

Oil & Gas Upstream Market Monthly Newsletter

Table of Contents

1. Market Summary
2. Money & Commodity Markets
3. Energy Specific Market
4. Equity Market Index
5. Fuel Supply & Demand
6. Industry Statistics
8. Equity Markets
10. Comparisons
11. M&A Transactions
13. Closing Thoughts

About Trefethen Advisors, LLC

Trefethen Advisors is a privately held investment bank. Trefethen is unique in its ability to maximize value for its clients by providing strategy-led, consultative investment banking services in situations requiring specialized industry, analytical, and/or structuring expertise. We offer skilled transaction execution capabilities and a full range of financial and strategic advisory services:

- Mergers & Acquisitions (Buy-Side & Sell-Side)
- Corporate Finance
- Financial Restructuring and Distressed M&A
- ESOP Buyouts

Corporate Finance resources include:

- Family Offices
- Venture Capital
- Debt/Sub-Debt
- Private Equity
- Financial Companies
- Sale-Leaseback Financing

For more company information, please visit our website at www.trefethenib.com

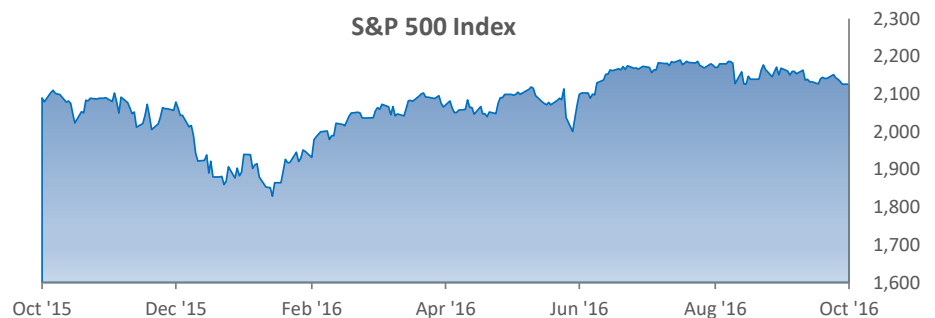
For more Oil & Gas information, please contact Brian Humenesky at bhumenesky@trefethenib.com

Trefethen Advisors, LLC is pleased to bring you this monthly edition of its monthly market update. This periodical is designed to provide current information on the public equity markets, oil & gas upstream markets, supply & demand trends, M&A activity as well as market and sector commentary. If you would like to add any colleagues to this newsletter, please contact Brian Humenesky at bhumenesky@trefethenib.com

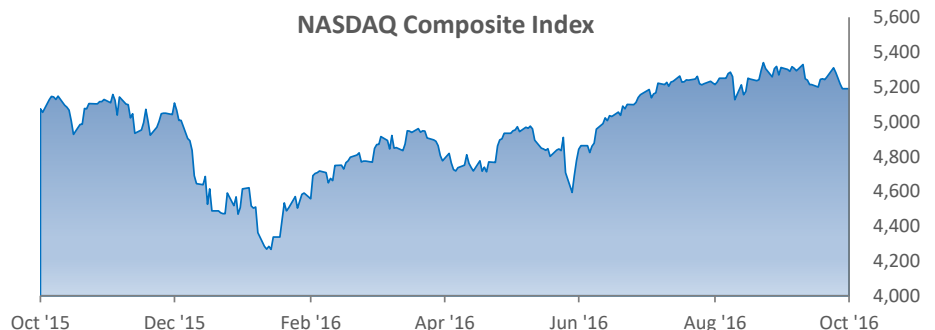
Market Summary

Stocks were lower in October as uncertainty surrounding the U.S. Presidential Election and mixed earnings results led stocks lower. Overall, S&P 500 and NASDAQ indexes declined 1.94% and 2.31%, respectively. By the end of the month, Oil prices hit one-month lows on doubts about OPEC following through with projected production cuts, erasing the 13% percent gain after OPEC announced on Sept. 27 modest production cuts. OPEC is hoping to finalize how much each individual member should cut at the Nov. 30 meeting; however, agreement amongst the members has been difficult to achieve with Iran and Iraq reluctant to freeze output. WTI and Brent Crude Oil traded down 2.9% and 3.1% during October falling from \$48.24 to \$46.86 and \$50.19 to \$48.61, respectively.

S&P 500 Index



NASDAQ Composite Index

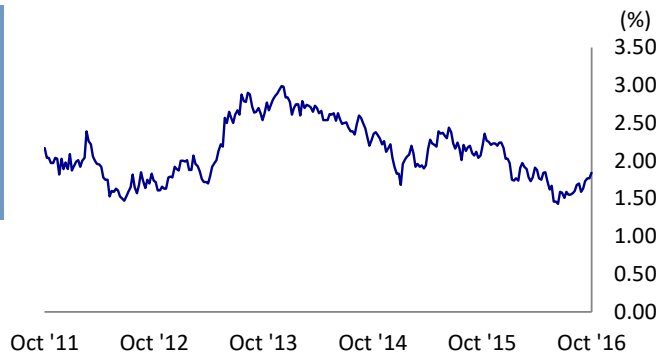


Treasury Rates

	10/31/2016	- 1 Wk.	- 1 Mo.	- 6 Mo.	- 12 Mo.
1-Year	0.66%	0.66%	0.59%	0.56%	0.34%
10-Year	1.84%	1.77%	1.60%	1.83%	2.16%
30-Year	2.58%	2.52%	2.32%	2.66%	2.93%
1M Libor	0.44%	0.53%	0.53%	0.19%	0.53%
3M Libor	0.88%	0.88%	0.85%	0.64%	0.33%

During October, treasury rates rose and speculation grew that the Fed will raise the federal funds rate in December. Despite the increase, some fear the 10-year rate may soon be testing resistance. The long-term trend for rates remains uncertain, but should become more clear post-election.

10-Year Treasury Yield

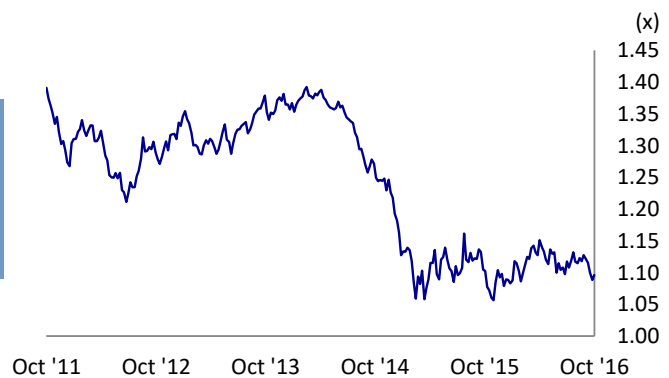


Exchange Rates

	10/31/2016	- 1 Wk.	- 1 Mo.	- 6 Mo.	- 12 Mo.
GBP/USD	1.22	1.22	1.30	1.46	1.55
EUR/USD	1.10	1.09	1.12	1.15	1.10
USD/JPY	105.14	104.24	101.28	106.85	120.76
USD/CNY	6.78	6.78	6.67	6.48	6.32

In currencies, the U.S. Dollar has carried the breakout into its 4th consecutive week and has been trading higher than most other major currencies.

EUR/ USD

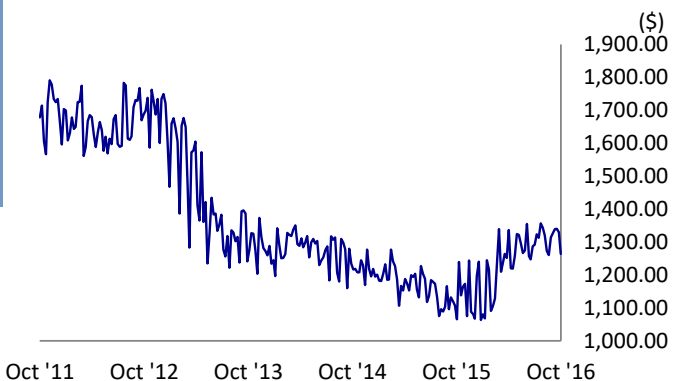


Commodity Markets

	10/31/2016	- 1 Wk.	- 1 Mo.	- 6 Mo.	- 12 Mo.
Crude Oil	47.46	50.52	48.82	45.92	46.59
Gold	1,273.1	1,263.7	1,317.1	1,290.5	1,141.4
Silver	17.80	17.60	19.21	17.82	15.57
Wheat	4.16	4.02	4.02	4.88	5.22
Corn	46.86	50.52	48.24	45.92	46.59

During the month of October, Crude Oil ran into a key level of resistance at \$52 a barrel. However, by the end of the month, it hit one-months low on doubts about OPEC's planned production cuts and a build in U.S. crude inventories.

GOLD



Source: Capital IQ

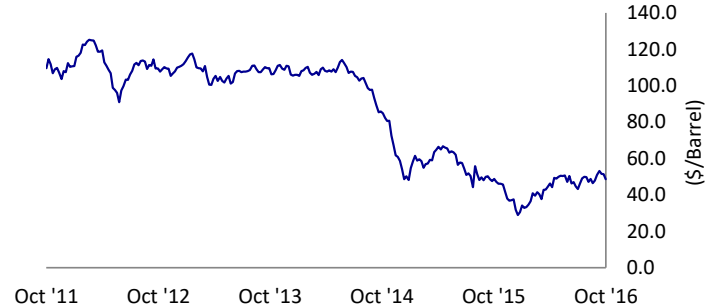
WTI Crude Oil

One-Month High	51.8	5-Year High	110.5
One-Month Low	46.9	5-Year Low	27.5
Monthly Change	(2.9%)	5-Year Change	(49.7%)



Brent Crude Oil

One-Month High	53.1	5-Year High	125.3
One-Month Low	48.6	5-Year Low	27.9
Monthly Change	(3.1%)	5-Year Change	(55.6%)



Henry Hub Natural Gas

One-Month High	3.7	5-Year High	5.5
One-Month Low	2.9	5-Year Low	1.6
Monthly Change	9.9%	5-Year Change	(21.2%)



Gasoline (RBOB)

One-Month High	1.5	5-Year High	3.4
One-Month Low	1.4	5-Year Low	0.9
Monthly Change	(3.0%)	5-Year Change	(45.5%)



Coal (Central Appalachian)

One-Month High	40.0	5-Year High	74.0
One-Month Low	40.0	5-Year Low	39.5
Monthly Change	0.0%	5-Year Change	(45.9%)



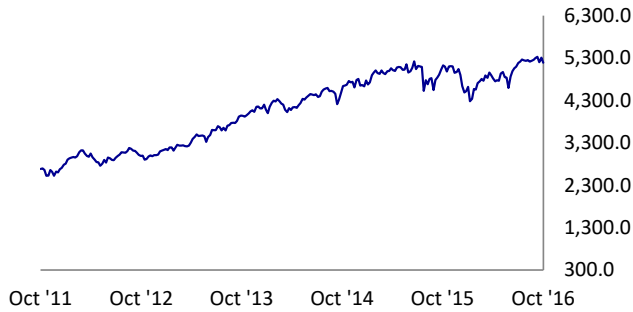
GDP Growth Forecast ¹

Region	2016E	2017P	Region	2016E	2017P
Global	2.4%	2.8%	China	6.7%	6.5%
United States	1.9	2.2	Brazil	(4.0)	(0.2)
Euro Area	1.6	1.6	Japan	0.5	0.5

Source: Capital IQ, ¹World Bank

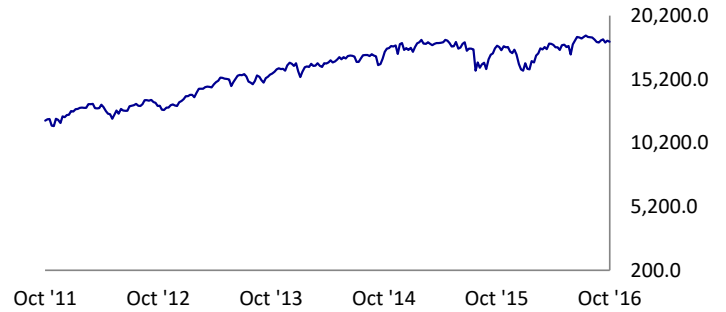
NASDAQ Index

One-Month High	5,328.7	5-Year High	5,339.5
One-Month Low	5,189.1	5-Year Low	2,441.5
Monthly Change	(2.3%)	5-Year Change	93.3%



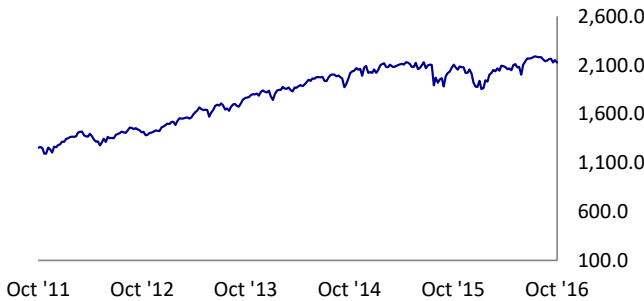
Dow Jones Industrial Average Index

One-Month High	18,329.0	5-Year High	18,636.1
One-Month Low	18,086.4	5-Year Low	11,231.8
Monthly Change	(0.9%)	5-Year Change	51.8%



S&P 500 Index

One-Month High	2,168.3	5-Year High	2,190.1
One-Month Low	2,126.2	5-Year Low	1,158.7
Monthly Change	(1.9%)	5-Year Change	69.6%



S&P U.S. Energy Index

One-Month High	528.1	5-Year High	737.1
One-Month Low	504.9	5-Year Low	388.6
Monthly Change	(3.0%)	5-Year Change	(2.5%)



S&P Global Energy Index

One-Month High	33.6	5-Year High	49.5
One-Month Low	32.4	5-Year Low	23.9
Monthly Change	(1.2%)	5-Year Change	(16.4%)



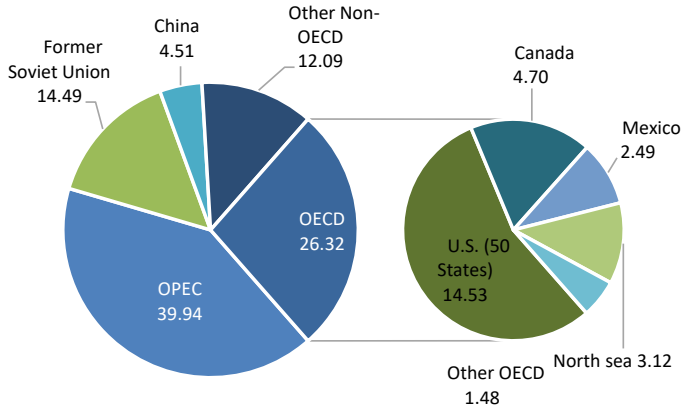
Dow Jones U.S. Oil & Gas Index

One-Month High	591.7	5-Year High	855.7
One-Month Low	562.1	5-Year Low	433.9
Monthly Change	(3.5%)	5-Year Change	(5.0%)

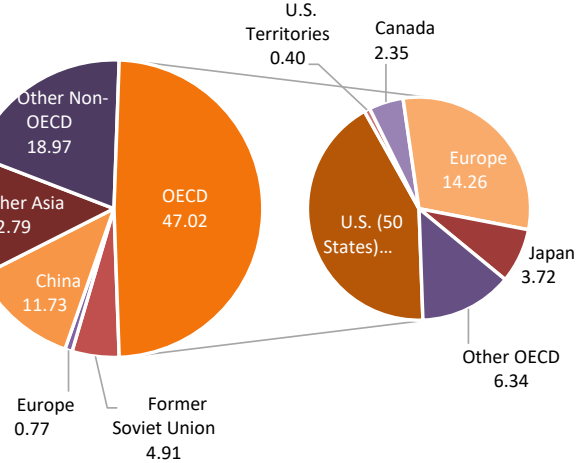


Source: Capital IQ

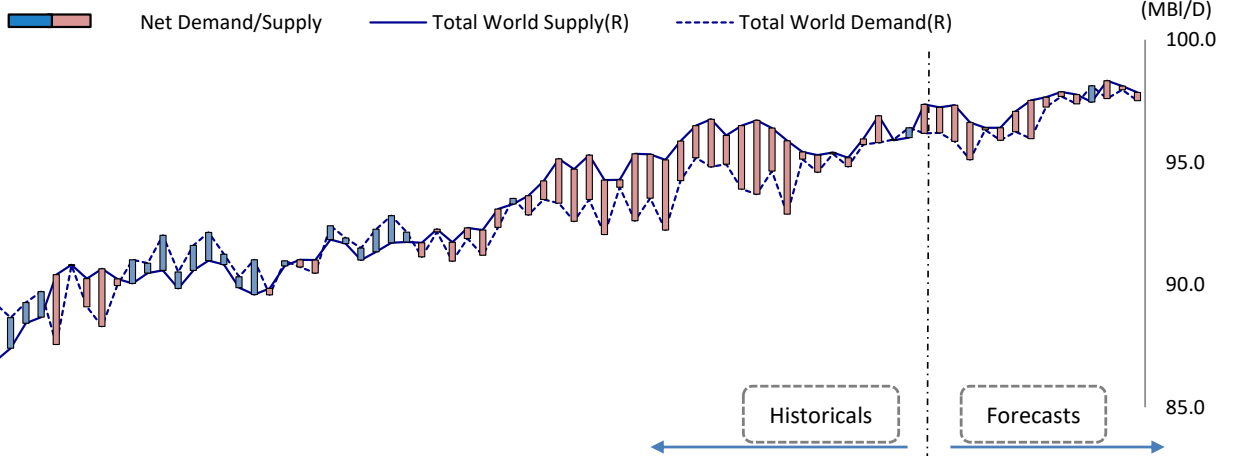
Supply (MBI/d)



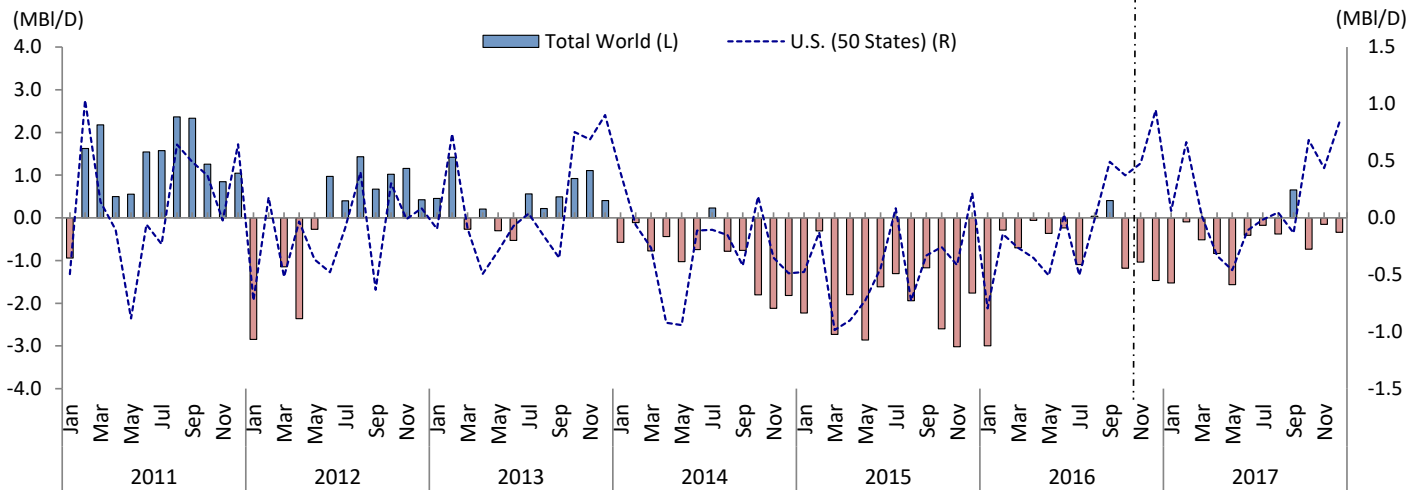
Demand (MBI/d)



Total World S & D



Total Inventory Net Withdrawals

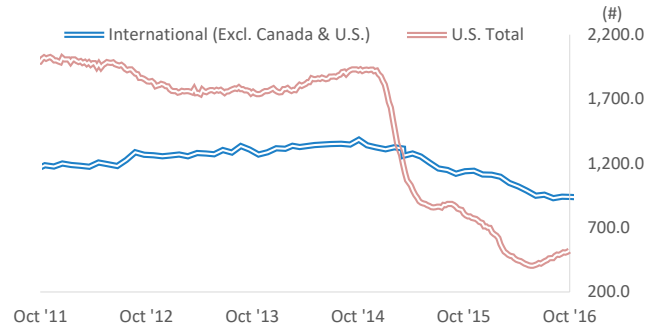


Source: EIA, Short-Term Energy Outlook released on November 8, 2016
*Fuel includes crude oil, natural gas plant liquids, biofuels, other liquids, and refinery processing gains

Rig Counts by Category

#####	1/1/2016	- 1 Mo.	- 1 Yr.	
U.S. Total	557	698	511	787
U.S. Oil	441	536	418	594
U.S. Gas	114	162	92	193
International (Excl. Canada & U.S.)	920	1045	934	1111
Horizontal / Directional	504	609	451	678
Vertical	53	89	60	109

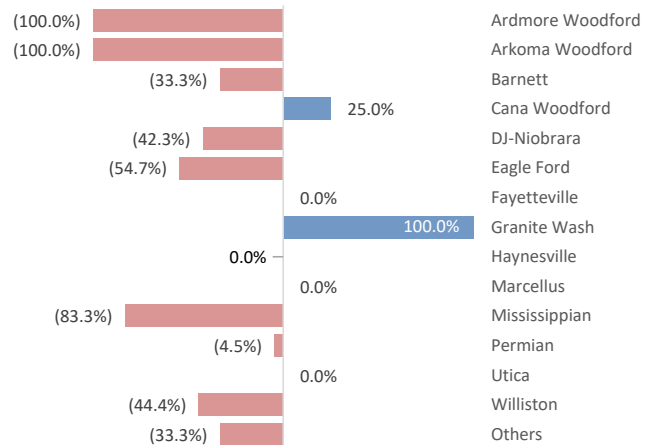
Total Rig Counts (Oil + Gas)



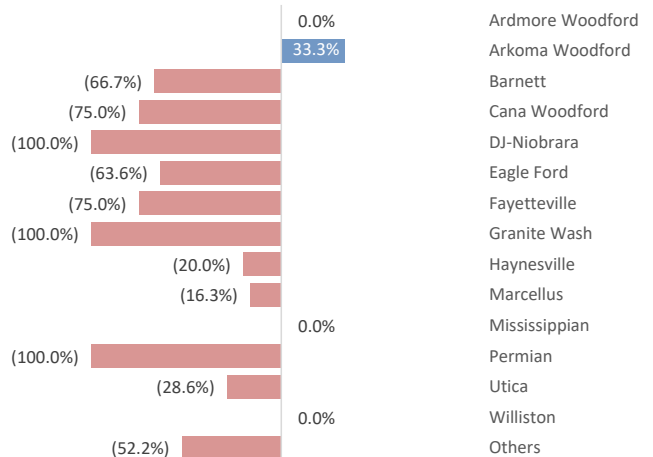
Rig Count by Region (Oil + Gas)

#####	1/1/2016	- 1 Mo.	- 1 Yr.	
Ardmore Woodford	0	2	1	2
Arkoma Woodford	4	8	3	8
Barnett	3	7	1	6
Cana Woodford	41	38	33	36
DJ-Niobrara	15	23	16	27
Eagle Ford	33	76	37	77
Fayetteville	1	1	0	4
Granite Wash	10	15	9	12
Haynesville	20	25	13	26
Marcellus	36	41	30	43
Mississippian	2	12	3	12
Permian	212	217	201	229
Utica	15	15	15	22
Williston	35	53	28	64
Others	130	165	121	219
Total	557	698	511	787

TTM Change in U.S. Oil Rig Count

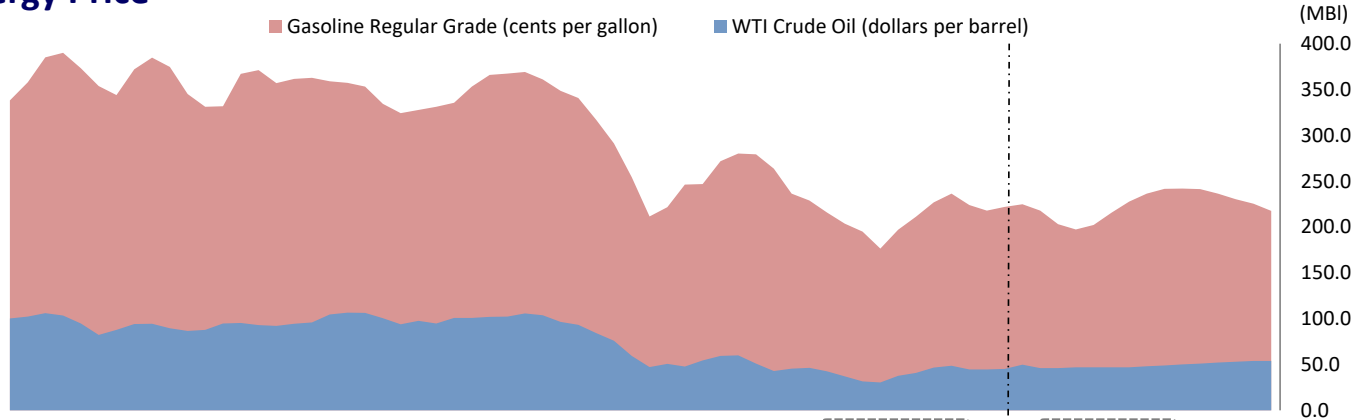


TTM Change in U.S. Gas Rig Count

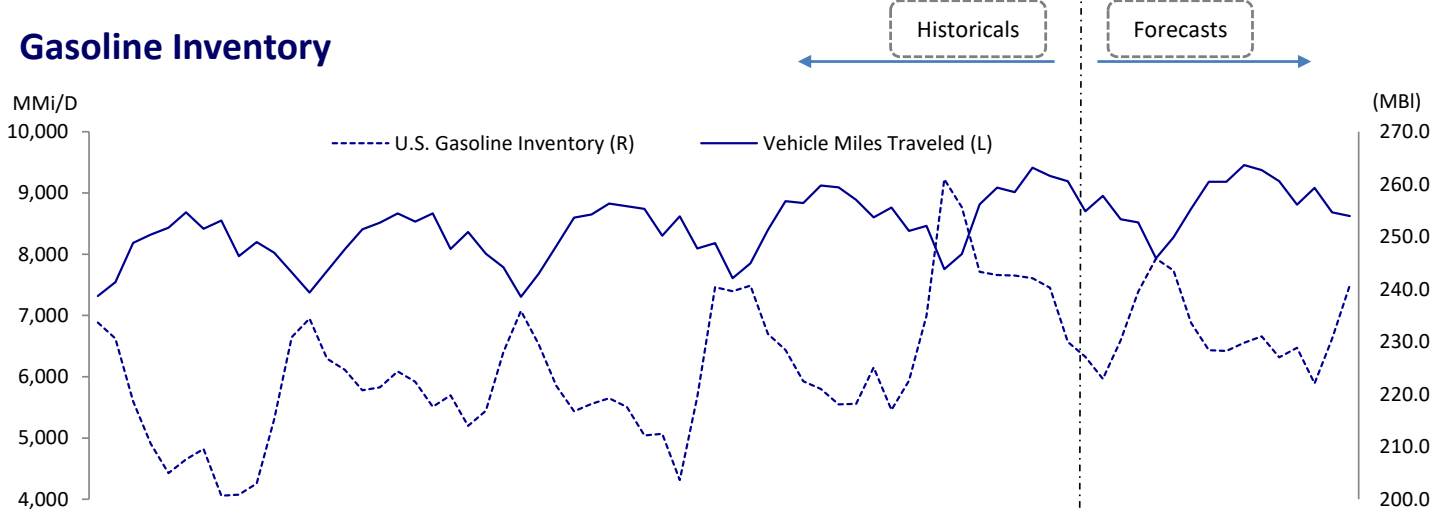


Source: Baker Hughes

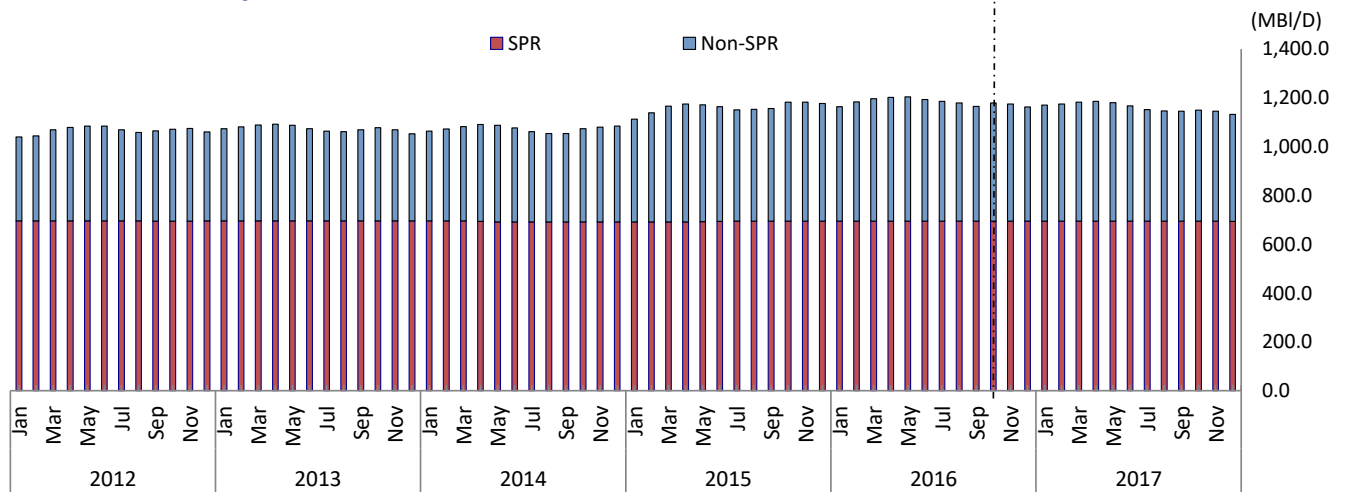
Energy Price



Gasoline Inventory



Crude Oil Inventory



Source: EIA, Short-Term Energy Outlook released on November 8, 2016

Equity Markets

(SMM, Except per Share Data)			(\$ in USD)				Selected Financial Data											
Security	Ticker	Latest FY Ended	Last 10/31/16	52 Wk. High	52 Wk. Low	% of 52 Wk. high	Market Cap	Enterprise Value	EV / EBITDA		EBITDA Margin		Net Debt / EBITDA		P / E		Dividend Yield	
									CY15A	CY16E	CY15A	CY16E	CY15A	CY16E	CY15A	CY16E		
Oil & Gas Drilling																		
CONSOL Energy Inc.	NYSE:CNX	12/31/2015	17.0	20.3	5.0	83.7%	3,889	7,234	7.5x	11.1x	23.9%	27.7%	4.9x	4.7x	NM	NM	-	
Chevron Corporation	NYSE:CVX	12/31/2015	104.8	107.0	79.0	97.9%	198,375	252,463	7.3x	11.4x	19.6%	18.5%	1.0x	1.7x	24.5	79.9	4.1%	
Diamond Offshore Drilling, Inc.	NYSE:DO	12/31/2015	16.5	26.1	14.8	63.2%	2,262	4,506	4.7x	7.1x	44.2%	40.7%	2.0x	3.3x	8.2	17.6	-	
EnSCO plc	NYSE:ESV	12/31/2015	7.8	18.3	6.6	42.6%	2,371	7,547	4.4x	6.3x	52.6%	45.8%	2.7x	3.5x	3.5	6.4	0.5%	
Helmerich & Payne, Inc.	NYSE:HP	9/30/2015	63.1	69.8	42.9	90.5%	6,858	8,298	4.3x	18.4x	35.9%	28.3%	(0.2x)	(0.8x)	15.6	NM	4.4%	
Nabors Industries Ltd.	NYSE:NBR	12/31/2015	11.9	13.3	5.5	89.7%	3,372	7,032	5.2x	11.6x	29.2%	27.5%	3.0x	5.4x	NM	NM	2.0%	
Occidental Petroleum Corporation	NYSE:OXY	12/31/2015	72.9	78.3	59.6	93.1%	55,698	67,211	10.1x	18.5x	45.0%	34.0%	0.9x	1.4x	567.4	NM	4.2%	
Rowan Companies plc	NYSE:RDC	12/31/2015	13.3	20.9	11.2	63.5%	1,664	5,347	4.2x	6.6x	48.0%	46.8%	2.2x	2.0x	4.8	8.1	-	
Transocean Ltd.	NYSE:RIG	12/31/2015	9.6	16.9	8.2	57.0%	3,511	14,634	3.6x	8.8x	44.3%	44.5%	2.0x	3.4x	3.1	11.4	-	
Exxon Mobil Corporation	NYSE:XOM	12/31/2015	83.3	95.1	73.2	87.6%	345,528	403,189	9.1x	11.9x	15.0%	15.1%	0.9x	1.2x	20.1	35.6	3.6%	
Average							62,353	77,746	6.0x	11.2x	35.8%	32.9%	1.9x	2.6x	80.9	26.5	1.9%	
Median							3,700	7,922	4.9x	11.3x	40.0%	31.1%	2.0x	2.6x	11.9	14.5	1.3%	
Oil & Gas Equipments and Services																		
Baker Hughes Incorporated	NYSE:BHI	12/31/2015	55.4	59.1	38.9	93.7%	23,430	30,266	12.1x	58.0x	11.5%	5.3%	0.9x	(1.4x)	NM	NM	1.2%	
FMC Technologies, Inc.	NYSE:FTI	12/31/2015	32.3	35.5	22.8	91.0%	7,283	9,637	7.1x	18.4x	15.2%	11.5%	0.2x	0.4x	12.6	34.8	-	
Halliburton Company	NYSE:HAL	12/31/2015	46.0	49.1	28.5	93.7%	39,807	55,455	8.3x	26.5x	17.6%	13.1%	1.3x	4.3x	21.9	NM	1.6%	
National Oilwell Varco, Inc.	NYSE:NOV	12/31/2015	32.1	39.9	26.3	80.4%	12,124	16,920	6.4x	61.9x	15.5%	3.8%	0.8x	6.2x	11.6	NM	0.6%	
Schlumberger Limited	NYSE:SLB	12/31/2015	78.2	83.9	61.1	93.3%	109,077	134,167	10.6x	20.5x	27.7%	23.0%	1.7x	2.7x	20.5	72.1	2.6%	
Weatherford International plc	NYSE:WFT	12/31/2015	4.8	11.3	4.8	42.8%	4,324	12,315	10.4x	41.2x	13.9%	5.2%	5.4x	23.6x	NM	NM	-	
Average							32,674	43,127	9.1x	37.7x	16.9%	10.3%	1.7x	6.0x	16.6	53.4	1.0%	
Median							17,777	23,593	9.3x	33.8x	15.3%	8.4%	1.1x	3.5x	16.6	53.4	0.9%	
Oil & Gas Refining & Marketing																		
Kinder Morgan, Inc.	NYSE:KMI	12/31/2015	20.4	27.5	12.0	74.3%	45,607	87,802	10.1x	12.2x	52.5%	53.7%	5.7x	5.7x	20.5	31.2	2.4%	
Marathon Petroleum Corporation	NYSE:MPC	12/31/2015	43.6	59.3	30.7	73.5%	23,157	41,994	6.6x	9.6x	9.5%	7.0%	1.6x	2.2x	8.7	17.8	3.3%	
ONEOK Inc.	NYSE:OKE	12/31/2015	48.4	51.4	18.9	94.2%	10,191	23,129	12.2x	13.4x	18.5%	20.2%	6.2x	5.3x	16.1	29.1	5.1%	
Phillips 66	NYSE:PSX	12/31/2015	81.2	93.7	72.9	86.6%	42,484	55,085	6.7x	12.4x	7.4%	4.9%	0.8x	1.5x	10.5	22.6	3.1%	
Spectra Energy Corp.	NYSE:SE	12/31/2015	41.8	44.0	22.0	95.1%	29,336	49,511	12.3x	17.4x	52.5%	53.8%	5.3x	5.2x	20.7	35.8	3.9%	
Tesoro Corporation	NYSE:TSO	12/31/2015	85.0	118.2	68.6	71.9%	10,146	18,910	4.7x	8.2x	13.7%	8.9%	0.8x	1.4x	7.4	15.4	2.6%	
Valero Energy Corporation	NYSE:VLO	12/31/2015	59.2	73.0	47.2	81.1%	27,330	43,022	4.3x	8.8x	10.2%	6.7%	0.4x	0.6x	7.4	15.4	4.1%	
Williams Companies, Inc.	NYSE:WMB	12/31/2015	29.2	40.3	11.2	72.5%	21,926	56,086	13.1x	13.3x	55.8%	59.9%	5.9x	5.8x	47.6	42.9	2.7%	
Average							26,272	46,942	8.8x	11.9x	27.5%	26.9%	3.3x	3.5x	17.4	26.3	3.4%	
Median							25,243	46,266	8.4x	12.3x	16.1%	14.6%	3.4x	3.7x	13.3	25.8	3.2%	
Oil & Gas Exploration and Production																		
Apache Corp.	NYSE:APA	12/31/2015	59.5	64.7	34.4	92.0%	22,568	34,000	6.6x	11.3x	61.2%	56.9%	1.9x	2.5x	1,564	21.7x	1.7%	
Anadarko Petroleum Corporation	NYSE:APC	12/31/2015	59.4	70.8	30.5	83.9%	33,221	58,245	12.4x	15.7x	40.4%	45.3%	4.7x	3.7x	2,057	28.3x	0.3%	
Antero Resources Corporation	NYSE:AR	12/31/2015	26.5	30.1	19.1	87.9%	8,314	14,491	9.9x	10.3x	30.9%	56.4%	3.8x	3.4x	2,202	6.6x	-	
Black Stone Minerals, L.P.	NYSE:BSM	12/31/2015	17.5	18.9	10.8	92.7%	3,343	3,701	11.5x	13.9x	63.9%	88.5%	0.2x	1.1x	50	74.3x	6.6%	
Chesapeake Energy Corporation	NYSE:CHK	12/31/2015	5.5	8.1	1.6	68.4%	4,827	17,804	6.6x	14.6x	19.1%	30.5%	4.1x	7.9x	1,504	11.8x	-	
Cabot Oil & Gas Corporation	NYSE:COG	12/31/2015	20.9	26.5	15.0	78.8%	9,717	11,738	11.5x	20.3x	60.1%	47.6%	2.5x	1.8x	1,365	8.6x	0.4%	
ConocoPhillips	NYSE:COP	12/31/2015	43.5	56.7	31.9	76.6%	53,813	86,878	12.7x	16.0x	20.5%	21.7%	3.5x	4.5x	8,180	10.6x	2.3%	
Carrizo Oil & Gas Inc.	NasdaqGS:CRZO	12/31/2015	33.8	42.9	18.4	78.9%	2,212	3,549	6.5x	9.3x	73.0%	70.6%	2.7x	3.5x	171	20.8x	-	
Concho Resources, Inc.	NYSE:CXO	12/31/2015	126.9	141.9	72.5	89.5%	17,900	21,800	8.7x	13.8x	95.0%	93.2%	1.8x	1.0x	623	35.0x	-	
Denbury Resources Inc.	NYSE:DNR	12/31/2015	2.4	4.7	1.0	51.1%	939	3,928	4.3x	9.8x	53.1%	40.1%	3.5x	7.5x	289	13.6x	-	
Devon Energy Corporation	NYSE:DVN	12/31/2015	37.9	47.8	18.7	79.3%	19,839	37,984	5.3x	16.6x	40.1%	22.6%	2.1x	4.0x	2,182	17.4x	0.6%	
Energren Corp.	NYSE:EGN	12/31/2015	50.1	61.6	22.9	81.4%	4,866	5,879	5.4x	20.5x	84.2%	50.9%	1.0x	0.4x	355	16.6x	-	
EOG Resources, Inc.	NYSE:EOG	12/31/2015	90.4	97.4	60.2	92.9%	49,993	58,028	11.0x	20.9x	46.6%	39.1%	1.5x	2.1x	2,118	27.4x	0.7%	
EP Energy Corporation	NYSE:EPE	12/31/2015	3.6	6.8	1.7	52.0%	899	4,735	3.6x	4.7x	86.0%	105.5%	2.9x	3.8x	546	8.7x	-	
EQT Corporation	NYSE:EQT	12/31/2015	66.0	79.3	47.8	83.2%	11,424	19,297	9.0x	15.9x	59.1%	68.8%	1.1x	0.9x	1,564	12.3x	0.2%	
Diamondback Energy, Inc.	NasdaqGS:FANG	12/31/2015	91.3	105.2	57.6	86.8%	7,125	8,110	11.3x	23.5x	102.3%	68.2%	1.0x	1.0x	157	51.7x	-	
Gulfport Energy Corp.	NasdaqGS:GPO	12/31/2015	24.1	34.2	20.3	70.5%	3,023	4,348	9.7x	10.5x	51.0%	76.2%	2.3x	1.4x	284	15.3x	-	
Hess Corporation	NYSE:HES	12/31/2015	48.0	63.4	34.4	75.7%	15,051	26,995	20.3x	19.8x	14.0%	29.1%	4.3x	2.8x	1,086	24.9x	2.1%	
Kosmos Energy Ltd.	NYSE:KOS	12/31/2015	5.2	7.8	3.5	66.7%	2,012	3,442	35.3x	16.9x	15.5%	40.5%	8.0x	6.0x	76	45.1x	-	
Laredo Petroleum, Inc.	NYSE:LPI	12/31/2015	11.9	13.6	4.1	87.8%	2,869	4,252	6.5x	10.2x	77.8%	78.5%	2.9x	3.2x	126	33.8x	-	
Marathon Oil Corporation	NYSE:MRO	12/31/2015	13.2	19.7	6.7	67.0%	11,167	20,398	4.5x	14.3x	54.7%	33.3%	1.9x	3.7x	2,163	9.4x	1.5%	
Murphy Oil Corporation	NYSE:MUR	12/31/2015	25.9	36.2	15.8	71.4%	4,455	8,202	5.4x	9.5x	40.6%	45.6%	2.3x	2.6x	774	10.6x	3.9%	
Noble Energy, Inc.	NYSE:NBL	12/31/2015	34.5	38.7	25.7	89.1%	14,773	24,807	11.6x	10.6x	57.9%	64.6%	3.9x	2.6x	1,421	17.5x	1.2%	
Newfield Exploration Co.	NYSE:NFX	12/31/2015	40.6	47.2	22.3	86.0%	7,988	10,896	7.2x	12.4x	68.7%	59.3%	2.3x	2.2x	509	21.4x	-	
Oasis Petroleum Inc.	NYSE:OAS	12/31/2015	10.5	13.0	4.3	80.8%	2,480	4,619	4.0x	9.3x	103.9%	67.5%	2.8x	4.3x	218	21.2x	-	
PDC Energy, Inc.	NasdaqGS:PDCE	12/31/2015	61.3	69.4	45.7	88.3%	3,500	5,742	6.3x	12.4x	74.4%	88.8%	1.5x	(0.3x)	273	21.0x	-	
Parsley Energy, Inc.	NYSE:PE	12/31/2015	32.9	36.8	15.7	89.4%	5,909	7,769	15.6x	23.3x	73.4%	71.7%	1.1x	1.1x	124	62.7x	-	
Pioneer Natural Resources Co.	NYSE:PXN	12/31/2015	179.0	193.2	107.8	92.6%	30,383	34,500	12.0x	18.2x	36.2%	54.6%	1.3x	1.2x	664	51.9x	0.0%	
Range Resources Corporation	NYSE:RRC	12/31/2015	33.8	46.5	20.5	72.7%	8,239	12,066	4.6x	17.7x	91.9%	48.6%	1.8x	5.6x	1,543	7.8x	0.2%	
Southwestern Energy Company	NYSE:SWN	12/31/2015	10.4	15.4	5.2	67.3%	5,099	11,233	6.0x	16.2x	39.5%	28.8%	3.8x	4.6x	1,036	10.8x	-	
Whiting Petroleum Corp.	NYSE:WLL	12/31/2015	8.2	19.0	3.5	43.5%	2,343	6,455	6.2x	8.4								

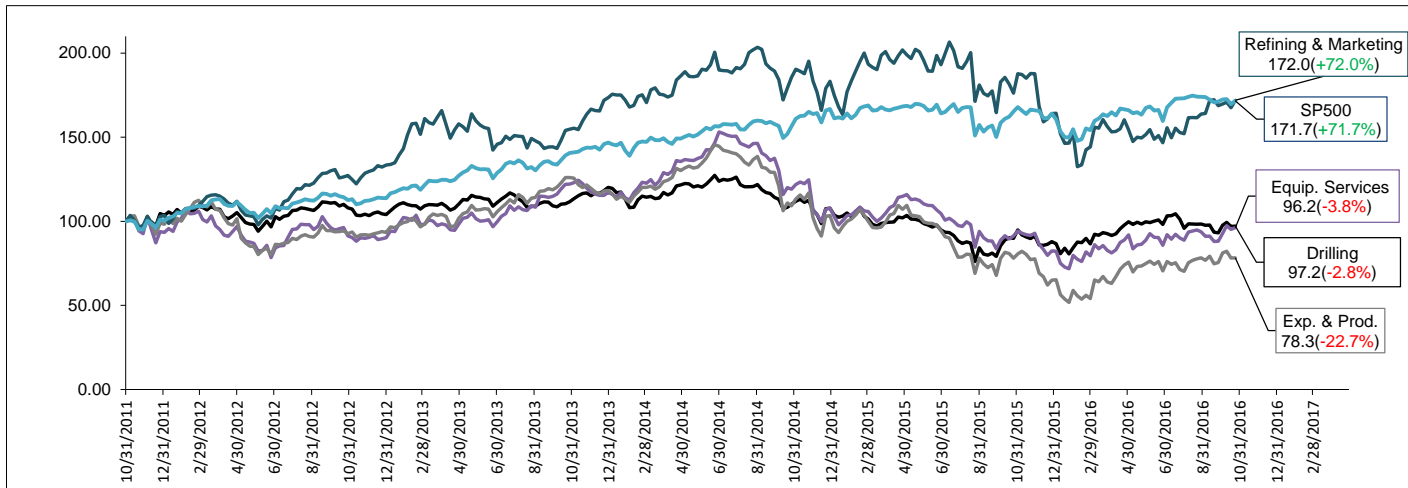
Equity Markets (Cont.)

(\$MM, Except per Share Data)

Security	Ticker	Revenue			Revenue Growth		EBITDA			EBITDA Margin			Avg. Margin	
		2014	2015	2016E	'14-'15	'15-'16E	2014	2015	2016E	2014	2015	2016E	'14-'15	'15-'16E
Oil & Gas Drilling														
CONSOL Energy Inc.	NYSE:CNX	3,727	3,114	2,348	(16.4%)	(24.6%)	1,053	745	650	28.3%	23.9%	27.7%	26.1%	25.8%
Chevron Corporation	NYSE:CVX	211,970	138,477	119,437	(34.7%)	(13.7%)	47,995	27,139	22,067	22.6%	19.6%	18.5%	21.1%	19.0%
Diamond Offshore Drilling, Inc.	NYSE:DO	2,815	2,419	1,566	(14.0%)	(35.3%)	1,202	1,069	637	42.7%	44.2%	40.7%	43.5%	42.4%
Enso plc	NYSE:ESV	4,565	4,063	2,614	(11.0%)	(35.7%)	2,356	2,137	1,198	51.6%	52.6%	45.8%	52.1%	49.2%
Helmerich & Payne, Inc.	NYSE:HP	3,720	3,165	1,599	(14.9%)	(49.5%)	1,559	1,136	452	41.9%	35.9%	28.3%	38.9%	32.1%
Nabors Industries Ltd.	NYSE:NBR	6,798	3,867	2,210	(43.1%)	(42.9%)	1,743	1,127	607	25.6%	29.2%	27.5%	27.4%	28.3%
Occidental Petroleum Corporation	NYSE:OXY	22,666	12,480	10,689	(44.9%)	(14.3%)	13,255	5,611	3,634	58.5%	45.0%	34.0%	51.7%	39.5%
Rowan Companies plc	NYSE:RDC	1,824	2,137	1,728	17.1%	(19.1%)	709	1,026	809	38.9%	48.0%	46.8%	43.4%	47.4%
Transocean Ltd.	NYSE:RIG	9,174	6,953	3,752	(24.2%)	(46.0%)	3,790	3,083	1,669	41.3%	44.3%	44.5%	42.8%	44.4%
Exxon Mobil Corporation	NYSE:XOM	411,939	268,882	223,330	(34.7%)	(16.9%)	69,213	40,325	33,801	16.8%	15.0%	15.1%	15.9%	15.1%
Average		67,920	44,556	36,927	(22.1%)	(29.8%)	14,288	8,340	6,552	36.8%	35.8%	32.9%	36.3%	34.3%
Median		5,681	3,965	2,481	(20.3%)	(29.9%)	2,049	1,636	1,003	40.1%	40.0%	31.1%	40.9%	35.8%
Oil & Gas Equipments and Services														
Baker Hughes Incorporated	NYSE:BHI	24,551	15,742	9,784	(35.9%)	(37.8%)	4,843	1,815	522	19.7%	11.5%	5.3%	15.6%	8.4%
FMC Technologies, Inc.	NYSE:FTI	7,943	6,363	4,559	(19.9%)	(28.3%)	1,299	967	522	16.3%	15.2%	11.5%	15.8%	13.3%
Halliburton Company	NYSE:HAL	32,870	23,633	15,944	(28.1%)	(32.5%)	7,174	4,155	2,095	21.8%	17.6%	13.1%	19.7%	15.4%
National Oilwell Varco, Inc.	NYSE:NOV	21,440	14,757	7,177	(31.2%)	(51.4%)	4,586	2,283	274	21.4%	15.5%	3.8%	18.4%	9.6%
Schlumberger Limited	NYSE:SLB	48,580	35,475	28,356	(27.0%)	(20.1%)	13,825	9,820	6,534	28.5%	27.7%	23.0%	28.1%	25.4%
Weatherford International plc	NYSE:WFT	14,911	9,433	5,787	(36.7%)	(38.6%)	2,974	1,307	299	19.9%	13.9%	5.2%	16.9%	9.5%
Average		25,049	17,567	11,935	(29.8%)	(34.8%)	5,783	3,391	1,708	21.3%	16.9%	10.3%	19.1%	13.6%
Median		22,996	15,250	8,481	(29.6%)	(35.2%)	4,715	2,049	522	20.7%	15.3%	8.4%	17.7%	11.5%
Oil & Gas Refining & Marketing														
Kinder Morgan, Inc.	NYSE:KMI	16,226	14,403	13,345	(11.2%)	(7.3%)	6,502	7,562	7,173	40.1%	52.5%	53.7%	46.3%	53.1%
Marathon Petroleum Corporation	NYSE:MPC	98,102	72,258	62,489	(26.3%)	(13.5%)	5,377	6,856	4,391	5.5%	9.5%	7.0%	7.5%	8.3%
ONEOK Inc.	NYSE:OKE	12,195	7,763	8,572	(36.3%)	10.4%	1,438	1,434	1,732	11.8%	18.5%	20.2%	15.1%	19.3%
Phillips 66	NYSE:PSX	164,093	100,949	90,550	(38.5%)	(10.3%)	7,183	7,502	4,438	4.4%	7.4%	4.9%	5.9%	6.2%
Spectra Energy Corp.	NYSE:SE	5,903	5,234	5,285	(11.3%)	1.0%	3,146	2,746	2,843	53.3%	52.5%	53.8%	52.9%	53.1%
Tesoro Corporation	NYSE:TSO	40,633	28,711	25,767	(29.3%)	(10.3%)	2,288	3,924	2,299	5.6%	13.7%	8.9%	9.6%	11.3%
Valero Energy Corporation	NYSE:VLO	130,844	87,804	73,397	(32.9%)	(16.4%)	7,370	8,990	4,911	5.6%	10.2%	6.7%	7.9%	8.5%
Williams Companies, Inc.	NYSE:WMB	7,637	7,360	7,058	(3.6%)	(4.1%)	3,320	4,104	4,231	43.5%	55.8%	59.9%	49.6%	57.8%
Average		59,454	40,560	35,808	(23.7%)	(6.3%)	4,578	5,390	4,002	21.2%	27.5%	26.9%	24.4%	27.2%
Median		28,430	21,557	19,556	(27.8%)	(8.8%)	4,349	5,480	4,311	8.7%	16.1%	14.6%	12.4%	15.3%
Oil & Gas Exploration and Production														
Apache Corp.	NYSE:APA	13,851	6,366	5,288	(54.0%)	(16.9%)	15,258	3,896	3,009	110.2%	61.2%	56.9%	85.7%	59.1%
Anadarko Petroleum Corporation	NYSE:APC	18,470	8,698	8,204	(52.9%)	(5.7%)	11,689	3,513	3,713	63.3%	40.4%	45.3%	51.8%	42.8%
Antero Resources Corporation	NYSE:AR	2,721	3,955	2,506	45.4%	(36.6%)	1,162	1,221	1,412	42.7%	30.9%	56.4%	36.8%	43.6%
Black Stone Minerals, L.P.	NYSE:BSM	-	393	301	NA	(23.3%)	-	251	267	NM	63.9%	88.5%	NM	76.2%
Chesapeake Energy Corporation	NYSE:CHK	20,951	12,764	3,987	(39.1%)	(68.8%)	5,084	2,435	1,217	24.3%	19.1%	30.5%	21.7%	24.8%
Cabot Oil & Gas Corporation	NYSE:COG	2,173	1,357	1,214	(37.5%)	(10.5%)	1,295	815	578	59.6%	60.1%	47.6%	59.8%	53.8%
ConocoPhillips	NYSE:COP	55,517	30,935	25,044	(44.3%)	(19.0%)	21,729	6,348	5,440	39.1%	20.5%	21.7%	29.8%	21.1%
Carrizo Oil & Gas Inc.	NasdaqGS:CRZO	697	623	538	(10.5%)	(13.7%)	533	455	380	76.6%	73.0%	70.6%	74.8%	71.8%
Concho Resources, Inc.	NYSE:CXO	2,660	1,804	1,692	(32.2%)	(6.2%)	2,033	1,713	1,577	76.4%	95.0%	93.2%	85.7%	94.1%
Denbury Resources Inc.	NYSE:DNR	2,435	1,769	997	(27.3%)	(43.7%)	1,370	939	400	56.3%	53.1%	40.1%	54.7%	46.6%
Devon Energy Corporation	NYSE:DVN	19,566	13,145	10,120	(32.8%)	(23.0%)	7,164	5,267	2,282	36.6%	40.1%	22.6%	38.3%	31.3%
Energren Corp.	NYSE:EGN	1,677	879	564	(47.6%)	(35.8%)	949	740	287	56.6%	84.2%	50.9%	70.4%	67.5%
EOG Resources, Inc.	NYSE:EOG	18,035	8,757	7,093	(51.4%)	(19.0%)	8,862	4,084	2,771	49.1%	46.6%	39.1%	47.9%	42.9%
EP Energy Corporation	NYSE:EPE	3,084	1,908	949	(38.1%)	(50.3%)	1,547	1,641	1,001	50.2%	86.0%	105.5%	68.1%	95.8%
EQT Corporation	NYSE:EQT	2,470	2,340	1,767	(5.3%)	(24.5%)	1,722	1,382	1,215	69.7%	59.1%	68.8%	64.4%	63.9%
Diamondback Energy, Inc.	NasdaqGS:FANG	496	447	506	(9.9%)	13.2%	403	457	345	81.2%	102.3%	68.2%	91.8%	85.2%
Gulfport Energy Corp.	NasdaqGS:GPOR	671	709	545	5.7%	(23.2%)	492	362	415	73.2%	51.0%	76.2%	62.1%	63.6%
Hess Corporation	NYSE:HES	11,439	6,561	4,685	(42.6%)	(28.6%)	6,823	919	1,365	59.6%	14.0%	29.1%	36.8%	21.6%
Kosmos Energy Ltd.	NYSE:KOS	883	472	502	(46.6%)	6.5%	554	73	204	62.7%	15.5%	40.5%	39.1%	28.0%
Laredo Petroleum, Inc.	NYSE:LPI	794	607	531	(23.6%)	(12.5%)	598	472	417	75.3%	77.8%	78.5%	76.6%	78.2%
Marathon Oil Corporation	NYSE:MRO	11,258	5,861	4,300	(47.9%)	(26.6%)	5,465	3,206	1,430	48.5%	54.7%	33.3%	51.6%	44.0%
Murphy Oil Corporation	NYSE:MUR	5,476	3,033	1,885	(44.6%)	(37.9%)	3,274	1,230	860	59.8%	40.6%	45.6%	50.2%	43.1%
Noble Energy, Inc.	NYSE:NBL	5,101	3,133	3,633	(38.6%)	16.0%	3,175	1,815	2,345	62.2%	57.9%	64.6%	60.1%	61.2%
Newfield Exploration Co.	NYSE:NFX	2,288	1,557	1,476	(31.9%)	(5.2%)	1,445	1,070	876	63.2%	68.7%	59.3%	65.9%	64.0%
Oasis Petroleum Inc.	NYSE:OAS	1,390	790	734	(43.2%)	(7.0%)	953	820	496	68.5%	103.9%	67.5%	86.2%	85.7%
PDC Energy, Inc.	NasdaqGS:PDCE	856	595	523	(30.5%)	(12.1%)	361	443	465	42.2%	74.4%	88.8%	58.3%	81.6%
Parsley Energy, Inc.	NYSE:PE	302	266	465	(11.8%)	74.6%	206	195	333	68.3%	73.4%	71.7%	70.9%	72.6%
Pioneer Natural Resources Co.	NYSE:PXN	5,055	4,825	3,473	(4.5%)	(28.0%)	2,525	1,747	1,896	50.0%	36.2%	54.6%	43.1%	45.4%
Range Resources Corporation	NYSE:RRG	1,992	1,598	1,405	(19.8%)	(12.1%)	1,170	1,469	683	58.7%	91.9%	48.6%	75.3%	70.3%
Southwestern Energy Company	NYSE:SWN	4,038	3,133	2,409	(22.4%)	(23.1%)	2,315	1,237	694	57.3%	39.5%	28.8%	48.4%	34.1%
Whiting Petroleum Corp.	NYSE:WLL	3,085	2,051	1,282	(33.5%)	(37.5%)	2,359	1,140	772	76.5%	55.6%	60.2%	66.0%	57.9%
Cimarex Energy Co.	NYSE:XEC	2,424	1,453	1,275	(40.1%)	(12.2%)	1,627	753	657	67.1%	51.8%	51.5%	59.5%	51.7%
Average		7,212	4,309	3,244	(29.0%)	(16.8%)	3,672	1,674	1,279	60.1%	57.8%	56.4%	58.8%	57.1%
Median		2,565	1,856	1,584	(32.8%)	(19.0%)	1,496	1,226	868	59.6%	58.5%	55.5%	59.8%	60.1%

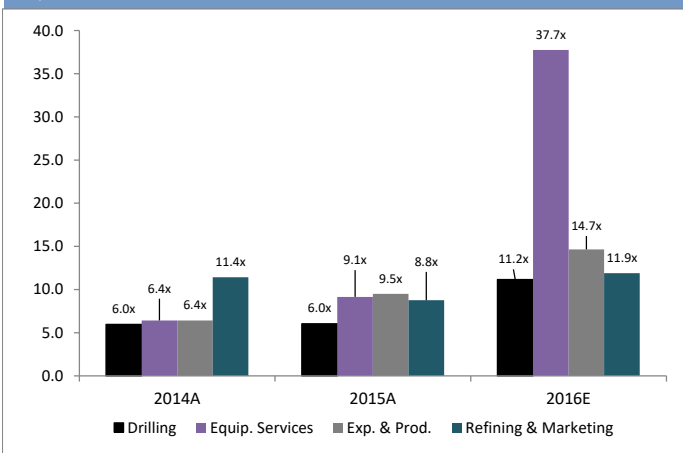
Comparison Graphics: Oil & Gas Upstream

Historical Relative Performance

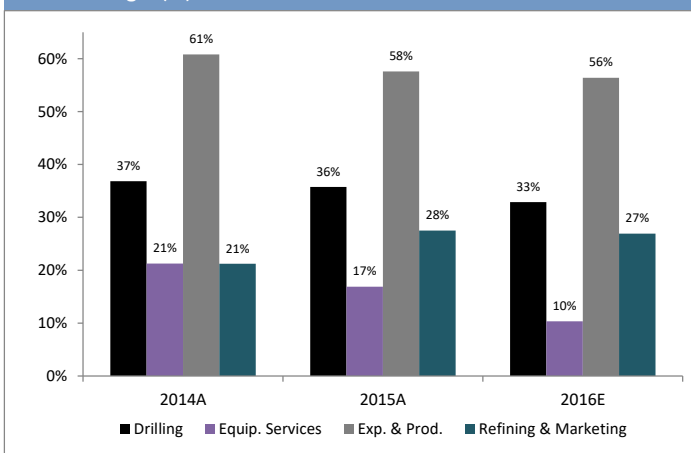


Index, 100 = October 31, 2011

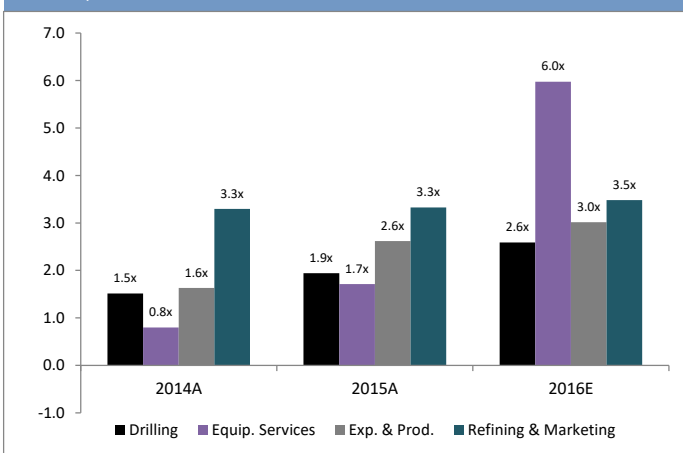
EV / EBITDA



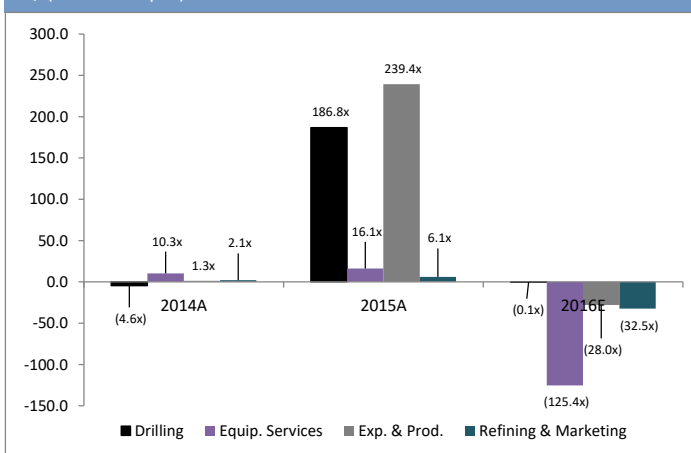
EBITDA Margin (%)



Net Debt / EBITDA



EV / (EBITDA - CapEx)



Oil & Gas Upstream Transactions

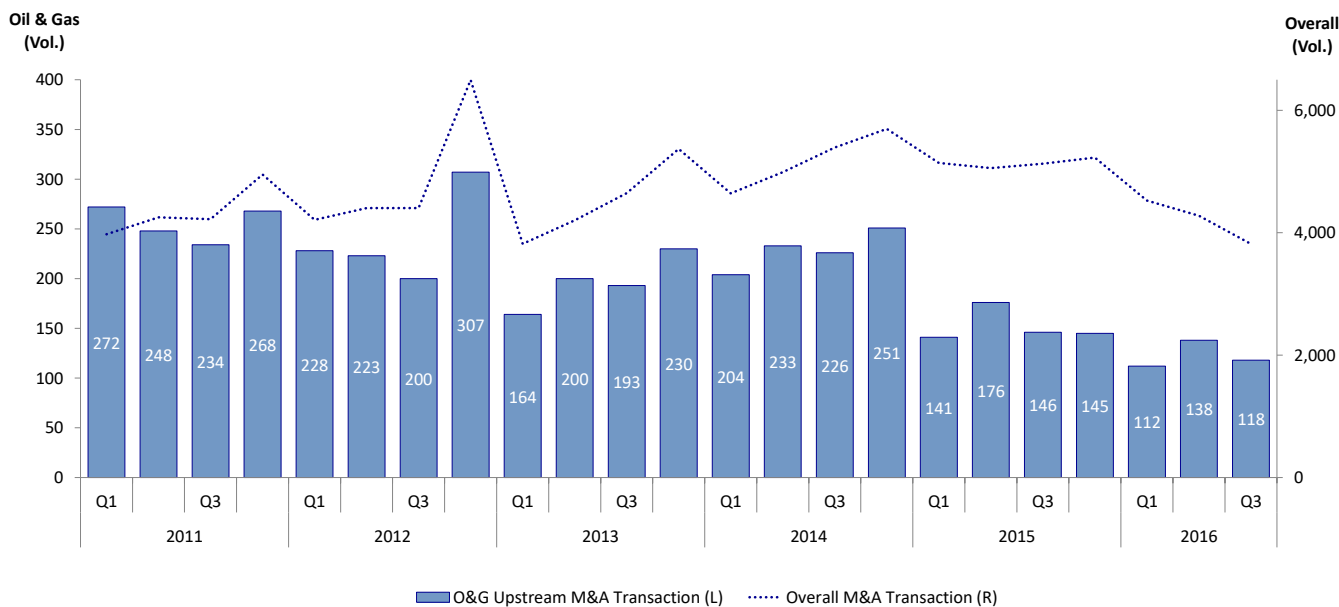
Announced Date	Target	States	Sector	Acquirer	Comments	Transaction Value (MM)
10/31/2016	Archrock Inc.	TX	S&S	Archrock Partners LP	To buy compression assets in a dropdown acquisition from the Houston-based company; includes customer contracts and about 270 compressor units.	\$ 85.0
10/31/2016	Saudi Aramco	Saudi Arabia	S&S	Nabors Industries Ltd.	To form JV in the Kingdom of Saudi Arabia to own, manage and operate onshore drilling rigs.	\$ -
10/31/2016	Saudi Aramco	Saudi Arabia	S&S	Nabors Industries Ltd.	To form JV in the Kingdom of Saudi Arabia to own, manage and operate onshore drilling rigs.	\$ -
10/31/2016	RMP Energy Inc.	Canada	E&P	Undisclosed	To purchase Ante Creek area assets in W Central Alberta; include 69,888 net acres and production of about 4,300 boe/d (45% crude oil and NGL) in 3Q 2016).	\$ 114.3
10/31/2016	Anadarko Petroleum Corp.	CO, KS, LA, TX	E&P	Undisclosed	Bought in multiple transactions the Ozona, Elm Grove, Hearne and Hugoton Fields as well as noncore acreage in the D-J Basin in CO, KS, LA and TX.	\$ 500.0
10/31/2016	Anadarko Petroleum Corp.	TX	E&P	Undisclosed	To purchase the Carthage Field in E TX; produced 40 Mboe/d (72% gas, 25% NGL and 3% oil) in 3Q 2016.	\$ 1,000.0
10/31/2016	Consol Energy Inc.	PA, WV	E&P	Noble Energy Inc.	To separate Marcellus 50-50 JV, resulting in a \$250 MM payment to Consol; each company will own 100% interest in separate operating areas.	\$ -
10/31/2016	Baker Hughes Inc.	TX	S&S	General Electric Co. ; GE Oil & Gas	To merge GE Oil & Gas and Baker Hughes into a new oilfield technology company with a value of \$32 B; GE will own a 62.5% majority in the new company.	\$ -
10/31/2016	Undisclosed	TX	E&P	Occidental Petroleum Corp.	Acquired 35,000 net Delaware Basin acres in Reeves and Pecos counties in West Texas; includes other Permian Basin interests.	\$ 2,000.0
10/26/2016	Maverick Drilling & Exploration Ltd.	TX	E&P	Undisclosed	To purchase interest in the Blue Ridge Field in Fort Bend County in South Texas.	\$ 9.1
10/25/2016	Trans Energy Inc. ; Republic Energy Ventures LLC	PA, WV	E&P	EQT Corp.	To acquire about 60,000 net acres of core Marcellus acreage in PA and WV; includes about 44 Mmcf/d of production and deep Utica drilling rights.	\$ 683.0
10/24/2016	Clayton William Energy Inc.	TX	E&P	Undisclosed	To purchase substantially all of Clayton William's Giddings Area assets in E Central TX; includes average production in 3Q 2016 of about 3,900 boe/d (80% oil).	\$ 400.0
10/24/2016	Sanchez Energy Corp.	TX	E&P	Carrizo Oil & Gas Inc.	To acquire about 15,000 net acres in the Eagle Ford Shale in LaSalle, Frio and McMullen counties in S TX; includes estimated net production during September of about 3,100 boe/d (61% oil) from 112 gross (93 net) wells.	\$ 181.0
10/20/2016	Stone Energy Corp.	WV	E&P	Tug Hill Inc. ; TH Exploration LLC	To acquire Appalachia assets, as part of Stone Energy's restructuring agreement; includes about 48,900 acres in the Marcellus and Utica shales.	\$ 360.0
10/20/2016	Royal Dutch Shell Plc	Canada	E&P	Tourmaline Oil Corp.	To acquire 206,000 acres of developed and undeveloped lands with about 24,850 boe/d of production in W Canada.	\$ 1,030.0
10/20/2016	Gastar Exploration Inc.	OK	E&P	Undisclosed	Formed JV with an undisclosed large private global investment fund to delineate and de-risk about 18,000 net acres in the Stack Play in Kingfisher County, OK; includes up to 60 Meramec and Osage wells.	\$ 71.0
10/20/2016	Gastar Exploration Inc.	OK	E&P	Undisclosed	Formed JV with an undisclosed large private global investment fund to delineate and de-risk about 18,000 net acres in the Stack Play in Kingfisher County, OK; includes up to 60 Meramec and Osage wells.	\$ -
10/19/2016	Vantage Energy LLC; Vantage Energy II LLC	PA, OH, WV, TX	E&P	Rice Energy Inc.	Acquired Englewood, CO-based Vantage Energy, which has assets in the Marcellus, Utica and Barnett shale plays.	\$ 2,700.0
10/18/2016	QStar LLC; EnCap Investments LP	TX	E&P	SM Energy Co.	To acquire 35,700 net acres within the Midland Basin in Howard and Martin counties in W TX; includes about 2,400 boe/d net production.	\$ 1,100.0
10/18/2016	SM Energy Co.	ND	E&P	Oasis Petroleum Inc.	To purchase Williston Basin assets located outside Divide County, ND; includes about 55,000 net acres.	\$ 785.0
10/17/2016	TIW Corp.	TX	S&S	Dril-Quip Inc.	To acquire the Houston-based, family-owned manufacturer of consumable downhole products for the global oil and gas market.	\$ 143.0
10/17/2016	Comstock Resources Inc.	TX	E&P	Undisclosed	To purchase conventional gas assets in S TX; includes 9,904 net acres and production of about 9.6 MMcf/d of natural gas and 22 bbl/d of oil.	\$ 28.0

Source: Capital IQ, Oil & Gas Investor
Note: E&P = Exploration & Production; S&S = Supply & Services; R&M = Refining & Marketing

Oil & Gas Upstream Transactions

Announced Date	Target	States	Sector	Acquirer	Comments	Transaction Value (MM)
10/17/2016	Blue Ocean Technologies LLC	TX	S&S	Oceaneering International Inc.	Bought the assets of Conroe, TX-based Blue Ocean, which is a privately held provider of RLWI systems.	\$ 30.0
10/14/2016	Freeport-McMoRan Inc.; Freeport-McMoRan Oil & Gas LLC	CA	E&P	Sentinel Peak Resources LLC	To buy onshore CA assets including 28,000 bbl/d of oil production in the San Joaquin and Los Angeles basins and coastal properties.	\$ 742.0
10/13/2016	Northpoint Resources Ltd.	BC	E&P	Canbriam Energy Inc.	Bought British Columbia assets, which include non-Montney natural gas production, reserves and related infrastructure.	\$ 7.5
10/13/2016	Undisclosed	TX	E&P	Lilis Energy Inc.	Purchased bolt-on properties consisted of 500 net acres within the Delaware Basin in Winkler County in West Texas; includes 78% WI in a producing vertical well.	\$ 3.0
10/13/2016	Silver Hills Energy Partners LLC; Silver Hill E&P II LLC; Kayne Anderson Capital Advisors LP;	TX	E&P	RSP Permian Inc.	To acquire Delaware Basin's Silver Hill, which controls about 68,000 gross (41,000 net) acres and produces about 15 Mboe/d net.	\$ 2,400.0
10/11/2016	Undisclosed	LA	E&P	Krewe Energy LLC	Purchased additional interest in the Lapeyrouse Field located in Terrebonne Parish in S LA, which brings Krewe's holdings to 100% interest in the field.	\$ -
10/7/2016	Blackhawk Group Holdings Inc. ; Blackhawk Specialty Tools LLC	TX	S&S	Frank's International NV	To acquire in a merger agreement Houston-based Blackhawk Specialty Tools, which provides well construction and well intervention services and products.	\$ 321.0
10/7/2016	Undisclosed	WV	E&P	Carbon Natural Gas Co.	Bought about 2,300 producing wells and more than 900 miles of natural gas gathering pipelines and associated facilities in the Appalachian Basin in WV.	\$ -
10/7/2016	Mexco Energy Corp.	TX	E&P	Parsley Energy Inc.	Purchased WI covering 50 net acres in the horizontal Wolfcamp trend in Glasscock County in W TX within the Midland Basin of the Permian.	\$ 2.2
10/6/2016	Sanchez Energy Corp.	TX	E&P	Sanchez Production Partners LP	To acquire producing Eagle Ford wells in Dimmit and Zavala counties in S TX, additional wellbores in the Palmetto Field and a 50% stake in Canero Processing LLC.	\$ 107.0
10/4/2016	Firewheel Energy LLC; EnCap Investments LP	TX	E&P	Resolute Energy Corp.	Acquired certain properties consisting of 3,293 net acres in Reeves County in W TX within the Delaware Basin of the Permian; includes 1,200 boe/d of current production and 6.2 MMMboe proved reserves.	\$ 135.0

M&A Closed Transactions Trends



Source: Capital IQ, Oil & Gas Investor
Note: E&P = Exploration & Production; S&S = Supply & Services; R&M = Refining & Marketing

Market Commentary

Oil prices continued to have trouble gaining momentum as demand expectations remain subdued and OPEC continued to pump at record levels. According to the International Energy Agency's monthly report for October, OPEC pumped a record 33.8 million barrels per day in October, which was at the high end of its output range. Even more troubling is those production levels come after the OPEC member countries agreed to trim output by 2% at the September meeting in Algiers; output is now at record levels, a result of the member countries not finding agreement amongst themselves on which producers should bear the brunt of the cuts. With many outside of OPEC ramping production, there is concern that supply growth will continue into 2017, further increasing pressure on prices. Domestically, the U.S. continued to see increases in rig count with 9 rigs added the last week of the month resulting in a total of 450 oil rigs in the U.S. at the end of October (Based on November 4, 2016 Baker Hughes Rig Count) well off the high of 1,609 in October 2014. Even with prices in the upper \$40 - \$50 range, domestic onshore producers have continued to show an appetite for production as lower operating expenses and drilling improvements show that properly capitalized, efficient operators can be profitable at these price levels.

Upstream M&A activity was strong in the 3rd quarter and was estimated at \$20.6 billion by PLS Inc. bringing the estimated total to \$43.0 billion for the year. Activity was the strongest in the Permian Basin with notable deals including the \$2.4 billion acquisition of Kayne Anderson backed Silver Hill Energy LP by RSP Permian and Rock Oil sold to SM Energy. In the case of the Silver Hill transaction, the assets were estimated to be sold at record highs for the Delaware Basin (\$48,200 acre). M&A activity remains the strongest in the higher quality assets as the equity and credit markets remain open-minded about those opportunities. Consolidation across the sector remains an attractive alternative as well, evidenced by the announcement of GE merging its oilfield services assets into Baker Hughes in a deal where GE will take control of the entity with the Baker Hughes shareholders receiving a special dividend of \$17.50 per share and 37.5% of the new entity. While deal flow remains strong for attractive cost advantaged assets, prices appear committed to stay in the \$40-\$50 range, which will continue to put pressure on all producers and operators to rationalize costs and investments.

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Trefethen Advisors, LLC is an independent financial and strategic advisory firm founded by Trefethen Advisors, serving leading middle-market public and private corporations, family offices, institutional investors, operating executives and individual business owners. Our hands-on senior partners have negotiated, structured, and completed more than \$8 billion in transactions. Trefethen's sector-focused model enables us to provide our clients with a complete perspective of the micro and macro economic trends affecting their industry and business, and influencing their complex strategic decisions.

Trefethen's collaborative approach consists of developing and executing value-maximizing strategies that are aligned with our clients' objectives. We offer a full range of financial and strategic advisory services (e.g., M&A; Corporate Finance; Financial Restructuring, ESOPs), and skilled transaction execution capabilities. Our principals have significant experience in senior housing and have extensive relationships with industry and capital markets participants. Our focus on value-added research provides our clients with insight on industry specific and macro issues affecting their business.

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