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September 30, 2017

Dear Limited Partners,

“Clear eyes, full hearts, can’t lose.” - Coach Eric Taylor, Friday Night Lights

The above quote is a mantra, something that the football coach in NBC’s drama, Friday Night Lights, says before leading his high school team onto the field. This quote from the television show is a condensed version of the movie quote, the genesis for which was the non-fiction book of the same name written by H.G. Bissinger. Interestingly, this book was based on a real high school football team and its journey to the 1988 state championship, and what the team’s accomplishments meant to the town of Odessa, Texas. Odessa lies in the heart of the Permian oil basin and at the time was dealing with the boom and bust of the oil industry. Three decades later, that quote applies as much to our investing process, one coincidentally focused on energy, as it does to a football team.

We’ve often said that investing requires a few things at its core, a penchant for fundamental analysis and a clear understanding of your personal strengths and weaknesses. Investing is where analysis and finance run on parallel paths, but psychological biases can blindside you at the intersections and ruin your entire adventure. This is why we try to approach investing with clear eyes, to find out what’s really true and not just what we believe is true. We always strive to articulate the contrarian thesis better than those who advocate them because that underpins sound analysis.

With a robust thesis in hand, we now have to commit capital and bet that we’re right. Unfortunately, even with the above, we can still lose. Whether it’s due to black swans waddling across our paths or the whims of fate, stuff happens. Sure we can talk about risk/rewards, Kelly ratios, etc., but often it takes some courage of conviction to hold positions, especially when they move against you. Suffering or holding losses goes against every human instinct and loss aversion permeates our psyche. This is why a full heart can help bridge that chasm of uncertainty, one borne from facts and sound reasoning.

In investing as in life, it’s all about the process, continuously working on our craft (i.e., we think this is what our parents referred to as “building character”). Over time, our success, much like character, will be a byproduct of continuous effort coupled with sound decision making. If and when the markets don’t agree with us, well we’ll just need a bit of patience. This is hard to come by even for the best and most hardened of investment managers, but often the road less traveled is the one worth taking. So our theme as we continue on our adventure? Clear eyes, full hearts . . . can’t lose.

Our Q3

Date	Open Square Fund I Performance YTD*	S&P 500 Performance YTD*	Outperformance / (Underperformance)
January 1 – September 30	(28.20)%	14.24%	(42.44)%

* Prior to fees. S&P 500 is using ETF: SPY

We managed to claw-back some of our losses this quarter and finish up 6.61% despite a continuing weak

energy market. After a trying Q2, sentiment in Q3 picked-up right the last quarter left off, and oil prices and energy stocks kept selling off. Many of our stocks sold down to levels that exceeded last year's February 2016 lows when oil traded at \$28/barrel, never mind that oil prices today are almost 100% higher.

The underperformance in energy stocks remains dramatic, especially given where oil prices are. If priced against historical multiples, our stocks should be roughly double their price today, but the market maintained its apathy.



As you can see above, the stock performance of oil producers typically tracks oil prices (i.e., as measured by the exchange traded fund XOP), which makes sense because you are what you make, and you're worth what your products are worth. Yet this correlation began to materially diverge this year, a divergence that only grew in Q3. Active fund managers had little reason to catch a falling knife, particularly when it's already so difficult to beat the index.

Q3 proved especially challenging for professional energy investors as it brought a wave of fund closures due to client withdrawals. Even the most bullish of bulls, Andy Hall (dubbed the "Oil God" by the press for his earlier prescient oil bets) closed his Astenbeck fund after sustaining large losses this year leading many to believe that the entire sector was now forsaken by a higher power. Sprout Energy Fund estimated that \$13B of energy assets under management, levered at least 2x, likely begat \$30B of additional selling, which compounded the pressure.

Management Realizes Shareholders Own Shares

In such a swoon, even E&P companies that are fundamentally sound are painted with the same broad brush and maligned. Thus, with equity prices hitting all-time lows, management teams compensated by stock options began to take notice. Some realized that maybe, just maybe, their plans for growth at all costs (well at the cost of more debt and equity issuances) should change because that self-destructive strategy has led them to today's predicament. Tentatively one company began emphasizing production restraint (i.e., responsible growth within cash flows), and when their share price actually increased, then monkey see, monkey do, and other companies followed. Social proof translated to companies yelling "game on", and restraint and increasing shareholder value has come back in vogue.

This maturity, however, will create some knock-on affects. Wall Street continues to forecast significant shale growth in 2018 and beyond, but those figures are extrapolated from earlier “growth at any cost” baselines. If the paradigm has shifted, future production growth will almost certainly be lower, which means the oil market will become even tighter, deficits will grow larger, and oil prices will spike higher. In addition, if company executives are constrained in organic growth, they’ll likely look to inorganic growth (i.e., mergers and acquisitions), hunting for targets armed with higher stock prices. If you can’t grow production by directly outspending your cashflow, M&A offers an alternative path for corporate growth. Done properly, M&A can allow them to increase margins and production, but at a lower cost per barrel.

This individual growth, however, may come at the expense of overall production growth. As companies gain scale and shale operators consolidate, further discipline will set-in, and shale production growth may become even more tempered. The Wild West of today eventually matures into the well-managed oil fields of tomorrow, and production growth inevitably falls. For now, it’s clear that Wall Street analysts were far too optimistic in their estimates for US oil production growth, but we believe given the newfound capital discipline, they’ll compound that error in their future forecasts.

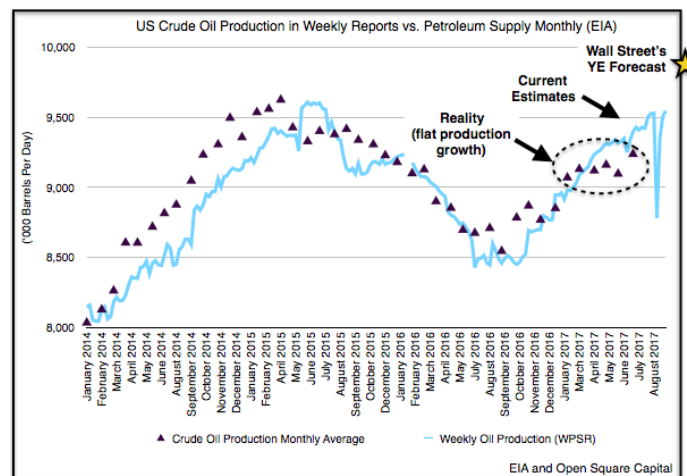
Today’s Production Growth, or Lack Thereof

Restrained growth may actually come just as oil inventories are approaching a deficit. Recall that the market’s “lower for longer” oil thesis is predicated on US shale production growth. If this growth fails to materialize under the old “grow at any cost” strategies, what then? Will shale growth be exposed as the red herring we’ve always thought it was? Data in the past few months indicates that the “growth at any cost” strategy was already staggering under its own weight.

As we’ve long argued, shale production can’t single-handedly mitigate global decline rates. Energy Aspects, a research service based in London, succinctly sums it up by stating

“If demand does not slow, the world will need far more oil than the tight oil sector can offer at \$50. Without additional productive capacity, the rapidly growing demand could trigger a supply crunch well before the theoretical peak in oil demand is reached. We are not saying for one moment that there is too little oil — there is plenty. Our point is there is not enough oil at \$50.”

At \$50/barrel, the world is relying upon growth in three shale patches in the US to shoulder the increasing global decline rates. What’s becoming clear is that these shale patches are hardly able to stem US production declines let alone the world’s. Just take a look at the US data below.



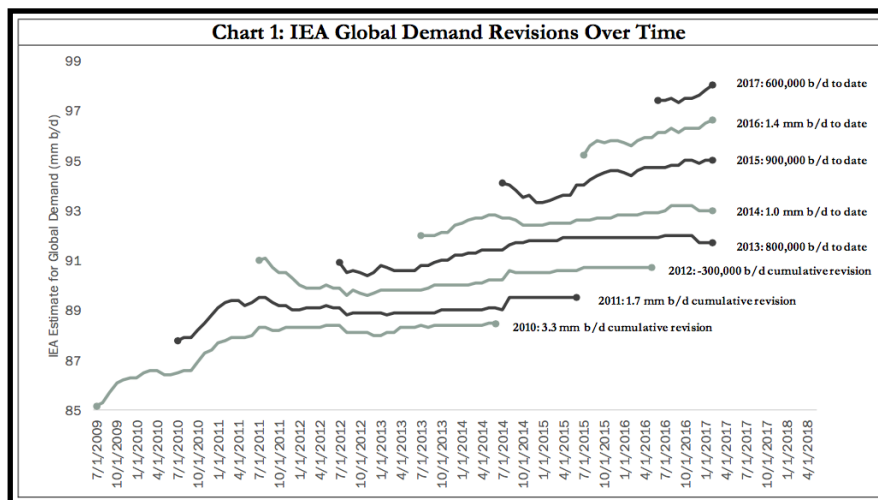
Despite Wall Street’s predictions, overall US production (40% of which includes shale) is coming in far less than predicted. The light blue line represents the EIA’s current estimates, and the dark triangles the more accurate monthly data that follows. We can already see actual production isn’t keeping pace with EIA’s estimates, let alone Wall Street’s. At current rates, we believe US crude production will only grow to be half of what Wall Street analysts had projected for 2017 (measured from YE 2016 to YE 2017). Think about that for a second, Wall Street analysts have essentially overestimated US production growth (i.e., supply in the supply/demand equation) by 100%. We’ve been the de facto Pollyanna for the past few years, contending that US production growth will be wholly insufficient to stem the tide of decline rates. We’re now seeing that play out.

Demand Growth

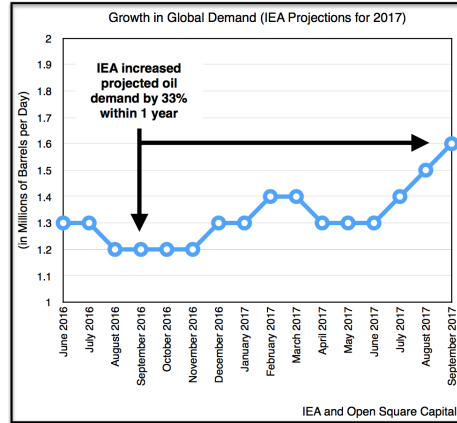
The dearth of capital has not only staggered production growth, but cheap prices have brought on a surge of demand. Global demand has simply been ratcheting higher.

Growth in Global Oil Demand (IEA)					
(million barrels per day)	2014	2015	2016	2017	2018
Total Global Demand	92.9	94.8	96.1	97.7	99.1
(Increase/(Decrease))		1.9	1.3	1.6	1.4
Cumulative (Increase/ (Decrease))			3.2	4.8	6.2

Since the oil price crash in late-2014, oil demand has cumulatively increased by almost 5M bpd, from 92.9M bpd to 97.7M bpd. If we include IEA’s preliminary estimate for 2018, that figure rises to 6.2M bpd. Said another way, the growth in global oil demand since prices collapsed has effectively absorbed the growth in oil production coming from shale. In fact, this growth in demand is likely even higher than indicated because the IEA has a history of first understating demand growth only to adjust it higher later (as illustrated by Goehring & Rozenwajg’s chart below).



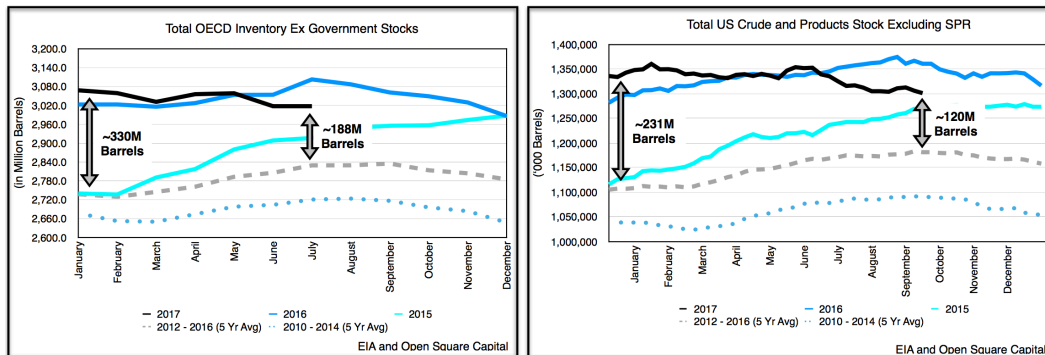
This year is no different. In 2016, IEA projected that global oil demand would rise by 1.2M bpd in 2017. Since then, the EIA has revised its demand estimates higher, and today it stands at 1.6M bpd (i.e., 400K bpd or 33% more than anticipated).



While this may not seem like a significant change, finding 400K bpd of extra production in a \$50/barrel environment simply isn't possible, which means much of this demand is being quenched by inventory draws.

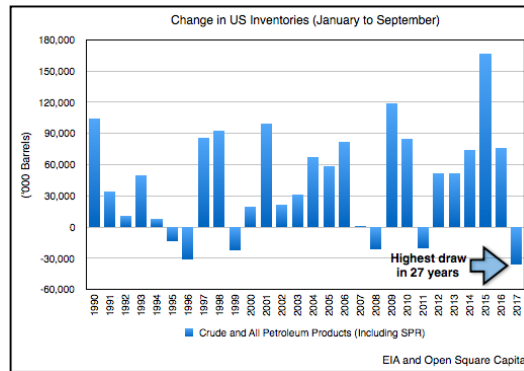
You Can Fool the Market, But Inventories Don't Lie

All of this, slowing production growth and higher demand, is impacting inventories. What started as small draws in February quickly gathered steam, and by Q3 the draws became historic. Below left depicts what global oil inventories (crude and refined petroleum products) looked like at the end of July (recall that global data lags by 2 months). The right chart shows US inventories as of September.

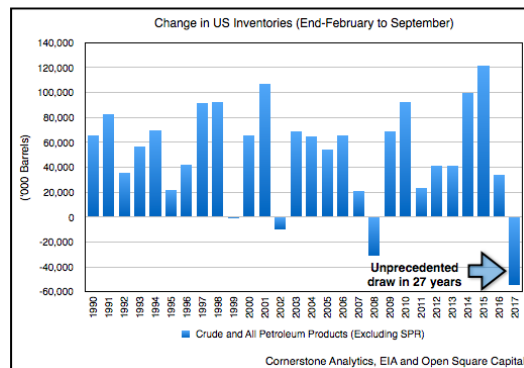


We can see that much of the oil surplus sits in the US so let's focus there. Since the beginning of the year, the US has whittled down the surplus by close to 110M barrels despite having to contend with the global destocking that occurred in Q1. Although we realize looking at the 5-year average isn't always precise especially since infrastructure additions means some of these increases in inventories are permanently filling tanks and pipelines, it's what the market looks at so we'll use it here.

What’s surprising is that the reductions have occurred during periods when oil inventories typically build, which is a testament to the undersupply and high demand. We discussed briefly the counter-seasonal draw in our Q2 letter, but with Q3 data now included, we can paint a much clearer picture. Below is a chart showing the unusual nature of today’s draws year-to-date.



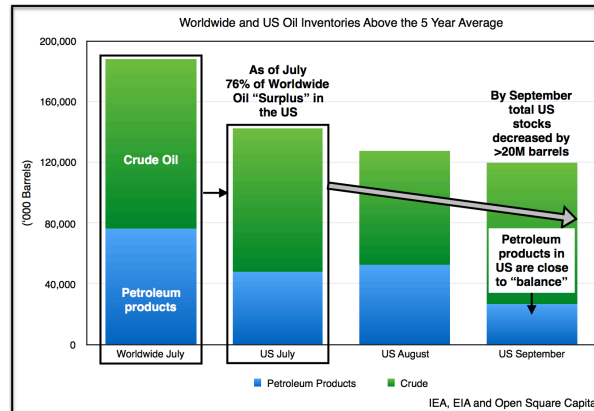
To further appreciate how unusual these draws are it helps to exclude the one-time global destocking that impacted US inventories in January and February. Cornerstone Analytics, a research firm led by Mike Rothman, noted that from February to September, overall petroleum stocks almost always increase. Almost always because in nearly three decades, US inventories have only fallen two other times, one of which was during the Great Recession in 2008.



In contrast, we’ve drawn by an unprecedented 54M barrels of total oil inventories from Feb-to-Sept, when the average build in the past 26 years has been 55M barrels (a 110M barrel difference). Said another way, the drawdown in oil inventories has **never** been this strong in the past three decades.

Refining Our Crude Reality

Since total oil inventories include both crude oil and refined petroleum products (i.e., gasoline, diesel, etc.), it’s always helpful to look at them separately. We previously showed that the worldwide supply of oil was 188M barrels above the 5-year average, that’s again depicted in the left green/blue column below. In July, the US surplus accounted for more than 76% of this, with crude oil the largest component.

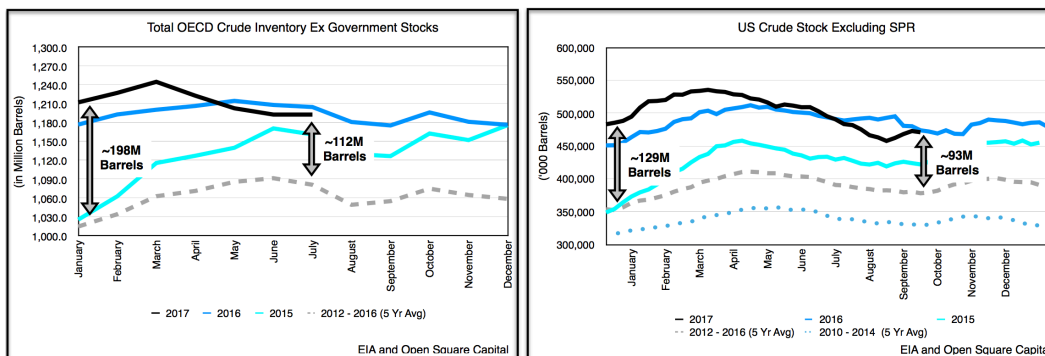


As we finished Q3, we can see that petroleum products have declined dramatically. This was due to both high demand and Hurricane Harvey. When refineries in Texas were idled because of the hurricane, oil products from storage declined as the remaining refineries failed to keep-up.

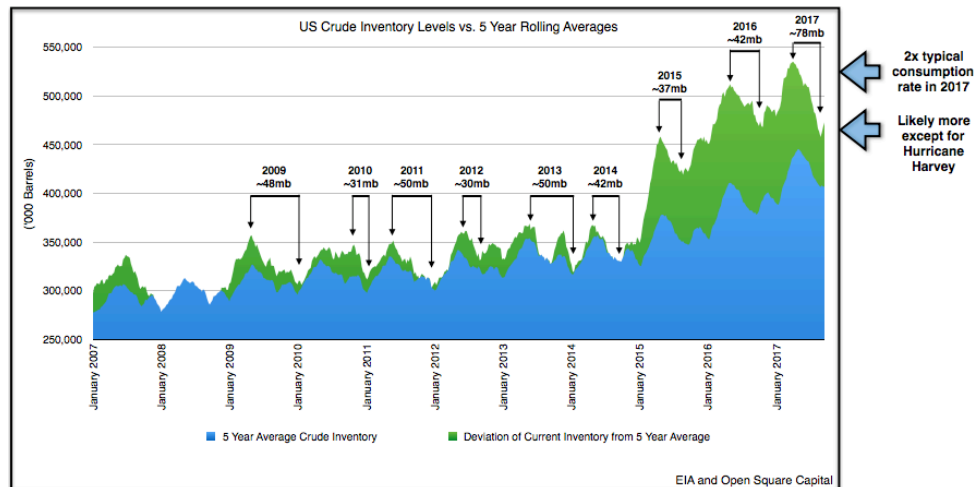
By September, much of the US surplus in petroleum products have been eliminated, and by year-end we believe product inventories will be in deficit. Why? Maintenance season. Contrary to popular belief, the fourth quarter is when demand peaks for petroleum products in the US. This is when stocks of refined products draw the most heavily as refineries slow down for maintenance. Case in point, the average 5-year draw during Q4 was 32M barrels (2012-2016). If we're currently running at higher demand and only ~28M barrels shy of balance, then it stands to reason that even in a "normal" year, we'll likely be undersupplied by year-end.

It's a Crude, Crude Summer

What about crude oil? Well we think it isn't far behind. The IEA estimates that crude inventories were approximately 112M barrels higher than the 5-year average as of July. At the time the US had approximately 93M barrels, and because of the hurricanes it stayed about the same at the end of September.



Although crude inventories outside of the US have drawn, almost 80% of the global crude surplus still sits in the US. Said another way, crude supplies are effectively balanced outside of the US, but this last bastion of supplies won't last. Just take a look at this graph illustrating the strength of US crude draws.



All of the financial and human capital invested in shale led to a tidal wave of crude supplies that built-up between 2014-2016. Yet, after only 9 months in 2017, the global markets have essentially cleared out a large portion of that surplus. While crude inventories are still elevated when compared to the 5-year average, strong oil demand and stagnating production have played significant roles in engineering an inventory draw. It's clear that today's crude draws are simply unsustainable at today's prices, and we believe crude inventories will continue its free fall in Q4 and here's why:

Exports

Unlike prior rebalancing, today's rebalancing will be a truly global one because Congress lifted the US export ban in late-2015. Currently international crude (i.e., "Brent") is priced at approximately \$58/barrel, whereas US WTI is priced at \$52/barrel. The higher price outside of the US indicates that supplies are even tighter overseas. Traders are now incentivized to arbitrage this differential by buying US crude and selling it overseas, pocketing the difference. Thus, US crude exports are bound to increase as oil is drawn from US storage. In just two weeks, US crude exports have increased by more than 1.2M bpd, reaching the highest ever of 1.98M bpd. To put that into context, just the increased draw is equivalent to more than twice the oil production coming out of Alaska, and by itself will make short work of the 93M barrels of surplus crude in the US.

Increasing Domestic Demand

Post-Hurricane Harvey, refineries have been slowly coming back online. The hurricane reduced US refining capacity by close to 20%, and during that time inventories of refined products drew heavily. Since petroleum products are already well on their way to balance, the lower inventory levels are pushing prices and refinery margins (i.e., crack spreads) up and motivating refineries to produce more. Higher production of refined products will drive higher crude demand. So as refineries return from maintenance season we expect crude draws will follow.

The undercurrent of flat production growth coupled with strong worldwide demand means both US and global inventories of crude and petroleum products will draw in Q4 and beyond. So if a historic 3-year

inventory build created on a foundation of loose monetary policy will likely be consumed by year-end, then what? Well one word . . . scarcity.

When There's Not Enough

In a prior article we published, we discussed the issue of scarcity. We're including excerpts of it here because we think it bears repeating. At the end of the day, prices will turn when inventories turn, again, when there's scarcity. This is why we keep analyzing current and forecasted inventory figures because we believe once inventories reach the "5-year averages" perception will begin to change and influence reality.

We're actually fairly conservative. We don't believe oil prices will immediately vault higher as we cross the 5-year average. We think prices will move up after we've fallen deeper below the 5-year average because it's not balance we need, it's scarcity. For oil bulls to succeed, we'll need the market to perceive that the draws will not only continue, but do so unabated and for awhile.

Once that occurs, we surmise three things will happen (some concurrently and others in time). First, as physical inventories increasingly tighten, oil prices for the strip will begin to naturally rise; this rise will then be noticed by consumers and Wall Street and increasingly factored into analyst reports. The change in assumptions will then filter into the broader community via the media, which will report that the market is in balance. As declines increase, however, that balance and the media's narrative will then turn into "shortage". As the ripple effects increase, this will filter its way to corporate planning and consumers of petroleum products (e.g., industrials, airlines, shipping, etc.) who will factor in higher prices and trigger an increase in hedging activities (i.e., low-scale hoarding); hedging that will be exacerbated by financial traders who will pile into the long side.

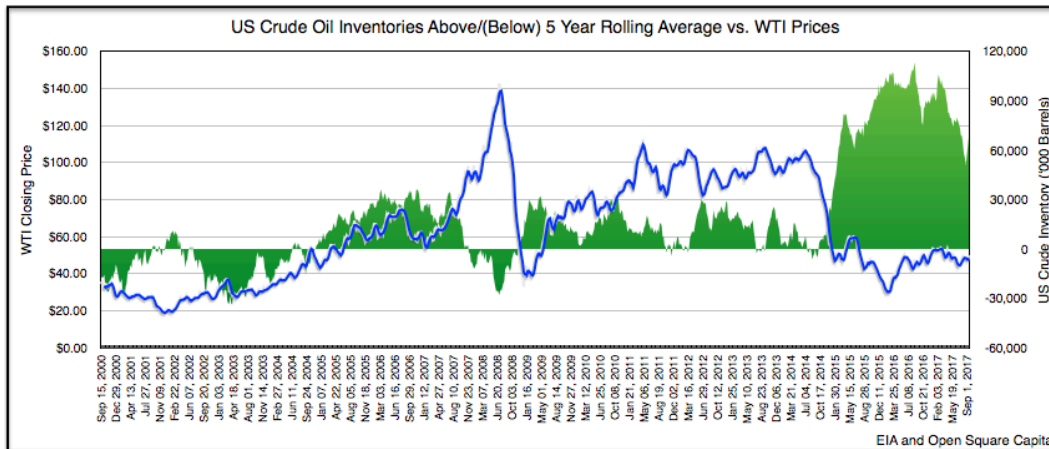
Second, the turn in oil prices will likely happen quickly because it will be driven less by fundamental data and more on sentiment/emotion (i.e., the inventory declines this year are well known, but prices have yet to readjust as the large inventory stockpiles have lulled the market into complacency). As the broader market reprices the commodity, sentiment will take over and just as it drove prices down to an unsustainable \$28/barrel, it will provide an artificial lift on the way up.

Lastly, the perception of longer-term oil scarcity will steadily increase. Initially, the increase in oil prices won't be significant enough to impact demand, given the low base from which oil prices will begin their ascent. If demand stays steady, inventory draws will appear to be accelerating relative to the lower physical stock levels. Eventually, when the growth in shale production ultimately proves disappointing in both scale and speed, that's when the narrative will eventually be exposed, by which time we'll be well into 2018 and beginning to model the dearth of oil/gas projects coming on-line in 2019.

The medium-term under-investment in oil production these past few years will then take the baton of scarcity and race it to new heights. For perspective, here's a quote from the *Financial Times*:

"Historically about 15bn barrels of new supplies from conventional resources are approved for development each year, the International Energy Agency says. This fell to 8bn in 2015 and 5.5bn in 2016. Despite a rise to 8bn-9bn barrels this year, the IEA expects that global oil supply will still struggle to keep pace with demand after 2020."

The market currently shrugs that off though because supplies are plentiful and 2 years away is akin to 2 decades away for today's investors. Why worry? *Hakuna Matata*. To which we say . . . fantastic . . . because it's simply going to make our bullish thesis play out that much better. There's nothing magical about the inverse correlation between inventories and oil prices. Lower inventories lead to higher prices. It's happened in years past and it will happen again.



Cheap capital spurring overproduction and shale development was only the most recent cause for bloated inventories and lower oil prices. Regardless of the cause, eventually the market rights itself and balance is restored. What's different today is the speed of that reckoning. Inventories are drawing down faster than they've ever had and absent demand falling off, there's little to arrest it.

Parting Thoughts

So many people ask us if we're frustrated that oil prices and our investments keep stagnating, and admittedly some days yes, but most other days we mentally shrug.

Like winter, scarcity is coming. We can see it in the data and we can see the mice eating away at the world's winter stores. We remain steadfast in knowing that our fund will have its many days in the sun when circumstances reverse, and we simply have to stay rational. In the meantime we know . . . clear eyes, full hearts, can't lose.

As always thank you for investing and please let us know if we can explain any of our ideas above in more detail.

Sincerely,



Nelson Wu
Managing Director