US Upstream M&A: Like Turkeys Voting for Christmas

The US E&P sector needs consolidation. There are too many undersized and irrelevant companies drilling shale wells. The fragmented nature of the industry results in suboptimal resource development, a lack of capital discipline, wasteful G&A spending and a more damaging environmental footprint. Today, the conditions are in place to allow for an inflection in M&A activity. Many impediments to consolidation have been removed but one major obstacle remains: management team and board incentives.

Few investors doubt whether consolidation makes sense for the E&P sector, or why it has been slow to materialize. However, historical parallels to today's environment, and the prevalence of similar drivers of consolidation in the past, suggest we may be reaching a tipping point.

E&P management teams have built their companies into fortresses, where protecting insiders is the primary objective. Unlike other sectors, E&P CEOs are rarely fired by their boards for underperformance, and hostile deals between E&Ps are virtually unheard of. Because of these fortifications, in order to obtain the most economic outcome investors must challenge existing power structures. Cracks are beginning to show…

Background

In the past ten years, shale development grew from nothing to take over the US oil industry, underpinned by two common beliefs. The first was that oil prices would rise for the foreseeable future and the second was that shale technology would continue to improve. Combined, these two factors would lead to a free cash flow inflection in the future. Attracted to the prospect of inventory depth, investors poured new capital into E&P companies large and small, in the form of equity and debt to finance the growth in Net Asset Value (NAV). With unconstrained access to capital and CEOs enamored with their organic growth opportunities, any incentives to merge were limited. And with elevated valuations, debates over acreage quality would halt merger discussions before they could advance. Even the price collapse of 2014-2016 did little to dampen the availability of capital as shale still resided in the hopes and dreams phase.

But, over the past few years, these tenets have unraveled in tandem as capital dried up and valuations plummeted. Investors question whether oil prices will rise over time as risks from the energy transition emerge, and they no longer believe that technology will continue to drive material improvements in productivity. Instead, they can see that, a decade later, the free cash flow inflection they were promised never materialized. They have stopped writing checks and the inherent optimism of E&P investing has been extinguished. What investors want now is greater efficiency, higher returns of capital and a reduced cost structure. The best way to achieve these things is through consolidation.

With no external capital available and little faith in a commodity price uptrend, the most significant obstacle to mergers now comes from inside the boardroom. Inflated executive pay packages, which are devoid of any real relationship with shareholder value creation, combined with low insider equity ownership and poorly structured change of control premiums are the true impediment today. After all, well-paid management teams are unlikely to vote themselves out of a job, even if it is in the best interest of shareholders. Investors must drive the change necessary to overcome this self-interest.

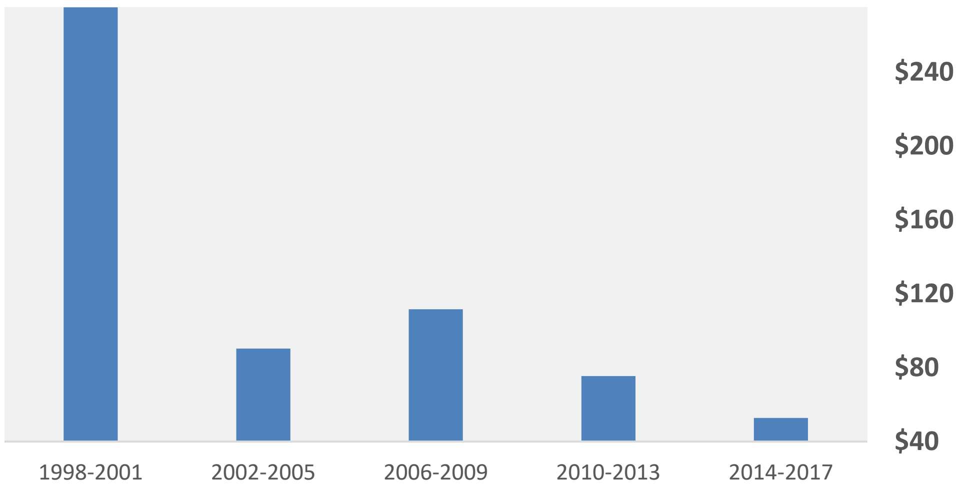
Historical Context – It All Looks Familiar

"Lord Browne believed as early as 1995 that the then-current industry structure could not persist, given its inability to deliver returns comparable to other industries"

- *BP and the Consolidation of the Oil Industry, 1998-2002 (HBS Case Study 2010)*

Since 1995 there have been 95 upstream corporate transactions in North America over $500M[1]. Notably, 40% of the deals measured by dollar value occurred in just a three-year period of 1998 to 2001, so we think it's important to understand the state of the industry when this wave of mega-mergers took hold.

North American M&A Deals by Value ($Bln)



Source: TPH

As oil historian Daniel Yergin describes in his book, *The Quest*, "For Asia was booming. But in July of 1997, one of the most buoyant of the economies, that of Thailand, was slammed by a financial crisis. Soon the cries spread, threatening the whole region and the entire Asian Economic Miracle, with far-reaching impact on global finance and the world economy. It would also detonate a transformation in the oil industry"[2]. As the Asian financial crisis was spreading, OPEC ministers met in November 1997 and agreed to raise their production quota by two million barrels a day. Saudi had entered into a market share war with Venezuela, who had attempted to almost double its production outside of OPEC policy, while Iraq was allowed by the United Nations to begin exporting oil. As if this oversupply wouldn't trigger enough downward pressure on oil, the crisis then spread beyond Asia. Russia defaulted on its sovereign debt in August 1998 and Wall Street was engulfed in the aftermath of the collapse of Long-Term Capital Management, OPEC ended up increasing production just as demand was weakening. With

[1] Source: TPH Upstream Public M&A Deal Bible (June 2019)
[2] Daniel Yergin, The Quest: Energy, Security and the Remaking of the Modern World (2011)

storage tanks filling up, the price of oil fell to $10/bbl, the lowest inflation-adjusted price since the 1960s.

As Yergin continues, “the price collapse did something else. It set off the biggest reshaping of the structure of the petroleum industry since the breakup of the Standard Oil Trust by the US Supreme Court in 1911. The result was something that would have been unimaginable without the circumstances created by the price crash.” On August 11, 1998 BP announced its $53 billion merger with Amoco, and as Browne himself claims, “It was as if the industry had been standing by waiting for someone to make the first move; it felt like we had broken a dam.”[3] Over the next three years as prices tripled, Chevron would merge with Texaco, Exxon with Mobil, Conoco with Phillips, and Total combined with both Petrofina and Elf. As Steve Coll writes in *Empire: ExxonMobil and American Power*, “Browne’s announcement galvanized his competitors. Every North American and European leader of a large oil corporation seemed to conclude simultaneously that his company needed to merge to get bigger”.

The rationales for the deals ranged from building scale and financial strength, to synergies and cost reductions, to filling strategic gaps in portfolios. At the time of the Amoco merger, BP expected synergies of at least $2 billion, including $1 billion from staff reduction[4]. With oil prices depressed, the company was clearly searching for additional ways to increase profitability and gain efficiency. One of the main drivers of the sustained wave of consolidation as oil prices recovered appears to be the market reception to the early deals, where the larger companies garnered higher valuation multiples than their smaller rivals, “possibly implying that the supermajors were better positioned to generate higher and more stable earnings”.

Current Industry Structure

“The Permian is too heavily fragmented, plagued by too many operators that each carry their own cost base. History suggests that most consolidation happens in a window of six to nine months after the nadir.”

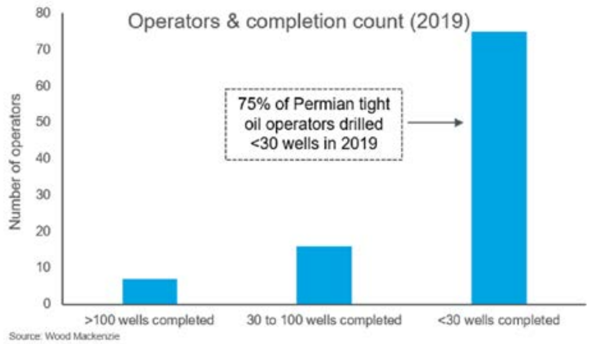
- *Citi Research report (June 5, 2020)*

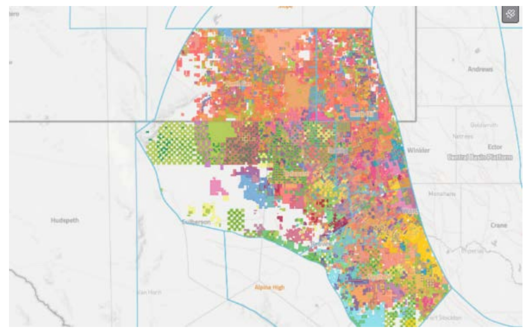
In the late 1990s, oil production growth was driven by the move into Deepwater basins where the majors were dominant. When prices fell, it was the majors that had to consolidate from a position of weakness. The situation today is analogous but different. The tsunami of unconventional shale that caused US production to grow from 5 to 12 million barrels a day over the past decade was driven by smaller independent E&Ps, not the majors. The scale of the problem today is different: in the late ’90s there were tens of companies that needed to merge or disappear. Now there are arguably hundreds.

To put some figures around this proliferation of players, Wood Mackenzie estimates that 80% of the crude oil production growth in the lower 48 over the next decade will come from the Permian Basin where they count over 100 different operators who drilled at least five wells last year. As highlighted by the lefthand chart below, 75% of these operators drilled less than 30 wells. The map of the Delaware on

[3] Steve Coll, Private Empire: ExxonMobil and American Power (2012)
[4] Reinhardt, Casadesus-Masanell and Hanson, BP and the Consolidation of the Oil Industry 1998-2002 Harvard Business School 9-702-012 (2010)

the right illustrates the vast array of overlapping acreage positions, where in 2019 an average of 55 operators ran at least one rig in the Basin:

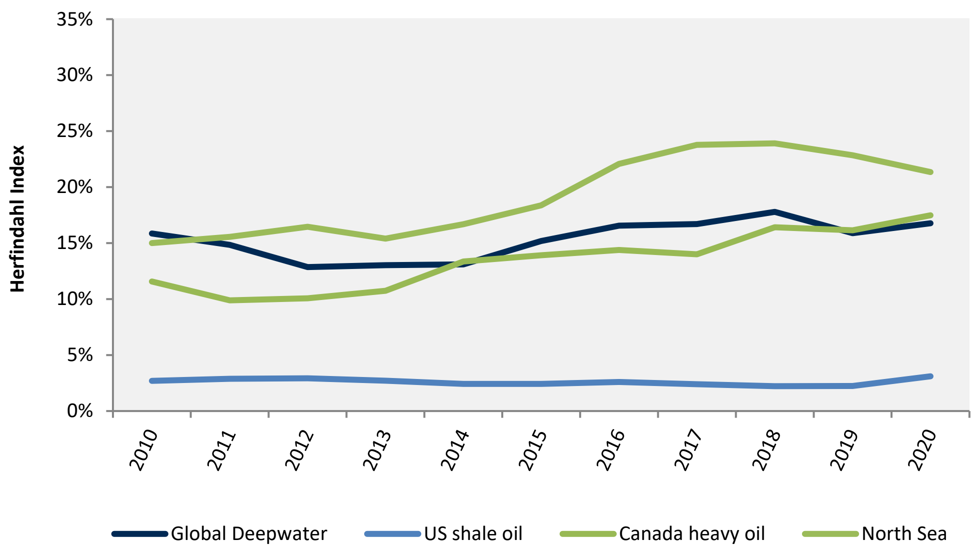




Source: Wood Mackenzie

Source: RSEG

Goldman Sachs describes shale as the last key producing market in need of consolidation and they believe "*the lower commodity price environment in onshore US (WTI) will likely serve as a catalyst for a new consolidation phase that is necessary to bring a fragmented industry into a more rational and sustainable state. We view that the current fragmentation and largely scattered, non-contiguous shale acreage are preventing industry under the current market structure from moving into its next phase of growth moderation, free cash flow generation and deflation through efficient logistics management, infrastructure layout, Big Data and advanced analytics".* The fragmented nature of the shale industry versus other regions can be quantified using the Herfindahl Index, which shows that US shale has remained below 5% even as the phase of resource development matures:



Source: Goldman Sachs

Why Now? Because Optimism Has Been Extinguished

In 2015, we said that the industry was closer to the price-driven mega-consolidation of the late 1990s than at any other time over the previous 15 years. But we thought that oil prices would have to go a lot lower, for a lot longer, for this to happen. Now, we're much closer to the late 1990s scenario. Prices are painfully low, we think they will stay very low for some time, and the outlook is challenging long-term.

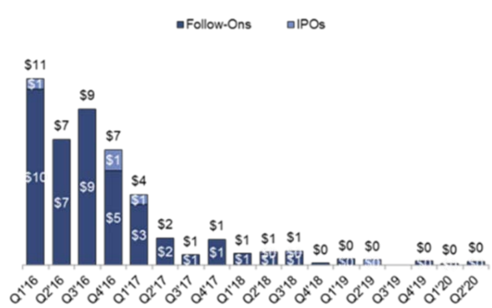
- *Wood Mackenzie M&A report (April 2020)*

Kimmeridge believes the lack of meaningful consolidation to date is likely attributable to several factors. Notably the four constraining factors listed below have been addressed after years of equity underperformance and an increased understanding of the sub-surface.

1. **Availability of Capital**

   Historically, one of the primary motivations for industry consolidation is differentiated access to capital, whether it is debt or equity. However, with the Fed pumping liquidity into the system following the GFC, and the early excitement surrounding the resource potential of shale, there were really no impediments to accessing capital. In 2016 alone the US E&P industry was able to raise over $30 billion of equity, which likely thwarted the natural pace of consolidation you would see coming out of a price downturn that severe. Given the magnitude of the value destruction across the sector since, we have seen capital availability dry up over the past 12-18 months:

E&P: Equity Market



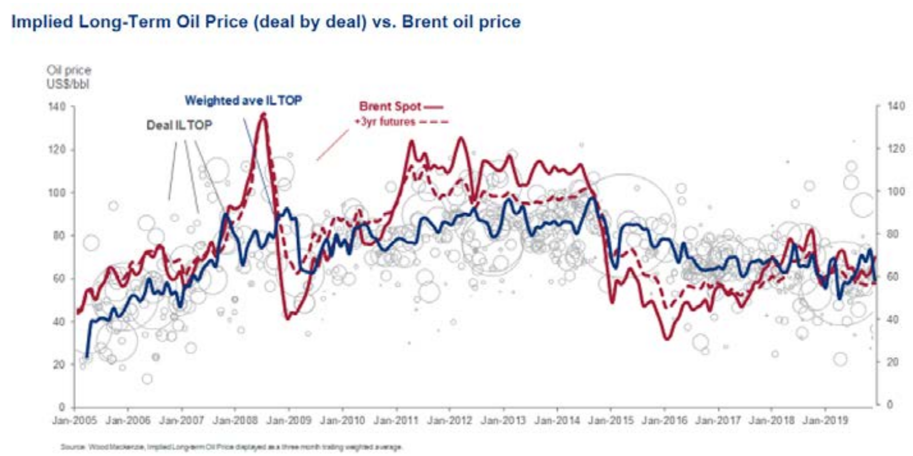
E&P: HY Market

Source: TPH

2. **Oil Price Expectations**

   Recalibrating oil price expectations after the historic collapse in November 2014 has proved challenging for both investors and companies. Despite the collapse in prices during '15/'16, longer-term consensus expectations remained anchored between $60-

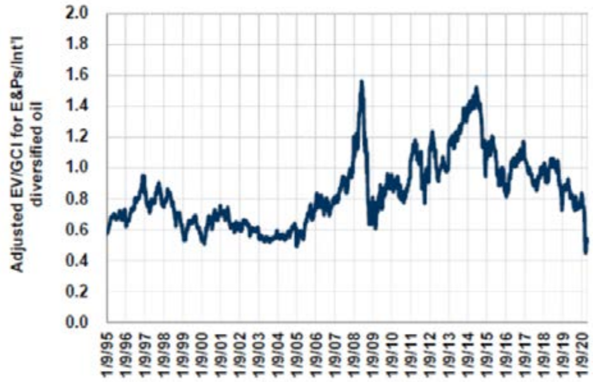
$70 WTI, underpinning hopes that companies would be bailed out by higher prices over time. If you look at the chart from Wood Mackenzie below that compares the oil price implied in A&D transactions (blue) and the Brent futures price (dotted red), you can see that in the last downturn, values never fell in sympathy with the commodity and buyers were still being asked to pay an implied price over $60/bbl. We believe that with the combination of waning long-term optimism around the commodity price and diminishing access to capital, this time we will see downside to the implied pricing of deals and a more motivated buyers' universe.



Source: Wood Mackenzie

3. Valuations

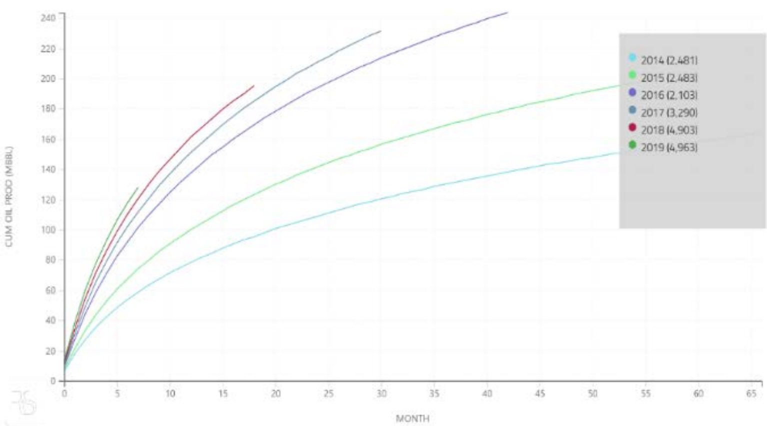
Coming out of the 2014-2016 downturn the market was valuing the sector on a multiple of invested capital, which required companies to pay a significant premium for undeveloped acreage in any transaction. With the loss of confidence in the E&P business model and these management teams, valuations have retraced back to a discount to invested capital. Notably the .6x ratio is where we saw a meaningful wave of consolidation in the late 1990s:

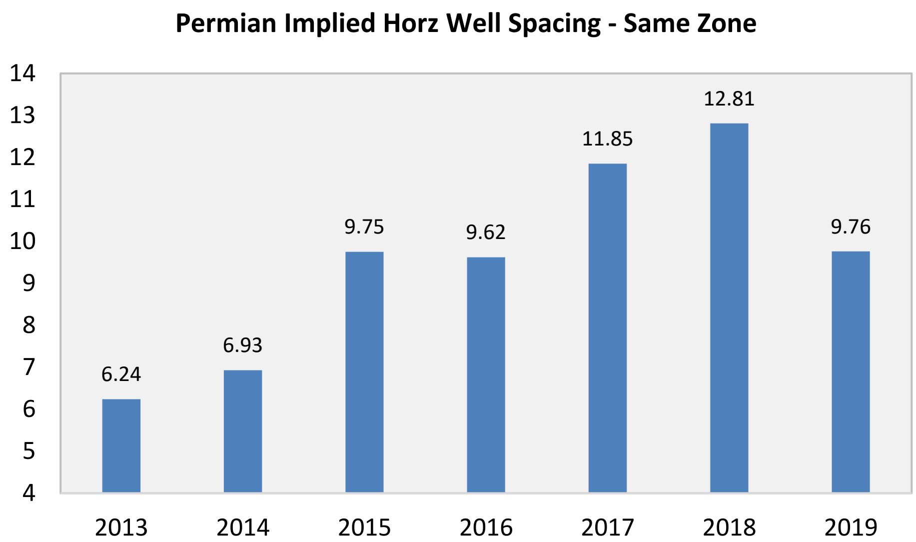


Source: Goldman Sachs

4. Resource Delineation

In the last downturn, the primary driver of the valuation premium associated with undeveloped acreage was the heightened degree of enthusiasm around the size and quality of shale resources. The industry was experiencing a multi-year trend of productivity gains and blue sky estimates around resource density had yet to be discredited. But with well productivity now plateauing across the US, including in the Permian (first chart), and implied well density rolling over (second chart), today both buyers and sellers can better calibrate true resource value.





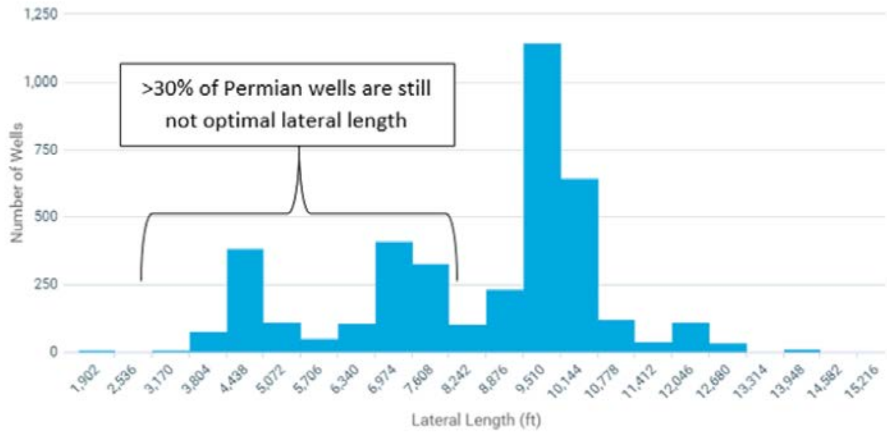
Source: RSEG

Bigger is Better

There is significant industrial logic to being larger in the development of unconventional resources. The major reasons include better oilfield service pricing, negotiating leverage and more efficient use of services, the ability to drill longer laterals and lower per barrel and per foot completed costs, a reduced environmental footprint, and lower overhead and other fixed costs.

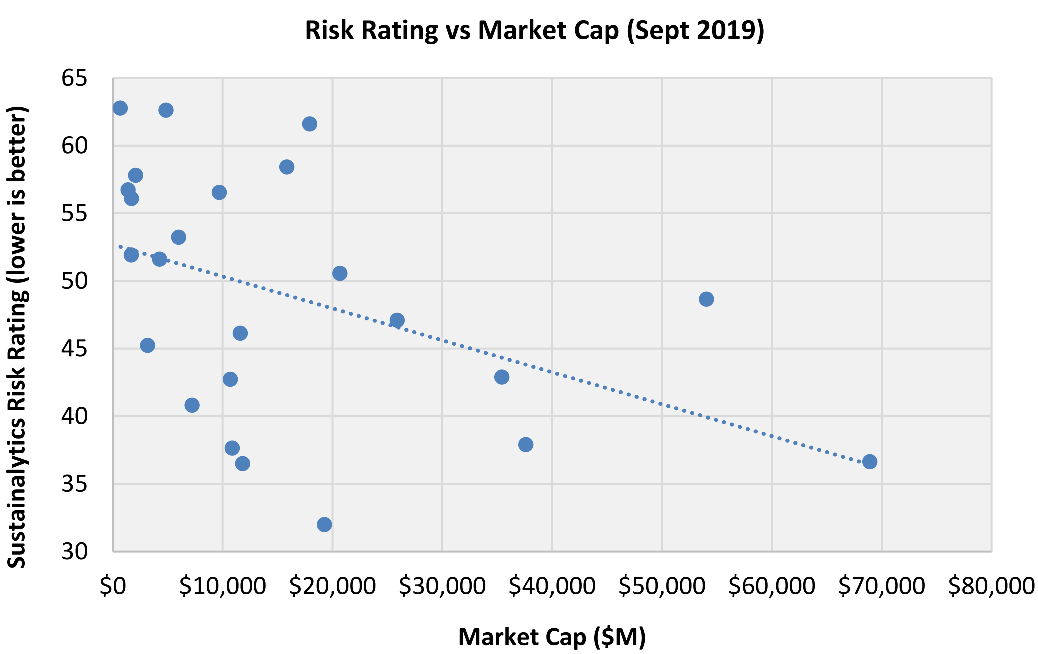
The first, improved service pricing, is the most obvious. If you are an important customer for Halliburton or Schlumberger, they will offer you better pricing. They will also send better crews to work for you, which over time will lead to lower well costs through the avoidance of errors, delays and sub-par execution. It's not just the big service companies whose pricing will improve, large producers have more influence in negotiating takeaway contracts and pipeline agreements as well.

Second, consolidating overlapping acreage positions has significant advantages in lowering operating costs. By controlling larger contiguous land positions, operators can drill longer laterals, and at the margin execute more of their drilling through the efficient use of super pads, thereby lowering the cost per foot drilled and completed. Despite the recognition of the improved economics from longer laterals, Wood Mackenzie estimates that over 30% of Permian wells are still sub-optimal in length:



Source: Wood Mackenzie Lens

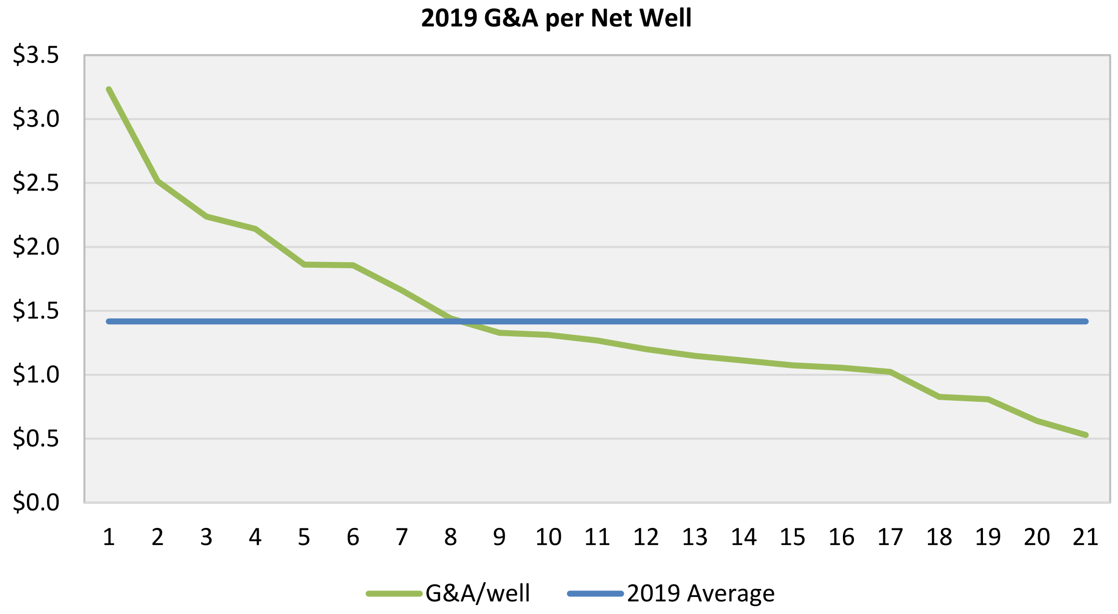
Third, larger scale provides the financial resources necessary to improve a company's environmental footprint. We tend to see a meaningful inverse correlation between the size of operations and emissions intensity (GHG/BOE), as well as freshwater usage. Society would benefit from the development of unconventional resources in the hands of fewer companies who prioritize the importance of better disclosure and more sustainable corporate behavior. Using Sustainalytics ratings within the US oily E&P universe we can see that the risk ratings tend to be skewed lower for the larger companies:



Source: Sustainalytics and Bloomberg

Fourth, there are many overhead functions that are required even if a company is running only a single well. Some of these are administrative, like back office accounting, division orders and title opinions. Many of these costs are redundant and billions of dollars are wasted in the industry because of these inefficiencies. Encana's acquisition of Newfield was noteworthy from this perspective. Despite the two companies sharing no real operational overlap from a basin perspective, the deal still resulted in the elimination of the entire G&A budget of the target. (In that transaction the value creation potential was eroded through the premium paid. This issue is one we discussed in our earlier note, "The Case for Zero Premium Mergers" in 2018).

The average G&A budget per net well for the 22 US E&P companies we analyzed was over $1.4 million in 2019, so the prospect of even cutting that in half would go a long way in reducing the friction between well-head economics and fully burdened financial results.

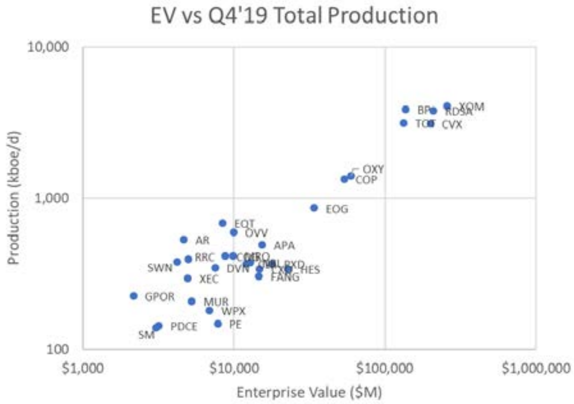


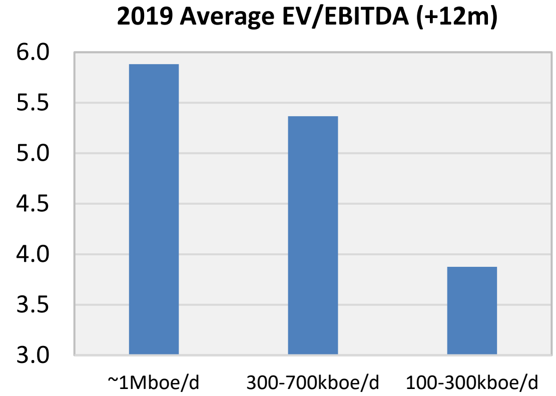
To illustrate that financial friction, we looked at a generic Midland Basin well that has a $35/bbl break-even and a well-head IRR of 50% at $55/bbl. Burdening the economics with the average G&A per well of $1.4 million leads to considerable deterioration in the return profile:

Midland Basin		
Peak IP 90	*boe/d*	863
EUR	*Mboe*	986
% Oil	*%*	55%
D&C Costs	*$M*	7.0
D&C per lat ft	*$/ft*	778
Non-D&C	*$M*	0.6
LOE	*$/boe*	4.5
GP&T	*$/boe*	2.0
Severence Tax	*%*	7%
Royalty	*%*	25%

WTI Price	$35	$45	$55
IRR (ex-G&A)	10%	26%	50%
IRR ($1.4M/well)	5%	15%	31%

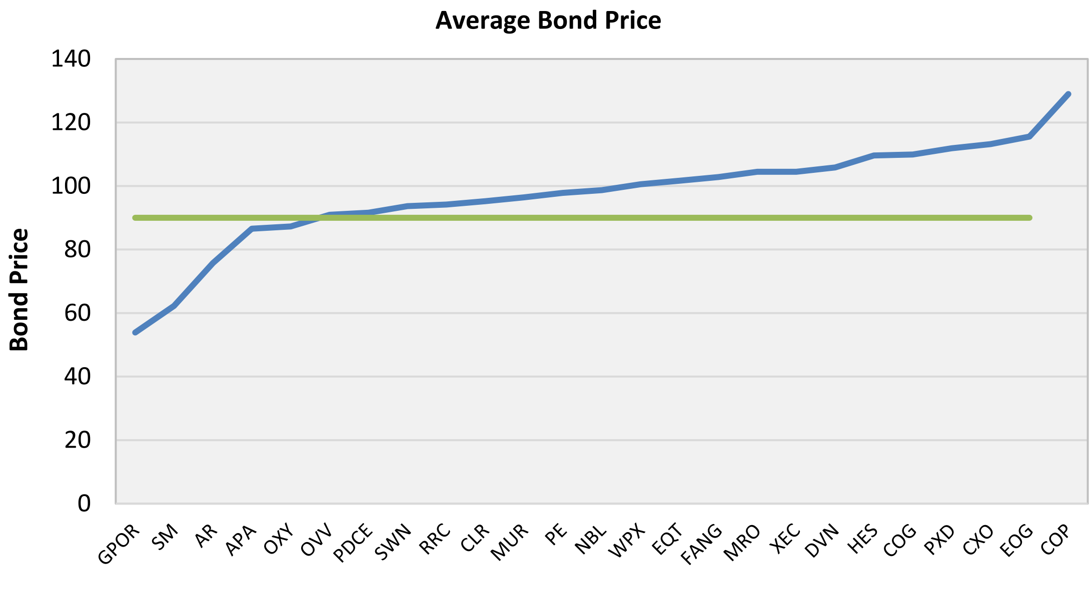
We think the G&A burden helps to explain the meaningful gap between the returns presented in E&P investor decks and reported financial results. This could be addressed through successful consolidation. Finally, we think size is going to be an essential feature in remaining relevant in a sector that has largely been abandoned by investors over the past several years. Larger companies are garnering higher valuation multiples. This could be due to index inclusion, the cost of capital, higher quality assets or just a different shareholder base. If we look at the various clusters of size within US E&P companies based on production and compare it to their average trading multiple in 2019, the trend is quite evident:





Source: Bloomberg Data

While we acknowledge that the distress in the credit markets at the depth of the crises earlier this year would have made it nearly impossible for any of these companies to merge given change of control covenants (101% of par). With bond prices recovering, the path to consolidation is no longer obstructed by creditors. Within the E&P universe included in the chart above, 20 of the 25 companies now have average bond prices above 90% of par.



Source: Bloomberg Data as of 6/17/20

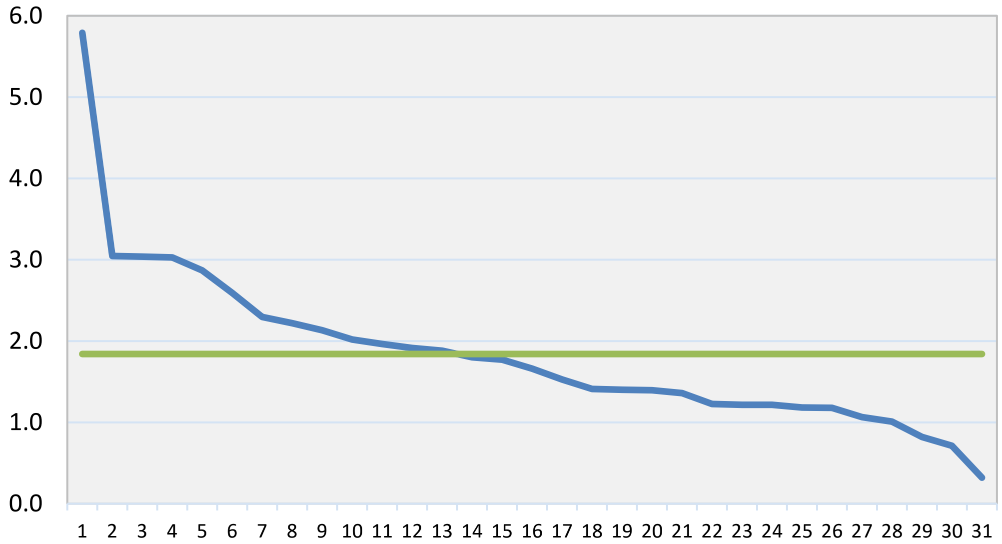
The Remaining Impediment

"Boards of directors don't stop mergers or block offers for companies. The CEOs do. Not one out of fifty boards will stand up to a CEO. In most cases, the CEO knows the board is beholden to him because he put them there in the first place. Although most CEOs own a few thousand shares of stock, their value as an incentive is insignificant compared to that of the four Ps: pay, perks, power and prestige."

- *T. Boone Pickens, Jr. (Boone, 1987)*

The consolidation of the US shale industry seems all but inevitable except for one remaining impediment. Relative to their long-term track record of value creation, being a CEO of a US E&P company may be the best paying job in corporate America. Furthermore, their skillset is not transferable outside the industry – we have not seen any notable hires of an E&P executive into another S&P 500 sector. So, the question we must ask is why would a CEO voluntarily relinquish the role? Most E&P CEOs own very little stock directly and when we looked at the Change of Control premium relative to 2019 CEO compensation, we found that the average CEO across 31 US E&P companies would make less then 2x their annual compensation by selling:

CoC Premium vs 2019 Compensation



Source: Company Proxy Filings

Admittedly, it's not an economically rational decision for them to sell or merge if they believe they can retain their job for the next several years at their existing level of compensation.

The Path Forward

Given the clear advantages of scale, it is in the interests of owners of E&P assets for companies to merge, cut costs and work towards a returns-focused business model like the one we described in our White Paper in March, "Preparing the E&P Sector for the Energy Transition: A New Business Model". But it can be difficult for owners of public E&Ps to exercise their rights. Management can delay and ultimately prevent transactions from happening, mostly with impunity. As a result, there needs to be substantial pressure to reform the existing compensation structure that is detached from shareholder value creation and treats annual bonuses as an annuity stream. Investors will have to force these management teams and boards to do what is in the best interest of shareholders, and not their personal financial situation. As we noted in our White Paper, "The fight will not be easy but the payoff for investors, industry participants, as well as the environment, will justify the efforts".

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