



## Oil Prices Can't Find Their Footing, Even Amid Geopolitical Turmoil

Imagine that during a single year, the following events all took place:

- ◆ a country that produces 13% of the world's oil became engaged in armed conflict;
- ◆ the United States and other nations fought a self-declared caliphate looking to quickly spread its influence in the oil-rich Middle East; and
- ◆ a nation that produces 3% of the world's oil saw some of its citizens become infected by a highly contagious and deadly virus that has killed thousands in nearby countries.

Now, imagine that oil prices during that year have *declined sharply*, even as these events continue. The year in question, of course, is not imaginary. Russia has been involved in conflict with Ukraine for several months, a US-led coalition has begun airstrikes in the Middle East against Islamic State fighters, and the Ebola virus has spread to Nigeria.<sup>1</sup> Yet West Texas Intermediate crude oil has declined from \$98 per barrel (bbl) at the beginning of the year to just \$81 as of mid-October. Brent crude has come under even more pressure, dropping from \$110 to \$85 thus far in 2014.

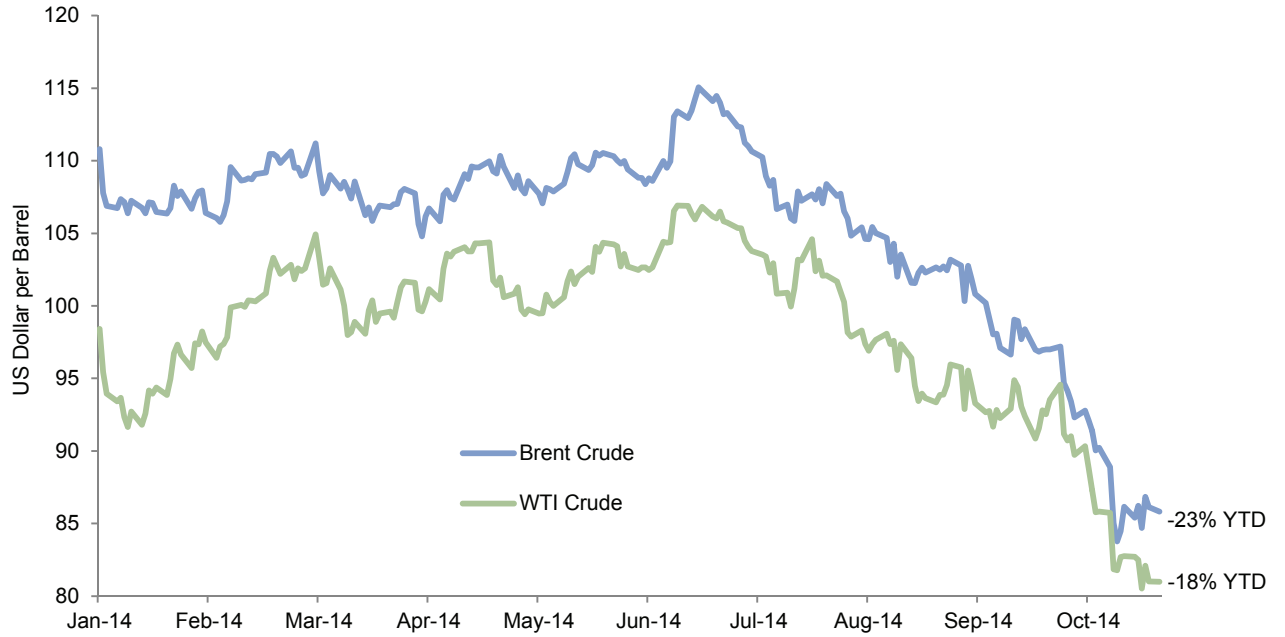
Why have oil prices fallen sharply this year despite the geopolitical turbulence near oil hotspots? The reasons, which are detailed in the pages that follow, are (a) the geopolitical turmoil does not appear to threaten significant impacts on the production or global delivery of oil, and (b) secular shifts in demand and supply are becoming evident this year.

<sup>1</sup> Admittedly, it appears to be well controlled in Nigeria at this point.

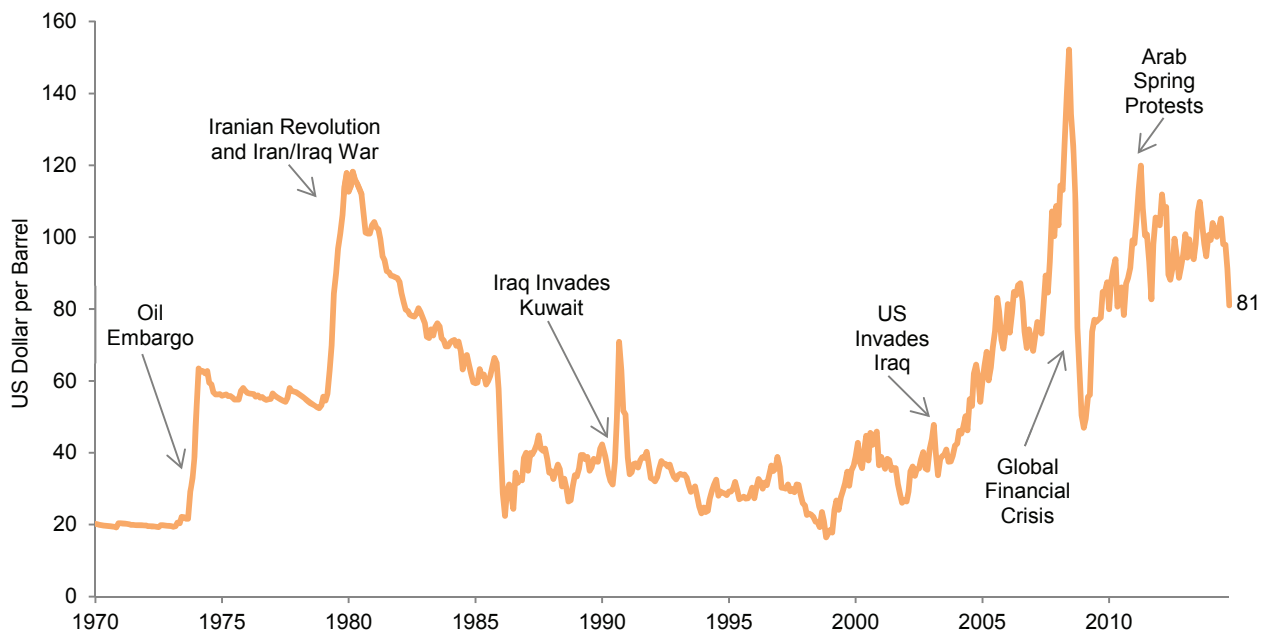
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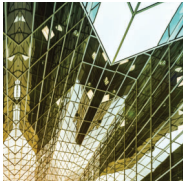


**Crude Oil Futures Prices**  
January 1, 2014 – October 27, 2014



**Inflation Adjusted Price of West Texas Intermediate Crude Oil (2014 Dollars)**  
January 31, 1970 – October 27, 2014





Crude oil prices tend to respond to potential supply threats. For example, West Texas Intermediate crude prices more than doubled in 1990 when Iraq invaded Kuwait, and they increased by about 20% as the Arab Spring protests heated up in early 2011. However, in 2014, oil markets have emitted a collective yawn when faced with Russia's invasion of Ukraine and the broadening tensions that have followed, even as Europe and the United States trade escalating sanctions with Russia. Ebola's spread to Nigeria over the summer was also not eventful from a crude oil price perspective (this is perhaps less surprising—the virus's impact there appears to be contained at this writing). Finally, the launch of airstrikes on Islamic State forces is occurring even as oil prices plummet. These events each appear to have a low risk of major near-term disruption to oil production, which is part of the reason that oil prices have not been supported by the turmoil, and why longer-term supply and demand issues have dominated pricing.

## Secular Demand Slowdown

Oil demand continues to grow, but demand growth is slowing, and increasingly more than 100% of the marginal growth is coming from China and other emerging markets (developed markets consumption is actually declining). The developed markets demand plateau stems from a variety of factors that have decreased use of motor fuels. Still-temper employment and economic growth in Europe is a major cyclical factor in holding back vehicle use, but many of the factors are more permanent or structural. The population is aging and growing more slowly. Consumers are increasingly using online retail as a substitute for in-person shopping (in the United States, for example, the market share of e-commerce as a percentage of all retail sales grew from 2.3% in 2005 to 6.4% less than a decade later). Employees in many professions are increasingly able to work from home offices at least some of the time.

Another dampener of fuel consumption is greater fuel efficiency. The average gas mileage of passenger cars sold in the United States increased at a compound annual rate of only 0.5% from 1990 to 2005 (from 28.0 to 30.3 miles per gallon, over 15 years); since then it has increased nearly four times as quickly on an annualized basis, and the average passenger car can now travel 36 miles per gallon of gasoline. While falling gasoline prices might decrease consumers' willingness to pay up for highly efficient vehicles, US fleet efficiency regulations are set to become much more stringent over time,<sup>2</sup> eventually hitting 54.5 miles per gallon in 2025. Thus, structural conditions are likely to slow the growth in vehicle miles traveled,<sup>3</sup> and efficiency gains will flatten or even decrease the total amount of fuel consumption.

<sup>2</sup> This refers to Corporate Average Fleet Efficiency rules (CAFE). These rules could be rolled back by a future administration, of course.

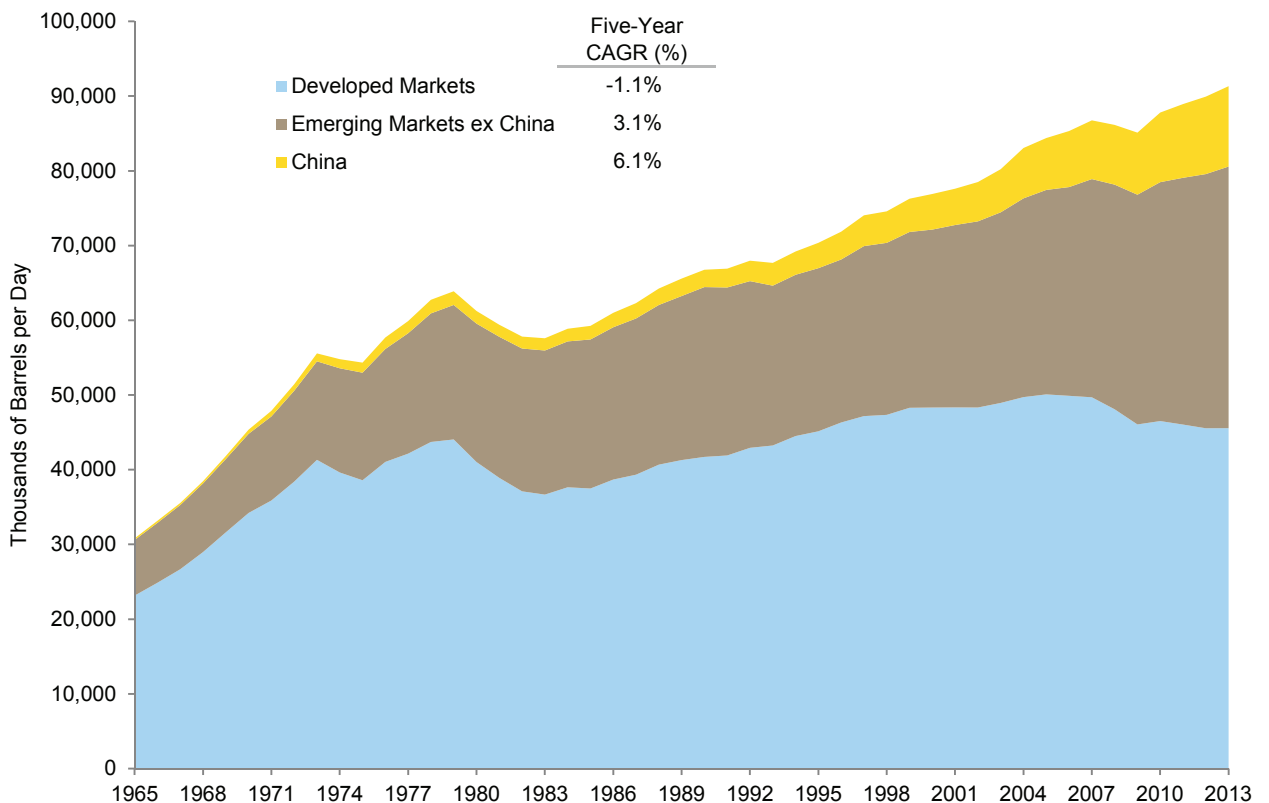
<sup>3</sup> Vehicle miles traveled fell during the recession and remain at 2005 levels (about 2% below the peak levels of 2007).



Emerging markets will continue to drive total demand growth, as they currently do, and likely at a slower pace. Over the past five years, developed markets have *decreased* their oil consumption at a 1.1% compound annual rate, while emerging markets aside from China have *increased* theirs by 3.1% annually—Chinese consumption has grown at an annualized 6.1% pace. However, China’s economic growth appears to be slowing; thus, its fuel consumption growth appears likely to moderate (the International Energy Agency [IEA] pencils in annual Chinese oil demand growth of 2% this year and 3% next year, compared to a median 5% annual growth over the past ten years, according to BP).

The IEA this month sharply cut its estimated global demand growth for 2014 and 2015 from its prior estimate (revising growth down by 200,000 bbls/day for 2014 and 300,000 bbls/day for 2015) even as the United States, which burns roughly 40% of the world’s gasoline, begins to see moderate economic growth. Given the secular shifts in demographics, shopping and working habits, and fuel efficiency, slowing growth for oil demand may be here for years to come.

**Regional Oil Consumption**  
1965–2013



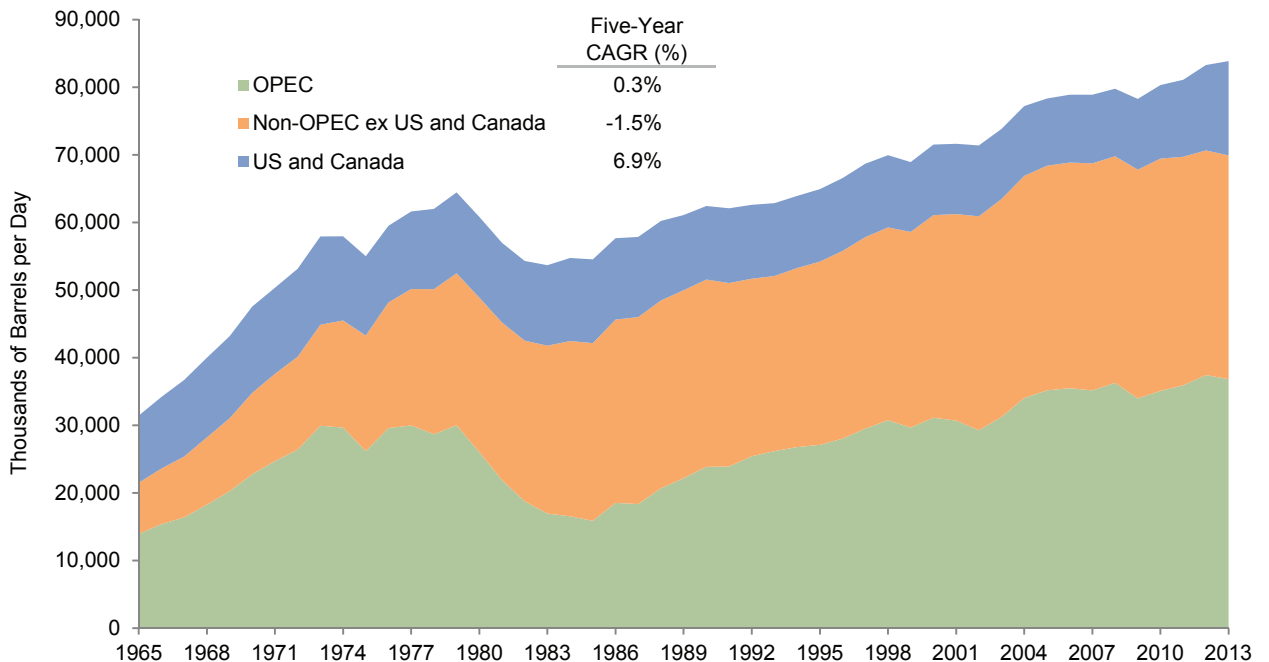


## Supply Stability

While *demand* growth is struggling, *production* growth is humming along, thanks in large part to massive increases in the United States and Canada as shale and other unconventional deposits are rapidly being harvested via hydraulic fracturing, horizontal drilling, and other technologies. In fact, North American production is growing by about 1 million bbls/day annually, keeping up with the pace of emerging markets demand growth. The IEA estimates that North American production will hit 18.6 million bbls/day in 2014, compared to 14.6 in 2011. The five-year cumulative annual growth rate for US and Canadian production through the end of last year is 6.9%.

US production growth is more than offsetting the slow production growth in the rest of the world. While OPEC has garnered many headlines (and conspiracy theories) in recent weeks, its market power may be flagging. The potential for sharp US-led supply increases was arguably masked in recent years by poor output in certain regions (like Iraq, Libya, South Sudan, and Syria) due to unrest or sanctions, which kept a lid on overall supply. Libyan production has increased rapidly in recent months (from 200,000 bbls/day in June to 900,000 in September), pushing the issue of potential global oversupply to the forefront, just as the IEA and other sources cite flagging demand.

Regional Oil Production  
1965–2013





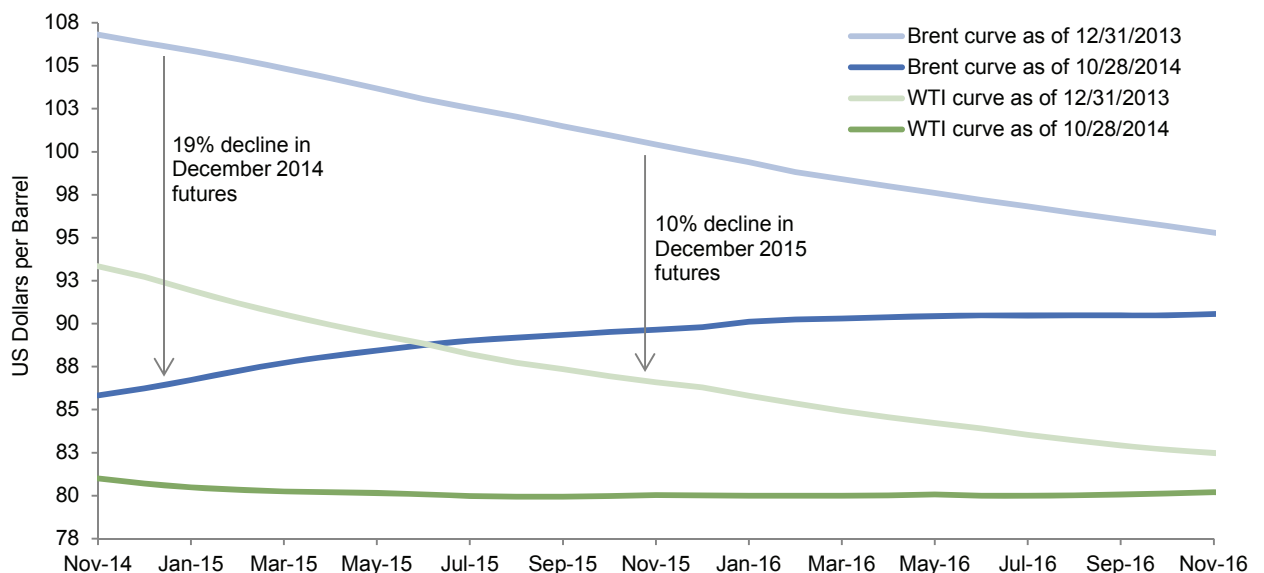
## So What Happens Next?

With prices having fallen so rapidly, investors are left to wonder whether the declines are over. It is impossible to say with any certainty. However, assuming recent demand-growth trends continue, sustained prices above \$100 may continue to constrain demand and drive additional investment in higher-cost production in North America, further boosting supply. Sustained prices below \$70, on the other hand, may put the brakes on high-cost production in the United States and elsewhere.<sup>4</sup> Some production in the Permian Basin, Bakken, Eagle Ford, and other areas would become uneconomic at or above these levels. These guides might serve as medium-term boundaries of the channel that oil prices will traverse in the medium term.

Futures curves at present bake in moderately rising prices over the next several years (readers will note that futures for delivery in late 2016 have not collapsed to nearly the same degree as futures near the front end of the curve). Even though oil consumers appear to have the upper hand at present, the continued growth in supply from unconventional sources depends on reasonable profits. Shale wells are depleted quite quickly, requiring continual new investment to assure even stable production from those deposits. Oil production in some countries may continue regardless of profitability, but if prices moved to levels that made US shale production unprofitable, supplies will decline rapidly.

<sup>4</sup> Estimates of oil prices at which various shale plays are profitable vary widely. The producer's cost of capital and balance sheet play a role, as does the expected future path of prices. For more information, please see John Kemp, "Prices, Time, Expectations: The Oil Market's Fuzzy Price Floor," Reuters, October 16, 2014.

Crude Oil Futures Curves as of December 2013 and as of October 2014





## Where Could We Be Wrong?

While we believe oil prices are most likely to remain in a price band of perhaps \$70 to \$100 over the medium term, there are credible cases for prices to shoot above or below those levels. For example, prices could be pushed above \$100 if conflict directly imperiled production, such as if the fighting with Islamic State expanded to disrupt the flow of oil from the Middle East. Similarly, any move by Russian President Vladimir Putin to choke off supplies could push prices much higher; however, we doubt Russian finances and the ruble, already under strain, could tolerate the impact of the hit to oil revenues. Prices could also rise if production from non-traditional North American basins began to decline faster than investors currently expect. If this were to happen, it would likely occur incrementally rather than suddenly. And naturally, even the \$70 level would be vulnerable in the event of a US or global recession.

## The Bottom Line

The commodity supercycle is over, and oil prices over the medium term are likely to be governed by moderating demand growth and by strong, yet price-dependent production growth. Oil prices may spend much of the next few years within a band stretching from \$100 on the high side to \$70 on the low side. Of course, even if those price thresholds were absolute, here-be-dragons boundaries governing the movement of oil prices (which we doubt), that still leaves plenty of room for additional drama in the oil markets. ■



## Contributors

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## Exhibit Notes

### Crude Oil Futures Prices

Sources: ICE Futures Europe and Thomson Reuters Datastream.

Notes: Crude oil futures prices represent near month futures contracts. Data are daily.

### Inflation Adjusted Price of West Texas Intermediate Crude Oil (2014 Dollars)

Source: Thomson Reuters Datastream.

Note: Data are monthly except for most recent data point in 2014, which is as of October 27.

### Regional Oil Consumption

Source: British Petroleum.

Notes: Differences between these world consumption figures and world production statistics are accounted for by stock changes, consumption of non-petroleum additives and substitute fuels, and unavoidable disparities in the definition, measurement, or conversion of oil supply and demand data. Data are annual.

### Regional Oil Production

Source: British Petroleum.

Notes: Oil production includes crude oil, tight oil, oil sands, and NGLs, the liquid content of natural gas where this is recovered separately. Data are annual.

### Crude Oil Futures Curves as of December 2013 and as of October 2014

Sources: Bloomberg L.P. and FactSet Research Systems.

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