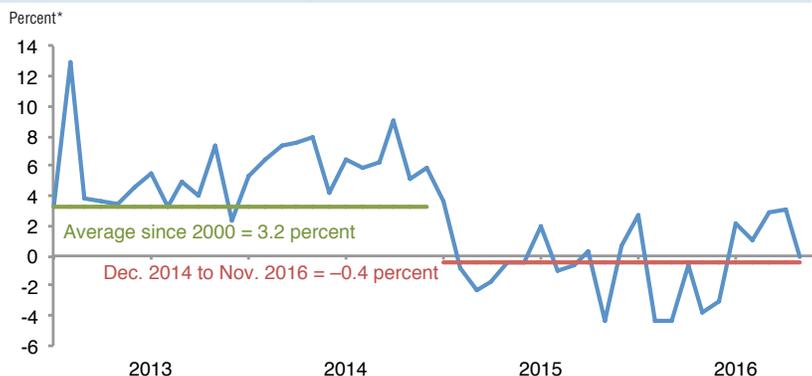


FEDERAL RESERVE BANK OF DALLAS • DECEMBER 27, 2016

**Summary** Improved conditions in the energy industry continue to affirm an increasingly positive outlook for Houston, although a broad-based recovery remains elusive. Total employment in the metropolitan area is growing moderately. Oil prices and the rig count are recovering, but energy jobs have yet to follow. While many sectors have improved since midyear, the construction and manufacturing sectors continue to lose jobs. Altogether, Houston is showing signs of improvement and the outlook is becoming more positive.

## Houston Business-Cycle Index



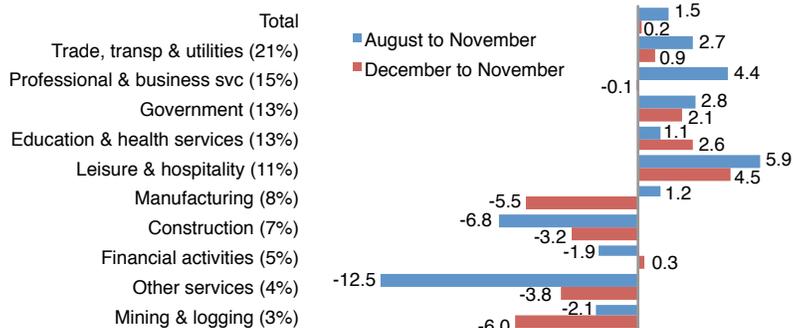
\* Annualized month-over-month growth rate.

SOURCE: Dallas Fed.

▶ The **Houston Business-Cycle Index** contracted an annualized 0.4 percent from December 2014 to November 2016. However, the index has grown an annualized 1.8 percent over the past five months, suggesting that the economy has begun a recovery. The index was essentially unchanged in November, and the growth rate for October was revised up to 3.2 percent from 2 percent.

## Employment

### Employment Growth



NOTES: Data show seasonally adjusted and annualized percentage growth by industry supersector. Numbers in parentheses represent share of total employment and may not sum to 100 due to rounding.

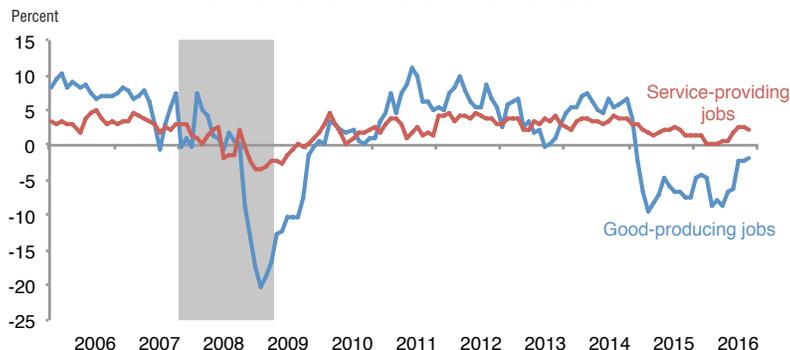
SOURCES: Bureau of Labor Statistics; adjustments by the Dallas Fed.

▶ Total nonfarm employment in **Houston** grew an annualized 1.5 percent from August to November. Growth came mostly from leisure and hospitality (4,600 jobs), professional and business services (5,000) and trade, transportation and utilities (4,100). Construction led job losses last month (-3,700), followed by other services such as auto mechanics, dry cleaning and animal boarding (-3,500).

▶ With the November data, Houston has added 6,000 jobs this year (annualized), a 0.2 percent growth rate. The rate is on par with the December-to-December job growth observed in 2015.

▶ Houston's November unemployment rate was 4.6 percent—equal to the U.S. and Texas rates—and its October rate was revised up to 4.8 percent. Unemployment has now averaged 4.8 percent since June, and the labor force has grown at a mild pace of 0.5 percent over that time.

### Goods and Services Job Growth



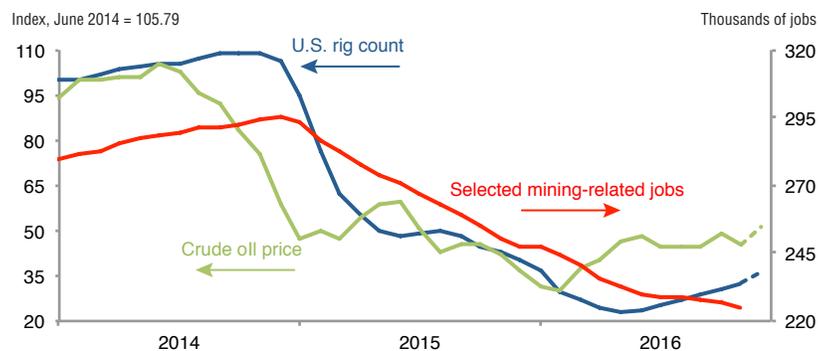
NOTES: Data are three-month annual growth rates. The gray bar indicates U.S. recession.

SOURCES: Bureau of Labor Statistics; adjustments by the Dallas Fed.

▶ Service sector employment growth, which had been accelerating, slowed slightly over the three months ending in November to 2.3 percent. This leaves service sector growth above its average pace since 2000 of 2 percent. The goods-producing sector extended its five-month trend of narrowing job losses. Goods-producing jobs fell 1.8 percent in the three months ending in November, the smallest decline since the oil bust began.

## Oil & Gas

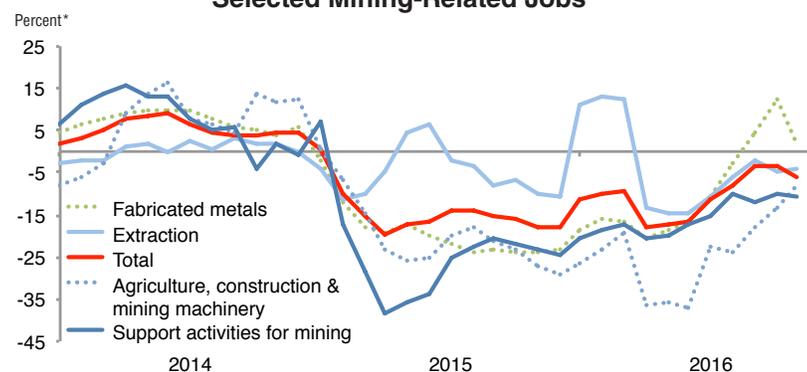
### U.S. Rig Count and Houston Energy Jobs



NOTE: Dashed lines are estimates based data available through Dec.16.

SOURCES: Baker Hughes; Energy Information Administration; Bureau of Labor Statistics; seasonal and other adjustments by the Dallas Fed.

### Selected Mining-Related Jobs



\*Three-month change, annualized.

NOTE: Architectural, engineering and related jobs also included in total.

SOURCES: Bureau of Labor Statistics; seasonal and other adjustments by the Dallas Fed.

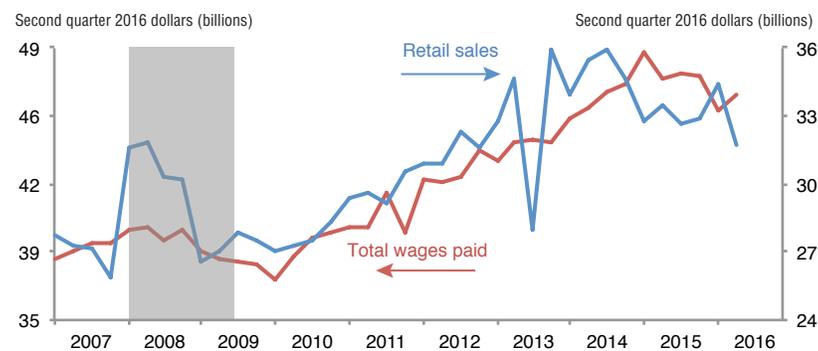
► Changes in the U.S. rig count tend to lag behind changes in the price of West Texas Intermediate crude (WTI). The recovery of WTI from below \$30 in February 2016 to the upper \$40 range by May presaged the slow but steady recovery in the rig count. The number of active rigs climbed to 637 in mid-December.

► On Nov. 30, the Organization of the Petroleum Exporting Countries (OPEC) announced that it and several non-OPEC producers would reduce the supply of crude oil to the world in the first half of 2017. WTI rose to average \$51 in the weeks that followed. Should markets continue to support higher oil prices through the winter months, the pace of recovery in the rig count—and the jobs that follow—may accelerate.

► From December 2014 to November 2016, Houston lost 70,200 jobs (24 percent) in sectors related to the rig count. Roughly 25,000 job losses came from the mining sector directly, while another 35,000 came from energy-related manufacturing.

► However, prospects are improving across the board for mining-related sectors, and the rate of job loss has slowed substantially since July.

## Wage and Retail Sales



SOURCES: Texas State Comptroller; Bureau of Labor Statistics; adjustments by the Dallas Fed.

► High-wage job losses related to the oil bust have been only partially offset by job gains in lower-wage industries such as leisure and hospitality. Real total wages paid in the Houston metro area remained 4.4 percent below their first quarter 2015 peak despite an uptick in the second quarter (the most recent data available). Real retail sales extended their fall in the second quarter. Sales were down 11.6 percent from their third quarter 2014 peak.

NOTE: Data may not match previously published numbers due to revisions.

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