



Are Oil Price Declines Good for the Economy?

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Since mid-June, the spot price of the U.S. benchmark for crude oil, West Texas Intermediate (WTI), has fallen from a bit less than \$108 per barrel to a bit less than \$50 per barrel—a decline of more than 50 percent. Much of the economic research on the effects of crude oil prices on the macroeconomy has focused on the effects of rising oil prices: Sharp increases generally have a negative effect. In fact, oil price increases have preceded 10 of the past 11 U.S. recessions.¹ But do falling oil prices, overall, have positive effects on the macroeconomy? Here the research is less conclusive: Some researchers argue they don't and some argue they do.² In general, though, as with rising oil prices, the effects depend on the source of the shock affecting the supply or demand.

Falling oil prices have numerous effects—some positive and some negative. On the positive side, lower oil prices tend to lower overall inflation and, to some extent, measures of inflation expectations. All else equal, lower inflation and inflation expectations tend to lower nominal interest rates and may spur increased demand for interest-sensitive durable goods such as automobiles and housing.

Lower oil prices also help to reduce operating expenses of the transportation sector and other industries that are relatively large users of gasoline, diesel, and jet fuel. There is also evidence that lower oil price volatility is associated with increased capital expenditures by businesses.

On the negative side, lower oil prices reduce the extraction and drilling incentive for producers, which has become more important in recent years since the United States has become a large crude oil producer. Reduced drilling activity has an immediate effect on industrial production and, ultimately, on nonresidential fixed investment.³ Although drilling activity remained high for a few months after oil prices peaked and began to decline, the number of rotary rigs drilling for crude oil in the United States has declined by about 23.3 percent since mid-October 2014.⁴

The table provides a gauge of the economic effects of falling crude oil prices, showing the average peak-to-trough change in oil prices and various measures of economic activity for five non-recession episodes since 1983. The five episodes and their respective peak-to-trough decline in oil prices (in parentheses) are November 1985–July 1986

Effects of Falling Crude Oil Prices: A Perspective Since 1983

| | No. of episodes | Average duration (months) | Change, peak to trough | | | | |
|---|-----------------|---------------------------|------------------------|--------------|---|----------------------------|----------------------|
| | | | Oil price (%) | Gasoline (%) | Industrial production growth (% points) | Real PCE growth (% points) | Inflation (% points) |
| Averages of all episodes excluding the current period | | | | | | | |
| | 5 | 8.6 | -34.4 | -14.6 | -0.27 | 0.63 | -1.05 |
| Current episode: | | | | | | | |
| | | 6 | -40.9 | -22.4 | 0.36 | 0.44 | -0.86 |

NOTE: The table shows the change in measures of economic activity from oil price peak to trough. WTI spot crude oil peaked at \$107.95 on June 20, 2014. Industrial production, real PCE, and PCE price inflation are shown as peak-to-trough changes in the 12-month percent change in each indicator.

SOURCE: Author's calculations.

(–58.1 percent); January 1997–December 1998 (–58.4 percent); July 2006–January 2007 (–26.3 percent); March 2012–June 2012 (–17.1 percent); and August 2013–November 2013 (–12.1 percent). These episodes range in duration from 3 months to 23 months, with an average of 8.6 months and a median of 6 months, and all had declines in nominal oil prices of more than 10 percent.

As expected, falling crude oil prices lead to falling gasoline prices and lower inflation.

I focus on non-recession episodes because the intent is to gauge the average effects of falling oil prices during an expansion. This analysis ignores any potential persistence effects—that is, the positive or negative effects from falling oil prices that occur beyond the period of the trough in oil prices. Rather than use spot oil prices, the table calculates the peak-to-trough change in the refiners' acquisition cost (RAC) for crude oil, which is a better measure of the price that refiners pay for oil.⁵

The table also shows the average peak-to-trough changes in gasoline prices, as measured by the consumer price index, and changes in the growth of industrial production, real personal consumption expenditures (PCE), and PCE inflation. Growth of the last three indicators is measured on a 12-month percent change basis. On average, the peak-to-trough decline in oil prices averages 34.4 percent. As expected, falling crude oil prices lead to falling gasoline prices (though not of the same magnitude) and to lower inflation. Falling oil prices also tend to lead to faster growth of real consumer spending. Yet, growth of real industrial production declined by about 0.3 percent during these five episodes of falling oil prices.

The bottom half of the table shows the same variables for the current period; data are available only through December 2014. The pattern seen in previous episodes generally holds, though in the current episode the growth of industrial production has instead strengthened. In conclusion, significant declines in oil prices during expansions appear to be a net positive for the economy. ■

NOTES

¹ For a recent summary of the research, see Engemann, Kliesen, and Owyang (2011) and the references therein.

² Mork (1989) was the first to find empirical evidence of the asymmetric effects of oil prices—that is, increases in oil prices matter more to the macroeconomy than decreases in oil prices. Hamilton (2008), a noted proponent of asymmetry, argued that most post-World War II recessions were preceded by rises in oil prices. Killian (2009) argues that the effect of oil price changes on the macroeconomy depends on the source of the disturbance to oil supply and demand.

³ See the FRED® Blog on oil prices and business fixed investment in structures: <http://fredblog.stlouisfed.org/2014/10/oil-prices-and-business-fixed-investment-in-structures/>.

⁴ The oil rig count data are available from Baker Hughes: <http://phx.corporate-ir.net/phoenix.zhtml?c=79687&p=irol-reports&other>.

⁵ The RAC is the composite measure—that is, based on the price of crude oil purchased from domestic and foreign sources. The RAC is commonly used as the oil price in large-scale econometric forecasting models.

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