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Riding the Oil Price Roller Coaster

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In 2016, the price of petrochemical products dipped to near 2008/09 recession levels, pushed down by oil spot prices hovering, on average, around the US\$40/bbl (WTI) mark with global crude futures reaching 11 year lows.

Of course oil markets have always been changeable, but many chemical producers were shocked by just how quickly and drastically the oil price impacted their margins in the last couple of years. And despite the adjustments the industry has made to date, it is still too soon to relax. The evolving nature of today's energy markets means more volatility and new price shocks are almost inevitable. While the oil market is starting to return to some sense of normalcy, 2017 could be a volatile year. Oil prices could rally sharply to start the year as the OPEC agreement starts draining supplies. There is a real risk, however, that producers could get overly enthusiastic and overshoot on production or that costs could re-inflate too quickly and hold back profit growth.

Petrochemical companies will need to raise their risk management game in these volatile times. Against a chaotic business backdrop, improving the visibility of the market risks around essential feedstock becomes mission critical. To protect their margins and manage the crack spread between feedstock costs and refined product prices effectively, petrochemical companies will have to raise their risk management game. The time to prepare for whatever new shocks lie below the horizon is now.

Baseline shifts

After four years of relatively stable prices, too many companies were unprepared for the sudden drop in crude prices that began in mid-2014 and continues to the present day. Politics, weather and war have always been variables with the potential to destroy margins. But what is driving today's oil price shocks are baseline shifts in the global dynamics of energy market supply and demand.

Oil supply has grown in recent years, mainly due to new production from US shale. OPEC's unwillingness to scale back production in response to shale output has exacerbated oversupply, while rebounding exports from countries that had been held back by embargo, or experienced political upheaval - namely Iran and Iraq - have added to the glut. Slower global economic growth and increased energy efficiency, meanwhile, have conspired to push down demand.

But the changes are not finished. What should be worrying petrochemical companies now is the prospect of more supply-side shocks in the near term, making it even harder to find profit in the crack spread.

Petrochemical producers are caught in a dual disadvantage. Crude prices determine production costs for finished products, since the chemical building blocks for ethylene and propylene are directly produced from oil and oil derivatives such as naphtha. But petrochemical production is also energy-intensive, with manufacturing infrastructure that needs its own hedging

strategy to mitigate energy costs – all of which are affected by the price of oil.

Sources of volatility

As Iran negotiates its way back into major export markets, production is still limited, but has the potential to drive prices lower. Production from other troubled countries such as Iraq and Libya can be expected to be chaotic, affected without warning by disruptions related to political and social unrest.

Meanwhile, the shale boom that has been so transformational to the US economy and global petro-politics generally, has also brought new supply chain management issues – namely high production decline rates. It is quite normal for peak production at shale wells to drop by up to 80% within a year. That means shale oil supply needs constant oversight and new production sources continually lined up. On the upside, new shale and other light tight oil production can be launched relatively quickly – so quickly that pundits have speculated the US could replace Saudi Arabia as the world's go-to swing producer. On the downside, shale producers have shown a preference to park their investments when oil prices are low, leading to rushed supply ramp-ups when oil prices rise.

When OPEC's apparent determination to keep production up is added – running away from its traditional role as global price referee – it is a recipe for more supply-demand shocks, as well as rapid price spikes and declines.

Oil is down, but gas is cheaper

The shale boom in the US has led to a bonanza of natural gas production and a well-advertised drop in natural gas prices. A less-publicised development, closely tied to the shale gas revolution, is the rapid growth across the segment of the petrochemical industry that uses abundant – and now very cheap – natural gas to produce key ingredients found in everything from liquid fuels to fertilizers to plastics.

Over the last three years, the US Environmental Protection Agency (EPA) has issued permits to build or expand 105 oil, gas, or chemical plants that will all use shale gas or oil as a feedstock. And there are another 15 pending applications. In western Pennsylvania, Shell Chemical recently signed a site option agreement to build a petrochemical complex with a world-scale ethane cracker to produce ethylene, which is used in many products, from plastic bags to cosmetics and detergents.

The low cost of the gas means margins are high for petrochemical manufacturers making gas-based intermediates and end products, and they are likely to stay that way in the near term. But like any other commodity, gas prices can fluctuate. Given the volumes at stake, even small price changes can mean huge benefits or losses, depending on the direction.

While the world may be awash in gas now, it is also becoming more popular every month as a cleaner source of energy. Several countries, and China in particular, are moving to drop coal burning and adopt natural gas more quickly.

The future exports of natural gas, combined with the growing adoption of natural gas power from sources such as power plants, consumers, and vehicles will continue to eat into supplies. It is only a matter of time before consumer demand, geopolitical events, and the knock-on effects of oil price changes create volatility in natural gas markets too.

How petrochemical manufacturers should react

The oil price collapse has exposed a fatal weakness in the petrochemical industry, that there are too many companies without the capability to respond quickly when price shocks land. The stable price environment that preceded the 2014 drop lulled many chemical-company leaders into a false sense of security, meaning they failed to keep up investments in risk management systems.

The problem is fixable. A petrochemical producer with the right tools in place can expand margins in a falling-oil-price environment by identifying sourcing savings ahead of declines in product pricing. When oil and/or shale gas prices go back up, margins can be still protected by raising prices faster than costs rise. The key is to have visibility of risks and changing market conditions, and to stay steps ahead of the competition.

Commodity management to the rescue

Trying to predict market moves is difficult, but with the right commodity management (CM) tools and attendant processes in place, it is possible to analyse one's company history and use the specific risk factors in the portfolio to model scenarios and likely future outcomes. This will help to mitigate the impact of oil and gas price shocks. Effective CM should provide petrochemical companies with the ability to do the following:

Analyse portfolio exposure to measure how various oil-price scenarios will impact the value of oil and other energy trades.

Monitor oil-price indicators to identify impending oil shocks.

Minimise risks by modelling the cost alternatives for financial hedging, contracts, as well as the logistical risks attached to replacement feedstocks.

Perform simulations on portfolio-to-guide trades under different oil price scenarios; for example, what happens if the oil price goes up 7% or 11% next year? By applying this and other 'what if' scenarios, petrochemical producers can make educated assumptions about costs and prices, based on where the market is going.

The level of uncertainty that continues to define oil markets should banish any complacency around trends that dominated during normal conditions. Despite the lessons of 2014 onward, it is still an open question as to which petrochemical companies will push ahead of the competition, and which will continue to watch profitability slide.

Raising the visibility of market risks is essential if chemical producers are going to manage the crack spread and control feedstock and energy costs effectively. CM systems and processes can provide critical business intelligence, as well as capture data in real time, and then analyse it to make optimal decisions around trade execution, position management, and physical logistics.

Conclusion

Ultimately, oil price volatility can provide as many opportunities as risks. Petrochemical companies can position themselves for profit if equipped with the right tools. Smart investments in CM technology will put producers in a position to effectively plan for, respond to, and even benefit from the oil price roller coaster.