural Gas

Gulf Coast Refiner and Chemical Margins still healthy

Cost Advantage persists... BUT
Downstream Advantage

Downstream Advantage Erosion Ending?

Oil/Gas Ratio

Dollar Spread

SOURCE: Energy Information Administration.
Downstream Advantage

Ethylene Margins Dip; Refining margins hold.

- Refiner margins
- Ethylene margins

Cents per pound
Dollars per barrel
Refining & Petrochemicals


Construction Workers in Shortage, particularly specialized skills.

Projects will partially counter/absorb job losses in oil field.

Many Projects Wont Get Built. Construction Jobs To Fall In 2017.
International Trade
Real Exports and Imports

Billions of dollars*

*Values adjusted to current dollars using Houston consumer price index.
SOURCE: U.S. Census Bureau and Wisertrade, author's adjustments.
## Texas Exports

<table>
<thead>
<tr>
<th>Nominal Value of Texas Exports</th>
<th>2014 Jan-Jul</th>
<th>2015 Jan-Jul</th>
<th>Contribution to Total Change</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total</strong></td>
<td>$167,736</td>
<td>$154,833</td>
<td>-7.7</td>
</tr>
<tr>
<td><strong>27 Hydrocarbon fuels and refined product</strong></td>
<td>$44,442</td>
<td>$33,536</td>
<td><strong>-6.5</strong></td>
</tr>
<tr>
<td><strong>29 Organic Chemicals</strong></td>
<td>$10,925</td>
<td>$9,223</td>
<td><strong>-1.0</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>HTS Export Category</th>
<th>2014 Value</th>
<th>2015 Value</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>84 NUCLEAR REACTORS, BOILERS, MACHINERY AND MECHANICAL APPLIANCES; PARTS THEREOF</td>
<td>$26,434</td>
<td>$25,673</td>
<td>-0.5</td>
</tr>
<tr>
<td>87 VEHICLES, OTHER THAN RAILWAY OR TRAMWAY ROLLING STOCK, AND PARTS AND ACCESSORIES THEREOF</td>
<td>$10,637</td>
<td>$11,262</td>
<td>0.4</td>
</tr>
<tr>
<td>10 CEREALS</td>
<td>$3,413</td>
<td>$2,928</td>
<td>-0.3</td>
</tr>
<tr>
<td>12 OIL SEEDS AND OLEAGINOUS FRUITS; MISCELLANEOUS GRAINS, SEEDS AND FRUITS; INDUSTRIAL OR MEDICINAL PLANTS; STRAW AND FODDER</td>
<td>$1,225</td>
<td>$783</td>
<td>-0.3</td>
</tr>
<tr>
<td>85 ELECTRICAL MACHINERY AND EQUIPMENT AND PARTS</td>
<td>$14,245</td>
<td>$14,642</td>
<td>0.2</td>
</tr>
<tr>
<td>88 AIRCRAFT, SPACECRAFT, AND PARTS</td>
<td>$2,258</td>
<td>$2,546</td>
<td>0.2</td>
</tr>
<tr>
<td>39 PLASTICS AND ARTICLES THEREOF</td>
<td>$11,324</td>
<td>$11,566</td>
<td>0.1</td>
</tr>
<tr>
<td>73 ARTICLES OF IRON OR STEEL</td>
<td>$3,764</td>
<td>$3,524</td>
<td>-0.1</td>
</tr>
<tr>
<td>All Other HTS Export Categories</td>
<td>$15,495</td>
<td>$13,370</td>
<td>0.0</td>
</tr>
</tbody>
</table>
Texas Hydrocarbon Exports

Contribution of higher volumes to Texas exports offset by falling prices, year-to-date

Billions of dollars

2014

2015

2015*

7.3%

*2015 Volumes @ 2014 Prices

Note: Data reflects HTS Codes 27 and 29.
Texas hydrocarbon exports dive in 1H 2015 due to oil price decline and strong dollar.

Note: Data in parenthesis are real annualized export values in billions of dollars through 2015:Q2.

SOURCE: U.S. Census Bureau and Wisertrade.

*year-to-date, annual rate.
# Texas hydrocarbon exports

<table>
<thead>
<tr>
<th>New Exports:</th>
<th>Old Exports:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Liquefied Natural Gas (Methane)</td>
<td>Motor Fuel (Gasoline, Diesel, Jet Fuel, Etc.)</td>
</tr>
<tr>
<td>Natural Gas Liquids (Propane, Butane, Etc.”)</td>
<td>Petrochemicals (PVC, Coatings, Etc.”)</td>
</tr>
<tr>
<td>“Stabilized” Condensate (Whatever that means)</td>
<td>Other Refined Products (lubricants, solvents, etc)</td>
</tr>
<tr>
<td>Crude Oil???</td>
<td></td>
</tr>
</tbody>
</table>
Construction & Real Estate
Construction & Real Estate

Construction Jobs in retreat.

<table>
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<tr>
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<th>Last three months</th>
<th>Year-to-date</th>
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<tbody>
<tr>
<td>Total construction</td>
<td>-0.8</td>
<td>-1.1</td>
</tr>
<tr>
<td>Construction of buildings</td>
<td>-3.5</td>
<td>-7.6</td>
</tr>
<tr>
<td>Heavy &amp; civil construction</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Specialty trades</td>
<td>0.0</td>
<td>0.4</td>
</tr>
<tr>
<td>Real estate &amp; leasing</td>
<td>1.4</td>
<td>-5.2</td>
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*Annualized growth rate; seasonally adjusted.
Construction Activity and Jobs Tend to Follow Occupancy

Square feet**

Square feet under construction**

Construction jobs*

Occupancy rate

Occupancy rate jobs index*

*Construction jobs are indexed, 2003:Q2=81.5.
**Population adjusted.
NOTE: Occupancy and square feet under construction are centered three-quarter moving averages; final point is a two-quarter average.
SOURCES: CBRE; author's adjustments.
Home Sales

Low supply and strong demand help push up price

Index (Jan2000=100)

Months supply of inventory


Median  Home Sales*  Month's of supply

*per the 6mma of payroll employment
Note: Seasonally adjusted
SOURCE: Houston Association of Realtors. Author's calculations.
Texas Medical Center
Health Employment Growth

Hospitals outperform, Other health-sectors below average

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<th>May to August</th>
<th>Year to date</th>
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<tr>
<td>Total</td>
<td>3.4</td>
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<td>Ambulatory health (48%)</td>
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<td>Hospitals (26%)</td>
<td>5.5</td>
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May to August
Year to date

Total
Ambulatory health
Hospitals
Other health

Percent
6 5 4 3 2 1 0

Health Employment Growth

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May to August
Year to date

Total
Ambulatory health
Hospitals
Other health
NASA'S budget for FY2016 is $18 Billion dollars. The JSC will receive $4.6 Billion.
Outlook
Outlook
Diversification After Oil Bust Made Houston More Like U.S.

*Higher values mean regional industry mix resembles national industry mix.

NOTE: Industry definitions changed in 1990.

PMI suggests weaker employment data ahead.

NOTES: Employment growth is a monthly, seasonally adjusted annual rate. Composite index values >50 indicate expansion, and index values <50 indicate contraction.
Outlook

Job Ads Suggest Weak Employment Data Ahead

Percent growth

Employment
Total ads
New ads

NOTE: Total and new ads are weighted moving averages, shifted forward two months.
Note: contribution to m/m percent change in number of total ads.
Composite leading indices point to zero-to-modest growth

Note: data are annualized three-month percent changes.

SOURCE: Conference Board. Seasonal and other adjustments by the DallasFed.
Outlook

A grim outlook for Upstream.
A good outlook for downstream.
A Healthier U.S. Economy will help?

Houston and the Texas Gulf Coast to Grow
-0.5 to 0.5 Percent in 2015
The Houston Economy

Jesse Thompson
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