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Crude Facts: The Winners and Losers of Low Oil Prices

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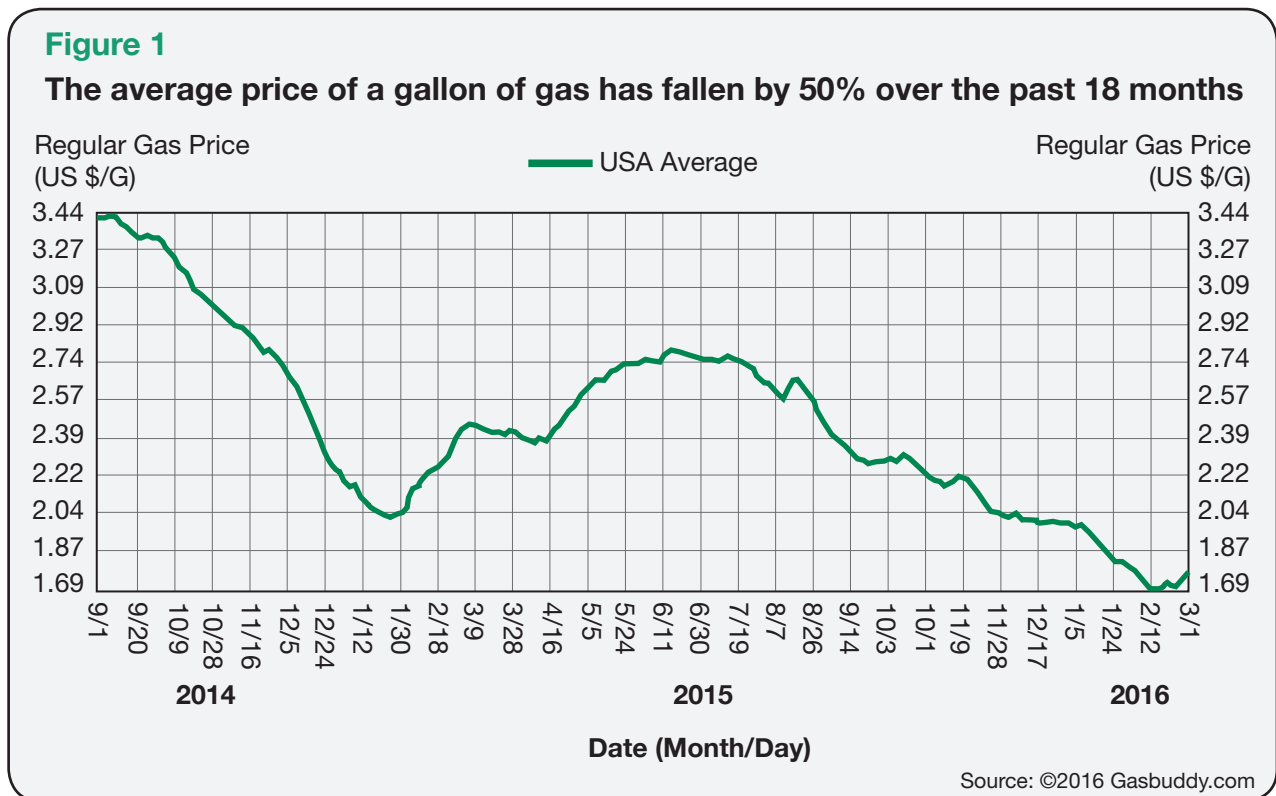
The Fall in Oil Prices: Causes and Consequences

Unless you have been hibernating for the last two years, you have noticed, and most likely celebrated a record drop in oil and gasoline prices. What is behind the fall and what are the likely repercussions as we proceed through 2016-17? And, in some ways even more importantly, why are the takeaways about how global economic and political forces can affect our everyday lives?

The Facts

When Loreen filled her tank with gas on the way to school last week, she paid about \$1.70 per gallon. As Figure 1 shows, this is half of the \$3.44 she paid just 18 months ago!

What happened?

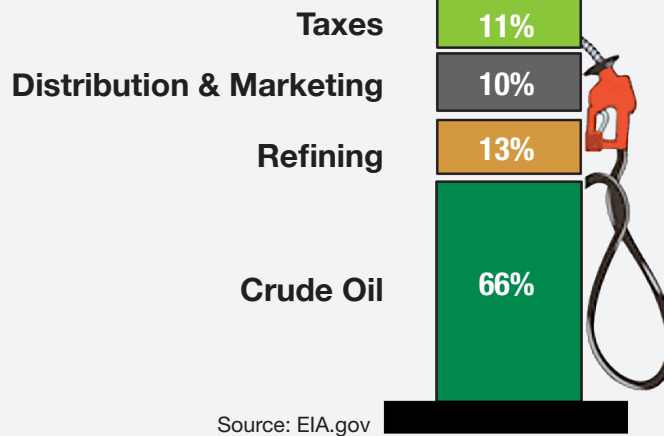


Causes

First, the price of a gallon of gas is comprised of several components. As shown in Figure 2, it is crude oil prices, that is, the price for a barrel of crude oil extracted from the ground or under the sea, that accounts for two-thirds of the gas price, in a typical month, with the rest driven by state and federal taxes, and the costs of refining, marketing, and distributing the fuel.

Figure 2

Components of the price of a gallon of gas at the pump

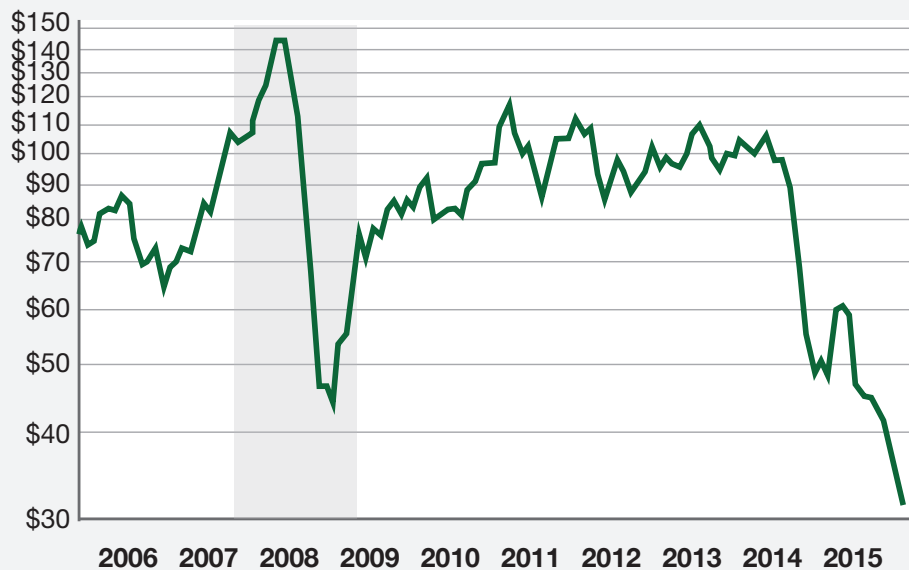


Source: EIA.gov

So far so good. Clearly, the figure suggests we must look to the price of a barrel of crude oil for the major proximate cause of the decline in gas prices. Formally stated, oil prices are set by the balance of *supply relative to demand* in the global market for oil. As you can see in Figure 3, the price of oil fell by about 70%, from \$105 to \$30 per barrel over the past two years.

Figure 3

The price of a barrel of oil has declined about 70% over the past two years



The figure also shows prices declined sharply during the worldwide Great Recession (2007-2009). Oil prices then recovered, fluctuating mostly in the \$80-100 range from 2010-2014. So what is the connection between the performance of the overall economy and oil prices?

A moment's reflection should suggest that as economies around the world grow faster or slower, meaning that spending—that is, the demand for goods and services—is growing

more or less, the *demand* for oil, a key input needed to produce and deliver goods and services will expand more or less.

So one key part of the story is that with economic growth having slowed in Europe and China, and domestic growth in the US remaining somewhat below historical trends, *the demand for energy, including coal, natural gas, and oil, has softened relative to what energy producers had been expecting.* For example, GDP growth in the United States in the last quarter of 2015 was only around one percent, and incoming data for the first quarter of 2016 suggest a continuation of sluggish economic growth. At the same time, economic growth in China, which consumes about 12% of the world's oil production, has plummeted from about 15% in 2013 to less than 7% currently.

The result of such a worldwide slowing in economic growth, not surprisingly, is a slowing in the demand for a key input in the production process and thus downward pressure on crude oil prices and thus fuel prices.

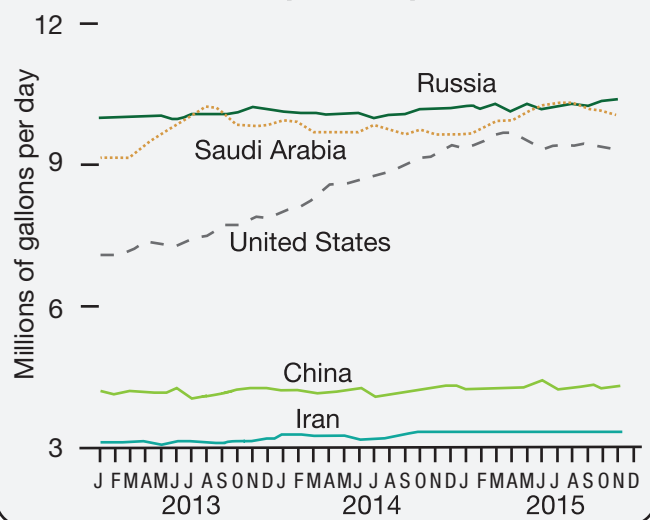
At the same time, the *supply of oil has continued to expand*, and many expect this trend to continue for some time. The story here has several parts—some economic and some political. First, as oil prices recovered after the Great Recession, this encouraged producers all around the world to invest in stepping up production, including in places that required more expensive drilling and extraction methods. Such places and methods might not have been profitable at \$50 a barrel, but were profitable at \$100 a barrel—remember this factoid for a bit later!

Second, as prices began to fall in the face of a slowing in the growth of demand, most producers did not cut production and some actually expanded. Analysts have suggested that Russia, which relies heavily on its revenue from selling oil and gas in world energy markets, could not afford to reduce supply, while Saudi Arabia, which may have the lowest cost of extracting oil in the world, remained profitable and wanted to increase their share of the worldwide market. And, as shown in Figure 4, in perhaps the development that might surprise you most, United States producers actually expanded production!

Looking ahead, with economic sanctions on Iran being eased as a result of the agreement with the US and others covering their development of a nuclear device, it appears their oil production will increase significantly in the next year or two.

Figure 4

As oil prices fell, major producers, such as Russia and Saudi Arabia, maintained production, while others, such as the United States, expanded production.



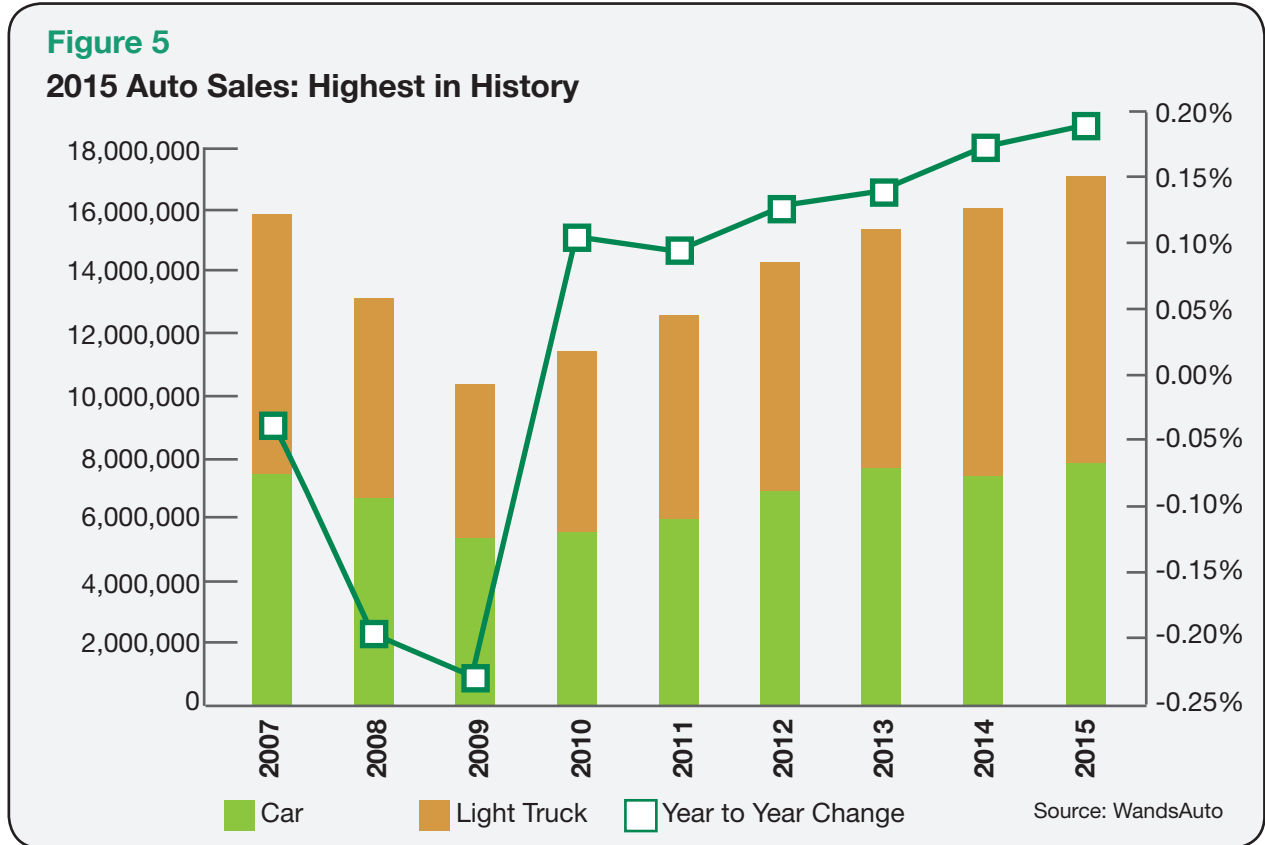
With such ongoing and expected increases in supply relative to demand, inventories of oil have grown and prices have plummeted. One of the key takeaways here is how global forces can combine to have dramatic effects in our domestic markets. For all the facts and figures, check out the Monthly Energy Review at <https://www.eia.gov/>.

Consequences

Such a large fall in the price of such an important commodity is having large and significant effects, both positive and negative, across the global economy.

Focusing first on some of the positives in the United States, let's do some simple math. Loreen is saving \$1.70 per gallon of gas compared to mid-2014. If she drives 10,000 miles per year, and her auto gets 30 miles per gallon, she buys about 330 gallons per year ($10,000/30 = 330$). If she is now saving \$1.70 per gallon, that is a yearly savings of \$561 ($330 \times \$1.70 = \561). Multiply that by the millions of drivers in the US and you can see that savings is akin to a tax cut, freeing up income that represents a huge increase in potential spending on a wide array of other goods and services.

To take one example, look at what has happened to auto sales in the US. Propelled by the ongoing drop in unemployment and the fall in oil prices which freed up income to be spent on other items, automobile sales soared by 20% in 2015 to a new record, with sales of "light trucks," which includes SUVs, minivans and light trucks especially strong.



Of course, there were also other prominent beneficiaries of lower oil prices; here is a headline from a recent article in *USA TODAY* by Charisse Jones (February 3, 2016).

“As oil prices sink, airline profits soar”

A wide variety of firms that use oil in the production process—think of UPS and utilities—found their costs of production falling. In the case of airlines, where fuel costs can account for 25-30% of total costs, profits soared to record levels and, in another benefit for consumers, airline fares stabilized or declined some.

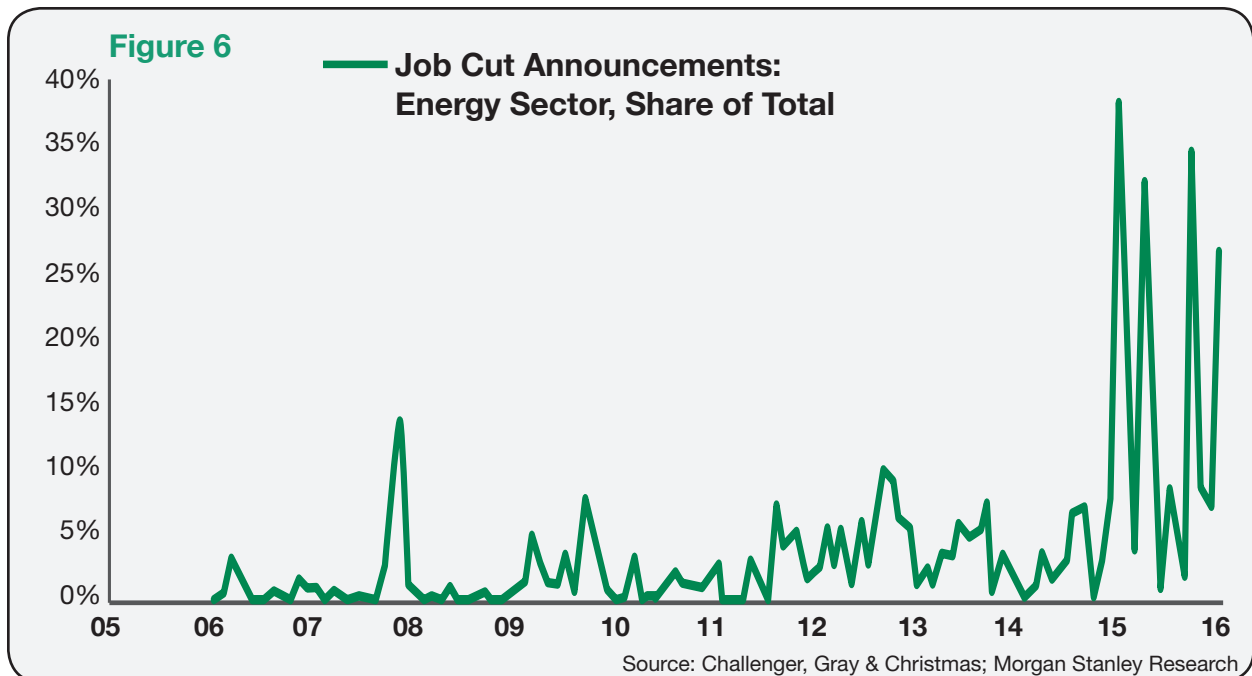
In fact, the fall in oil prices and its spillover effects on other producers and prices (including heating oil), is helping hold down the overall inflation rate in the United States to a modest 1-1.5%.

All in all, it seems that the positive effects of the decline in oil prices have been large and widespread. However, those of you who live in Texas, which accounts for 35% of the nation’s oil production, North Dakota, California, Alaska, and Oklahoma—the 5 largest oil producing states in the nation—know there is more to the story! What are the negatives?

As oil prices have plummeted, the profitability of some wells and indeed entire drilling companies have declined significantly. As reported by CNN’s Chris Isidore on February 2, 2016,

“Exxon Mobil’s bottom line is the latest victim of plunging oil prices. The nation’s largest oil company reported a 58% drop in fourth quarter profits, and a 50% drop in profits for the full year, as oil prices tumbled.”

In response, as shown in Figure 6,



layoffs in the energy producing sector have approached levels not seen for decades. As affected workers cut their spending, the spillover effects on tax revenues and merchants in the communities where these workers live have been large.

Perhaps the most dramatic impacts have been in Alaska. As reported by NPR,

“For decades, Alaska has relied on oil to pay its bills. In recent years, up to 90 percent of state spending came from oil revenue. With crude prices at a 12-year low, the state faces at least a \$3.5 billion deficit—or two-thirds of its budget.”

In response, Alaska may need to revive a statewide income tax on residents.

Summing Up

When trying to understand the causes of changes in any price, factors driving movements in supply and demand are the most important place to focus. Beyond this, when trying to understand movements in a price sent in global markets, such as oil, both economic and political forces will often be interacting.

Looking ahead, most experts expect world economic growth, the key factor on the demand side, to be subdued in 2016, and the major producers of oil to maintain production at close to current levels. As a result, it appears that oil, and thus gasoline prices, will remain well below prices prevailing in 2014. Like Loreen and her friends, enjoy the benefits while you can, but remember those who are suffering as they cope with the effects of lower prices on employment and profits.