

Energy

Oil Prices Plummet amid Growing Supply–Demand Imbalances

Fourth Quarter 2014

Oil prices plunged during the fourth quarter as a result of expanding world oil supply and changes in expectations for future supply and demand. Libyan oil production made an unexpected comeback starting in the third quarter, which, along with increasing production in the United States, pushed global oil supply above demand.

Despite falling prices, the Organization of the Petroleum Exporting Countries announced in November that it planned on keeping its crude oil production target at 30 million barrels per day (mb/d). Although Saudi Arabia has been a swing producer in the past, cutting or increasing production in response to global supply changes, the Saudis indicated their intention to maintain current export market share rather than cut back production. Forecasts of world oil consumption growth have been revised downward, reflecting a weaker outlook for the global economy.

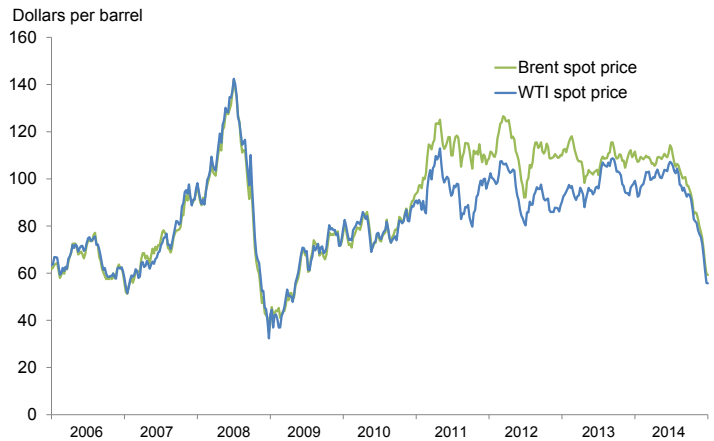
Prices

Oil prices have dropped more than \$30 per barrel since the end of the third quarter (*Chart 1*). West Texas Intermediate (WTI), the domestic benchmark, ended the fourth quarter at \$55.74 per barrel, while Brent, the global benchmark, fell to \$59.22. Retail gasoline prices declined 80 cents during the quarter to average \$2.55 per gallon. Diesel fell 30 cents to \$3.42 per gallon.

Market uncertainty about oil prices surged in the fourth quarter. The Chicago Board Options Exchange (CBOE) OVX Index, a measure of oil price uncertainty based on options prices, has risen to levels not seen since the euro zone debt crisis emerged in 2011. Overall macroeconomic uncertainty, as proxied by the CBOE VIX Index, has returned to lower levels after a brief spike, indicating that volatility in the oil market is not driven by uncertainty in the macroeconomic outlook but rather by uncertainty about the future supply of oil.

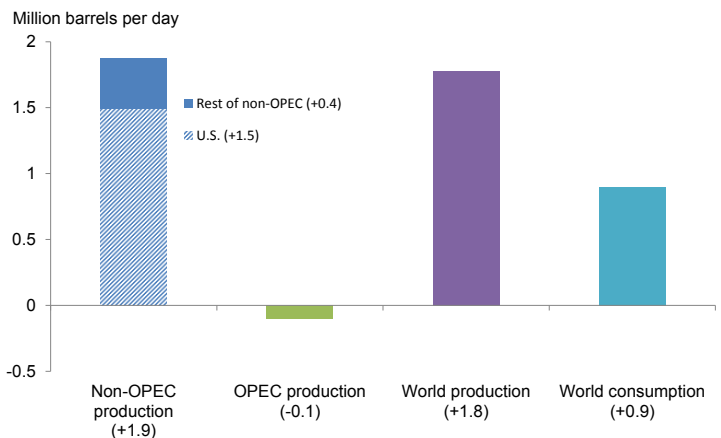
Oil prices are expected to remain low in 2015. According to the Energy Information Administration (EIA), Brent crude is forecast to average \$68 per barrel in 2015, a decline of \$35 from the end of third quarter 2014. The EIA projects that Brent will average \$63 per barrel during the first half of 2015 and rise to an average of \$73 in the second half. WTI is forecast to average \$63 per barrel, down \$30 from the September forecast.

Chart 1
Oil Prices Continue to Drop



SOURCE: Wall Street Journal.

Chart 2
Oil Supply Growth Outpaces Demand in 2014



SOURCE: Energy Information Administration.

International Supply and Demand

Global oil supply is expected to outpace demand in 2014 due to recent supply growth (*Chart 2*). The world supply of liquid fuels is expected to average 92 million barrels per day (mb/d) in 2014, while demand is expected to average 91.4.¹

The U.S. continues to be a primary driver of supply growth, with daily liquid fuels production increasing by 1.5 mb/d in 2014. U.S. crude oil production rose to 8.6 mb/d in 2014, up 15.6 percent from 2013. U.S. production of natural gas liquids increased to nearly 3 mb/d in

2014, up 13 percent from 2013, while production of other liquids, mainly ethanol, held steady, averaging just over 1 mb/d in 2014.

World consumption growth in 2014 will come in lower than previously expected. In January 2014, demand was forecast to grow 1.2 mb/d for the year, but December estimates show demand increased only 0.9 mb/d, 25 percent less than the January estimate. The forecast for 2015 world consumption has been revised downward by 570,000 barrels per day since the end of the third quarter.

The growing imbalance between supply and demand has led to substantial revisions to forecasts for 2015 inventory accumulation (*Chart 3*). Prior to Libya's surprise comeback in the third quarter, the EIA had predicted a negligible increase in inventory accumulation, about 10,000 barrels per day on average for 2015, but in December, the organization forecast that oil and oil products would be put into storage in late 2014 and throughout most of 2015—peaking in second quarter 2015 at 840,000 barrels per day. The increase in inventories will keep downward pressure on oil prices through much of next year.

U.S. Energy Indicators

U.S. crude oil production continues to grow, with fourth-quarter production averaging around 9 mb/d. Weekly estimates show that the U.S. produced over 9 mb/d throughout November, reaching 9.1 mb/d in mid-December.

Texas crude oil production was an estimated 3.4 mb/d in October, up 800,000 barrels per day year over year. Production in the Eagle Ford Shale, which makes up over 40 percent of total Texas crude production, increased 6 percent in the fourth quarter to 1.6 mb/d. In the Permian Basin, which includes parts of both Texas and New Mexico, production climbed nearly 7 percent in the fourth quarter to 1.8 mb/d.

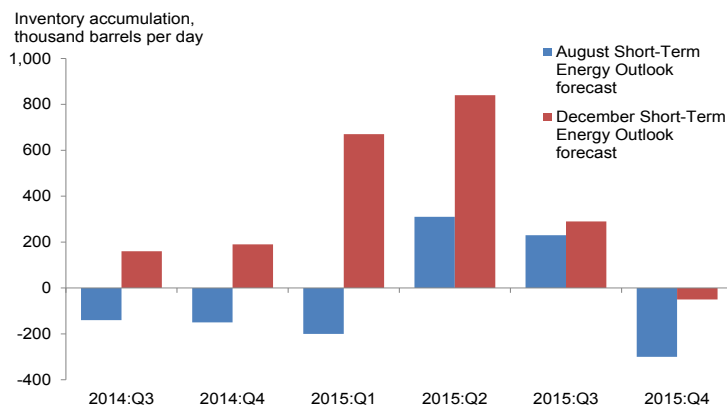
Declining oil prices are affecting the rig count. The total number of rigs drilling for oil and natural gas in the U.S. and Texas fell nearly 5 percent during the fourth quarter (*Chart 4*). While the number of oil rigs fell during the quarter, the number of gas rigs was mostly unchanged. Much of the decline in the oil rig count is a result of fewer rigs doing traditional vertical, rather than horizontal, drilling.

U.S. demand for motor gasoline increased about 1.1 percent in the fourth quarter and was up 2.1 percent year over year. Diesel consumption rose nearly 5 percent year over year in the third quarter, but fourth-quarter diesel consumption is expected to be about 3 percent lower than in fourth quarter 2013. Diesel consumption is forecast to grow 3.1 percent in 2015.

Natural Gas

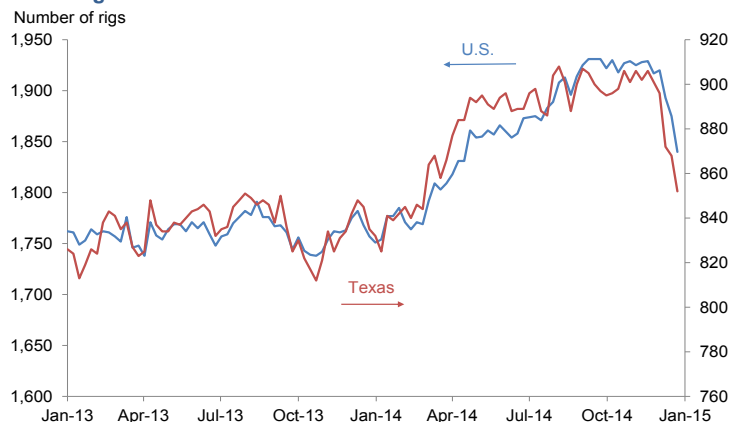
Natural gas prices rose above \$4 per million British

Chart 3
Large Inventory Buildup Now Expected



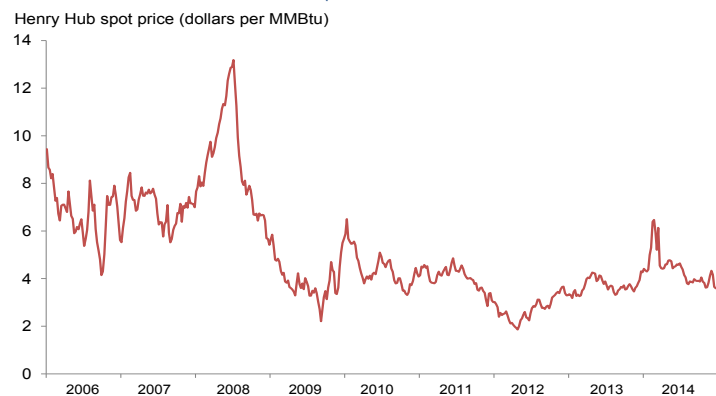
SOURCE: Energy Information Administration.

Chart 4
Total Rig Count Falls



SOURCE: Baker Hughes.

Chart 5
Natural Gas Price Falls Below \$3



SOURCE: Wall Street Journal.

thermal units (MMBtu) during November due to abnormally cold temperatures in the U.S. They fell back below \$3 at the end of December, closing the quarter at \$2.88 per MMBtu—a 30-cent decline from the third quarter (*Chart 5*). Prices will likely be volatile over the next few months because winter heating is a major source of natural gas demand and unusually high or low temperatures significantly impact the supply-demand balance.

Despite unstable prices, U.S. natural gas production continues to grow at a steady pace. Marketed production of natural gas was up 7 percent year over year to 76.41 billion cubic feet per day (bcf/d) in the fourth quarter.

Drillers have begun successfully applying horizontal drilling and hydraulic fracturing to extract gas from the Utica Shale in eastern Ohio and parts of Pennsylvania and West Virginia. Fourth-quarter natural gas production in the Utica region more than doubled year over year, exceeding 1.6 bcf/d by the end of the fourth quarter.

Sempra Energy's new liquefied natural gas (LNG) export terminal recently broke ground in Louisiana. The facility is expected to launch in 2019 and have the capacity to export 1.7 bcf/d, or approximately 2 percent of current U.S. production. The first U.S. LNG exports are slated to ship in 2015 when the Cheniere facility in Sabine Pass, La., begins operations with export capacity of 3.8 bcf/d.

The EIA recently released a report on the potential impact of LNG exports on U.S. natural gas prices, and it projects that natural gas exports will increase to 12 bcf/d by 2020 and that spot prices will rise about 4 percent compared with a case in which no exports are permitted. The model also suggests that shale gas production will increase to meet new international demand, dampening the effect on natural gas prices.

—Kristin Davis and Michael Plante

Note

1. EIA data measure consumption and production of liquid fuels, including crude oil and oil products, natural gas liquids, biofuels, and liquids derived from other hydrocarbon sources. Liquefied natural gas and liquid hydrogen are not included.

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About the Authors

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