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Upstream Oil Prices and Costs: Economics or Behavioural Strategy?

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The recent oil price downturn continues to force companies to rethink their business models

As a strategy to stay afloat, players in the upstream oil industry – oilfield service companies in particular – continue to engage in activity cutbacks, service price renegotiations, cancellations and postponements of future service commitments. Left unchecked, heuristics may continue to undermine strategic decision-making.

Geopolitics, economics and technology trigger price spikes

Many of the factors that explain how oil prices fluctuate are interconnected. The fall from a peak of $115 per barrel in mid-2014 by more than 70 percent at some point – compared with the June 2014 levels – remains one of the most important international macroeconomic developments of the last two and a half years. Energy economists explain this in terms of the shocks to demand and supply arising from the complex interplay of geopolitics, economics

Figure 1 | Daily Crude Oil Spot Prices ($US per Barrel)

Source: U.S. Energy Information Administration

and technology. Considering the excess supply and inventories that have built up in the market, lower prices continue to force producers to adjust supply, stockholding and investment flows. As we head into 2017, uncertainty around what oil prices might look like in the future weighs heavily on operators, contractors, investors and regulators.

Uncertainty and declining revenues keep the price-cost debate on the front burner

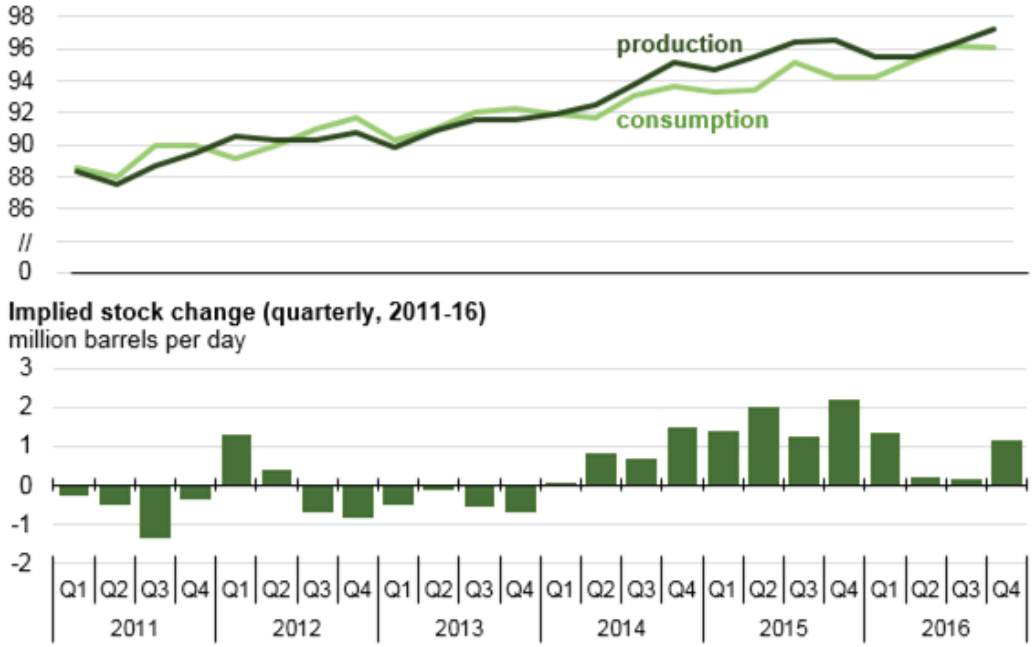
The current low-oil-price environment presents a number of supply chain and procurement challenges for energy companies. Declining revenues and evaporating earnings are forcing companies to decommission their rigs, in addition to massive cuts in exploration and production investments. Keeping other factors constant, lower investment today will translate into lower output and higher prices tomorrow. For instance, deferred high-cost projects may create a shortfall in future production, resulting in a tight demand-supply balance that may push prices even higher over the medium term. As such, procurement and supply chain strategies remain on the front burner – as the downward spiral of oil prices plagues the industry. Despite having succeeded in cutting costs in the last two years, many wells remain unprofitable. This continues to trigger the price-cost debate.

The low oil price trilemma: value maximization, quality assurance and supply chain disruption

On the true relationship between the price of oil and the cost of production per barrel, classical economic thinking posits that in a competitive industry, the cost of producing an additional unit of output – i.e. marginal cost – determines price. In the same vein, traditional management and economic theories suggest that prices should reflect value. The tough challenge, however, is figuring out the precise value that prices represent. Perhaps even tougher is the question of whose judgement should be relied on in arriving at the perceived or estimated value of the particular good or service in question.

To the extent that oil prices drive costs, it is often expected – on the supply side – that when oil prices fall, a corresponding cost deflation will be required to ensure profitability. The corporate decision-making process often hinges on value maximization. In the realm of supply chain management, this implies finding the lowest-cost suppliers that meet certain minimum quality standards.

Figure 2 | Global Production and Consumption of Crude Oil and Other Liquids (Million Barrels per Day)



Source: U.S. Energy Information Administration

Innovation, efficiency improvements, short-term actions and long-term consequences

In the face of competitive pressures, procurement teams across the energy industry continually rely less on innovation and efficiency improvements as a strategy to increase operating efficiencies. Instead, they focus more on negotiating price reductions from suppliers, in addition to exploring other avenues to improve capacity and reduce short-term, discretionary spending. Recent statistics from the United States Bureau of Labour Statistics show that the Producer Price Index (PPI) – an indicator used to track oilfield service companies' rates – continues to fall for drilling and extraction companies. This PPI trajectory confirms weakened demand for services and the ongoing battle to maintain market share – as companies seek operating efficiencies. Such short-termism can result in long-term damage; there is always a trade-off. This has huge implications for long-term profitability.

Bounded rationality, heuristics and supply chain optimization

A fundamental assumption in mainstream economics is that consumers and firms act logically and rationally in the decision-making process. While it is true that firms actively seek value maximization by consistently pursuing loss minimization strategies, the field of behavioural economics shows that asymmetric information and individuals' affective states – which include emotional and motivational states – have a huge influence on their judgements; these often result in suboptimal decision-making. For instance, emotional theory suggests that agents place a lot of emphasis on certain information that may skew the heuristics they follow. Since consumers are not automatons, perhaps rather than focus exclusively on price, procurement and supply chain specialists need to craft strategies that incorporate customers' overall buying experience.

Figure 3 | Producer Price Index (Oil and Gas Extraction)

Source: U.S. Bureau of Labour Statistics

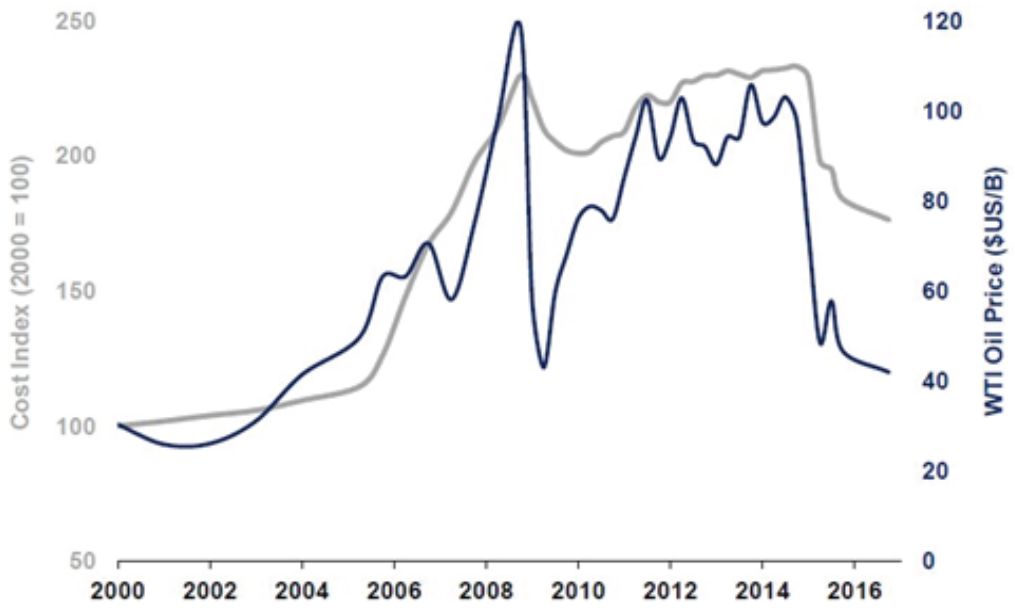
Behavioural and cultural change key to delivering operational efficiency

While sound economics and business analytics remain vital, it is equally very important that industry executives focus on behavioural and cultural change as a tool for engineering key players to deliver leaner, fitter and more efficient operations – under a continued low-oil-price regime. Industry operators need to rethink their contract management and supplier relationship management strategies. While it remains a fact that it will take time to achieve significant efficiency improvements, companies need to carefully weigh the costs of short-term cost-reduction strategies against the benefits of deploying long-term supply chain best practices – in the most optimized way. This is in addition to managing expectations and reaching a consensus with suppliers with regards to the important – and often complex – issues of safety, training and equipment specifications.

Cost economics, marketing and behavioural science are three essential components of an effective strategy

In closing, beyond budgets and costs, firms should be lean, competitive and continually attract investments. Because price shocks affect firms in an industry differently, companies need to critically examine their changing cost economics, in addition to long-run shifts in the cost position of competitors. These, combined, will provide the necessary ingredients to craft an effective strategy to help avoid the competitive pricing trap. And of course, in addition to economics, strategy, analytics, marketing and sales, greater attention should be paid to the behavioural science of forecasting and decision making.

Figure 4 | Upstream Capital Costs Vs. Oil Prices



Source: IHS, Bloomberg, ARC Financial Corp.

About Author

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Dr. Fred Olayele is President/Chief Economist of the Global Economic Institute for Africa. An Adjunct Professor of International Business with the Sprott School of Business at Carleton University, he teaches in the MBA program. He has taught various applied and theoretical economics classes at the University of Regina.

Dr. Olayele's diverse career spans banking, government, management consulting and academia across Africa, Europe and North America. Much of his work examines the complex intersection of economics, business strategy and public policy.

A certified Project Management Professional (PMP), he has presented on trending economic and policy issues at major conferences, with active engagement on the international speaking circuit. He holds a PhD in Economics.