

Energy—In Transition

Pranav Rawal, Managing Director
October 21, 2021

Is it too premature to give up on Fossil fuels? To say that the current structural dynamics in the oil markets are complex would be an understatement. At a given time, there are several factors that impact the supply and demand equilibrium that ultimately drive the price of oil.

Supply:

- **OPEC+:** OPEC+ policy is a significant determinant of oil price. OPEC+ currently includes Saudi Arabia, Russia, and a host of other countries. OPEC has successfully (and sometimes unsuccessfully) managed supply over the years by controlling their oil production and output. Any unwillingness to come to an agreement among its members can wreak havoc on the price of oil—as we saw in the months of March and April of 2020 when oil dropped to as low as \$8 per barrel in certain markets and even went negative for one day.
- **Shale E&Ps:** The behavior of shale Exploration and Production (E&P) companies in terms of their capital allocation and oil production growth is a second major determinant of supply. Billions of dollars in capital has been destroyed since 2014 with shale producers consistently outspending their operating cash flow and flooding the market with oil. The shale E&Ps generated negative free cash flow and drilled oil wells at returns below their cost of capital.
- **U.S. sanctions on Iran:** This is another major factor on the global supply of oil. A swing of up to a million barrels per day in global production can result depending on whether the U.S. maintains its sanctions against Iran. To put this number in perspective, the global demand is around 100 million barrels per day.
- **Oil midstream and infrastructure problems:** Specifically, Permian midstream bottlenecks had a major impact on the takeaway capacity of the producers in 2017, and in 2014, early in the shale cycle, Bakken oil producers used to face a \$10 or \$15 per barrel headwind as a result of insufficient take away capacity—either pipeline or rail.
- **African nations:** Nigeria and Libya’s problems with civil strife also impacts their production and thus, their global supply level.

Demand:

- For the better part of the last two decades, a large portion of oil demand growth came from China. With Chinese GDP growing at a record pace (8%+ for several years), oil demand growth was robust. In the last three years, the Chinese oil demand has slowed due to a decline in their GDP growth along with intentional steps to manage their carbon emissions. Today, India appears to be the new China; however, oil demand and GDP are not growing at the same torrid pace as China. Nevertheless, the expanding middle class (a 1.4 billion population) is propelling demand growth.
- Electric vehicles (EVs) gaining share and threatening to upend oil transportation demand.
- The ever-increasing noise about ESG, especially the Environmental part, which is resulting in investors shunning oil and fossil fuel-based investments.

A brief history

The oil industry has seen several mini boom and bust cycles since the fall of 2014 when Saudi Arabia famously flooded the world with oil production in order to cripple the U.S. shale industry. During this time, the U.S. shale industry drastically cut costs and was able to lower the marginal cost of production (from \$80 to \$55). Oil prices plummeted to \$28 in early 2016—shrinking supply and setting the stage for oil prices to exceed marginal cost coming out of this glut.

Marginal cost is the price of the marginal barrel and at prices below \$55, even the lowest cost producers globally (in this case U.S. shale) cannot earn their cost of capital. Saudi and Russia, actually need a higher number to balance their budgets because of social and other obligations, thus there is no source globally that can sustainably produce oil below this price. From 2015 to 2018, U.S. producers continued to grow at phenomenal rates, more than 100% annually in some cases, while destroying capital in the process. During

this period, acreage acquisition and consolidation by E&Ps were fueled by abundant capital from Wall Street. A record number of debt and secondary equity offerings were completed to acquire additional acreage. However, the poor returns for these producers caught up to them as frustrated institutional investors finally threw in the towel and refused to fund the acquisitions through debt or equity offerings. When capital dried up for these producers, they acquiesced, and free cash flow was the most heavily used word in their earnings calls. It became a game of survival of the fittest as subscale producers with debt were between a rock and a hard place. If they spent within their cash flow, their production declined every year (due to the 40 to 50% annual declines in production typical of the shale rock). If they overspent, their equity was pummeled.

Consolidation

Following the 2020 carnage in the oil markets, there was a wave of zero premium merger of equals or acquisitions. For example, Concho by ConocoPhillips, Noble by Chevron, Devon merging with WPX, and finally Parsley Energy by Pioneer Natural Resources. In the low growth and low oil price environment last year, it was rightfully deemed that subscale operators would not survive by themselves. Only a handful of scale E&Ps and/or majors remain in the U.S. that, in our opinion, are investable (Exxon, Chevron, ConocoPhillips, EOG Resources, Pioneer, Devon, and Diamondback). Majors outside the U.S. (especially the European counterparts) are on an aggressive path to shed their fossil fuel assets and become downstream alternative energy power companies. There are a few exceptions among smaller companies, such as PDC Energy, that have been disciplined operators historically and possess advantageous rock. These companies can still do well despite lacking comparative scale.

Corporate Governance

Corporate Governance has been a major problem for E&Ps in general. Most of the U.S. based shale E&Ps and their oil service counterparts have been poorly managed and are inclined to follow the institutional imperative, which creates roadblocks in the path to create value.

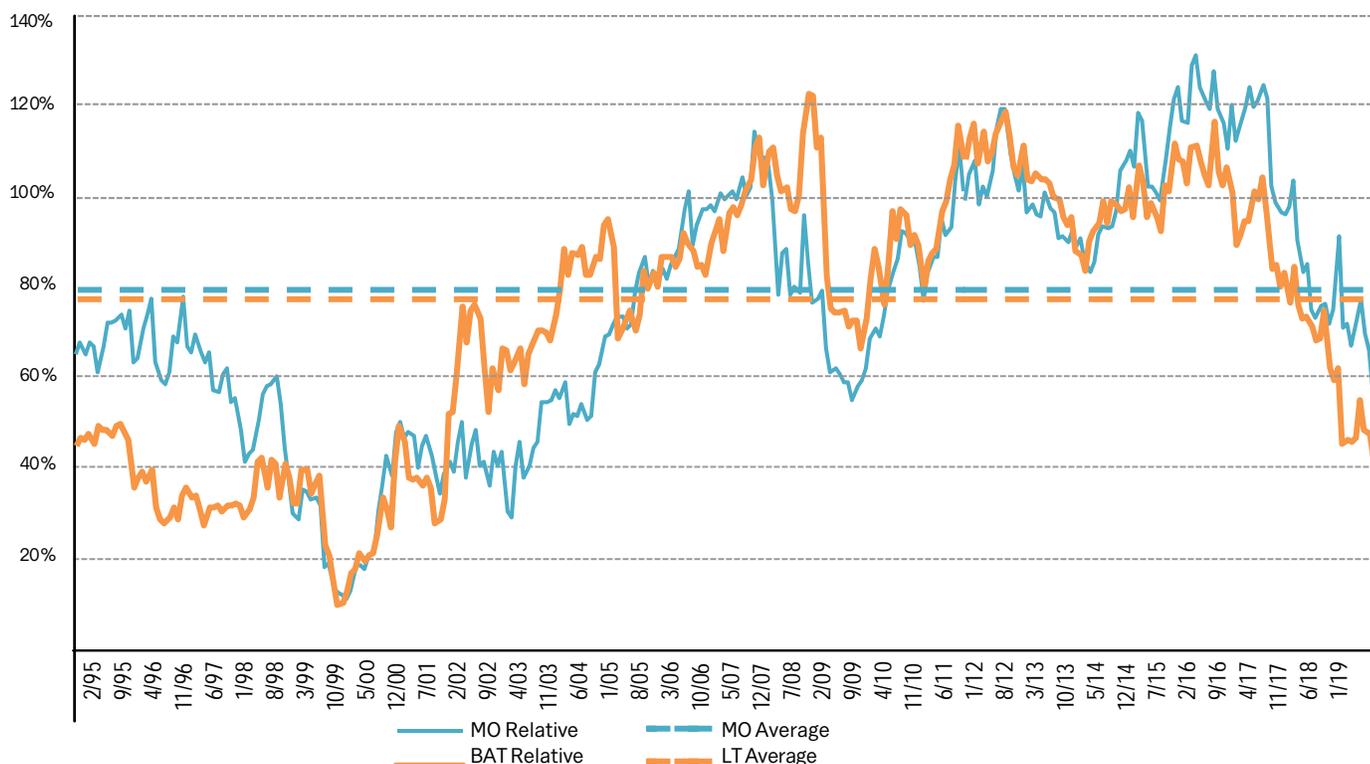
A majority of the energy companies' C suite have little to no ownership in their respective companies, but get high compensation every year in essence for destroying capital. For example, when Occidental Petroleum Corp., a large-cap Permian operator, made a bid for a peer company with offshore and shale assets in 2019, it crippled the company with debt (especially in a highly cyclical and somewhat secularly challenged sector) and it was in essence a synthetic poison pill. The CEO's equity stake in the company at that point was equal to one year of the CEO's total compensation, providing a great incentive to keep the job by pursuing a value destructive acquisition. Within the subscale operators, the incentives were even worse in some cases. After consolidation, the incentives were corrected for the most part and the remaining management teams are relatively more shareholder friendly. The boards have implemented compensation structures for management that focus on free cash flow, leverage, and returns rather than just focusing on production growth, as was the case previously.

E&P Playbook going forward

By the end of 2020, most scale producers had further reduced their cost structure. A majority can keep their production flat and manage to pay a small dividend with oil prices as low as \$35 per barrel. Keeping production flat is important because the shale model is characterized by decline rates that can run as high as 30-50%. This suggests that at a normal oil price, 30 to 50% of the cash flows might be utilized just to stand still.

Fossil fuels clearly have secular headwinds, but we believe they will be around much longer than the popular perception, which currently indicates they will be replaced in less than a decade. The optimal business model for the producers in this scenario, and the one most have started following, is to return capital to the shareholders instead of redeploying it back into the business. An example of another industry with similar characteristics is Big Tobacco. From the mid-1990s up to the early 2000s, Big Tobacco was under legal scrutiny due to health concerns attached to smoking. Stocks such as Altria Group and British American Tobacco saw their valuations derate 50% or more from the market multiple (see chart below), similar to what we are seeing today with the energy stocks (E&Ps trade at greater than 50% discount to the market multiple based on NTM EV/EBITDA metric).

Looking at Tobacco: Altria Group (MO) and British American Tobacco (BAT) NTM P/E multiples relative to the S&P 500 average



Source: Bloomberg; Bank of America Merrill Lynch Global Research. Oilfield Services: The times they are a-changin' (August 28, 2019)

After a decade of underperformance relative to the S&P 500, these stocks subsequently outperformed the market for the next several years. During this time, investors flocked to these companies and their multiples rerated due to solid earnings, high dividend yields, and relatively lower legal scrutiny. E&Ps and other energy companies should execute this same playbook.

A potential model going forward, which should attract investor capital would include planning for a range of oil price from \$45 to \$65, and having a reinvestment ratio of anywhere between 50 to 60% (that is deploy 50 to 60% of operating cash flow into capex). Also, the companies should return the excess free cash flow back to shareholders, either in the form of dividends and/or share buybacks. In the case of companies with debt obligations, some of the free cash flow should be used to pay down debt and bring leverage to an acceptable level (1.0x and below).

While the industry will return to some level of moderate growth over time, we believe there are significant benefits to limiting capital allocation to the drill bit segment—it should help reduce base decline rates while at the same time pushing operators to become more efficient through a reduction in controllable cash costs (G&A plus operating expenses). This should also mitigate the risk of material service cost inflation to some extent in a higher crude environment similar to the one that we are witnessing now.

As we noted earlier, it will not be easy to replace fossil fuels so rapidly. Currently, more than 60% of oil globally is used for transportation in the form of gasoline, diesel, and jet fuel. EVs have shown much promise, however, their adoption rates have not increased rapidly yet. At this time, EVs represent approximately 3% of new vehicle sales globally. The primary reasons EV market share has not increased more is a result of battery costs, technology not improving to the extent originally projected, and lack of a charging infrastructure. In addition, with the exception of Tesla, the incumbent OEM's have not yet jumpstarted their EV production meaningfully.

A variety of issues in the past few years—including the recent Covid crisis—have done damage to the supply side for fossil fuels. The industry has already lost a portion of supply related to deepwater and lack of significant investment in the area further compounds the issue. Some of the more conventional supply, such as Gulf of Mexico, is slowly coming back, but U.S. onshore vertical wells might never come back. We were postulating last year that this might introduce a supply shock at some point, which could spike the price of oil. As the events in 2021 have unfolded, we are partially there with WTI above \$80 as of early October.

Current Situation

We believe both oil and natural gas continue to have a favorable backdrop. In terms of oil, the OPEC+ alliance continues to exercise discipline in maintaining production cuts. The October 4th OPEC meeting was one of the shortest with the alliance sticking to its earlier decision of gradually increasing production by 400k barrels per day from November. Oil demand continues to increase from last year as economies open up globally post Covid and new oil supply has been kept off the market. Besides OPEC, the U.S. producers have been disciplined in not increasing production even as oil prices soar. They have been committed to returning a big percentage of their increased free cash flows back to shareholders in the form of dividends and share buybacks. Some E&Ps are posting free cash flow and dividend yields of 15% and 12% respectively for fiscal year 2022. Dividends typically include both a base and variable portion.

Even with secular headwinds, the next 5 to 10 years appear to be defensible for oil as renewables have not ramped up as fast as anticipated and oil is well ingrained into the global infrastructure. Looking beyond 10 years, the outlook becomes cloudy, as technological advances in batteries should result in an increased adoption of EVs—ultimately eating away at oil demand.

A few words on natural gas

Besides oil, natural gas has also been witnessing a bit of a renaissance. Natural gas prices, which have been perennially below \$3/MCF, have witnessed recent increases to above \$6/MCF. Our readers may recall that ConocoPhillips top ticked the price of natural gas in late 2005 with their Burlington Resources purchase. Since 2005, the price has had a steep descent from as high as \$13/MCF to the lows of \$2-\$2.50/MCF.

The primary reasons for the decline in natural gas prices are:

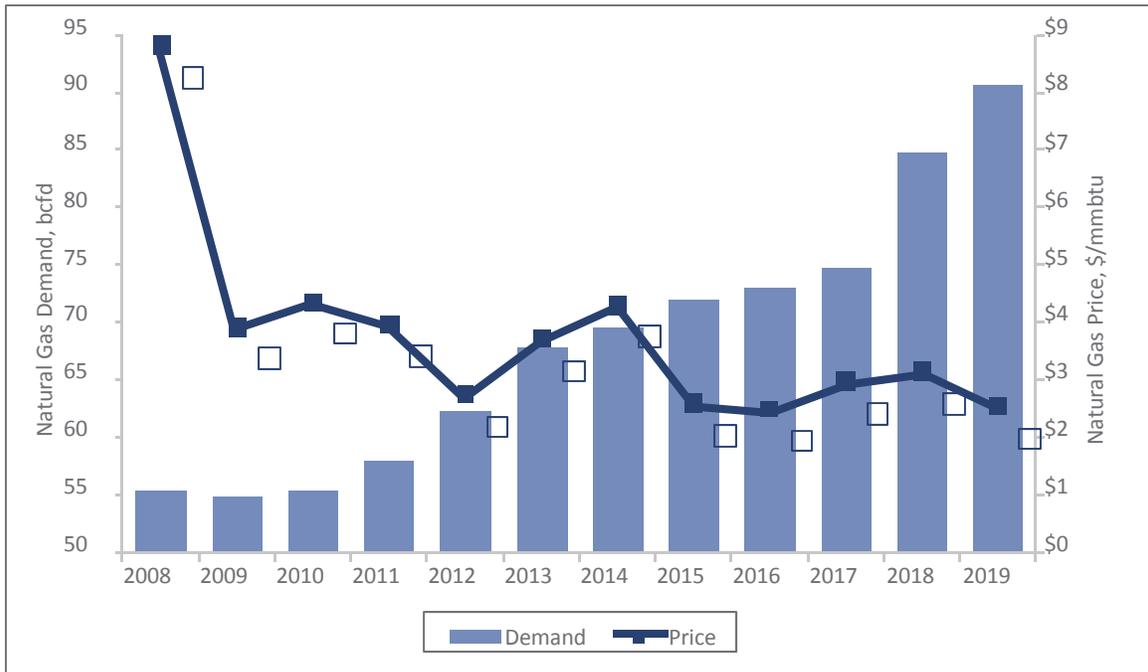
- The supply of natural gas exploded to the upside with the advent of shale allowing operators to make acceptable returns at relatively lower natural gas prices. The demand could not keep up.
- A decade ago, natural gas was more of a landlocked commodity in the U.S. with the liquefied natural gas (LNG) industry and infrastructure not very well developed. As a result, the excess supply had nowhere else to go and resulted in steep price declines.
- Later in the decade, from 2012 onwards, there was the onset of shale oil. Oil could now be extracted from the newly discovered basins such as Bakken, Eagle Ford, Permian, and the DJ Basin. As the shale oil drilling proliferated, it also brought a ton of associated gas with it. A barrel of shale oil typically had 60% oil and the remaining was natural gas and natural gas liquids.

All these reasons kept a lid on the price of natural gas.

However, in the last 18 months, things have started to change. We talked about how the oil E&Ps have become disciplined and have stopped growing—focusing on generating free cash flow instead. This has a direct impact on reducing associated gas production and helping the natural gas market. In addition, in terms of becoming disciplined, the shale gas industry is a few years ahead of the shale oil industry as most companies have already been starved of external capital. As a result, the industry has much lower decline rates (in the 20-35% range generally), is consolidated, and is already focused more on free cash flow and less on production growth.

In addition, in the last decade in the U.S. natural gas as a fuel has increased its share of power generation from 24% in 2010 to 45% in 2020. Meanwhile, coal has declined from 45% in 2010 to 16% in 2020. Coal has environmental concerns around its emissions while natural gas burns relatively cleaner and is available in abundance at cheap rates in the U.S. The figure below shows the historical prices and demand for natural gas.

Historical Natural Gas Prices and Demand



Source: U.S. EIA, FactSet, Q2 2020, SailingStone Capital Partners LLC. *The Energy Transition: Outlook and Implications for Upstream Commodities* (July 2020)

A confluence of factors are contributing to the current price surge with the main ones being: the possibility of a cold winter globally, recent LNG outages in select parts of the world, almost non-existent new natural gas supply (including the U.S., which is affecting LNG exports to Asia), and Russia's inability to supply Europe with natural gas through their pipelines.

We have maintained for some time now that natural gas has a special role to play in the energy transition. The lofty goal by the International Energy Agency of net zero emissions by 2050 can only be met with natural gas carrying a bulk of the medium-term load. Areas such as Africa, China, and India still burn a considerable amount of coal for their electric power needs. Natural gas can serve as an important base load for these countries as they ramp up their efforts to get their power from renewable sources, which requires billions of dollars in investments. Keeping this in mind, we believe natural gas has a longer runway than oil and lower secular headwinds. LNG exports, however, require billions of dollars of investments in liquification plants at U.S. ports, investments in additional pipeline infrastructure, and a forward-thinking policy. The U.S. should step up to fill the gap to help reach the ambitious 2050 targets.

Pranav Rawal*Managing Director/Senior Analyst*

Mr. Pranav Rawal is a Managing Director with Sapience Investments and serves as a Senior Analyst with the investment team. Mr. Rawal has been working with the investment team since 2006 and joined Sapience Investments in 2016. Previously, he served as Senior Vice President for the Pelican Value Equity team at Wells Capital Management, as Equity Analyst with both Dearborn Partners, LLC and Lyceum Capital, LLC, and as Energy Infrastructure Analyst with Duke Solutions Inc.

Mr. Rawal has been working in the investment industry since 2000. He earned a Bachelor of Engineering in Mechanical Engineering from S.S. Engineering College of India, where he graduated with High Distinction, and a Master of Science in Industrial Engineering and Management from Oklahoma State University. He also earned his MBA from the University of Chicago. Mr. Rawal is a member of the Alpha Pi Mu Honor Society.

This material has been prepared for informational purposes only and should not be considered a recommendation to purchase or sell any specific security. The opinions expressed herein are those of Sapience Investments, LLC ("Sapience"), and are subject to change without notice. Past performance is not a guarantee or indicator of future results. This material is not financial advice or an offer to sell any security or product. You should not assume that any of the investment strategies or securities discussed herein were or will remain in an account's portfolio at the time you receive this report.

This document contains projections, forecasts, estimates, beliefs and similar information ("forward looking information"). Forward looking information is subject to inherent uncertainties and qualifications and is based on numerous assumptions, in each case whether or not identified. Further, material presented has been derived from sources considered to be reliable, but the accuracy and completeness cannot be guaranteed.

Sapience is an independent investment adviser registered under the Investment Advisers Act of 1940, as amended. Registration does not imply a certain level of skill or training. More information about Sapience, including our investment strategies, fees and objectives can be found in our ADV Part 2, which is available upon request at info@sapienceinv.com.