Oil Markets and the US Economy

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Global oil supply has been remarkably resilient to date, growing even more quickly than demand despite persistently low prices. We believe the oil market has yet to find its equilibrium and that lower prices and significant industry capex cuts will eventually lead to lower production, which may now be happening in the United States.

Cutbacks in investment thus far have been very deep, and are expected to take another leg down in 2016. These cuts have been a drag on US economic growth, with a noticeable impact on local employment. Nonetheless, we continue to believe that lower energy prices are on balance good for the US economy. We see evidence that consumers are spending their windfall from energy savings and anticipate that the converging tailwinds of lower energy bills, a tighter labor market, and, most important, an eventual acceleration in wage growth can support even stronger US spending growth.

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In December 2014 our colleagues discussed the factors contributing to the plunge in oil prices in the second half of that year in *The Evolving Global Oil Market*. The following March, we published *US Consumer and Corporate Behavior in a Low Oil Price World*, which outlined our view that sustained lower oil prices would be good for the US economy on balance, but that the negative impact of energy industry capital expenditure (capex) and job cuts would likely be felt before the positive effects of increased consumer spending. In this paper, we highlight trends in global oil supply, our outlook for energy industry capex, and the US consumer response to lower fuel prices.

Oil Supply Has Surprised to the Upside

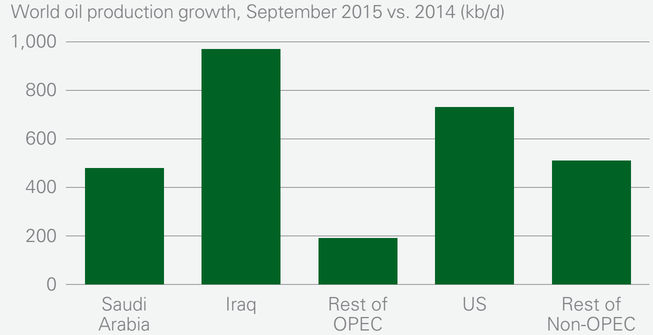
Following a brief rebound, oil prices fell to new six-year lows in August and have since averaged approximately $40–$45 per barrel of West Texas Intermediate (WTI) crude oil. These low prices and the "lower for longer" outlook suggested by crude oil futures reflect excess supply and medium-term uncertainties plaguing the oil market.

Although global demand has increased in response to lower prices, production has surged by more. This has led the global oil surplus (measured by the excess of supply over demand) to double in the last year to 2.4 mb/d in the second quarter of 2015, as estimated by the International Energy Agency (IEA). Subsequently, the pace of supply growth moderated in the third quarter, but September supply of 96.6 mb/d still represented an increase of 2.9 mb/d over the 2014 average. Iraq, Saudi Arabia, and the United States accounted for 75% of this increase in production (Exhibit 1). Remarkably, Iraq increased its production by nearly 1 mb/d, in spite of its adverse circumstances.

Persistent oversupply also has added to global inventories, which rose by an estimated 715 million barrels in the six quarters through the second quarter of 2015, with roughly 220 million of this increase in inventories in the United States.[1] Elevated inventories will be an additional overhang for oil prices, to the extent that they are later sold back into the market.

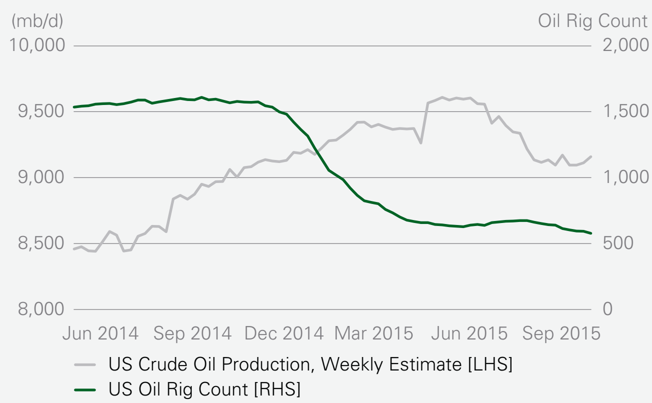
Lower prices have led to severe capex cuts and global oil production should eventually respond. Indeed, the long-expected turn in US production may have already arrived. Thus far US supply strength has been surprising, as shale oil's shorter lead times between drilling and production and its more rapid production decline rates give oilfield operators more flexibility to react to plunging prices. Indeed, drilling activity has fallen rapidly, with US oil rig counts plummeting from 1,600 in October 2014 to fewer than 600 in October 2015. However, production initially continued to climb despite this collapse, reflecting higher efficiency in both drilling and production, due in part to operators focusing on their best resources and retaining the best equipment and crews. More recently, the US Department of Energy's weekly estimates of crude oil production have finally begun to show a decline, falling from 9.6 mb/d in early July to less than 9.1 mb/d in October (Exhibit 2).[2]

Exhibit 1
Three Countries Have Driven 75% of World Oil Supply Growth



As of 30 September 2015
Saudi Arabian production includes half of Neutral Zone production.
Source: International Energy Agency, "Oil Market Report," 13 October 2015.

Exhibit 2
US Production May Be Finally Turning



As of 31 October 2015
Source: Baker Hughes, Bloomberg, US Energy Information Administration

Looking ahead, a number of factors will affect how rapidly oil supply and demand are balanced, including:

1. What will be the impact of the P5 + 1 deal with Iran?[3]

   Iranian Oil Minister Bijan Namdar Zanganeh has said that the country can increase its oil production by 500,000 b/d when sanctions are lifted and by 1 mb/d within months after that.[4] Many analysts believe this view is optimistic and that it will take time and investment to lift production by such substantial amounts, as the condition of shut-in wells is not known and operating wells may be suffering from underinvestment.

   More generally, geopolitics are always a factor for oil supply and can lead to surprises in either direction. For example, Libyan production has the potential to increase, having fallen due to conflict from around 1.3 mb/d in early 2013 to about 400,000 b/d in 2015.[5]

Exhibit 3
Current Spending Cuts Among Deepest Ever

	1986	1987	1989	1992	1993	1994	1998	1999	2002	2009	2015E	2016E
North America (%)	-40	-8	-7	-17	16	8	-15	-27	-17	-32	-45	-25
International (%)	-18	-4	16	8	-4	-4	14	-14	9	-6	-20	-10
Total (%)	**-33**	**-6**	**2**	**-3**	**4**	**2**	**0**	**-19**	**-1**	**-14**	**-27**	**-13**

As of 31 October 2015
Years in which capex declined.
Source: Barclays for historical data. Lazard estimates.

2. Will delayed investment dent supply over a longer time horizon?

   Approvals of major new international projects have slowed to a virtual halt, leading to concerns that oil supply could quickly tighten in the next two to three years if prices remain low and demand persists. Complicating the outlook over this time frame is the unknown impact of significant spending cuts on existing production, which could decline at a more rapid pace due to reduced maintenance spending.

3. Will demand growth continue at its recent pace?

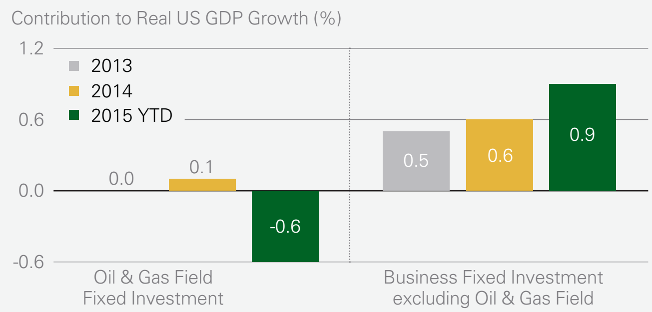
   The IEA estimates that global demand was 93.9 mb/d in the second quarter, up 1.9 mb/d from a year earlier. Approximately a third of this increase came from continuing robust demand growth in China, despite its economic slowdown. As a result, world demand could look very different should China suffer a "hard landing." However, as part of China's transition away from relatively energy-intensive manufacturing and industrial activities, its growth in oil use has increasingly been led by consumer demand. Jefferies estimates that over 60% of the increase in Chinese oil product demand over the past year was for products associated with consumption use—gasoline and kerosene (jet fuel)—rather than industrial use.[6] It is not clear how this transition in Chinese energy demand might be affected by an economic slowdown that is more rapid than currently anticipated.

Capex Cuts Have Weighed on the US Economy

Global supply resilience is all the more surprising considering the severity of capex cuts, which we estimate to be 27% in 2015 and which we believe will take another leg down in 2016 by around 13%. These cuts are even deeper than all but one of the five prior instances when the oil price plunged by more than 30% in a six-month period, and rival those of the 1985–86 price collapse, which is the most comparable to current circumstances (Exhibit 3). In nominal dollar terms, 2015's cuts are the biggest ever.

The impact of these cuts on the US economy has been rapid, as we posited in March. From the end of 2009 through June 2014, nominal US private fixed investment in oil & gas wells and exploration and in mining and oilfield machinery ("oil & gas field fixed investment") rose by $95 billion on an annualized basis. From June 2014 through September 2015, oil & gas field fixed investment fell by $81 billion (annualized) erasing roughly 85% of its nominal increase. Most of the weakening in investment occurred in 2015, following declining rig

Exhibit 4
Significant Economic Drag from Shrinking Oil & Gas Capex



As of 30 September 2015
Oil & gas field fixed investment comprises investment in petroleum and gas wells and exploration (structures), and in mining and oilfield machinery (equipment). Calculation based on Q4/Q4 growth for 2013 and 2014, and Q3 2015/Q4 2014 growth for 2015.
Adapted from Jason Furman, "Business Investment in the United States: Facts, Explanations, Puzzles, and Policies," 30 September 2015.
Source: US Bureau of Economic Analysis, Haver Analytics.

counts and suggesting that investment cuts have further to go if rig counts fall significantly again, given the new lows in oil prices. In real terms, the drag on US GDP from this contraction in oil & gas field fixed investment in the first three quarters of 2015 was significant and was largely responsible for the slower rate of investment growth in the National Accounts (Exhibit 4). In fact, the oil & gas investment decline obscured a notable improvement in business fixed investment outside of the energy sector.

Energy industry job cuts have also been severe although their impact on overall payrolls has been more limited. Employment in oil & gas extraction and support activities for oil & gas operations ("upstream oil & gas") increased by nearly 60% from January 2010 to September 2014, as the industry added 197,000 new jobs, with payrolls rising to 537,000. From October 2014 through August 2015, however, upstream oil & gas payrolls fell by 62,000, while the rest of private nonfarm payrolls rose by 2.5 million jobs.

While energy sector job losses have taken place in a context of relatively strong jobs growth, the local impact on communities dependent on oil production has been more significant. Overall employment has fallen in all but three of the top ten oil states, with the decline most severe among the states most reliant on oil & gas jobs, in particular North Dakota and Wyoming, which have seen total private nonfarm payrolls fall by 3.1% and 2.3%, respectively, thus far in 2015.

The US Consumer Is Responding to Lower Prices

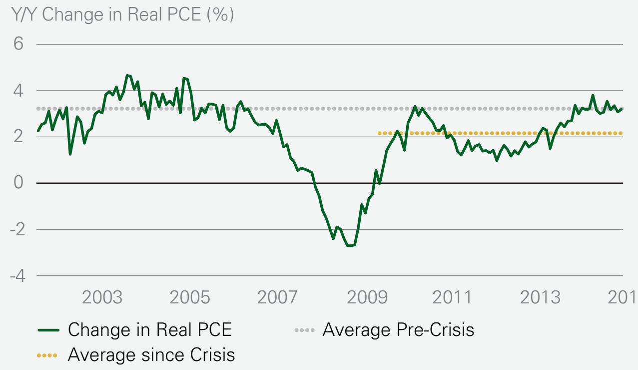
In March, we outlined our view that the energy industry–related drag on the US economy would be more than offset by increased consumer spending as a result of energy savings, but that the consumer benefit would be slower to materialize and less apparent as it is distributed across a wide range of goods and services. The headwind to growth from cutbacks in the energy industry is already evident and we now see evidence that consumers are indeed spending their windfall.

We estimate that the average US household will save about $670 in 2015.[7] Despite these savings, there has been considerable disappointment—which we share—that retail sales have yet to show their hoped-for breakout. However, as we previously cautioned, we think some care is required in drawing conclusions from retail sales, in part because they do not capture all consumer spending, particularly on services, and because these sales data are influenced by lower gas prices as even core data series that exclude gas stations still capture the growing share of gasoline sales that take place at retailers like Kroger, Walmart, and Costco (which accounted for 13.8% of total gasoline sales as of May 2014).[8]

Data from the National Accounts tell a different story than does retail sales. From December 2014–April 2015 the savings rate rose as Americans, constrained at least in part by a harsh winter, saved a larger percentage of their disposable personal income. However, since May 2015, it has fallen below its 2014 average, implying that the portion of consumer spending that previously went to energy is being spent elsewhere. Similarly, data show that aggregate spending has continued to grow. Beginning in the second half of 2014, year-on-year growth in real personal consumption expenditures (PCE) rose above 3%, well above its level in the past few years and roughly in line with its pre-crisis average (Exhibit 5).

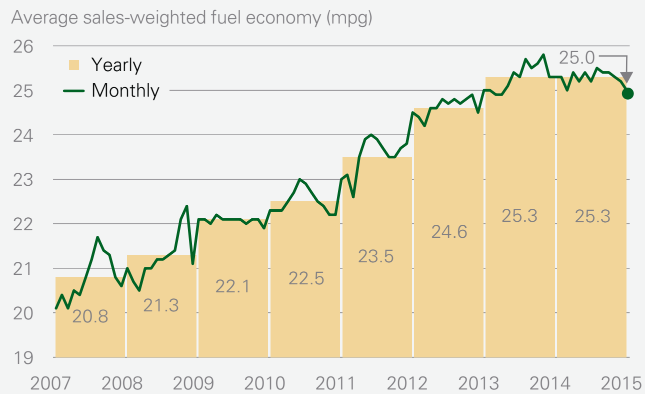
Finally, recent data suggest consumers are redirecting part of their energy windfalls to increasing their energy consumption. Data indicate consumers are driving more, purchasing more (and higher grades of) gasoline, and buying bigger, less fuel-efficient cars (Exhibit 6).

Exhibit 5
Growth in Real Spending Has Accelerated



As of 30 September 2015
Source: Credit Suisse, Haver Analytics, US Bureau of Economic Analysis

Exhibit 6
Consumers Are Buying Vehicles with Lower Fuel Efficiency



As of 31 October 2015
Source: University of Michigan Transportation Research Institute

Conclusion

All said, we believe we may be seeing the beginning of an oil market rebalancing with the recent slowing of US production. However, the overhang from oil supply growth in the past year means that the process of reaching equilibrium could take quite some time. In the interim, there are several significant uncertainties clouding the medium-term outlook. Continued oversupply of energy is likely to lead to even more energy industry capex cuts in 2016, but also continued low prices at the pump for US consumers.

Significantly lower energy industry investment and employment have been a drag on the US economy. However, the economy has sustained its moderate growth trajectory of recent years, led by consumer spending. We continue to expect that this trend can strengthen if a "virtuous cycle" emerges, whereby the middle class participates more fully in the US recovery, bolstered by lower energy prices, a stronger labor market, and credit score healing. While US consumers appear to be spending their energy windfall, the catalyst of stronger wage growth has not yet emerged on a sustained basis. We anticipate that acceleration in wage growth will support even stronger spending growth in the quarters to come.

This content represents the views of the author(s), and its conclusions may vary from those held elsewhere within Lazard Asset Management. Lazard is committed to giving our investment professionals the autonomy to develop their own investment views, which are informed by a robust exchange of ideas throughout the firm.

Notes

1 Global inventory estimate from the International Energy Agency's "Oil Market Report." As of 11 September 2015. US inventory estimate from the US Energy Information Agency's "Petroleum Supply Monthly." As of 30 September 2015.

2 Weekly estimates can be subject to significant revisions and may have been affected by maintenance in the Gulf of Mexico.

3 P5 +1 is a group comprising the United States, the United Kingdom, France, China, Russia, and Germany that is joined in a diplomatic effort to negotiate limitations on Iran's nuclear program.

4 As of 2 August 2015. Source: Bloomberg, "Iran Oil Minister Says Output to Rise a Week after Sanctions."

5 As of 31 October 2015. Source: Bloomberg.

6 As of 26 October 2015. Source: Jefferies, "China/Energy: Oil Demand: Life is a Highway, I Want to Ride it All Night Long."

7 As of 6 October 2015. Source: US Energy Information Administration, Short-Term Energy Outlook. Calculation is based on the year-on-year change in gasoline consumption and prices, projected through the end of 2015.

8 Source: National Association of Convenience Stores, 2015 Retail Fuels Report.

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