

Oil Prices in 2015

By Thomas Tunstall*

Since the recent drop in oil prices from \$100 per barrel to around \$50 per barrel, predictions about where prices are going have been all over the board. Estimates have been as low as \$20 per barrel and as high as \$200. That's quite a wide range. What's interesting is that until the recent plunge in prices, it had become quite fashionable to claim that oil prices would never fall below \$100 per barrel. Yet, seasoned industry observers would likely have commented that if oil had reached a permanently high plateau of \$100, it would be first time something like that ever happened.

Now in some quarters, there is talk that oil may never reach \$100 per barrel again. It seems that memories are often short. If we were to look at the history of oil prices over the past hundred years or so, we would see an industry landscape replete with booms and busts, gluts and shortages. This latest iteration is no different.

For the near term, two things appear very likely. Oil prices are headed lower. And unfortunately, the resulting lower gasoline prices will not provide the expected offsetting boost to the economy from consumer spending that many are forecasting.

Oil price impacts can perhaps best be understood in a macroeconomic context that makes use of measures such as gross output, as an alternative to the more usual fixation on gross domestic product. The use of gross output and its contribution to a fuller understanding of macroeconomic dynamics comes to us by way of three particular insights:

Production processes have a time-oriented structure.

Capital is not homogeneous, but instead exhibits heterogeneity.

Consumer spending does not drive the economy the way we believe.

While the above points may seem unremarkable, it is useful to compare/contrast these with traditional Keynesian analysis, which tends to give them short shrift. First, aggregate supply and demand in Keynesian macroeconomics are assumed to occur simultaneously, which is an overly simplistic and inadequate model of the way products and services are actually matched up with demand. Second, capital in many industries - including the oil and gas industry - cannot be readily repurposed to other uses. Capital is not homogeneous, but rather heterogeneous. And lastly, we continue to place too much emphasis on the impact of consumer spending as a panacea that we constantly try to conjure up in order to lift us out of our economic troubles. Because of our obsession with the power of consumer spending, we place too little emphasis on the impact of entrepreneurial and business-to-business activity farther up the supply chains that are the real drivers of economic activity.

The first issue dealing with the way time influences an economy can also be thought of as a lag effect. Factors set in motion in an economy often have significant momentum associated with them. The path of least resistance for supply chains and networks that are firmly in place is usually to continue functioning as they have in the past. As a result, events related to economic activity along a particular supply chain create inertia, which can make change difficult.

Over the past few years, U.S. energy companies have pushed oil production up from around 5 million barrels per day in 2008 to over 9 million barrels per day in 2015 - not too very far from the record levels of just over 10 million barrels per day in 1970. The success of new production techniques has unleashed an additional 4 million barrels per day over that time frame by establishing new supply chains in energy producing areas such as North Dakota and South Texas. While capital reductions have been announced by several energy companies, no producer is anxious to dismantle its existing supply chain.

As we know, the precipitating event for the huge price drop in oil occurred at the OPEC meeting held in November 2014, when the cartel confounded global expectations by deciding not to curb production in order to stabilize prices. Non-OPEC members, such as Russia, also indicated that they would maintain crude oil production at current levels. Market reaction in terms of prices for Brent and West Texas Intermediate crudes was swift, prompting oil prices to fall from over \$100 in July 2014 to as low as \$45 in early 2015.

Because unconventional techniques are drilling intensive, with wells completed for as little as \$6-8 million and in 10-15 days or less, it was believed that production could be curtailed quickly. And, yes, that much is certainly true compared with the hundreds of millions and multi-year windows required for deepwater rig completions. But it still doesn't mean that unconventional production can be turned off like a faucet.

* Thomas Tunstall is Research Director of the Institute for Economic Development at the University of Texas at San Antonio. He may be reached at thomas.tunstall@utsa.edu

The cutbacks that have been initiated by producers in the U.S. have been steady, but still slow. Like a diesel locomotive that requires a mile or more of track to come to a stop, it is not at all clear whether slight muting of oil production in the U.S. will be significant enough to keep from overwhelming existing storage facilities. Further, producers are apparently stockpiling crude oil in the belief that prices will go up. Evidence of the effect of inertia is manifest in that there has not been a sharp, significant drop in oil production in the U.S. As these events continue to unfold, a tipping point is certainly a possibility that may drive prices to new lows in this particular cycle.

Oil prices haven't been this low since 2009. And markets take time to respond to changing circumstances. After a multi-year run of oil prices consistently above \$80 a barrel (and more often around \$100), oil producers across the globe have been reluctant to cut back production because they have become dependent on the revenues.

Many industry observers and analysts maintain the belief that oil prices will rebound to previous levels. For example, T. Boone Pickens went on record in December 2014 on CNBC saying that within 12-18 months, oil would be back at \$100. (Caveat Emptor: T. Boone also said in 2005 that worldwide oil production would reach an absolute peak of 84 million barrels per day. Instead, daily world production topped 90 million barrels in 2013 and has continued to rise since then.)

Though crude oil production continues to be diverted into storage because the current cost is believed to be extraordinarily low and temporary, the existing storage capacity has limits. The closer we get to those limits, the more storage costs will increase. Pressure will mount to unleash the oil on the market at some point. When this happens, crude oil prices will be driven even lower.

So while new drilling techniques with the use of hydraulic fracturing and horizontal drilling have ushered an unexpected bounty of oil and gas, the science is only part of the story. True, advancements in engineering techniques play an important role, but the motivation and behavior of the exploration and production companies does as well. In short, it may take a while before we see production - which has outstripped demand - come back into alignment.

Another factor poised to put downward pressure on oil prices is a strong dollar. Right now, no central bank in the world wants to raise interest rates. Nonetheless, sooner or later it is bound to happen, and the first to do so will be the U.S. Fed. By raising interest rates, a strengthened U.S. dollar will push oil prices down as well.

Still further is the prospect of a nuclear deal between Iran and other countries. When this occurs, as appears likely, it will have the effect of bringing additional supply on the market, which will increase global supply and also put pressure on oil prices. The rest of OPEC appears to have no plans to cut production either.

On the flip side is the issue of demand. Evidence is mounting that China may be in the process of a protracted slowdown. As the world's largest single oil importer, the country buys nearly 7 million barrels each day. Yet government stimulus has been periodically required to prop up massive and questionable infrastructure spending. China is maintaining its construction boom in suburbs and rural areas by erecting scores of buildings that may never be occupied. For one eerie example of a different kind of ghost town, google: Ordos China Ghost City. In fact it's hard to not envision some sort of correction in the Chinese economy. After all, how many empty buildings can the country continue to build?

Taken together - the increase in supply bumping up against weakening demand portends a predictable outcome: falling prices. Yet the near-term impact from low oil prices was widely expected to be a positive boost to the U.S. economy. So far this hasn't happened. Why?

Michael Gapen, chief United States economist at Barclays has gone on record in January 2015 saying that household consumer spending contributes roughly 65 percent of gross domestic product, compared with about 1 percent from oil and gas industry investment. He and other economists have indicated that the benefits of lower energy prices will be felt much more broadly than the expected drag on some industries and regions.

This type of analysis is a gross oversimplification of the macroeconomy. Nonetheless, it is consistently repeated and rarely challenged.

The 65-70 percent of gross domestic product that the press and Wall Street economists regularly trumpet supposedly driven by consumer spending is what occurs at the final stage of the supply chain - what we call consumption. At this last stage of the value chain, the transactions become more numerous and markups are often at their highest, which makes the impact of consumer spending appear larger than it actually is.

What's missing from the picture is the magnitude of the business-to-business transactions that occur earlier in the supply chain. Driven by entrepreneurial activity, raw materials are developed, undergo

some kind of production process, and are then distributed to retail channels. GDP only measures this final phase. When all of the intermediate transactions are tallied, we find that in the U.S. economy, transactions between businesses as measured by gross output constitute nearly 60 percent of economic activity. Instead of the widely-reported 65-70 percent, consumption (or consumer spending) actually clocks in at only a little over 30 percent of economic activity.

Viewed in this manner, it is clear that too much emphasis is placed on the consumer, and too little placed on business activity that develops raw materials, puts them through production processes and then distributes them to retailers. If we put consumer spending in its proper context, we can start to see why the economy may not bounce back as quickly as many analysts have predicted.

Another misconception that still confounds mainstream economic thought is the assumption that aggregate supply and aggregate demand curves react instantaneously. Such thinking leads to the supposition that while oil price declines will hurt energy producers, lower gasoline prices will benefit consumers, who will spend more and make up the difference from an overall economic standpoint. And eventually, that scenario may pan out. But there will be a lag effect. Consumers will not immediately spend the surplus created by lower gas prices - if they ever, in fact, do so at all. If they save the surplus, the money then becomes investment, and so it will take a while before the impacts show up later in economic statistics as consumption.

Another issue likely to cause the economy to take time to recover is the general belief that capital is largely homogeneous. Yet equipment or facilities, or even human skills that are defined as capital have elements of specificity associated with them. That is to say, capital manifests heterogeneity. As a result, one type of capital cannot necessarily be readily substituted for another. At best, refitting or conversion may be required, which also takes time.

The time element associated with converting capital, as well as with the business-to-business transactions that start as resource development, then go through a production process, and finally are distributed to retailers create a lag effect. Keynesian economics has led us to believe that investment and consumption are instantaneous. They are not. And since the economy is constantly changing and evolving, the products consumers may eventually decide to spend their surplus on may not have even come to market yet.

In short, the prospect for higher oil prices at least through 2015 remains dim. Too many factors are acting in tandem to keep prices depressed. And a quick fix from lower gas prices is unlikely to pick up the slack in the economy in the near term as many have predicted. Normal economic lags, combined with far too much faith in the power of consumer spending alone tell us that from an economic perspective, the road ahead will be a bumpy ride.



Energy & The Economy

Proceedings of the
37th IAEE International Conference,
New York City, NY, USA, June 15 – 18, 2014
Single Volume \$130 – members; \$180 – non-members

This CD-ROM includes articles on:

Transportation Developments
International Shale Development: Prospects and Challenges
Oil & Gas Reserve Valuation & Financing
International Implications of U.S. Energy Renaissance
Climate Change and Carbon Policies – International Lessons and Perspectives
Renewable, Power Prices, and Grid Integration
Energy Financing
Utility Business Model
Global Energy Demand Growth
Demand for Liquid Fuels
Investment in Electricity Markets
GHG Emissions Reduction
OPEC and Geopolitical Issues
Cap-and-Trade
Biofuels
Electricity Modeling
Oligopolistic Behavior in Energy Markets
Climate Issues
Intermittent Energy Integration
Auctions and Bid Analysis

Payment must be made in U.S. dollars with checks drawn on U.S. banks. Complete the form below and mail together with your check to:

Order Department

IAEE

28790 Chagrin Blvd., Suite 350

Cleveland, OH 44122, USA

Name _____

Address _____

City, State _____

Mail Code and Country _____

Please send me _____ copies @ \$130 each (member rate) \$180 each (nonmember rate).

Total Enclosed \$ _____ Check must be in U.S. dollars and drawn on a U.S. bank, payable to IAEE.