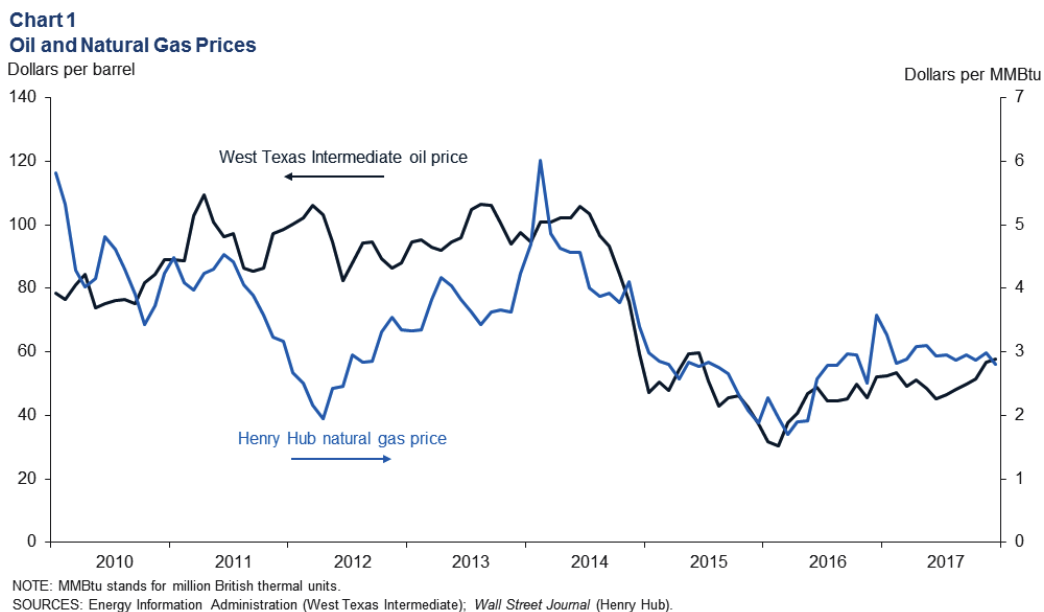


January 2018

Indicators for the Texas oil and gas sector continued to improve in December. Prices for West Texas Intermediate (WTI) crude oil rose in December. Texas oil and gas employment expanded further in November, marking 10 consecutive months of increases. Both U.S. and Permian Basin crude oil production continued to rise. U.S. crude inventories have fallen since September, providing support to WTI prices. Strong demand for diesel is helping lift diesel prices above gasoline prices.

Oil and Natural Gas Prices

Continuing drawdowns in Organization for Economic Cooperation and Development (OECD) inventories, geopolitical tensions in the Middle East and an outage on the Forties pipeline in the North Sea helped push the WTI average price per barrel to \$57.88 in December (Chart 1). The Forties pipeline, which moves crude from the North Sea to the U.K., was offline from Dec. 11 to Dec. 30 after a crack was discovered in the pipeline, impacting production in the region. WTI prices have further increased to roughly \$64 per barrel for the week ending Jan. 12—the highest level in over three years.

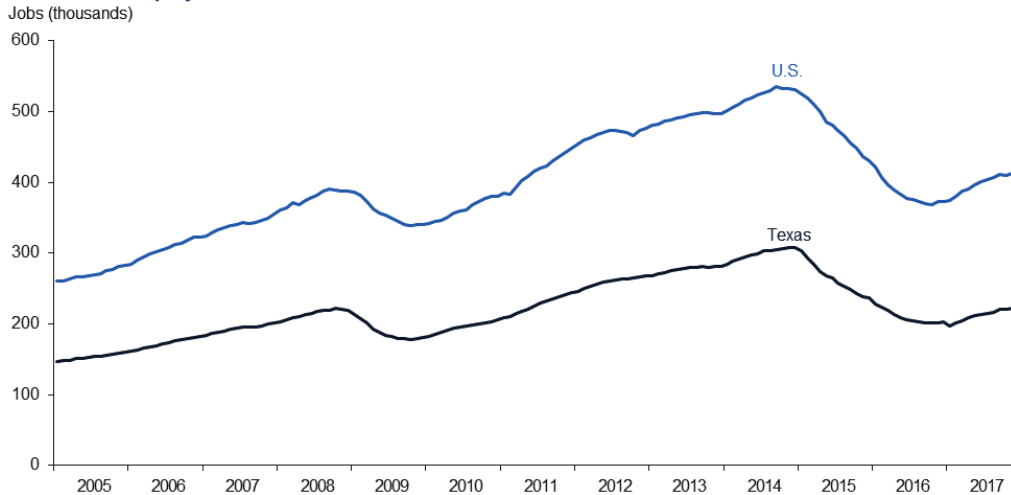


Henry Hub natural gas prices decreased to \$2.80 per million British thermal units (MMBtu) in December, compared with \$2.99 in November, due to rising natural gas production. The Energy Information Administration (EIA) predicts that U.S. dry natural gas production will increase from 73.6 billion cubic feet per day (bcf/d) in 2017 to 80.4 bcf/d in 2018, an increase of 9.3 percent to an all-time high.

Employment and Eleventh District Production

Texas oil and gas employment expanded in November by 1,600 jobs to roughly 222,600, with most of the increase coming from support activities for mining (*Chart 2*). Since January 2017, support activities for mining have added 24,900 jobs, while oil and gas extraction has only added 1,300. U.S. oil and gas employment increased in November by 3,500 jobs to roughly 413,400, with Texas accounting for 54 percent of the total.

Chart 2
Oil and Gas Employment



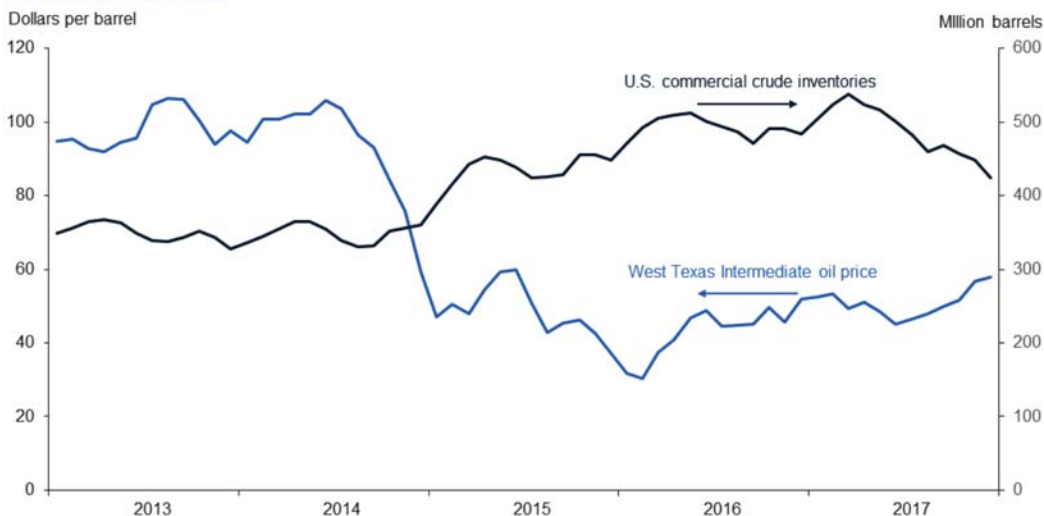
NOTES: Oil and gas employment is calculated by summing data series for oil and gas extraction and support activities for oil and gas operations for the U.S. and summing oil and gas extraction and support activities for mining employment for Texas. All values are seasonally adjusted.
SOURCES: Bureau of Labor Statistics; seasonal and other adjustments to Texas employment data by the Dallas Fed.

Permian Basin production rose in December by 69,700 barrels per day (b/d) to 2.72 million, and Eagle Ford production was up 2,200 b/d to 1.24 million. The EIA forecasts Permian production to grow to 3.6 million barrels per day (mb/d) by the end of 2019.

Crude Inventories

U.S. commercial crude inventories declined from 448.1 million barrels in November to 424.5 million in December, the lowest level since February 2015 (*Chart 3*). Declining crude inventories in the U.S. have provided support for WTI prices, which are currently at levels not seen since December 2014. Refiners in the U.S. continue to run at elevated rates, with December utilization averaging 94.7 percent, above the five-year average of 92.1 percent.

Chart 3
U.S. Crude Inventories

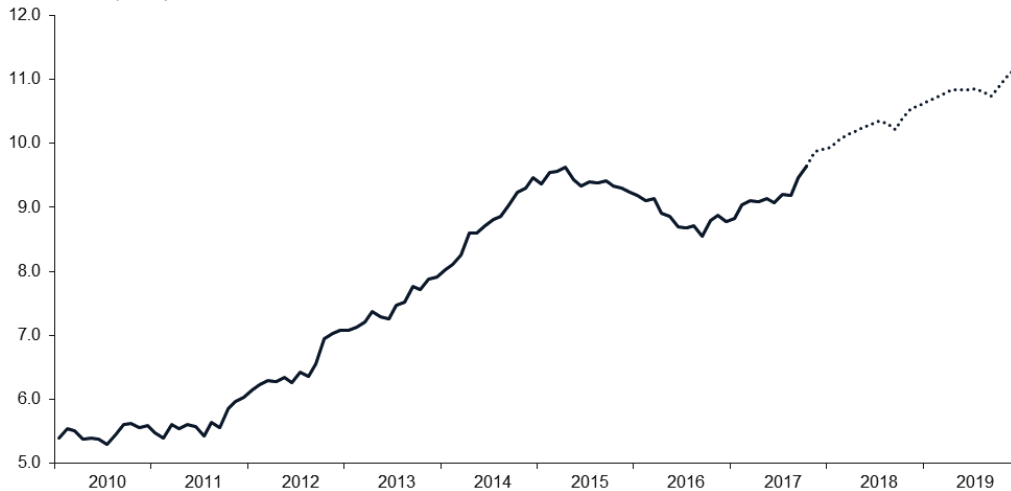


NOTE: Commercial crude inventories for December 2017 are as of week ending Dec. 29 from the Weekly Petroleum Status Report.
SOURCES: Energy Information Administration, *Monthly Energy Review* and *Weekly Petroleum Status Report*.

U.S. Crude Production

U.S. crude oil production increased from 9.47 mb/d in September to 9.64 mb/d in October (*Chart 4*). Growth in production continues to be concentrated in the Permian, which currently has slightly over half of all U.S. oil-directed rigs. The EIA projects that production will increase to 10.6 mb/d by the end of 2018, above the U.S. all-time high of 10.0 mb/d recorded in November 1970.

Chart 4
U.S. Crude Oil Production
Million barrels per day

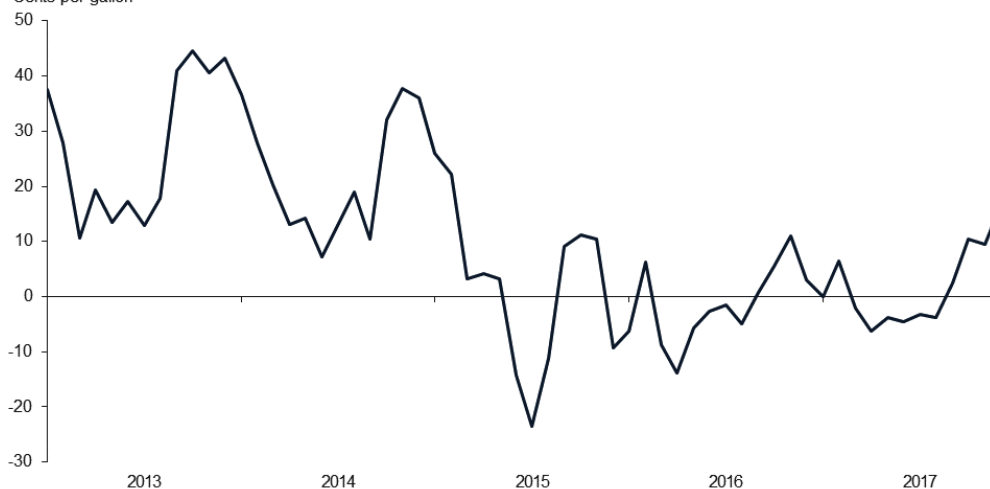


NOTE: Dotted line denotes estimates/forecasts from November 2017 to December 2019 taken from the Short-Term Energy Outlook.
SOURCE: Energy Information Administration, *Short-Term Energy Outlook*, January 2018.

Diesel–Gasoline Price Differential

The U.S. Gulf Coast (USGC) diesel–gasoline price differential rose from 9.4 cents in November to 16.5 cents in December, the highest level since February 2015 (*Chart 5*). The decline in the price of crude oil in late 2014 spurred consumer demand for gasoline, pushing prices up for gasoline relative to diesel. However, a recent pickup in global diesel demand has pushed up diesel prices relative to gasoline in the past few months. The latest EIA monthly report notes that growing global demand for diesel, coupled with higher oil prices, is likely to lead to higher retail diesel prices in the U.S. in 2018 and 2019. The diesel–gasoline price differential was calculated by taking the USGC diesel spot price and subtracting the USGC gasoline spot price.

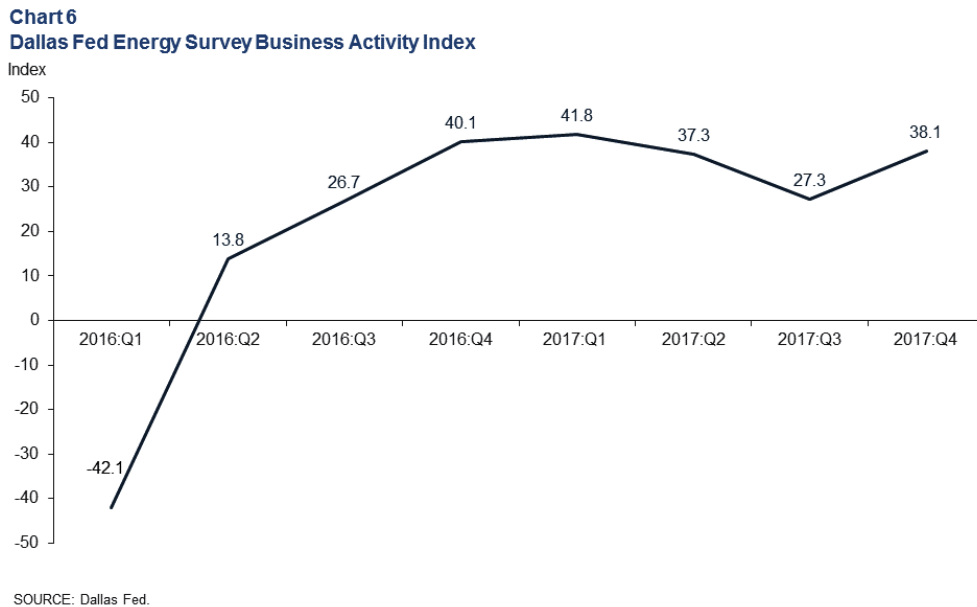
Chart 5
U.S. Gulf Coast Diesel–Gasoline Differential
Cents per gallon



NOTE: Differential calculated as U.S. gulf coast ultra-low sulfur number 2 diesel spot price minus U.S. gulf coast conventional gasoline regular spot price.
SOURCE: Energy Information Administration.

Energy Survey

Activity in the Eleventh Federal Reserve District's energy sector gained momentum in fourth quarter 2017, according to the Dallas Fed Energy Survey. The business activity index—the survey's broadest measure of business conditions—climbed over 10 points to 38.1, with the increase driven by the exploration and production side of the industry (*Chart 6*). Oil and gas production increased for the fifth quarter in a row, with responses suggesting production rose at an accelerated rate. Special questions in this quarter's release found that a little more than half of respondents think the oil rig count will be higher six months from now, but almost all respondents think WTI crude prices need to be more than \$60 to see a substantial increase in the oil rig count.



Additional charts of interest can be found in the Dallas Fed's monthly energy slideshow.
<https://www.dallasfed.org/research/energy/slideshow.aspx>

About Energy Indicators

Questions can be addressed to Kunal Patel at kunal.patel@dal.frb.org. *Energy Indicators* is released every third Thursday of the month and can be received by signing up for an email alert. For additional energy-related research, please visit the Dallas Fed's energy home page.