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Piranha!

The "Piranhaization" of U.S. E&P

Concentration of Assets, Targeted Acquisitions, and Strategic Divestitures Separate the Winners from the Losers in a $50/bbl Crude Oil World

- The U.S. E&P sector is enjoying a recovery, not due to rising prices but instead driven by strategies that focus on core plays, M&A deals that implement those strategies, and productivity gains that can be extracted through improved operational results and lower costs.
- Through aggressive deal making in hundreds if not thousands of transactions, U.S. E&Ps have been behaving like schools of piranha, eating away at small pieces of other companies and selling pieces of themselves to fund those acquisitions.
- In doing so these companies are simultaneously fragmenting and reconstituting the U.S. E&P sector.
- It is critically important to understand this transformation, which will not only shape future U.S. oil and gas production, but will drive the supply side of the global supply/demand balance.
- RBN's intensive study of 43 U.S. E&Ps provides this understanding, covering companies that produce about half of total US oil and gas output, and have a total enterprise value of $667 billion.
- Collectively, in 2016 these companies issued $28.6 billion in stock and $36.4 billion in bonds. Some have built a strong balance sheet and been rewarded by financial markets while others have continued to struggle financially and have been punished.
- In 2017, these companies are boosting investment by 43% after a 70% plunge in 2014-16, which will restart substantial output growth in 2017 and beyond.

1. Introduction

Two years ago, if you told U.S. exploration and production companies (E&Ps) that most of them would be thriving at crude prices below $50/bbl they would have called you crazy, if not worse. But that is exactly what has happened. Despite predictions of widespread bankruptcies and credit defaults after the plunge in oil prices in late 2014, most of the upstream industry has weathered the crisis remarkably well through the "high-grading" of portfolios, impressive capital discipline, and an intense focus on operational efficiencies.

There is no doubt that we are seeing a rebound in the U.S. E&P sector, but it is certainly a different kind of rebound than those in the past. In stark contrast to major industry consolidations that have followed other price downturns, where the largest companies gobbled up smaller and weaker companies in huge merger and acquisition (M&A) deals, this cycle has been characterized by hundreds—if not thousands—of smaller transactions. E&Ps are concentrating their assets, and building out significant contiguous acreage positions in their core operating areas while generating funds for operations and acquisitions through equity offerings, debt refinancings and sales of non-core assets.

The strongest and most aggressive of the U.S. E&Ps have been behaving like *schools of piranha*, eating away at small pieces of other companies and simultaneously fragmenting and reconstituting the E&P sector, with most successful companies focusing their resources, operations and investments on a few attractive plays where an advantageous combination of geology, geography and economics provide attractive investment returns.

How will this reconstituted E&P sector perform? Where will E&Ps invest? Which companies will be successful and which will fall by the wayside? How will these companies impact world oil and gas markets?

These questions—and many more—are addressed in this market study, titled **Piranha!,** which is based on an in-depth assessment of the reconstituted U.S. E&P sector covering 43 U.S. E&P companies, which are most representative of the U.S. upstream industry. Collectively, these companies produce about half of total U.S. oil and gas output, and have a total enterprise value of over $650 billion. Our analysis looks at this "universe" of companies from several perspectives, including size, commodity focus (crude oil versus natural gas), geography (dominant basins) and financial strength. The peer group breakdown according to size is shown in Figure 1 below: 16 large E&Ps (proved reserves of 1 billion barrel of oil equivalent—boe—or more), 17 mid-size (300 million to 1 billion boe[1]), and 10 small (under 300 million boe). From a commodity perspective, 21 are oil-weighted producers (60%+ liquids reserves), 9 are gas-weighted producers (60%+ natural gas reserves), and 13 are diversified producers. All of the major U.S. shale/unconventional plays are represented in the combined portfolios of these firms.

Ticker	Large E&Ps	Ticker	Mid-Size E&Ps	Ticker	Small E&Ps
APC	Andarko Petroleum	XEC	Cimarex Energy	BBG	Bill Barrett Corp.
AR	Antero Resources	CXO	Concho Resources	CRZO	Carizzo Oil & Gas
APA	Apache Corp	ECA	Encana Corp.	DNR	Denbury Resources
COG	Cabot Oil and Gas	EGN	Energen Corp.	FANG	Diamondback Energy
CHK	Chesapeake Energy	EPE	EP Energy	LPI	Laredo Petroleum
COP	ConocoPhillips	MUR	Murphy Oil	PE	Parsley Energy
CNX	Consol Energy	NFG	National Fuel Gas	RSPP	RSP Permian Inc.
CLR	Continental Resources	NFX	Newfield Exploration	SN	Sanchez Energy
DVN	Devon Energy	OAS	Oasis Petroleum	UNT	Unit Corp.
EOG	EOG Resources	PDC	PDC Energy	WTI	W&T Offshore
EQT	EQT Corporation	PXD	Pioneer Natural Resources		
HES	Hess Corporation	QEP	QEP Resources		
MRO	Marathon Oil	RICE	Rice Energy		
NBL	Noble Energy	SM	SM Energy		
OXY	Occidental Petroleum	SWN	Southwestern Energy		
RRC	Range Resources	WLL	Whiting Petroleum		
		WPX	WPX Energy		

Figure 1- RBN Piranha Study Universe by Peer Group

[1] The boe – barrels of oil equivalent – is a measure frequently used in the financial assessment of E&P companies which puts volumes of crude oil, natural gas, and natural gas liquid (NGLs) on an equal footing by converting all types of well hydrocarbon output into a volume equivalent to crude oil. It is the sum of crude production volume in barrels and the volume of gas production in Mcf (thousands of cubic feet) divided by 5.8. The conversion is based on the relative heat content of crude versus gas, assuming that a barrel of crude oil has approximately 5.8 million Btus, while a Mcf of gas has approximately 1,000 Btus.

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Piranha! is organized into four sections, described below.

- **Section A - "Love it or Leave It: The New Upstream M&A Paradigm"** examines the strategies that companies are adopting to thrive in a $50/bbl world, breaking down M&A activity by basin to show where these firms are selling and where they are buying. The analysis looks back at prior industry downturns, explains what makes this cycle so completely different, and how companies have "voted with their feet" to dramatically narrow their strategic focus to core plays.

  To provide a thorough perspective on this shift in strategic focus, M&A activity in each of the major shale basins over the last 10 years is summarized, and considers deals done year-to-date 2017. As shown in Figure 2 below (beginning with 2013 data), M&A activity jumped from only $18 billion in 2015 to $45 billion in 2016, an increase of 150%. Most deals were about concentrating acreage. In fact, only one significant 2016-17 transaction by our universe of E&Ps involved acreage in more than one play, EOG Resources' $2.45 billion purchase of Yates Energy's Permian and Powder River Basin assets—but both added to its existing core areas. Only three companies entered new plays: Range Resources bought northern Louisiana-focused Memorial Resource Development, PDC Energy moved into the Permian by acquiring privately held Kimmeridge Energy and Marathon Oil entered the northern Delaware Basin in two deals totaling $1.8 billion. The remaining 2016 M&A deals and all 2017 acquisitions to date involved increasing exposure to current core plays.

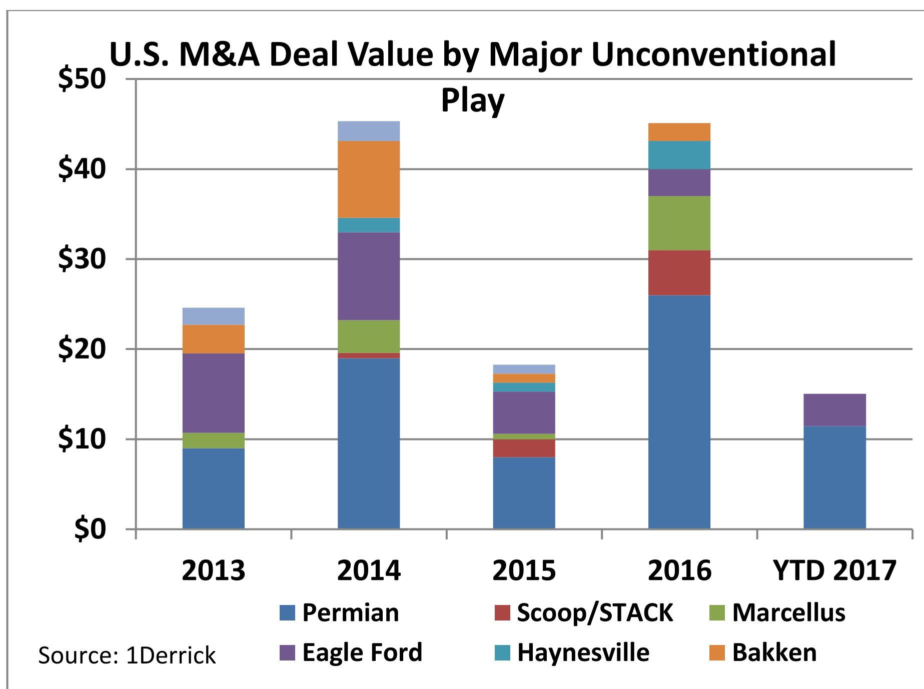

Figure 2 - RBN Piranha Study M&A Value by Major Unconventional Play; Source: 1Derrick

  Those core areas were overwhelmingly in a handful of resource plays. The Permian Basin accounted for 48% of total 2016 transaction value; six plays—the Permian, Marcellus, SCOOP/STACK, Haynesville, Eagle Ford, and Bakken—made up 83%. In contrast, total unconventional acquisition activity accounted for 67% of total transaction value in 2015, 56% in 2014, and 49% in 2013. Only one of the 15 largest 2016 deals involved assets outside of a shale play: Anadarko's $2 billion purchase of deepwater Gulf of Mexico properties from Freeport McMoRan.

- **Section B – "Capital Spending Rebounds: A Leaner Industry Positions for Growth"** looks forward to the 2017 capex and production guidance from the companies in our universe. The graph on the left graph in Figure 3 below shows the sum of capital expenditures over the past three years

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and company guidance for 2017 while the graph on the right shows production for the same periods. Note that even with capex down substantially, production has been resilient.

In total, these companies have indicated in their most recent public releases and investor calls that total 2017 capital spending for exploration and development (which excludes acquisitions, land and facilities, capitalized interest, etc.) will rise 43% to $56 billion from $39 billion in 2016. The investment boost, which is larger than many industry analysts expected, is still 32% below 2015 and 58% below 2014 capital spending. The 21 oil-weighted companies account for $8.7 billion, or 52%, of the $17 billion increase in 2017 outlays, while the 10 gas-weighted firms have the highest percentage boost.

Collectively our universe of companies expects that their oil and gas production will increase 3% in 2017 after a small decline from 2015 to 2016. The oil-weighted and gas-weighted peers are forecasting 7% and 10% output growth, respectively, while total production for the diversified group, which has the lowest capital spending increase, is forecast to drop 5%.

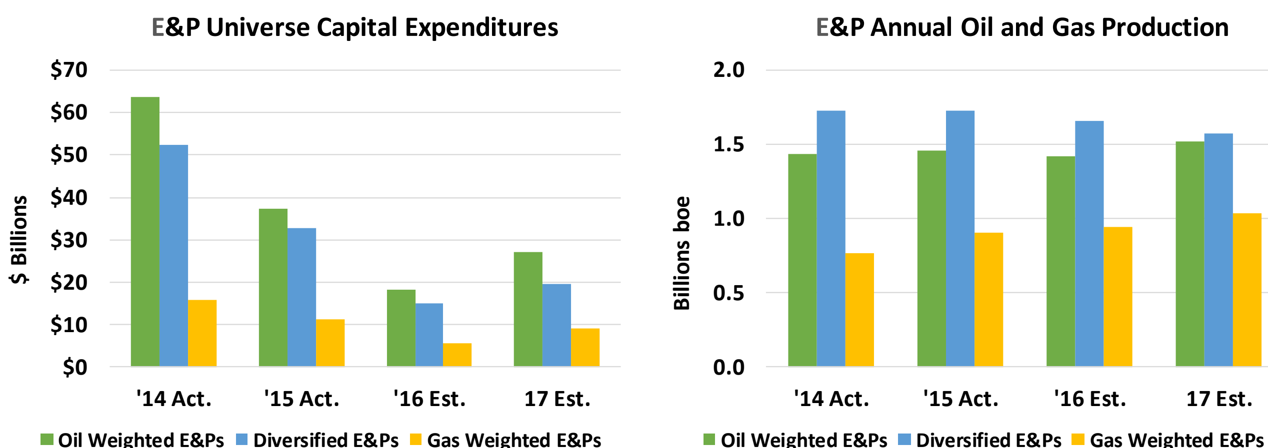

Figure 3 –2017 Capex and Production

- **Section C – "Financial Strength Analysis"** explores the degree to which the 43 E&P companies in our universe have focused on maintaining and improving their financial health. The surge in M&A activity and capital investment would not have been possible if the companies in our universe had neglected their balance sheets or failed to attract strong investor support. Collectively, these companies issued $28.6 billion in stock and $36.4 billion in bonds in 2016. More remarkably, they repurchased $43.1 billion in bonds, leading to $6.7 billion in net debt reduction. But the strategies employed—and the financial market's response to those strategies—has been quite different from company to company. Some have built a strong balance sheet while others have continued to struggle financially. Some (especially Permian players) have been rewarded by financial markets, while others have been punished.

  To develop an understanding of how the interaction of these factors positions some companies for success and warns of threats to others, we have evaluated each firm in our E&P universe on two metrics: Financial Position and Equity Valuation. Financial Position is measured through the debt-to-total-capital ratio. A company with a strong financial position can borrow money to invest and grow its business and will not be constrained by looming debt repayments and crushing interest outlays. A company in a strong financial position can take advantage of low oil and gas prices by buying assets from weak companies and will not be forced to sell assets in an undesirable market. Conversely, a company in poor financial position will be focusing on survival, which will result in capital spending being slashed and assets being sold to keep the company's head above water. Similarly, a company with a strong Equity Valuation can be more aggressive in building their asset bases organically through capital investment or by making acquisitions of

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proved reserves or acreage. Companies with weak equity valuations may be candidates for sales of individual assets or of the entire company.

The data is presented in graphics that plot each company's position in one of four quadrants based on its Financial Position and Equity Valuation. As shown in Figure 4, the vertical scale depicts Financial Position while the horizontal scale depicts Equity Valuation. Companies in the top left (green box) with strong positions in both metrics are in the best shape to take advantage of 2017 market trends, while those in the bottom right (red box) are threatened by those same market trends. This quadrant-based analysis is presented for three peer groups organized by size (large, mid-sized, and small), commodity (oil, gas and diversified), and major shale basin (Permian, Appalachian, Eagle Ford, Williston, and SCOOP/STACK).

The Financial Strength Analysis demonstrates that resilience to the dramatic drop in commodity prices was broad-based rather than restricted to certain peer groups or regions, although some firms, particularly in the Small E&P peer group are struggle with weak balance sheets. Equity markets strongly favored oil-weighted producers, especially in the Permian Basin, but gas producers were able to slash capital spending and costs without adding crippling debt while awaiting a stronger price environment.

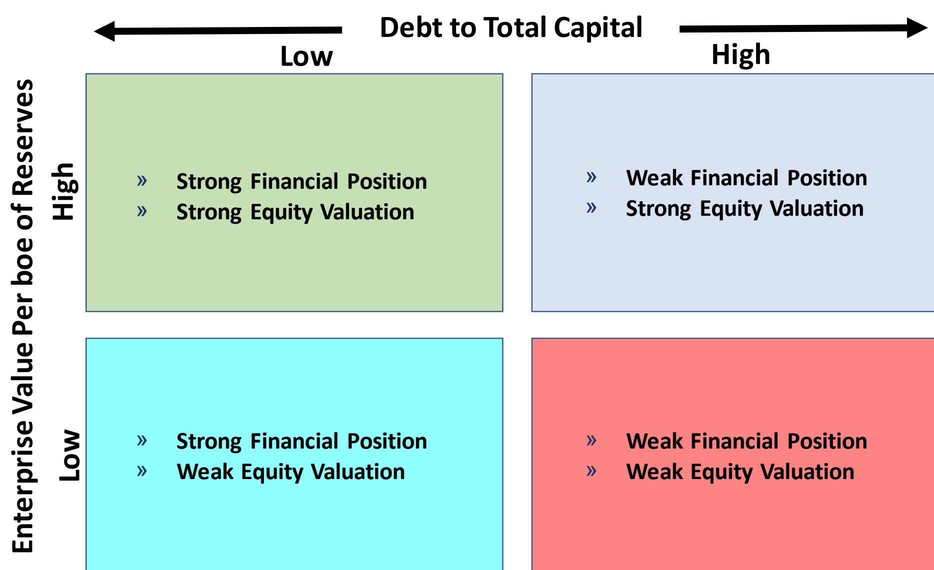

Figure 4 – RBN Financial Strength Analysis

- **Section D – "Individual Company Profiles"** scrutinizes each company in our universe of 43 firms, as well as four majors at a granular level, looking at their financial condition, capex plans, geographic focus, M&A strategies and a general assessment of the company's position in today's U.S. E&P industry. Specific details for each company include:
  - The Bottom Line: An investment summary for each company.
  - What each company is buying and selling.
  - What each company owns, with breakdowns of production and proved reserves by region/play and oil/NGL/gas weighting.
  - Where each company is spending: Capital spending strategy, level, allocation, intensity, and effectiveness.
  - M&A strategy.
  - Leverage and equity valuation metric analysis.
  - Investment strategy.
  - Acquisition and divestiture history and analysis.

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Piranha! Synopsis

The U.S. E&P sector is enjoying a recovery. But it is not a traditional recovery driven primarily by rising prices. Instead, the increases in production and improved financial results are tied to strategies that focus on core plays, M&A deals that implement those strategies, and productivity gains that can be extracted due to better operational results and lower costs.

Through aggressive deal-making in hundreds—if not thousands—of transactions, U.S. E&Ps have been behaving like *schools of piranha*, eating away at small pieces of other companies and selling pieces of themselves to fund those acquisitions. In doing so they are simultaneously fragmenting and reconstituting the U.S. E&P sector.

The trend of concentrating investment on fewer core assets will continue. The winners in this industry-wide transformation will be the companies we have identified that:

1. Adopt and articulate clear, straightforward strategies to maximize investment returns by focusing on their core operating areas;
2. Maintain a strong balance sheet that will enable them to weather future commodity price downturns, which are quite possible due to continued increases in U.S. supplies;
3. Demonstrate the ability to execute through adoption of new technologies, effective operations, and prudent acreage acquisitions.

Piranha! is a market study about understanding this industry-wide transformation, identifying the companies best positioned for success, and predicting how the changes in U.S. E&P sector will continue to dominate the supply side of the supply/demand balance, not only in the U.S. but around the globe.

Piranha! The "Piranhaization" of U.S. E&P

is a special RBN Market Study not included with RBN Backstage Pass or any other subscription service. To subscribe, send an email to tjbraziel@rbnenergy.com or call 888-613-8874.

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Concho Resources

Oil-Weighted E&P

The Bottom Line

Concho has the most diverse asset base in the Permian Basin, adding to its Midland, northern Delaware, and southern Delaware positions with $2.4 billion in acquisitions in 2016. It is planning to add an average 19 rigs in 2017, the largest in the Permian. However, it is shifting its development focus from the Midland to the northern Delaware Basin. With oil prices increasing and costs trending lower, Concho is boosting its total 2017 capital program by 33% to $1.53 billion, but its D&C spending will remain within cash flow.

What Concho's Buying

Concho has been an aggressive and opportunistic buyer, announcing $2.4 billion in acquisitions in 2016. It has funded these purchases using its high-valued equity, which allowed the company to lower absolute debt by $600 million in 2016. The company is likely to continue to be an active buyer going forward.

What Concho's Selling

The company completed $325 million in non-core acreage sales in 2016 and is likely to continue to high grade its portfolio in 2017. Concho recently announced the sale of its interest in the Alpha Crude pipeline, which will net it $803 million in proceeds.

What Concho Owns

Region/Play/Mix	Production (4Q 2016)	Reserves (Year-end 2016)
Delaware Basin	NA	48%
Midland Basin	NA	27%
New Mexico Shelf	NA	25%
Total	164,337 boe/d	720 Mmboe
Oil	61%	60%
Gas	39%	40%

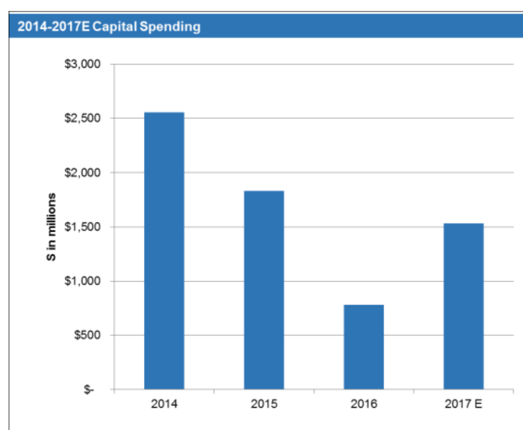
Northern Delaware Basin: Concho has 250,000 net acres primarily in Eddy and Lea counties in New Mexico.

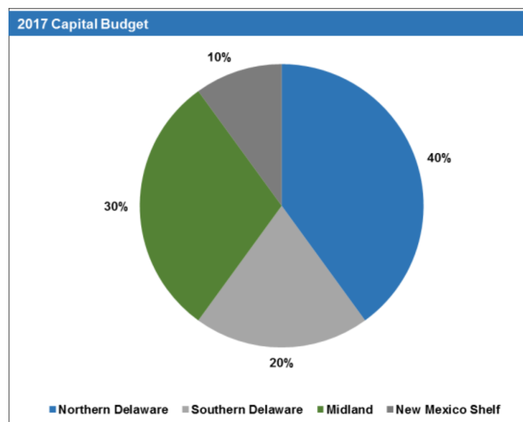
Southern Delaware Basin: The company has 125,000 net acres primarily in Reeves, Ward, and Pecos counties, Texas.

Midland Basin: After the closing of the $1.65 billion acquisition of 40,000 net acres from Reliance Energy, Concho has 150,000 net acres primarily in Andrews, Martin, Ector, Midland, and Upton counties, Texas.

New Mexico Shelf: The company has 100,000 new acres primarily in northern Eddy and Lea counties.

Where Concho's Spending





Concho has the most diverse portfolio of the major Permian producers, with significant acreage in all four major plays. It plans to maintain a balanced approach to allocating investment among its core areas going forward, even when oil prices increase.

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The company boosted its rig count by one, to 19 rigs in 2017, the most of any Permian producer. It expects to generate 20%-24% production growth and a 20% CAGR over 2017-19.

Although its total rig count is little changing, Concho is shifting its development focus to the northern Delaware Basin, where it will spend about $610 million (40% of capex) to jump from four to eight rigs. It will drill an average of 5,000-foot laterals targeting the Second Bone Spring, Avalon, and Wolfcamp.

Even though the Reliance acquisition in the Midland Basin closed on October 4, 2016, the company is decreasing its rig count from eight to five. It is allocating $460 million to the play (30% of capex) and says that it can still generate significant production growth by shifting to longer laterals and multi-well pad drilling targeting the Lowe Spraberry and the Wolfcamp B.

Concho will continue to run four rigs in the southern Delaware and spend $300 million (20% of capex), where its contiguous acreage position also allows longer laterals. It is focusing on Wolfcamp development and delineating the Third Bone Spring.

Concho will invest $150 million (10% of capex) to run two horizontal rigs on its legacy oil play on the New Mexico Shelf, where it is focusing on optimizing well-spacing and completion techniques on the Upper Blineberry and Paddock formations.

Concho Investment Intensity and Effectiveness

Capital Metrics		Rank
Capital Intensity	425%	42
Capital Efficiency	$11.93	23

Concho's cash flow has exceeded its D&C budget since Q3 2015 and will continue to fund its increased spending in 2017.

Concho's year-end proved reserves were up 15% as the company replaced 344% of production. Its cost to add 125 MMboe through the drill bit was $9.21/boe.

More About Concho's M&A Strategy

Concho's $2.4 billion in 2016 acquisitions included its $1.65 billion purchase of Midland Basin properties from Reliance Energy, its first major transaction since the $1 billion purchase from Three Rivers Operating Company in May 2012. The company easily financed all its acquisitions using its highly-valued equity as currency.

Concho's active portfolio management has also included several smaller sales of Permian acreage that it deemed non-core as its development program evolved. It is currently marketing a package of southern Midland Basin properties.

Concho sold its stake in the 400-mile Alpha Crude pipeline for net proceeds of $803 million.

The company said it is still seeking opportunities to acquire acreage around its core areas, in order to drill longer laterals, either through smaller or larger transactions.

Concho would be a very expensive acquisition target for a major international firm seeking entrance to the Permian Basin.

Leverage and Equity Valuation

Valuation Metrics		Rank
Enterprise Value per Boe	$30.16	5
Enterprise Value/EBITDA	80.1	1

Leverage Metrics		Rank
Debt to Capital %	20%	3
EBITDA/Interest Ratio	1.2	41

Concho's diverse, quality Permian portfolio and its operational excellence has garnered one of the highest enterprise values among U.S. E&Ps, which makes its equity an attractive currency for future acquisitions.

The company has the third-lowest debt-to-capital ratio in our universe. Pro forma for the Alpha Crude pipeline sale, Concho had $749 million in cash at year-end 2016 and an undrawn $2.5 billion revolving credit facility.

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