Merger and Acquisition Activities in the U.S. Oil and Gas Industry

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In the last several years, the U.S. oil and gas industry has experienced some significant changes. From 2006 to 2013, the WTI oil price increased from $66.05/Bbl to about $95/Bbl, where it remains today. The Henry Hub natural gas price increased from $6.73/MMBtu in 2006 to $8.86/MMBtu in 2008, before it dropped to below $3 in 2012. Towards the end of 2013, gas prices started to increase to more than $4, driven by an abnormally cold December unseen in recent years. During this eight-year period, the economic development around the world, in particular the economic growth in the Asian countries such as China and India, has been the driving force behind the significant oil price increases. However, since the U.S. gas market is still largely driven by domestic supply and demand factors, U.S. gas prices have been insulated from the same world events that have impacted oil prices; the outcome of which reveals a relative diverging price movement – oil prices have increased and remained high, while gas prices have tanked as domestic production ramped up in the presence of a tepid domestic demand, thanks to mild weather.

In general, the U.S. oil and gas market is still broadly impacted by world economic forces. The financialization of the commodity market in the early years of the eight-year period (2006 to 2013) helped fuel rapid growth in oil and gas prices in the U.S. The recession experienced by several world economies reduced the demand for oil and gas and depressed prices significantly. On the investment front, as the world financial markets are more integrated than ever before, international financial flows have helped drive investment activities in the U.S. On one hand, as oil prices continued to increase and some national oil companies continued to seek overseas investment opportunities, we would expect some level of investment activity in the U.S. oil and gas industry to be driven by international capital flows.

In this article, we take a look at the more recent evidence in the merger and acquisition activities in the U.S. oil and gas industry, so that we might gain a better understanding of the trend and possibly account for the reasons behind the changes in the trend. We examine a number of M&A transactions in the U.S. oil and gas industry over time and by location. In addition, we look at the M&A transactions involving foreign investors. A preliminary look at the factors that have been driving more recent M&A trends in the oil and gas industry will be provided.[1]

Recent Trend in M&A Activities in the U.S. Oil and Gas Industry

There was a general upward trend in M&A transactions in the U.S. oil and gas industry. Figure 1 plots the number of M&A transactions for the period of 2006 to 2013.[2] The total number of transactions increased quite rapidly from 2006 to 2008. However, the recession took a toll on M&A and the number of transactions, declined in 2009, before rising in 2011. During 2012 and 2013, the total number of transactions continued its declining path, dropping from a high of 862 transactions in 2011 to 582 transactions in 2013. This general trend appears to be consistent with overall economic conditions, as well as the circumstances surrounding the oil and gas industry. The early increase in the number of transactions may also be due to the financialization of the commodity market, when a large amount of capital was poured into the oil and gas industry. The onset of the recession and tightening of credit appear to have depressed the M&A transactions temporarily before the oil and gas sector heated up again. This is especially true for the time period between 2009-2010, when E&P activities in several major shale plays started to generate heightened interest in investment in oil and gas properties in those areas.

In terms of the value of the transactions, though, there were a number of

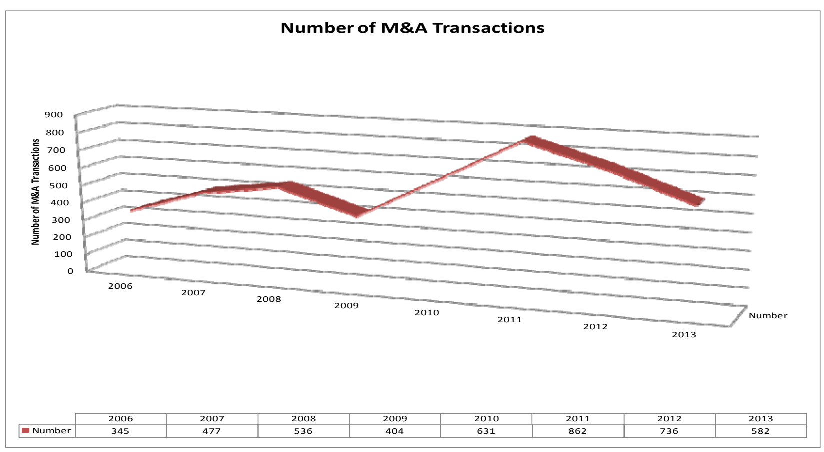

Figure 1: M&A Transactions in the U.S. Oil and Gas Industry – 2006 to 2013

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See footnotes at end of text.

transactions that involved several billion dollars, the majority of the transactions involved were below $300 million. Table 1 shows the percentage of the transactions below $300 million accounted for more than 85% of the total transactions that reported a value.

Transaction Value ($ Mil.)	Number of Trans.
<0 or (blank)	2050
0-1000	2179
1000-2000	64
2000-3000	15
3000-4000	11
4000-5000	10
5000-6000	2
7000-8000	2
15000-16000	1
17000-18000	*1*
20000-21000	*1*
35000-36000	*1*
40000-41000	*1*
Grand Total	*4338*

Transaction Value ($ Mil.)	Number of Trans.
0-100	1642
100-200	208
200-300	124
300-400	60
400-500	40
500-600	40
600-700	24
700-800	15
800-900	16
900-1000	10

Transaction Value ($Mil.)	Number of Trans.
0-10	874
10-20	230
20-30	144
30-40	104
40-50	78
50-60	48
60-70	52
70-80	44
80-90	34
90-100	34

Table 1: M&A Transaction by Value

Locations of the Transactions

While most regions saw some transactions, most of the transactions have been concentrated in a few major areas. Figure 2 shows the percentage of the M&A transactions occurring in each region for 2013. The Gulf Coast and Midcontinent regions, the two areas that are traditionally oil and gas producing regions, had the largest number of transactions, totaling almost 50% of all transactions that reported specific locations. The Rockies and Permian Basin regions ranked third and fourth, each accounting for 13% and 11% of total transactions, respectively. Together, these four regions accounted for about 75% of total M&A activity.

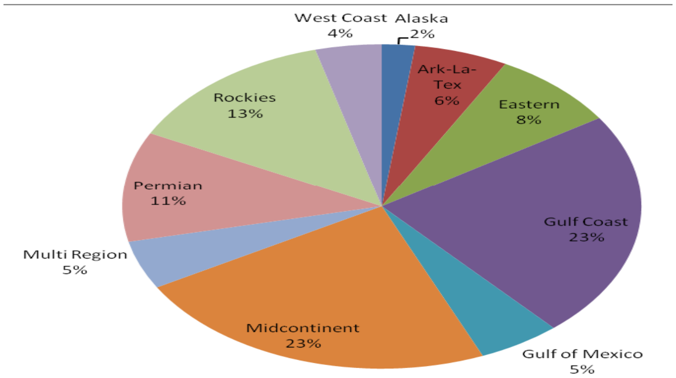


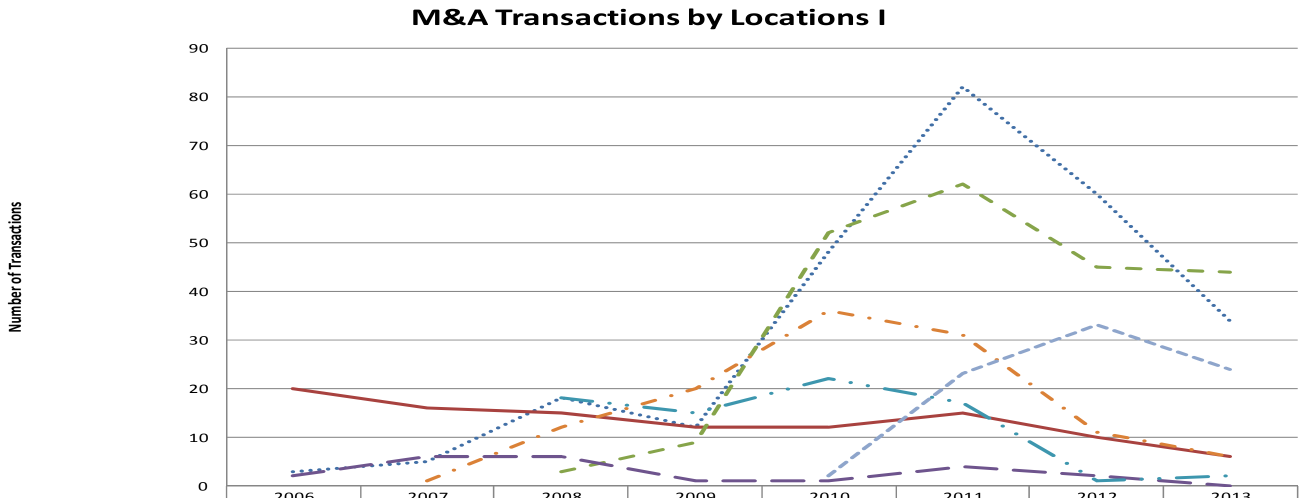
Figure 2: Locations of Oil and Gas M&A Transactions

One might be curious as to where these transactions took place within each of the regions, especially given the booming shale oil and gas production in recent years. Figure 3 shows the number of transactions reported by the specific shale plays[3]. Several patterns can be noted from the two following charts. The number of transactions generally followed an increasing trend pattern in the aggregate number of transactions, until 2011, followed by a declining trend thereafter. The Bakken (the Rockies), Permian (West Texas) unconventional, and Eagle Ford (South Texas) regions witnessed the largest number of transactions in shale plays. During this time period between 2008-2011, there were some booms in the Haynesville shale play. However, the number of transcations in Haynesville Shale have essentially dried up in the last two years, reflecting the fact that the E&P cost in the play is higher than the costs in other areas; therefore, investment has moved to other areas, where exploration and production are more profitable.

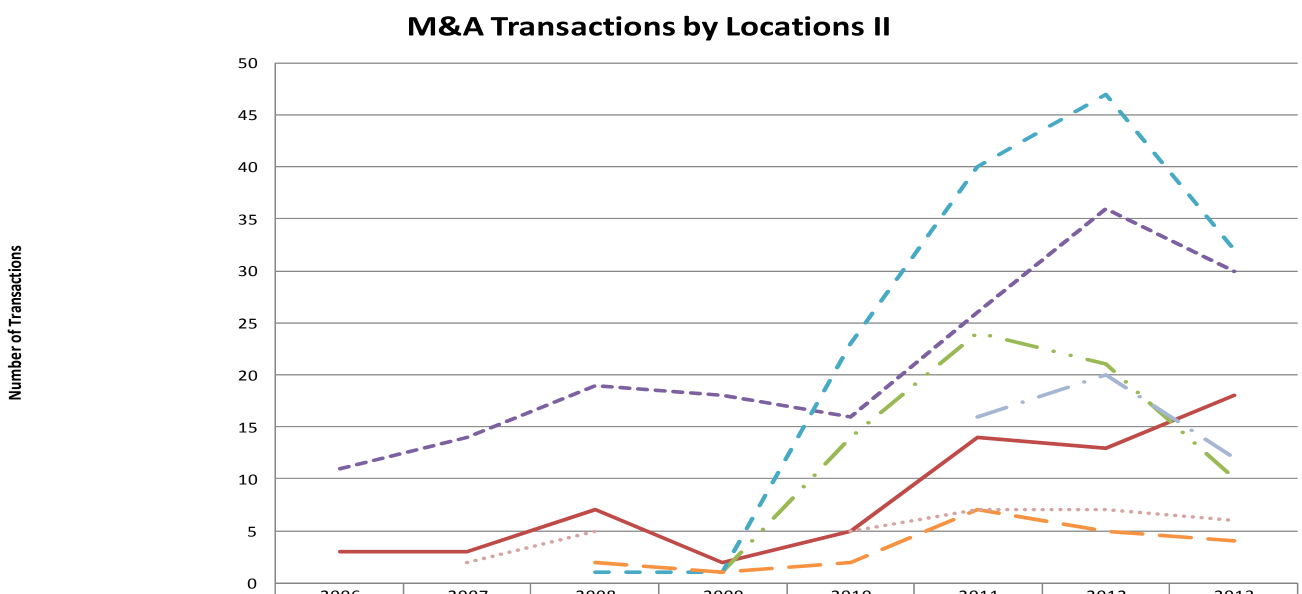
Among the various shale plays, the Marcellus play saw a rapid increase in M&A transactions starting in 2008. The timing coincided with the production pattern in the area. Between 2009-2012, Marcellus Shale experienced rapid production expansion and the number of M&A transactions showed the same pattern.

There are some interesting patterns shown in the Utica Shale and Mississippian Lime areas as well. The transactions started to appear in the Utica area in 2011 and continued to 2013. The time of these transactions coincided with the beginning of the oil and gas boom in the Utica Shale. While the Utica Shale is more well known, the Mississippian Lime play is a lot less recognized – most people probably could not pinpoint the area on a map. However, this lime play in North/Central Oklahoma has received the same amount of attention from oil and gas investors as in other plays. There has been a burst of M&A activity in more recent years in this area, highlighted with some joint venture activities between Cheasapeake Energy and Chinese oil and gas investors.

The same is true with the Niobrara region in Northern Colorado and adjacent Wyoming, Nebraska and Kansas. Though Niobrara is mainly an oil play, it is still in the early stage of leasing and development and is technically not considered a shale play. Niobrara has emerged as one of the hottest liquid-rich plays due to its reserve and production potential, which has attracted investors to acquire properties and drilling rights.



	2006	2007	2008	2009	2010	2011	2012	2013
Bakken	3	5	18	12	48	82	60	34
Barnett	20	16	15	12	12	15	10	6
Eagle Ford			3	9	52	62	45	44
Fayetteville	2	6	6	1	1	4	2	0
Haynesville	6		18	15	22	17	1	2
Marcellus		1	12	20	36	31	11	6
Mississippian Lime					2	23	33	24



	2006	2007	2008	2009	2010	2011	2012	2013
Multiple	3	3	7	2	5	14	13	18
Niobrara		2		1	14	24	21	10
Other	11	14	19	18	16	26	36	30
Permian Unconventional			1	1	23	40	47	32
Tuscaloosa Marine	2		2	1	2	7	5	4
Utica						16	20	12
Woodford		2	5		5	7	7	6

Figure 3: M&A Transactions by Shale Play

Foreign Interest in the U.S. Oil and Gas Transactions

One of the strategies of the National Oil Companies is to develop property interest in foreign countries, as they may face limited investment opportunities domestically. However, we do not observe any increasing trend in foreign investors investing in the U.S. oil and gas industry. Figure 4 plots the percentage of U.S. oil and gas M&A transactions in which only foreign buyers were involved in recent years and the numbers indicate that these

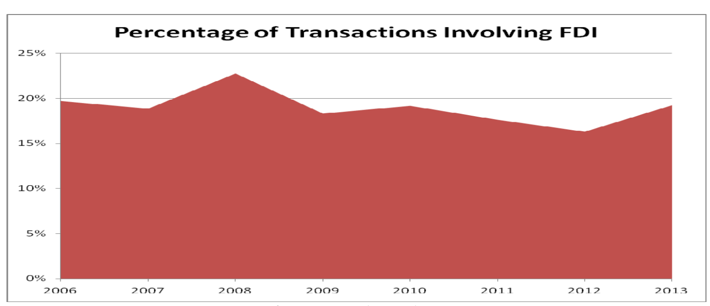


Figure 4: Percentage of U.S. Oil and Gas M&A Transactions Involving Foreign Entities Only

2006	2007	2008	2009	2010	2011	2012	2013
46.4%	43.0%	34.3%	29.5%	34.2%	34.3%	33.8%	39.9%

Table 2: Percentage of M&A Transactions Involving Foreign Investors

Figure 5: U.S. Oil and Gas M&A Involving Joint Ventures

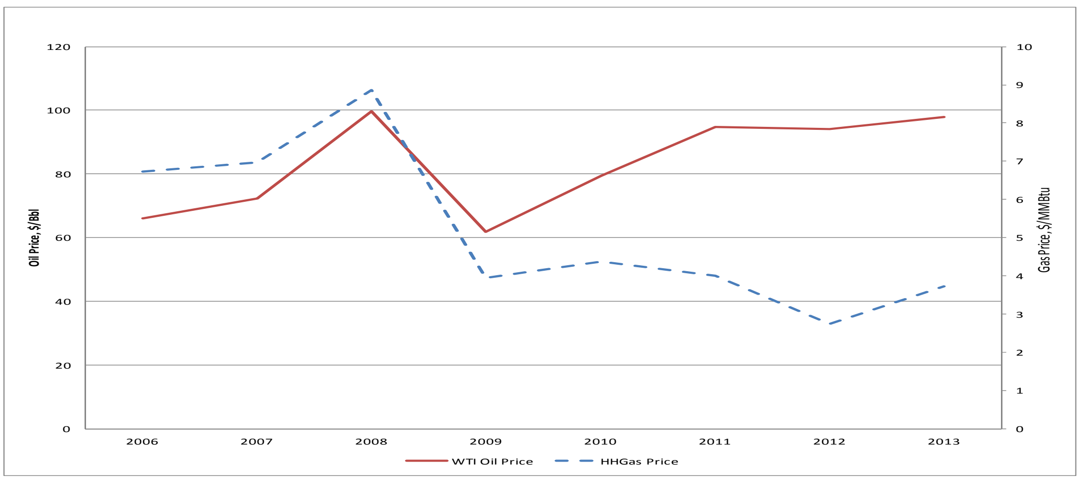


Figure 6: U.S. Oil and Gas Prices

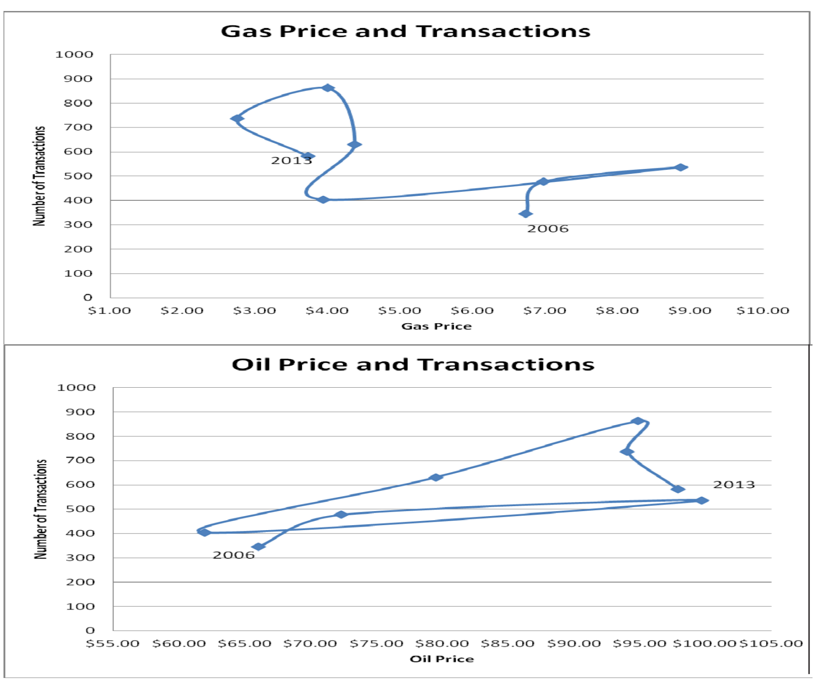


Figure 7: Oil Price, Gas Price and M&A Activity

percentages stayed around 20%, with the maximum reached in 2008.

Though there is not a significant trend in the number of transactions involving foreign entities alone, there is an upward trend in the number of buying transactions involving joint ventures between the U.S. and foreign investors in more recent years, even though the percentage has not reached the 25% level since 2006 (Figure 5). As Table 2 indicates, the total percentage of M&A transactions involving foreign buyers fluctuated around 40%. 2009 had the smallest percentage (29.5%) as the world economy was experiencing economic difficulties, followed by a decline in transactions in the years leading up to 2008. Now it appears that foreign investment in the U.S. oil and gas industry has continued to grow, with 2013 observing a rebound to almost 40%.

Even though the percentage of the transactions involving a foreign entity could tell a story as to how foreign interest is fueling the U.S. shale play boom, the number of transactions itself does not necessarily reveal the complete story. One of the reasons for this is that sometimes, when a foreign interest is involved, one single large transaction could outweigh many smaller domestic transactions combined in terms of the transaction value. For example, in 2013 Chesapeake Energy signed a deal with China's Sinopec for over a billion dollars. A year earlier, Chesapeake's cross-town neighbor, and another energy company in Oklahoma City, Devon, penned a deal with Sinopec for over 2 billion dollars.

What Drives U.S. Oil and Gas M&A Transactions?

Many factors may be behind the M&A transactions in the U.S. oil and gas industry in recent years. At the firm level, strategic considerations, operating and financial conditions, capital budget constraints, reserve, and production situations all impact a company's decision to buy or sell oil and gas properties. At the more aggregated level, the price of oil and gas is a more important consideration, as the prices move and the expectation of future price movement determines the returns on investment. During the period of 2006 to 2013, oil and gas prices moved synchronously in earlier years, but diverged in later years (see Figure 6). The examination of the U.S. oil and gas M&A activities and their prices suggest that mainly oil prices, rather than gas prices, have been driving the M&A transactions.

A simple statistical analysis suggests that the oil price and M&A activity are correlated, but gas price and M&A activities may be associated with each other for the first half of the period, but not for the period as a whole. For example, the overall correlation between oil price and the number of oil and gas M&A transactions is 0.714 for the whole sample period, but only -0.498 between the gas price and M&A transactions. For the earlier period, 2006-2009, the correlations are 0.844 and 0.618 for the oil price and the gas price with the M&A activities, respectively. The patterns in Figure 7 suggests the same – the relationships between the oil price and M&A activity, and the gas price and M&A activity are positive, except for gas prices in the later period.

The movement of the M&A activities across geographic locations and plays is easily understood by oil and gas economics. The first mover advantage, the uncovering of vast reserves and potential production, and the drilling and production cost dynamics explain the "boom and bust" cycle of M&A transaction activities for a specific location/play. Ultimately, prices, especially the prices of oil and other liquids, provided a strong economic motivation for the oil and gas investors to engage in the M&A activities. Needless to say, the horizontal drilling technology made the E&P in the shale plays possible and profitable, enabling the booms in the oil and gas industry.

Looking forward, as opportunities in the well-known plays have arisen and went in just a few years, if some of the less well-known plays continue to follow this same pattern, the M&A activities in the U.S. oil and gas industry may subside. The current downward trend in M&A activity began in 2012, which may be the sign of a cooling down of the M&A activities in the oil and gas industry. However, as long as oil prices remain high, we will most likely see the activities trailing off gradually. Furthermore, should we see the rebound of gas prices in the medium term, we may observe another wave of M&A rushing up for another round, bringing more foreign investors onto American soil.

Footnotes

[1] Most of the investment activity data was extracted from PLS (Petroleum Listing Service) Inc. Oil & Gas M&A Database.

[2] Note that the data for 2013 is only up to June. The total number for 2013 was obtained by doubling the numbers reported for the first half of the year.

[3] Strictly speaking, not all those listed are shale plays. For example, Mississippian Lime is not a shale play.

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