Energy Indicators

Federal Reserve Bank of Dallas

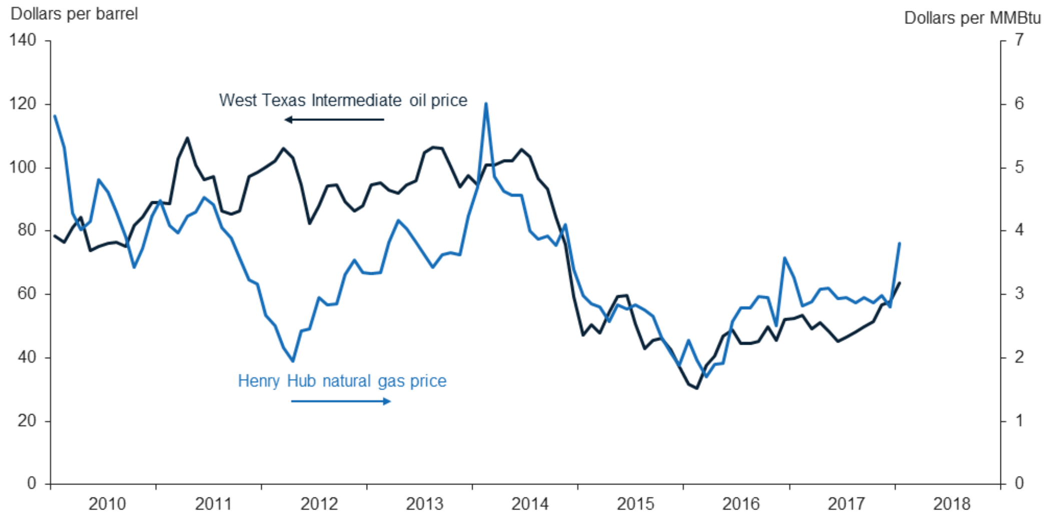
February 2018

Prices for West Texas Intermediate (WTI) crude oil went up in January to a three-year high. Permian Basin crude oil production continued to increase as the oil rig count continues to rise. Gasoline exports rose to an all-time high in November, with more than half going to Mexico. The spread between WTI and Brent crude has narrowed slightly.

Oil and Natural Gas Prices

The average WTI spot price increased from $57.88 per barrel in December to $63.70 in January, the highest level in over three years (*Chart 1*). Prices for WTI surged during the first week of January as protests broke out in Iran, OPEC's third-largest producer. Continuing declines in U.S. crude and refined product inventories coupled with strong OPEC compliance further helped build support for prices of WTI through the rest of January.

Chart 1
Oil and Natural Gas Prices



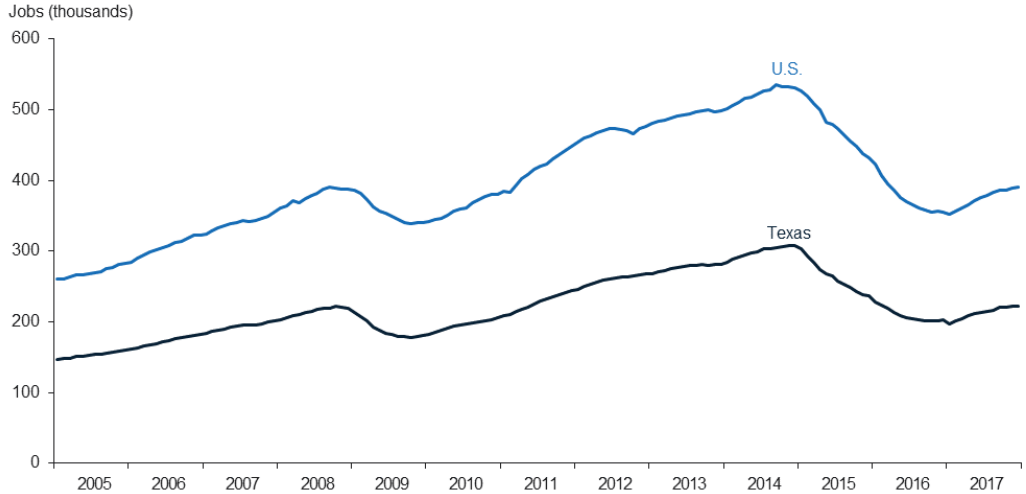
NOTE: MMBtu stands for million British thermal units.
SOURCES: Energy Information Administration (West Texas Intermediate); *Wall Street Journal* (Henry Hub).

Henry Hub natural gas prices jumped to $3.81 per million British thermal units (MMBtu) in January due to extremely cold weather the first week of the month. However, the Henry Hub futures curve remains below $3 per MMBtu for the next couple of years on expectations that U.S. dry natural gas production will rise significantly in 2018 and provide ample supply to meet demand.

Employment

Texas oil and gas employment declined in December by 400 jobs to roughly 221,600, the first decline in over 10 months (*Chart 2*). The small decline in Texas oil and gas employment is likely to be temporary as both rig counts and completions continue to rise in the state. U.S. oil and gas employment increased in December by 800 jobs to roughly 390,100, with Texas accounting for 57 percent of the total.

Chart 2
Oil and Gas Employment

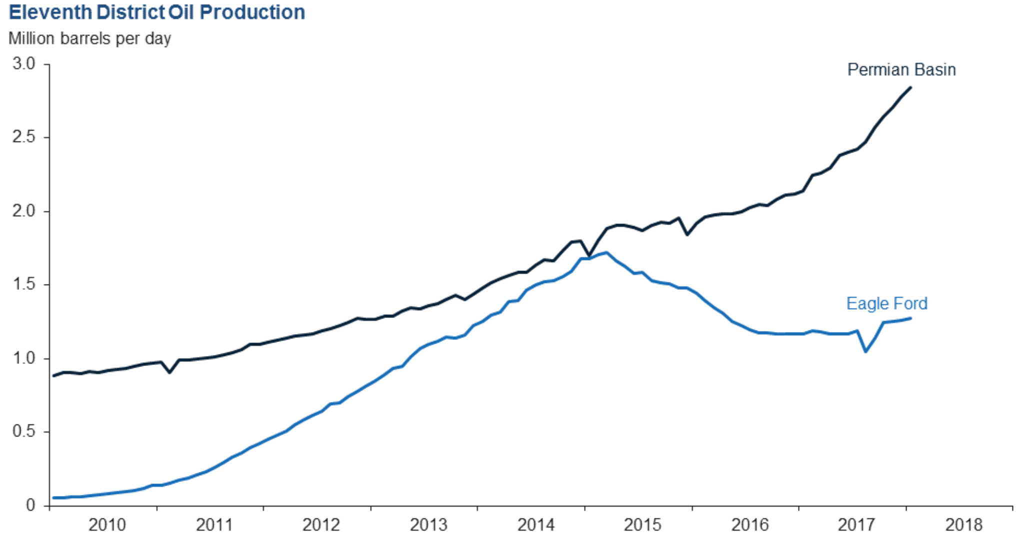


NOTES: Oil and gas employment is calculated by summing data series for oil and gas extraction and support activities for oil and gas operations for the U.S. and summing oil and gas extraction and support activities for mining employment for Texas. All values are seasonally adjusted.
SOURCES: Bureau of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

Eleventh District Production

Permian Basin production rose in January by 68,900 barrels per day (b/d) to 2.85 million, and Eagle Ford production was up 9,000 b/d to 1.27 million (*Chart 3*). The Midland-to-Sealy Pipeline entered partial service in November 2017 and flowed 330,000 b/d through the rest of the fourth quarter. The pipeline is expected to ramp up its transportation capacity to 450,000 b/d by second quarter 2018, helping alleviate transportation constraints in the basin. The latest data suggest that production in the Eagle Ford is picking up and has increased 27,800 b/d since October 2017.

Chart 3
Eleventh District Oil Production

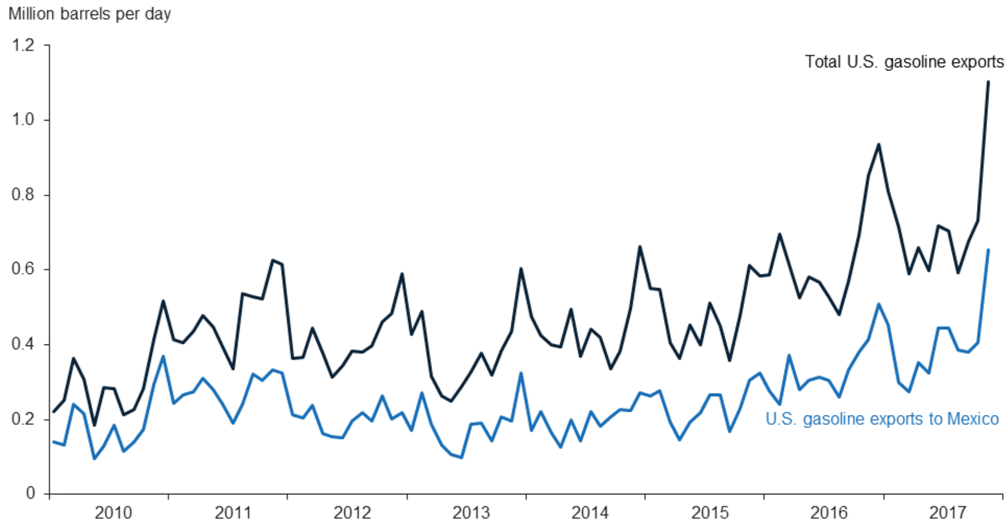


SOURCE: Energy Information Administration, Drilling Productivity Report, January 2018.

Gasoline Exports

U.S. gasoline exports increased from 0.73 million b/d in October to 1.10 million b/d in November, an all-time high (*Chart 4*). A significant portion of U.S. gasoline exports goes to Latin America due to its proximity and high demand outstripping refining capacity in the region. Exports to Mexico have rapidly increased, as unplanned outages resulted in refinery utilization rates under 50 percent for parts of 2017 in Mexico. Refiners in the U.S. ran at above-normal rates to meet demand, with November utilization averaging 92.5 percent, above the five-year average of 90.5 percent.

Chart 4
U.S. Gasoline Exports

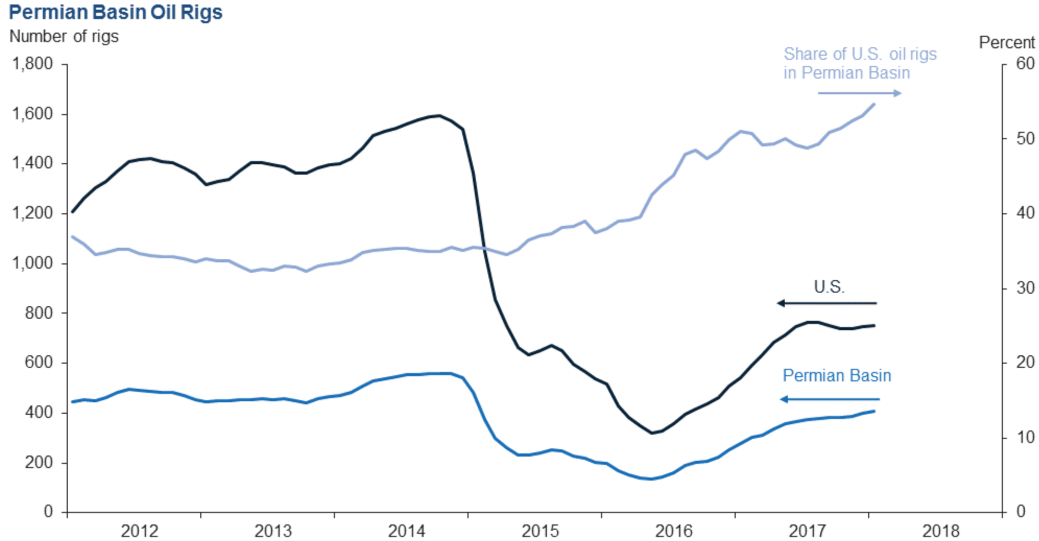


SOURCE: Energy Information Administration, *Petroleum Supply Monthly*, January 2018.

Permian Basin Rig Counts

Oil-directed rig counts increased from 398 in December to 410 in January in the Permian Basin, the highest level since early 2015 (*Chart 5*). Operators continue to move rigs to the Permian, which currently has 55 percent of all U.S. oil-directed rigs. The stacked nature of the basin along with the immense size of the Permian is likely providing economic opportunities for operators. For example, Exxon Mobil noted in January that the company can develop and produce its acreage in the Permian at under $15 a barrel. Drilled but uncompleted wells (DUCs) in the Permian have increased to 2,880 in January and are slightly more than double the number of DUCs in January last year, as wells drilled continue to exceed wells completed.

Chart 5
Permian Basin Oil Rigs

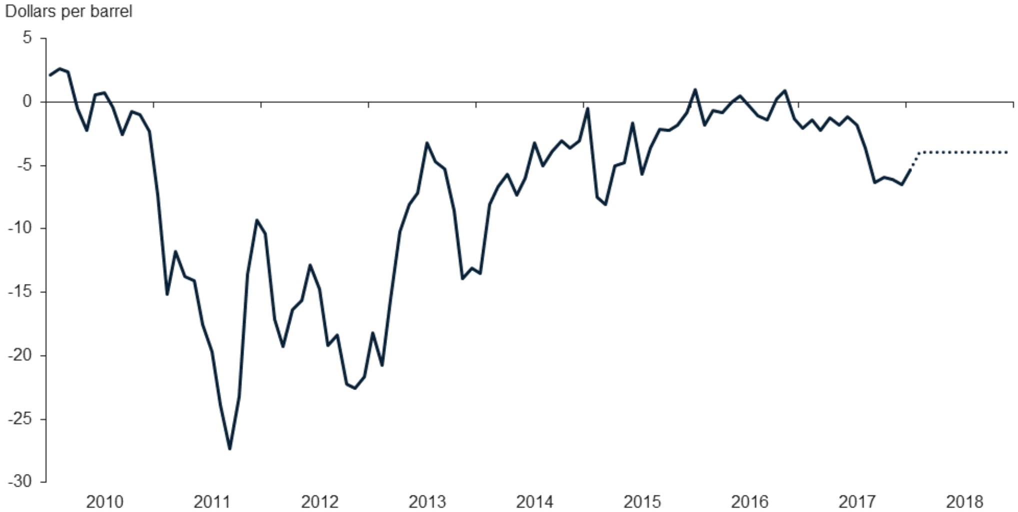


NOTE: All monthly values are calculated by taking the average of the weekly data.
SOURCES: Baker Hughes.

WTI–Brent Spread

The spread between WTI and Brent narrowed to -$5.38 per barrel in January on average, as inventories in Cushing, Oklahoma, declined (*Chart 6*). Crude inventories in Cushing fell significantly from 49.0 million barrels on Dec. 29 to 36.3 million on Feb. 2. Strong U.S. exports and the new Diamond Pipeline running from Cushing to Memphis, Tennessee, helped lower inventories. The Energy Information Administration expects the spread to be -$4 per barrel for the rest of 2018.

Chart 6
WTI–Brent Spread



NOTE: Dotted line denotes forecasts from February 2018 to December 2018 taken from the Short-Term Energy Outlook.
SOURCES: Energy Information Administration; author's calculations.

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.