
The Long-Term Price of Oil Hangs on the Short-Term Focus of Consensus

*If everyone is thinking alike, then somebody isn't thinking.
~ George S. Patton*

Summary

- Oil demand is growing stronger than estimated.
- We believe shale production growth is set up to disappoint.
- Global oil liquids inventory is declining.
- Combined, we believe these factors should lead to higher prices for oil and energy-related stocks.

The consensus view of oil is that the price of crude oil will remain “lower for longer.” We believe this view relies almost entirely on the forecasts and estimates put forth by two main energy agencies: the International Energy Agency (IEA) and the U.S. Energy Information Administration (EIA). With a majority of today’s energy market traders and investors so short-term focused, it’s only natural that they have predominately focused their attention on the short-term supply, demand, and inventory estimates produced by the IEA and the EIA.

It is our opinion that the consensus view finds comfort in groupthink and therefore pays little attention, if any, to the historical accuracy of the agencies publishing these estimates. In our research, rather than relying solely on the near-term estimates, we compare the original demand estimates from the EIA and IEA to their subsequent revisions and have found that they tend to be revised higher. Since the revised numbers are more accurate, we believe they provide a more realistic picture of the underlying fundamentals.

That said, here are the three primary points that support the “lower for longer” view on oil:

- Weak global demand
- Huge shale production growth
- Resulting in excess global inventory

Below we will address each of these items:

Demand Growth

We have highlighted several times in prior communications that the EIA and IEA systematically underestimate the global demand growth and, over time, retrospectively adjust historical demand figures higher. The IEA’s historical revisions to its global supply and demand estimates have the effect of making reported surpluses smaller and deficits larger than originally estimated. Recent commentary about demand by the media and analysts generally portrays demand as being lackluster. However, this is simply not true. Demand continues to grow.

Since 1998, global oil demand has grown annually by an average of 1.3 million barrels per day (mb/d). Currently, the IEA estimates global demand for 2017 growing by 1.5 mb/d and by 1.4 mb/d for 2018. We find it very odd that this actual increase in above trend demand growth is portrayed by these agencies as weak demand, especially given their history of cautious demand estimates. However, because the consensus tends to believe what they hear most, rather than look at the facts, weak demand is what the consensus argues.

Shale Production

Perhaps the biggest argument for the “lower for longer” view of oil is that U.S. shale production, driven by ever increasing productivity gains, will unleash huge increases in new production that will leave the world swimming in oil for years to come. In this case, the EIA’s models appear to be overestimating productivity gains, leading to robust production forecasts that exceed the actual industry production figures. Over the next series of charts, we will review U.S. production data from three different EIA reports.

- First is the monthly Short Energy Outlook (STEO), which among other data items, contains its annual forecast for the current and forward year U.S. oil production.
- Second is the Weekly Petroleum Status Report (WPSR), which in addition to the weekly inventory data, contains the EIA’s model-based estimate of the prior week’s U.S. oil production.
- Third is Form EIA-914, which is a more complete data set of U.S. monthly production. The data is reported on a two-month lag, allowing it to capture a more accurate picture of U.S. oil production. The following is the EIA’s description of Form EIA-914.

“Form EIA-914 allows EIA to gather more complete and current information about U.S. crude oil and lease condensate production nationally and regionally. Ultimately, this information will improve EIA reporting and forecasting, and it will inform related public debates on topics such as refining capacity, crude oil exports, and legislative initiatives.”

We believe a good way to think of these reports is that the STEO is the EIA’s guesstimate of average annual future production. The WPSR is its model-based estimate of weekly production and is used by the industry to attempt to track production growth relative to the EIA’s annual production estimates. Form EIA-914 provides an actual survey-based figure for monthly production as compared with the weekly production estimates that are from an econometric model. In short, the monthly Form EIA-914 data provides a more accurate estimate of actual industry production. Another way to think of Form EIA-914 is as a more comprehensive report card rather than weekly pop quiz.

Short Energy Outlook (STEO)

Every month the EIA publishes its Short Term Energy Outlook (STEO). This outlook provides the EIA’s guess on the average annual U.S. production for the current year and for the year ahead. Chart 1 shows a summary of the monthly STEO reports from January through August 2017. Notice in January that the EIA estimated that U.S. production would average 9 mb/d for 2017 and 9.3 mb/d for 2018, up

Chart 1

EIA's Monthly Short-Term Energy Outlook Report - Forecast of Average Annual US Production		
	2017 Annual Average Production Forecast	2018 Annual Average Production Forecast
Jan 17	9.0	9.3
Feb 17	9.0	9.5
Mar 17	9.0	9.7
Apr 17	9.2	9.9
May 17	9.3	10.0
Jun17	9.3	10.0
Jul 17	9.3	9.9
Aug 17	9.3	9.9

*in million barrels per day
Source: EIA, Century Management

from the 8.9 mb/d average production for the full year 2016. As 2017 has developed, the estimates for production growth have become bolder. For example, in the most recent August 2017 STEO report, the EIA estimates current year U.S. production will average 9.3 mb/d and a whopping 9.9 mb/d for 2018. **The basis for the increase is driven primarily by its view of increased shale productivity. This sentiment forms the consensus view on U.S. production growth over the next two years.**

Weekly Petroleum Status Report (WPSR)

The WPSR is published every Wednesday morning. This report contains weekly inventory balances for crude oil, gasoline, distillates, and several other refined petroleum products. It also contains the EIA's estimate of weekly crude oil production. Published weekly, this is perhaps the most widely followed report, as it represents the most current estimates of supply, demand and inventory levels for the U.S. oil and gas industry. Specific to production, the industry uses the weekly WPSR estimates to track changes relative to the EIA's STEO annual production estimates. Chart 2 shows the EIA's estimate of weekly U.S. oil production for each month of 2017. Not coincidentally, the EIA's weekly production estimates began moving higher at the same time as its STEO (Chart 1) annual estimates jumped higher. These series are generally based on the same assumptions and models. This production optimism is based on a belief that you can flip a switch, ramp up production, and continually increase well productivity. **We will see in Chart 3 that this presumption is not unfolding as the consensus camp expects.**

Chart 2

EIA's Weekly Petroleum Status Report U.S. Production Estimates						
	WK 1	WK 2	WK 3	WK 4	WK 5	Monthly Average of Weekly Estimates
Jan 17	8.950	8.944	8.961	8.915		8.943
Feb 17	8.980	8.977	9.001	9.032		8.998
Mar 17	9.090	9.109	9.129	9.147	9.199	9.135
Apr 17	9.240	9.252	9.266	9.293		9.263
May 17	9.314	9.305	9.320	9.342		9.320
Jun 17	9.330	9.350	9.250	9.338		9.317
Jul 17	9.400	9.430	9.410	9.430		9.418
Aug 17	9.420	9.500	9.530	9.530		9.495
YEAR TO DATE AVERAGE OF WEEKLY ESTIMATES						9.236

*in million barrels per day

Source: EIA, Century Management

Form EIA-914

Form EIA-914 is published at the end of each month updating the EIA's monthly U.S production estimates on a two-month lag. For example, the most recent Form EIA-914 published at the end of August 2017 updates the monthly production numbers for the month of June. It is designed to provide a more complete picture of U.S. production. However, because it has a two-month lag, it is often ignored. This is unfortunate because we believe it is the only way to check reality against prior estimates. Form EIA-914 tells a vastly different story than the rising production estimates forecasted in the STEO report or weekly production numbers. In Chart 3, we see Form EIA-914 reported monthly production that averaged just over 9 mb/d for the first six months of 2017. For the month of June, production was 9.096 mb/d, which is 221,000 b/d below the EIA's original weekly estimates for June of 9.317 mb/d. Additionally, June's Form EIA-914 monthly production was 73,000 b/d lower than May's Form EIA-914 monthly production of 9.169 mb/d, which was also lower than the original estimate for May. This is in spite of an increase in rig count, longer laterals, more sand, etc. **In other words, while the industry has been working hard to increase productivity, the more complete Form EIA-914 reveals monthly production is almost flat.**

Importantly, the fact that the EIA's weekly production estimates have been overstating actual production hasn't stopped the EIA from continuing to ramp up its weekly production forecast. Its weekly model forecast for July and August 2017 (Chart 2) suggest monthly production rates increasing to 9.418 mb/d and 9.495 mb/d respectively. In order for these weekly estimates to be accurate, the next two Form

EIA-914 reports will have to show production jumped by 300,000 to 400,000 b/d from June levels. We will see again how accurate these estimates are when the next two Form EIA-914 reports are issued at the end of September and October. Furthermore, with the first six months average production stuck at slightly over 9 mb/d, the second half of 2017 must average 9.6 mb/d to reach the EIA's 9.3 mb/d annual forecast. In order to average 9.6 mb/d in the second half of 2017, the production rate would need to close out the year running at close to 10 mb/d. This suggests the industry will increase production by nearly 1 mb/d from June through December 2017. **With what we have already seen through June, we believe the probability of this happening is very low. Nonetheless, this remains the view of the EIA and consensus!**

Chart 3

EIA's 914 Monthly Production Report (Revises STEO Production Estimates with 2 Month Lag)	
	EIA 914 Report Monthly Production
Jan 17	8.851
Feb 17	9.070
Mar 17	9.132
Apr 17	9.115
May 17	9.169
Jun17	9.096
YEAR TO DATE AVERAGE	9.072

*in million barrels per day
Source: EIA, Century Management

Putting It All Together

Chart 4 combines the data of the first three charts. It is clear by looking at Form EIA-914 monthly production figures that the EIA's STEO report and weekly models have been overly optimistic in estimates of U.S. production growth. Furthermore, it seems highly improbable that actual production will reach the EIA's annual estimates that currently feed the consensus view.

Chart 4

EIA's 914 Monthly Production Report (Revises STEO Production Estimates with 2 Month Lag)				
	STEO 2017 US Production Forecast	Monthly Average of Weekly Estimates	EIA 914 Report Monthly Production	Over Estimation Weekly vs Monthly
Jan 17	9.000	8.943	8.851	0.092
Feb 17	9.000	8.998	9.070	-0.072
Mar 17	9.000	9.135	9.132	0.003
Apr 17	9.200	9.263	9.115	0.148
May 17	9.300	9.320	9.169	0.151
Jun17	9.300	9.317	9.096	0.221
Jul 17	9.300	9.418		
Aug 17	9.300	9.495		

*in million barrels per day
Source: EIA, Century Management

Why is this important? It is important because the global consensus view of “lower for longer” relies on the argument that non-OPEC oil production growth driven predominately by increasing U.S. shale production will exceed global demand growth for the next several years. This view holds that continually rising shale productivity is a foregone conclusion, thereby adding surplus oil, keeping inventories high and oil prices low. **Without shale growth, the EIA global supply and demand estimates would show a deficit for the next two years rather than the surplus that it and the consensus expect.** Shale production, therefore, becomes the linchpin to the “lower for longer” argument.

With all of the wonderful advancements taking place in shale production, we can see in Form EIA-914 data that production growth is not currently meeting consensus expectations and therefore is not supportive of the primary argument backing the “lower for longer” view.

Finally, the fact that global oil inventories have been declining is a surprise to many, mostly because it has been ignored by the EIA, many analysts and the financial media. Chart 5 shows that as of 2/1/17, we had 338 million barrels of oil in inventory above the 5-year average, and as of September 6, 2017, the oil inventory overhang has been cut to 152 million barrels. Remember, inventory drops when demand exceeds supply. This is commonly referred to as a supply deficit. This is yet one more data point that runs counter to the view that demand is weak, supply keeps growing, and that we are swimming in oil.

Chart 5



Source: Bloomberg

We believe Hurricane Harvey will add quite a bit of noise to the weekly oil numbers for a short period of time. But in our view, this does not change the current supply/demand path for oil, which based on facts, shows rising demand, lower than estimated shale production growth, and declining global oil inventories. We expect, at some point, the consensus view will start questioning the EIA estimates and pay attention to the data rather than remain stuck in groupthink. We believe the actual data points to higher oil prices.

With global oil depletion reducing supplies by 4 to 5 mb/d annually over the next five years, the industry must find 20 mb/d of new sources of supply just to satisfy current demand. We believe the longer that low oil prices persist, starving the industry of the cash flow needed to fund capital investments for future production, the higher the likelihood of a super spike in the price of crude oil.

While a super spike in the price of oil would likely benefit our Century Management energy-related equity holdings, it would not be healthy for consumers or the economy in the long run. A more reasonable assessment of supply and demand fundamentals, rather than a myopic focus on weekly estimates, would, in our opinion, result in oil prices more representative of industry economics (which we believe is higher than the current price) and a healthier environment for both consumers and producers.

Either way, we see oil prices moving higher.

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