

# Oil & Gas Upstream Market Monthly Newsletter

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## 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](http://www.trefethenib.com)

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*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 [bhumesky@trefethenib.com](mailto:bhumesky@trefethenib.com)*

## Market Summary

A combination of solid economic data, encouraging fourth quarter earnings and continued optimism on future tax and spending policies helped lift stock prices in January. Overall, the S&P returned 1.79% and the NASDAQ returned 4.30% in January. The 10-year U.S. Treasury yield remained unchanged from the month prior, ending January at 2.45%. While both stocks and bonds generally improved in January, returns in other spaces were more mixed. The U.S. Dollar Index dropped -2.60% following the strong post-election surge. Oil prices also retreated -1.84% but the WTI Crude Oil Index remained above \$50/barrel, as the OPEC began implementing promised production cuts.



## Treasury Rates

|          | 1/31/2017 | - 1 Wk. | - 1 Mo. | - 6 Mo. | - 12 Mo. |
|----------|-----------|---------|---------|---------|----------|
| 1-Year   | 0.84%     | 0.81%   | 0.85%   | 0.50%   | 0.47%    |
| 10-Year  | 2.45%     | 2.47%   | 2.45%   | 1.46%   | 1.94%    |
| 30-Year  | 3.05%     | 3.05%   | 3.06%   | 2.18%   | 2.75%    |
| 1M Libor | 0.78%     | 0.77%   | 0.77%   | 0.50%   | 0.43%    |
| 3M Libor | 1.03%     | 1.03%   | 1.00%   | 0.76%   | 0.61%    |

During January, treasury yields remained roughly flat month-over-month, pausing from a spike in yields following the U.S. election and heightened expectations for accelerating inflation and economic growth.

## 10-Year Treasury Yield



## Exchange Rates

|         | 1/31/2017 | - 1 Wk. | - 1 Mo. | - 6 Mo. | - 12 Mo. |
|---------|-----------|---------|---------|---------|----------|
| GBP/USD | 1.26      | 1.25    | 1.23    | 1.33    | 1.42     |
| EUR/USD | 1.08      | 1.08    | 1.06    | 1.12    | 1.08     |
| USD/JPY | 112.79    | 113.38  | 116.75  | 102.30  | 121.13   |
| USD/CNY | 6.88      | 6.86    | 6.94    | 6.64    | 6.58     |

In currencies, the U.S. Dollar experienced weakness across major currency pairs as the result of higher perceived U.S. political risk.

## EUR/ USD



## Commodity Markets

|           | 1/31/2017 | - 1 Wk. | - 1 Mo. | - 6 Mo. | - 12 Mo. |
|-----------|-----------|---------|---------|---------|----------|
| Crude Oil | 52.81     | 53.18   | 54.66   | 42.33   | 33.62    |
| Gold      | 1,211.4   | 1,210.8 | 1,151.7 | 1,353.1 | 1,116.4  |
| Silver    | 17.54     | 17.19   | 15.99   | 20.35   | 14.24    |
| Corn      | 52.81     | 53.18   | 53.72   | 41.60   | 33.62    |
| Wheat     | 4.20      | 4.26    | 4.08    | 4.07    | 4.79     |

During the month of January, crude oil prices traded within a relatively tight range, WTI at \$51.7 to \$56.4 and Brent at \$53.6 to \$57.1/barrel. Prices were supported by OPEC tracking to the production cuts agreed to in November. Commodities have generally gained since Trump was elected president, as his plans for infrastructure spending and an expected economic uptick fueled a rally in commodities.

## GOLD



Source: Capital IQ

### WTI Crude Oil

|                |        |               |         |
|----------------|--------|---------------|---------|
| One-Month High | 56.4   | 5-Year High   | 110.5   |
| One-Month Low  | 51.7   | 5-Year Low    | 27.5    |
| Monthly Change | (1.7%) | 5-Year Change | (46.4%) |



### Brent Crude Oil

|                |        |               |         |
|----------------|--------|---------------|---------|
| One-Month High | 57.1   | 5-Year High   | 125.3   |
| One-Month Low  | 53.6   | 5-Year Low    | 27.9    |
| Monthly Change | (1.1%) | 5-Year Change | (49.4%) |



### Henry Hub Natural Gas

|                |         |               |       |
|----------------|---------|---------------|-------|
| One-Month High | 3.4     | 5-Year High   | 5.5   |
| One-Month Low  | 3.1     | 5-Year Low    | 1.6   |
| Monthly Change | (15.4%) | 5-Year Change | 24.5% |



### Gasoline (RBOB)

|                |        |               |         |
|----------------|--------|---------------|---------|
| One-Month High | 1.6    | 5-Year High   | 3.4     |
| One-Month Low  | 1.5    | 5-Year Low    | 0.9     |
| Monthly Change | (7.2%) | 5-Year Change | (46.4%) |



### Uranium

|                |       |               |         |
|----------------|-------|---------------|---------|
| One-Month High | 24.7  | 5-Year High   | 52.5    |
| One-Month Low  | 20.5  | 5-Year Low    | 17.8    |
| Monthly Change | 20.5% | 5-Year Change | (52.8%) |



### GDP Growth Forecast <sup>1</sup>

| Region        | 2016E | 2017P | Region | 2016E | 2017P |
|---------------|-------|-------|--------|-------|-------|
| Global        | 2.3%  | 2.7%  | China  | 6.7%  | 6.5%  |
| United States | 1.6   | 2.2   | Brazil | (3.4) | 0.5   |
| Euro Area     | 1.6   | 1.5   | Japan  | 1.0   | 0.9   |

Source: Capital IQ, <sup>1</sup>World Bank

### NASDAQ Index

|                |         |               |         |
|----------------|---------|---------------|---------|
| One-Month High | 5,660.8 | 5-Year High   | 5,660.8 |
| One-Month Low  | 5,429.1 | 5-Year Low    | 2,747.5 |
| Monthly Change | 4.3%    | 5-Year Change | 99.5%   |



### Dow Jones Industrial Average Index

|                |          |               |          |
|----------------|----------|---------------|----------|
| One-Month High | #####    | 5-Year High   | 20,100.9 |
| One-Month Low  | 19,732.4 | 5-Year Low    | 12,101.5 |
| Monthly Change | 0.5%     | 5-Year Change | 57.2%    |



### S&P 500 Index

|                |         |               |         |
|----------------|---------|---------------|---------|
| One-Month High | 2,298.4 | 5-Year High   | 2,298.4 |
| One-Month Low  | 2,257.8 | 5-Year Low    | 1,278.0 |
| Monthly Change | 1.8%    | 5-Year Change | 73.6%   |



### S&P U.S. Energy Index

|                |        |               |       |
|----------------|--------|---------------|-------|
| One-Month High | 560.9  | 5-Year High   | 737.1 |
| One-Month Low  | 534.3  | 5-Year Low    | 388.6 |
| Monthly Change | (3.6%) | 5-Year Change | 1.1%  |



### S&P Global Energy Index

|                |        |               |         |
|----------------|--------|---------------|---------|
| One-Month High | 35.3   | 5-Year High   | 49.5    |
| One-Month Low  | 33.9   | 5-Year Low    | 23.9    |
| Monthly Change | (2.6%) | 5-Year Change | (13.8%) |



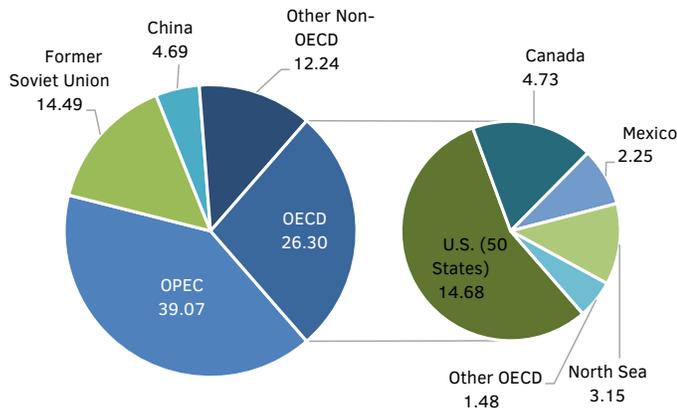
### Dow Jones U.S. Oil & Gas Index

|                |        |               |        |
|----------------|--------|---------------|--------|
| One-Month High | 627.9  | 5-Year High   | 855.7  |
| One-Month Low  | 599.3  | 5-Year Low    | 433.9  |
| Monthly Change | (3.4%) | 5-Year Change | (1.0%) |

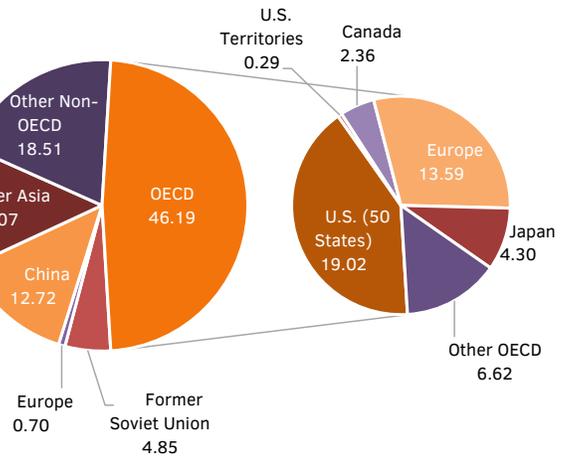


Source: Capital IQ

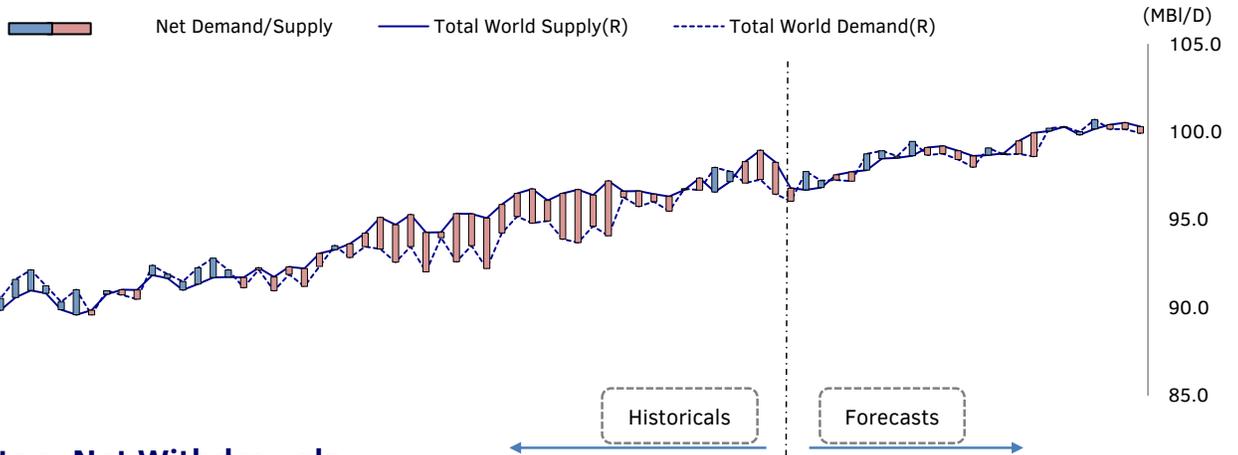
### Supply (MBI/d)



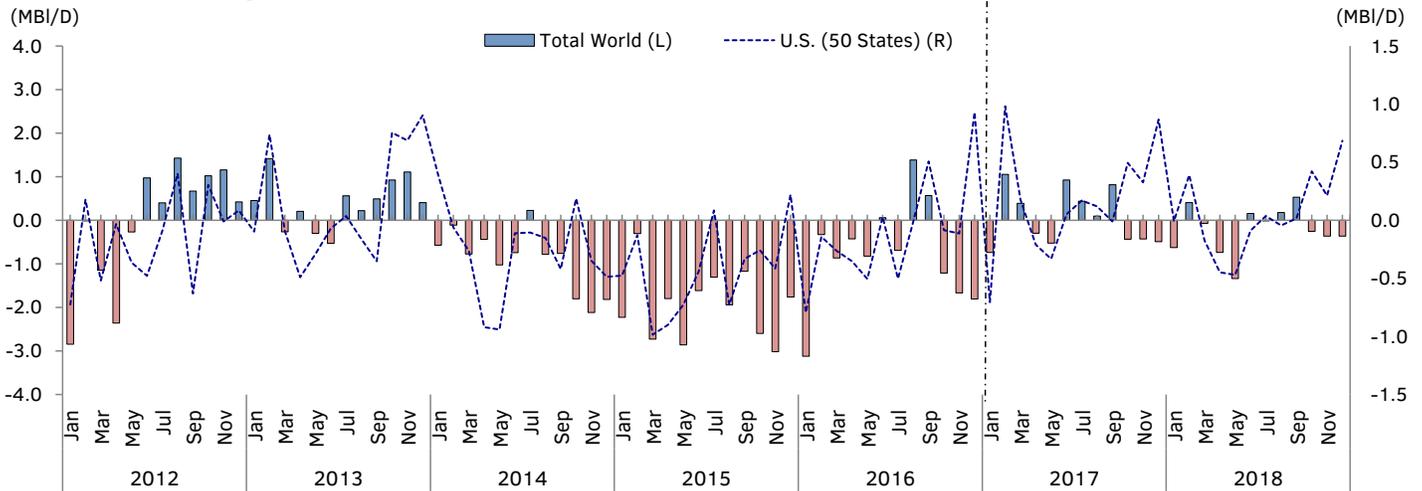
### Demand (MBI/d)



### Total Supply and Demand



### Total Inventory Net Withdrawals



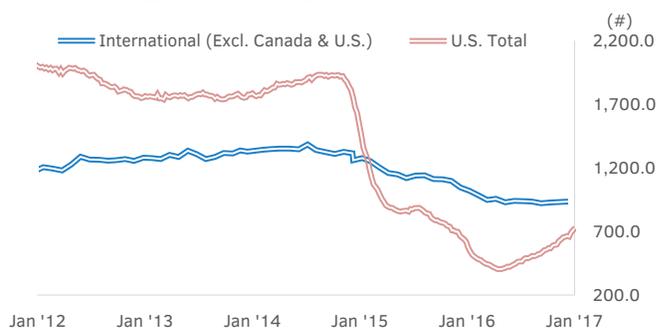
Source: EIA, Short-Term Energy Outlook released on February 7, 2017

\*Fuel includes crude oil, natural gas plant liquids, biofuels, other liquids, and refinery processing gains

### Rig Counts by Category

|                             | 2/3/2017 | 1/1/2017 | - 1 Mo. | - 1 Yr. |
|-----------------------------|----------|----------|---------|---------|
| U.S. Total                  | 729      | 658      | 658     | 619     |
| U.S. Oil                    | 583      | 525      | 525     | 498     |
| U.S. Gas                    | 145      | 132      | 132     | 121     |
| Int'l (Excl. Canada & U.S.) | 933      | 933      | 929     | 1045    |
| Horiz. / Dir.               | 662      | 588      | 588     | 545     |
| Vertical                    | 67       | 70       | 70      | 74      |

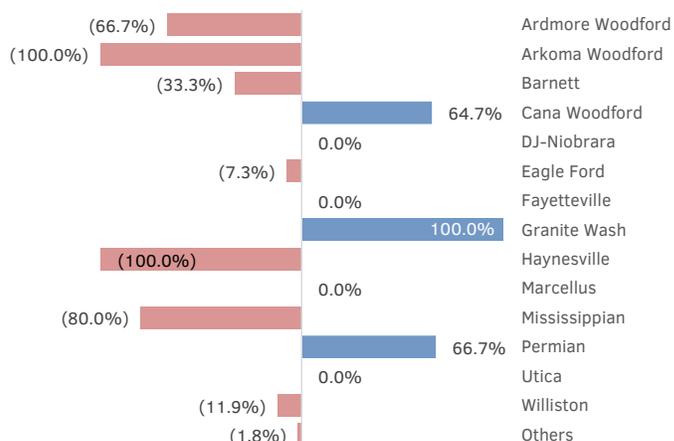
### Total Rig Counts (Oil + Gas)



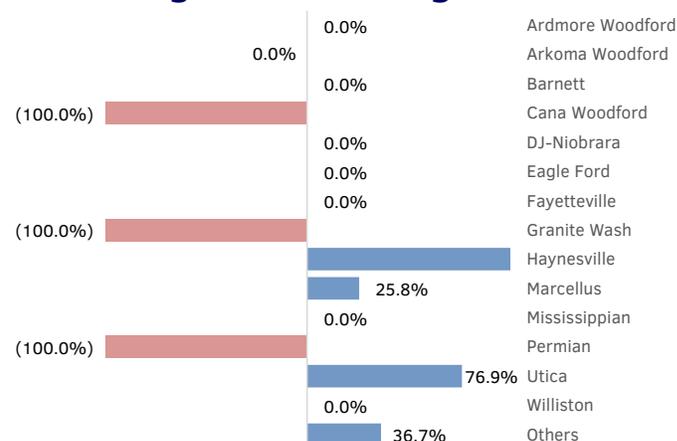
### Rig Count by Region (Oil + Gas)

|                  | 2/3/2017   | 1/1/2017   | - 1 Mo.    | - 1 Yr.    |
|------------------|------------|------------|------------|------------|
| Ardmore Woodford | 1          | 1          | 1          | 3          |
| Arkoma Woodford  | 5          | 4          | 4          | 7          |
| Barnett          | 3          | 3          | 3          | 3          |
| Cana Woodford    | 56         | 37         | 37         | 39         |
| DJ-Niobrara      | 21         | 25         | 25         | 21         |
| Eagle Ford       | 56         | 46         | 46         | 64         |
| Fayetteville     | 1          | 1          | 1          | 0          |
| Granite Wash     | 8          | 15         | 15         | 13         |
| Haynesville      | 30         | 27         | 27         | 18         |
| Marcellus        | 39         | 39         | 39         | 34         |
| Mississippian    | 2          | 3          | 3          | 11         |
| Permian          | 295        | 264        | 264        | 182        |
| Utica            | 23         | 20         | 20         | 14         |
| Williston        | 37         | 33         | 33         | 44         |
| Others           | 152        | 140        | 140        | 166        |
| <b>Total</b>     | <b>729</b> | <b>658</b> | <b>658</b> | <b>619</b> |

### TTM Change in U.S. Oil Rig Count

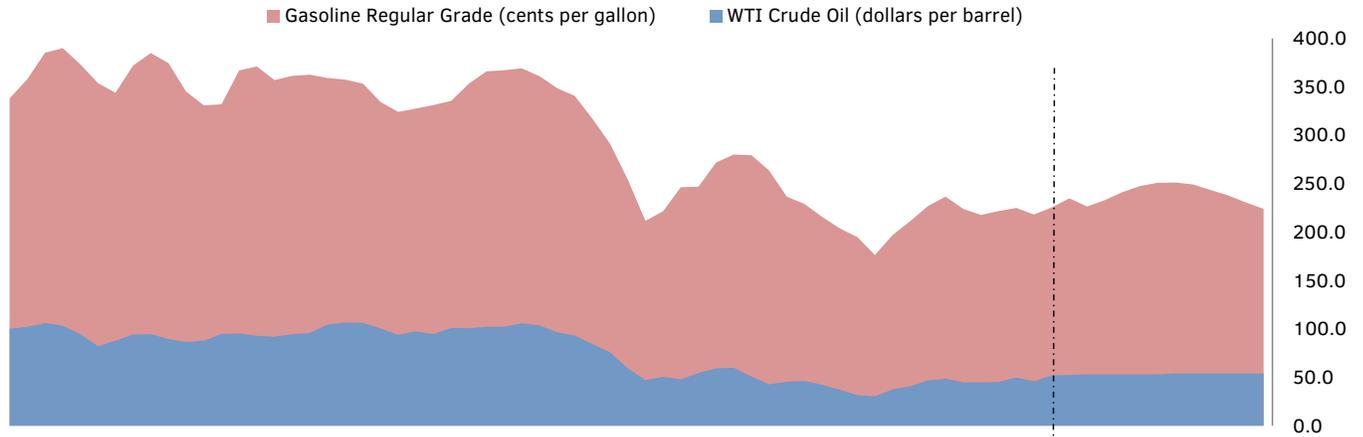


### TTM Change in U.S. Gas Rig Count

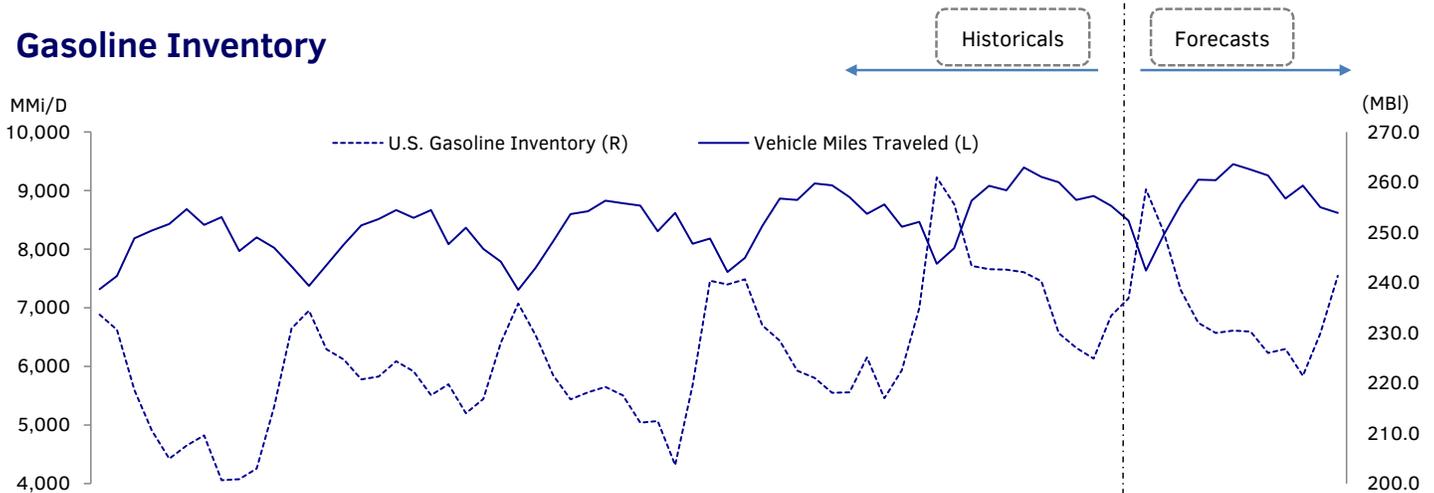


Source: Baker Hughes

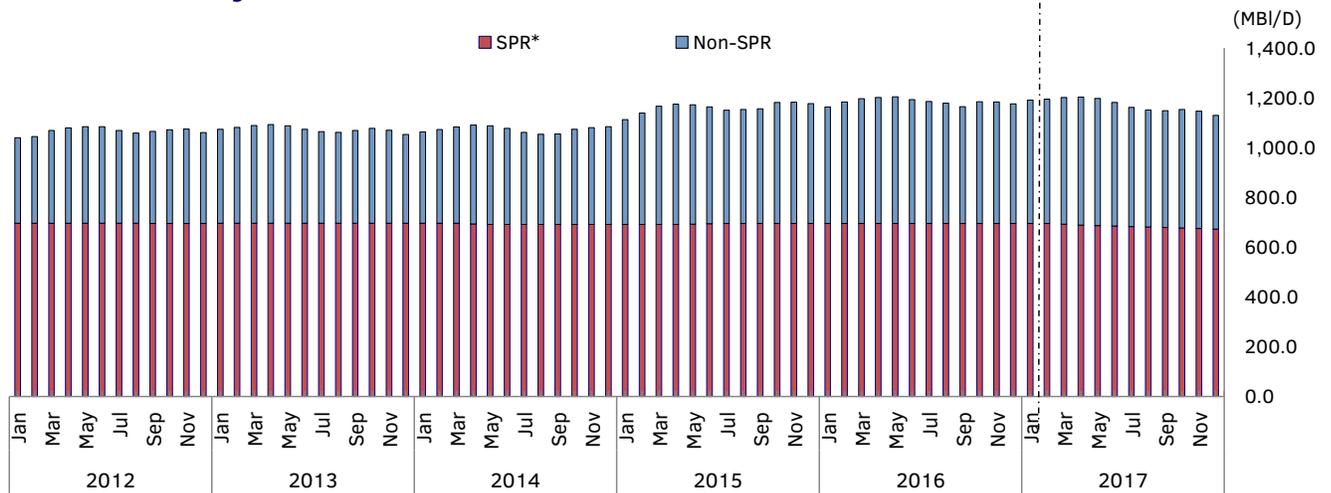
### Energy Price



### Gasoline Inventory



### Crude Oil Inventory



Source: EIA, Short-Term Energy Outlook released on February 7, 2017

\*SPR: Strategic Petroleum Reserve

# Equity Markets

| (\$MM, Except per Share Data)                   |               |                 | (\$ in USD)   |             |            |                  | Selected Financial Data |                    |              |              |               |              |                   |             |             |             |                |  |
|---|---------------|-----------------|---------------|-------------|------------|------------------|-------------------------|--------------------|--------------|--------------|---------------|--------------|-------------------|-------------|-------------|-------------|----------------|--|
| Security  | Ticker        | Latest FY Ended | Last 01/31/17 | 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 |  |
|   |               |                 |               |             |            |                  |                         |                    | CY16A        | CY17E        | CY16A         | CY17E        | CY16A             | CY17E       | CY16A       | CY17E       |                |  |
| <b>Oil &amp; Gas Drilling</b>                   |               |                 |               |             |            |                  |                         |                    |              |              |               |              |                   |             |             |             |                |  |
| CONSOL Energy Inc.                              | NYSE:CNX      | 12/31/2016      | 16.9          | 22.1        | 7.2        | 76.8%            | 3,887                   | 6,864              | 10.4x        | 7.2x         | 33.4%         | 36.0%        | 4.0x              | 2.8x        | NM          | 27.5        | -              |  |
| Chevron Corporation                             | NYSE:CVX      | 12/31/2016      | 111.4         | 118.8       | 81.2       | 93.8%            | 211,587                 | 265,867            | 14.6x        | 7.2x         | 16.2%         | 23.1%        | 2.5x              | 1.1x        | 127.4       | 24.0        | 3.9%           |  |
| Diamond Offshore Drilling, Inc.                 | NYSE:DO       | 12/31/2016      | 16.4          | 26.1        | 14.8       | 62.7%            | 2,247                   | 4,488              | 3.7x         | 7.3x         | 41.7%         | 41.4%        | NM                | 3.2x        | 17.1        | 21.9        | -              |  |
| Enso plc  | NYSE:ESV      | 12/31/2016      | 10.9          | 12.5        | 6.6        | 87.7%            | 3,311                   | 9,749              | 2.5x         | 13.2x        | 44.6%         | 38.8%        | NM                | 5.6x        | 7.3         | NM          | 0.4%           |  |
| Helmerich & Payne, Inc.                         | NYSE:HP       | 9/30/2016       | 71.2          | 83.5        | 45.8       | 85.3%            | 7,794                   | 9,112              | 17.7x        | 26.2x        | 24.0%         | 21.5%        | (1.1x)            | (1.0x)      | NM          | NM          | 3.9%           |  |
| Nabors Industries Ltd.                          | NYSE:NBR      | 12/31/2016      | 16.3          | 18.2        | 5.7        | 89.3%            | 4,634                   | 8,484              | 7.7x         | 11.8x        | 27.4%         | 28.3%        | NM                | 4.6x        | NM          | NM          | 1.5%           |  |
| Occidental Petroleum Corporation                | NYSE:OXY      | 12/31/2016      | 67.8          | 78.3        | 65.0       | 86.5%            | 51,789                  | 63,841             | 15.1x        | 10.0x        | 34.8%         | 47.1%        | NM                | 1.2x        | NM          | 52.9        | 4.5%           |  |
| Rowan Companies plc                             | NYSE:RDC      | 12/31/2016      | 17.9          | 20.9        | 11.2       | 85.7%            | 2,248                   | 6,184              | 2.8x         | 13.7x        | 47.3%         | 36.3%        | NM                | 3.2x        | 8.9         | NM          | -              |  |
| Transocean Ltd.                                 | NYSE:RIG      | 12/31/2016      | 14.0          | 15.8        | 8.2        | 88.2%            | 5,438                   | 16,985             | 3.2x         | 14.0x        | 46.7%         | 41.9%        | NM                | 4.5x        | 16.0        | NM          | -              |  |
| Exxon Mobil Corporation                         | NYSE:XOM      | 12/31/2016      | 83.9          | 95.1        | 74.6       | 88.2%            | 347,866                 | 400,790            | 12.6x        | 7.8x         | 14.8%         | 16.5%        | 1.4x              | 0.8x        | 37.9        | 20.7        | 3.6%           |  |
| <b>Average</b>                                  |               |                 |               |             |            |                  | <b>64,080</b>           | <b>79,237</b>      | <b>9.0x</b>  | <b>11.8x</b> | <b>33.1%</b>  | <b>33.1%</b> | <b>1.7x</b>       | <b>2.6x</b> | <b>35.8</b> | <b>29.4</b> | <b>1.8%</b>    |  |
| <b>Median</b>                                   |               |                 |               |             |            |                  | <b>5,036</b>            | <b>9,431</b>       | <b>9.0x</b>  | <b>10.9x</b> | <b>34.1%</b>  | <b>36.1%</b> | <b>1.9x</b>       | <b>3.0x</b> | <b>16.5</b> | <b>24.0</b> | <b>0.9%</b>    |  |
| <b>Oil &amp; Gas Equipments and Services</b>    |               |                 |               |             |            |                  |                         |                    |              |              |               |              |                   |             |             |             |                |  |
| Baker Hughes Incorporated                       | NYSE:BHI      | 12/31/2016      | 63.1          | 66.9        | 39.4       | 94.3%            | 26,743                  | 34,414             | 52.7x        | 24.9x        | 5.0%          | 13.6%        | (3.2x)            | (1.1x)      | NM          | 153.8       | 1.1%           |  |
| TechnipFMC plc                                  | NYSE:FTI      | 12/31/2016      | 33.6          | 35.4        | 33.3       | 95.1%            | 4,008                   | 12,832             | NM           | 7.7x         | 10.9%         | 12.0%        | NM                | (2.2x)      | NM          | 6.1         | 6.4%           |  |
| Halliburton Company                             | NYSE:HAL      | 12/31/2016      | 56.6          | 58.2        | 28.8       | 97.2%            | 49,155                  | 65,580             | 25.2x        | 18.7x        | 13.8%         | 18.6%        | 3.8x              | 2.4x        | NM          | 47.1        | 1.3%           |  |
| National Oilwell Varco, Inc.                    | NYSE:NOV      | 12/31/2016      | 37.8          | 40.3        | 26.3       | 93.8%            | 14,280                  | 18,965             | 51.6x        | 34.9x        | 3.8%          | 7.5%         | NM                | 3.3x        | NM          | NM          | 0.5%           |  |
| Schlumberger Limited                            | NYSE:SLB      | 12/31/2016      | 83.7          | 87.5        | 67.7       | 95.7%            | 116,864                 | 139,909            | 20.9x        | 18.5x        | 23.2%         | 24.2%        | 2.6x              | 2.2x        | 75.6        | 46.8        | 2.4%           |  |
| Weatherford International plc                   | NYSE:WFT      | 12/31/2016      | 5.2           | 8.3         | 3.8        | 62.8%            | 5,111                   | 13,786             | 17.7x        | 17.8x        | 4.8%          | 11.8%        | NM                | 8.5x        | NM          | NM          | -              |  |
| <b>Average</b>                                  |               |                 |               |             |            |                  | <b>36,027</b>           | <b>47,581</b>      | <b>33.6x</b> | <b>20.4x</b> | <b>10.3%</b>  | <b>14.6%</b> | <b>1.1x</b>       | <b>2.2x</b> | <b>75.6</b> | <b>63.5</b> | <b>1.9%</b>    |  |
| <b>Median</b>                                   |               |                 |               |             |            |                  | <b>20,512</b>           | <b>26,690</b>      | <b>25.2x</b> | <b>18.6x</b> | <b>8.0%</b>   | <b>12.8%</b> | <b>2.6x</b>       | <b>2.3x</b> | <b>75.6</b> | <b>46.9</b> | <b>1.2%</b>    |  |
| <b>Oil &amp; Gas Refining &amp; Marketing</b>   |               |                 |               |             |            |                  |                         |                    |              |              |               |              |                   |             |             |             |                |  |
| Kinder Morgan, Inc.                             | NYSE:KMI      | 12/31/2016      | 22.3          | 23.1        | 14.0       | 96.6%            | 49,871                  | 91,064             | 11.9x        | 12.6x        | 55.5%         | 53.2%        | 5.4x              | 5.5x        | 31.3        | 31.6        | 2.2%           |  |
| Marathon Petroleum Corporation                  | NYSE:MPC      | 12/31/2016      | 48.1          | 52.9        | 30.7       | 90.8%            | 25,547                  | 44,652             | 6.2x         | 7.9x         | 6.9%          | 7.5%         | NM                | 1.7x        | 25.8        | 16.2        | 3.0%           |  |
| ONEOK, Inc.                                     | NYSE:OKE      | 12/31/2016      | 55.1          | 59.0        | 19.6       | 93.4%            | 11,602                  | 24,545             | 7.1x         | 13.9x        | 19.7%         | 18.1%        | NM                | 5.2x        | 33.8        | 21.9        | 4.5%           |  |
| Phillips 66                                     | NYSE:PSX      | 12/31/2016      | 81.6          | 90.2        | 72.9       | 90.5%            | 42,731                  | 56,915             | 9.7x         | 9.6x         | 5.4%          | 5.4%         | NM                | 1.2x        | 28.0        | 18.9        | 3.1%           |  |
| Tesoro Corporation                              | NYSE:TSO      | 12/31/2016      | 80.9          | 92.5        | 68.6       | 87.4%            | 9,503                   | 22,393             | 5.0x         | 8.0x         | 8.5%          | 8.6%         | NM                | 1.3x        | 21.0        | 12.9        | 2.7%           |  |
| Valero Energy Corporation                       | NYSE:VLO      | 12/31/2016      | 65.8          | 70.4        | 47.2       | 93.4%            | 29,767                  | 43,414             | 8.4x         | 7.4x         | 6.3%          | 6.7%         | 1.9x              | 0.5x        | 17.9        | 13.2        | 4.3%           |  |
| The Williams Companies, Inc.                    | NYSE:WMB      | 12/31/2016      | 28.8          | 32.4        | 11.2       | 89.0%            | 23,535                  | 56,610             | 5.3x         | 12.5x        | 61.3%         | 57.2%        | NM                | 5.1x        | 43.7        | 32.3        | 2.8%           |  |
| <b>Average</b>                                  |               |                 |               |             |            |                  | <b>27,508</b>           | <b>48,513</b>      | <b>7.6x</b>  | <b>10.2x</b> | <b>23.4%</b>  | <b>22.4%</b> | <b>3.7x</b>       | <b>2.9x</b> | <b>28.8</b> | <b>21.0</b> | <b>3.2%</b>    |  |
| <b>Median</b>                                   |               |                 |               |             |            |                  | <b>25,547</b>           | <b>44,652</b>      | <b>7.1x</b>  | <b>9.6x</b>  | <b>8.5%</b>   | <b>8.6%</b>  | <b>3.7x</b>       | <b>1.7x</b> | <b>28.0</b> | <b>18.9</b> | <b>3.0%</b>    |  |
| <b>Oil &amp; Gas Exploration and Production</b> |               |                 |               |             |            |                  |                         |                    |              |              |               |              |                   |             |             |             |                |  |
| Apache Corporation                              | NYSE:APA      | 12/31/2016      | 59.8          | 67.4        | 34.4       | 88.8%            | 22,697                  | 34,059             | 7.7x         | 7.9x         | 57.7%         | 63.4%        | NM                | 1.7x        | 1,564       | 218x        | 1.7%           |  |
| Anadarko Petroleum Corporation                  | NYSE:APC      | 12/31/2016      | 69.5          | 72.7        | 35.3       | 95.7%            | 38,860                  | 62,028             | 18.9x        | 12.0x        | 36.5%         | 47.0%        | 4.2x              | 2.6x        | 2,057       | 30.2x       | 0.3%           |  |
| Antero Resources Corporation                    | NYSE:AR       | 12/31/2016      | 24.4          | 30.1        | 22.5       | 81.1%            | 7,667                   | 13,868             | 5.2x         | 9.1x         | 59.4%         | 47.3%        | NM                | 3.1x        | 2,202       | 6.3x        | -              |  |
| Black Stone Minerals, L.P.                      | NYSE:BSM      | 12/31/2016      | 18.5          | 19.6        | 10.8       | 94.8%            | 3,540                   | 3,921              | 13.5x        | 13.9x        | 85.2%         | 70.6%        | NM                | 1.1x        | 50          | 78.7x       | 6.2%           |  |
| Chesapeake Energy Corporation                   | NYSE:CHK      | 12/31/2016      | 6.5           | 8.1         | 1.6        | 80.1%            | 5,776                   | 19,127             | 4.7x         | 8.9x         | 32.6%         | 46.6%        | NM                | 4.5x        | 1,504       | 12.7x       | -              |  |
| Cabot Oil & Gas Corporation                     | NYSE:COG      | 12/31/2016      | 21.5          | 26.5        | 19.3       | 81.1%            | 9,996                   | 12,015             | 19.7x        | 11.2x        | 46.3%         | 61.2%        | NM                | 0.9x        | 1,365       | 8.8x        | 0.4%           |  |
| ConocoPhillips                                  | NYSE:COP      | 12/31/2016      | 48.8          | 52.6        | 31.9       | 92.6%            | 60,415                  | 91,552             | 12.0x        | 7.5x         | 21.4%         | 37.2%        | NM                | 1.9x        | 8,180       | 11.2x       | 2.1%           |  |
| Carrizo Oil & Gas, Inc.                         | NasdaqGS:CRZO | 12/31/2016      | 35.4          | 42.9        | 20.6       | 82.5%            | 2,312                   | 3,642              | 6.3x         | 7.6x         | 70.6%         | 70.5%        | NM                | 2.8x        | 171         | 21.3x       | -              |  |
| Concho Resources Inc.                           | NYSE:CXO      | 12/31/2016      | 139.4         | 144.5       | 84.9       | 96.5%            | 20,243                  | 23,037             | 11.8x        | 12.6x        | 99.4%         | 69.5%        | NM                | 1.5x        | 623         | 36.9x       | -              |  |
| Denbury Resources Inc.                          | NYSE:DNR      | 12/31/2016      | 3.4           | 4.7         | 1.0        | 71.6%            | 1,316                   | 4,311              | 3.6x         | 9.5x         | 40.3%         | 40.2%        | NM                | 6.6x        | 289         | 14.9x       | -              |  |
| Devon Energy Corporation                        | NYSE:DVN      | 12/31/2016      | 45.5          | 49.0        | 18.7       | 92.9%            | 23,845                  | 40,447             | 9.6x         | 10.7x        | 24.0%         | 31.0%        | NM                | 2.2x        | 2,182       | 18.5x       | 0.5%           |  |
| Energen Corporation                             | NYSE:EGN      | 12/31/2016      | 53.9          | 62.1        | 22.9       | 86.8%            | 5,232                   | 6,169              | 19.2x        | 11.2x        | 50.0%         | 59.4%        | NM                | 0.3x        | 355         | 17.4x       | -              |  |
| EOG Resources, Inc.                             | NYSE:EOG      | 12/31/2016      | 101.6         | 108.0       | 64.7       | 94.0%            | 58,839                  | 67,426             | 20.4x        | 13.2x        | 38.8%         | 49.4%        | NM                | 1.1x        | 2,118       | 31.8x       | 0.7%           |  |
| EP Energy Corporation                           | NYSE:EPE      | 12/31/2016      | 5.2           | 6.8         | 1.7        | 76.6%            | 1,321                   | 5,130              | 1.6x         | 7.2x         | ###           | 61.6%        | NM                | 5.3x        | 546         | 9.4x        | -              |  |
| EQT Corporation                                 | NYSE:EQT      | 12/31/2016      | 60.6          | 79.3        | 55.5       | 76.4%            | 10,475                  | 18,127             | 9.1x         | 10.2x        | 69.7%         | 64.2%        | NM                | 1.2x        | 1,564       | 11.6x       | 0.2%           |  |
| Diamondback Energy, Inc.                        | NasdaqGS:FANG | 12/31/2016      | 105.2         | 110.0       | 67.1       | 95.6%            | 9,482                   | 12,575             | 25.7x        | 15.4x        | 69.4%         | 73.8%        | NM                | (0.7x)      | 157         | 80.1x       | -              |  |
| Gulfport Energy Corporation                     | NasdaqGS:GPOR | 12/31/2016      | 20.9          | 34.2        | 20.6       | 61.1%            | 3,320                   | 6,189              | 8.3x         | 8.6x         | 72.6%         | 62.4%        | NM                | 0.4x        | 284         | 21.8x       | -              |  |
| Hess Corporation                                | NYSE:HES      | 12/31/2016      | 54.2          | 65.1        | 38.0       | 83.2%            | 16,997                  | 27,593             | 18.7x        | 12.5x        | 27.2%         | 39.0%        | 3.1x              | 1.8x        | 1,086       | 25.4x       | 1.8%           |  |
| Kosmos Energy Ltd.                              | NYSE:KOS      | 12/31/2016      | 6.5           | 7.3         | 3.9        | 90.2%            | 2,525                   | 4,042              | NM           | 9.9x         | (13.5%)       | 51.1%        | NM                | 2.8x        | 76          | 53.0x       | -              |  |
| Laredo Petroleum, Inc.                          | NYSE:LPI      | 12/31/2016      | 13.6          | 16.0        | 4.1        | 84.7%            | 3,228                   | 4,614              | 7.7x         | 9.8x         | 73.9%         | 58.9%        | NM                | 2.8x        | 126         | 36.7x       | -              |  |
| Marathon Oil Corporation                        | NYSE:MRO      | 12/31/2016      | 16.8          | 18.8        | 6.7        | 89.1%            | 14,191                  | 23,956             | 9.6x         | 9.0x         | 34.2%         | 45.4%        | NM                | 1.8x        | 2,163       | 11.1x       | 1.2%           |  |
| Murphy Oil Corporation                          | NYSE:MUR      | 12/31/2016      | 28.9          | 36.2        | 15.8       | 79.8%            | 4,978                   | 8,844              | 9.3x         | 6.1x         | 42.9%         | 62.8%        | 2.6x              | 1.5x        | 774         | 11.4x       | 3.5%           |  |
| Noble Energy, Inc.                              | NYSE:NBL      | 12/31/2016      | 39.8          | 41.6        | 27.9       | 95.5%            | 17,030                  | 25,596             | 6.7x         | 8.8x         | 68.9%         | 63.2%        | NM                | 2.0x        | 1,421       | 18.0x       | 1.0%           |  |
| Newfield Exploration Company                    | NYSE:NFX      | 12/31/2016      | 40.1          | 47.9        | 22.3       | 83.7%            | 7,906                   | 10,892             | 9.0x         | 9.5x         | 61.0%         | 59.8%        | NM                | 1.6x        | 509         | 21.4x       | -              |  |
| Oasis Petroleum Inc.                            | NYSE:OAS      | 12/31/2016      | 14.1          | 16.6        | 4.3        | 85.4%            | 3,366                   | 5,674              | 7.4x         | 8.2x         | 68.8%         | 61.0%        | NM                | 3.3x        | 218         | 26.0x       | -              |  |
| PDC Energy, Inc.                                | NasdaqGS:PDCE | 12/31/2016      | 73.9          | 82.0        | 45.7       | 90.2%            | 4,823                   | 6,113              | 10.2x        | 9.4x         | 92.9%         | 69.8%        | NM                | 1.2x        | 273         | 22.4x       | -              |  |
| Parsley Energy, Inc.                            | NYSE:PE       | 12/31/2016      | 35.2          | 38.3        | 15.9       | 92.0%            | 7,216                   | 8,799              | 18.8x        | 13.3x        | 72.7%         | 69.1%        | NM                | 1.5x        | 124         | 71.1x       | -              |  |
| Pioneer Natural Resources Company               | NYSE:PXD      | 12/31/2016      | 180.2         | 193.2       | 108.8      | 93.3%            | 30,609                  | 34,947             | 15.8x        | 13.9x        | 51.2%         | 52.9%        | NM                | 0.8x        | 664         | 52.6x       | 0.0%           |  |
| Range Resources Corporation                     | NYSE:RRC      | 12/31/2016      | 32.3          | 46.5        | 22.6       | 69.6%            | 7,885                   | 11,659             | 12.2x        | 9.7x         | 48.2%         | 48.2%        | NM                | 3.1x        | 1,649       | 7.1x        | 0.2%           |  |
| Southwestern Energy Company                     | NYSE:SWN      | 12/31/2016      | 9.0           | 15.4        | 5.6        | 58.4%            | 4,422                   | 10,501             | 7.9x         | 8.3x         | 27.5%         | 40.0%        | NM                | 2.5x        | 1,036       | 10.1x       | -              |  |
| Whiting Petroleum Corporation                   | NYSE:WLL      | 12/31/2016      | 11.1          | 13.9        | 3.5        | 80.1%            | 3,155                   | 6,755              | 4.5x         | 6.6x         | 61.2%         | 60.4%        | NM                | 3.4x        | 821         | 8.2x        | -              |  |
| Cimarex Energy Co.                              | NYSE:XEC      | 12/31/2016      | 135.2         | 143.3       | 81.2       | 94.4%            | 12,853                  | 14,993             | 20.1x        | 12.5x        | 51.6%         | 62.5%        | NM                | 0.7x        | 485         | 30.9x       | 0.2%           |  |
| <b>Average</b>                                  |               |                 |               |             |            |                  | <b>13,329</b>           | <b>19,644&lt;/</b> |              |              |               |              |                   |             |             |             |                |  |

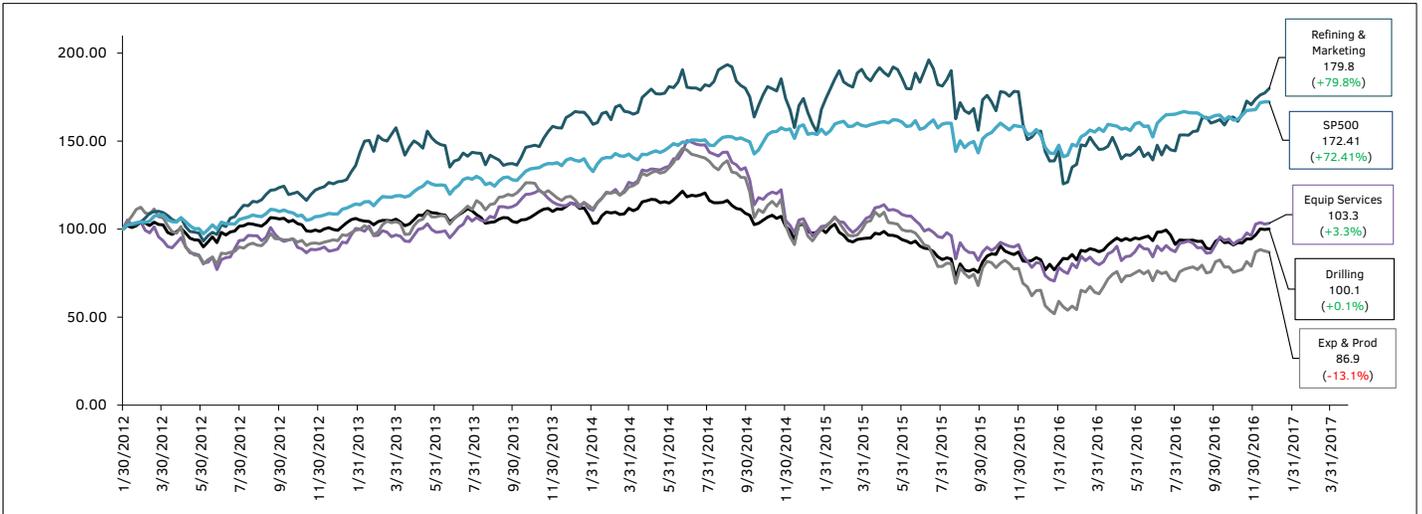
## Equity Markets (Cont.)

(\$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     |
| <b>Oil &amp; Gas Drilling</b>                   |               |               |               |               |                |              |              |              |              |               |              |              |              |              |
| CONSOL Energy Inc.                              | NYSE:CNX      | 3,114         | 2,026         | 2,662         | (34.9%)        | 31.4%        | 745          | 677          | 958          | 23.9%         | 33.4%        | 36.0%        | 28.7%        | 34.7%        |
| Chevron Corporation                             | NYSE:CVX      | 138,477       | 114,472       | 159,395       | (17.3%)        | 39.2%        | 27,139       | 18,531       | 36,752       | 19.6%         | 16.2%        | 23.1%        | 17.9%        | 19.6%        |
| Diamond Offshore Drilling, Inc.                 | NYSE:DO       | 2,419         | 1,563         | 1,476         | (35.4%)        | (5.6%)       | 1,069        | 653          | 611          | 44.2%         | 41.7%        | 41.4%        | 43.0%        | 41.6%        |
| Enscopl   | NYSE:ESV      | 4,063         | 2,615         | 1,895         | (35.6%)        | (27.5%)      | 2,137        | 1,166        | 736          | 52.6%         | 44.6%        | 38.8%        | 48.6%        | 41.7%        |
| Helmerich & Payne, Inc.                         | NYSE:HP       | 3,165         | 1,624         | 1,621         | (48.7%)        | (0.2%)       | 1,136        | 390          | 348          | 35.9%         | 24.0%        | 21.5%        | 29.9%        | 22.8%        |
| Nabors Industries Ltd.                          | NYSE:NBR      | 3,867         | 2,218         | 2,544         | (42.6%)        | 14.7%        | 1,127        | 608          | 719          | 29.2%         | 27.4%        | 28.3%        | 28.3%        | 27.8%        |
| Occidental Petroleum Corporation                | NYSE:OXY      | 12,480        | 10,363        | 13,594        | (17.0%)        | 31.2%        | 5,611        | 3,602        | 6,402        | 45.0%         | 34.8%        | 47.1%        | 39.9%        | 40.9%        |
| Rowan Companies plc                             | NYSE:RDC      | 2,137         | 1,762         | 1,243         | (17.6%)        | (29.4%)      | 1,026        | 834          | 451          | 48.0%         | 47.3%        | 36.3%        | 47.7%        | 41.8%        |
| Transocean Ltd.                                 | NYSE:RIG      | 6,953         | 3,824         | 2,900         | (45.0%)        | (24.2%)      | 3,083        | 1,786        | 1,216        | 44.3%         | 46.7%        | 41.9%        | 45.5%        | 44.3%        |
| Exxon Mobil Corporation                         | NYSE:XOM      | 268,882       | 226,094       | 311,826       | (15.9%)        | 37.9%        | 40,325       | 33,399       | 51,516       | 15.0%         | 14.8%        | 16.5%        | 14.9%        | 15.6%        |
| <b>Average</b>                                  |               | <b>44,556</b> | <b>36,656</b> | <b>49,916</b> | <b>(31.0%)</b> | <b>6.7%</b>  | <b>8,340</b> | <b>6,165</b> | <b>9,971</b> | <b>35.8%</b>  | <b>33.1%</b> | <b>33.1%</b> | <b>34.4%</b> | <b>33.1%</b> |
| <b>Median</b>                                   |               | <b>3,965</b>  | <b>2,416</b>  | <b>2,603</b>  | <b>(35.2%)</b> | <b>7.2%</b>  | <b>1,636</b> | <b>1,000</b> | <b>847</b>   | <b>40.0%</b>  | <b>34.1%</b> | <b>36.1%</b> | <b>34.9%</b> | <b>37.8%</b> |
| <b>Oil &amp; Gas Equipments and Services</b>    |               |               |               |               |                |              |              |              |              |               |              |              |              |              |
| Baker Hughes Incorporated                       | NYSE:BHI      | 15,742        | 9,841         | 10,159        | (37.5%)        | 3.2%         | 1,815        | 493          | 1,381        | 11.5%         | 5.0%         | 13.6%        | 8.3%         | 9.3%         |
| TechnipFMC plc                                  | NYSE:FTI      | 13,260        | 13,243        | 13,964        | (0.1%)         | 5.4%         | 1,404        | 1,450        | 1,674        | 10.6%         | 10.9%        | 12.0%        | 10.8%        | 11.5%        |
| Halliburton Company                             | NYSE:HAL      | 23,633        | 15,887        | 18,772        | (32.8%)        | 18.2%        | 4,155        | 2,193        | 3,500        | 17.6%         | 13.8%        | 18.6%        | 15.7%        | 16.2%        |
| National Oilwell Varco, Inc.                    | NYSE:NOV      | 14,757        | 7,183         | 7,241         | (51.3%)        | 0.8%         | 2,283        | 274          | 544          | 15.5%         | 3.8%         | 7.5%         | 9.6%         | 5.7%         |
| Schlumberger Limited                            | NYSE:SLB      | 35,475        | 27,810        | 31,245        | (21.6%)        | 12.4%        | 9,820        | 6,442        | 7,575        | 27.7%         | 23.2%        | 24.2%        | 25.4%        | 23.7%        |
| Weatherford International plc                   | NYSE:WFT      | 9,433         | 5,788         | 6,550         | (38.6%)        | 13.2%        | 1,307        | 277          | 772          | 13.9%         | 4.8%         | 11.8%        | 9.3%         | 8.3%         |
| <b>Average</b>                                  |               | <b>18,717</b> | <b>13,292</b> | <b>14,655</b> | <b>(30.3%)</b> | <b>8.9%</b>  | <b>3,464</b> | <b>1,855</b> | <b>2,574</b> | <b>16.1%</b>  | <b>10.3%</b> | <b>14.6%</b> | <b>13.2%</b> | <b>12.4%</b> |
| <b>Median</b>                                   |               | <b>15,250</b> | <b>11,542</b> | <b>12,062</b> | <b>(35.1%)</b> | <b>8.9%</b>  | <b>2,049</b> | <b>971</b>   | <b>1,527</b> | <b>14.7%</b>  | <b>8.0%</b>  | <b>12.8%</b> | <b>10.2%</b> | <b>10.4%</b> |
| <b>Oil &amp; Gas Refining &amp; Marketing</b>   |               |               |               |               |                |              |              |              |              |               |              |              |              |              |
| Kinder Morgan, Inc.                             | NYSE:KMI      | 14,403        | 13,058        | 13,555        | (9.3%)         | 3.8%         | 7,562        | 7,245        | 7,212        | 52.5%         | 55.5%        | 53.2%        | 54.0%        | 54.3%        |
| Marathon Petroleum Corporation                  | NYSE:MPC      | 72,258        | 62,500        | 75,627        | (13.5%)        | 21.0%        | 6,856        | 4,323        | 5,658        | 9.5%          | 6.9%         | 7.5%         | 8.2%         | 7.2%         |
| ONEOK, Inc.                                     | NYSE:OKE      | 7,763         | 8,688         | 9,802         | 11.9%          | 12.8%        | 1,434        | 1,709        | 1,772        | 18.5%         | 19.7%        | 18.1%        | 19.1%        | 18.9%        |
| Phillips 66                                     | NYSE:PSX      | 100,949       | 86,713        | 110,034       | (14.1%)        | 26.9%        | 7,502        | 4,650        | 5,957        | 7.4%          | 5.4%         | 5.4%         | 6.4%         | 5.4%         |
| Tesoro Corporation                              | NYSE:TSO      | 28,711        | 24,260        | 32,730        | (15.5%)        | 34.9%        | 3,924        | 2,052        | 2,813        | 13.7%         | 8.5%         | 8.6%         | 11.1%        | 8.5%         |
| Valero Energy Corporation                       | NYSE:VLO      | 87,804        | 75,659        | 87,549        | (13.8%)        | 15.7%        | 8,990        | 4,775        | 5,891        | 10.2%         | 6.3%         | 6.7%         | 8.3%         | 6.5%         |
| The Williams Companies, Inc.                    | NYSE:WMB      | 7,360         | 7,235         | 7,938         | (1.7%)         | 9.7%         | 4,104        | 4,433        | 4,540        | 55.8%         | 61.3%        | 57.2%        | 58.5%        | 59.2%        |
| <b>Average</b>                                  |               | <b>45,607</b> | <b>39,731</b> | <b>48,176</b> | <b>(8.0%)</b>  | <b>17.8%</b> | <b>5,767</b> | <b>4,170</b> | <b>4,835</b> | <b>23.9%</b>  | <b>23.4%</b> | <b>22.4%</b> | <b>23.6%</b> | <b>22.9%</b> |
| <b>Median</b>                                   |               | <b>28,711</b> | <b>24,260</b> | <b>32,730</b> | <b>(13.5%)</b> | <b>15.7%</b> | <b>6,856</b> | <b>4,433</b> | <b>5,658</b> | <b>13.7%</b>  | <b>8.5%</b>  | <b>8.6%</b>  | <b>11.1%</b> | <b>8.5%</b>  |
| <b>Oil &amp; Gas Exploration and Production</b> |               |               |               |               |                |              |              |              |              |               |              |              |              |              |
| Apache Corporation                              | NYSE:APA      | 6,366         | 5,400         | 6,793         | (15.2%)        | 25.8%        | 3,896        | 3,113        | 4,309        | 61.2%         | 57.7%        | 63.4%        | 59.4%        | 60.5%        |
| Anadarko Petroleum Corporation                  | NYSE:APC      | 8,698         | 7,869         | 10,999        | (9.5%)         | 39.8%        | 3,513        | 2,875        | 5,175        | 40.4%         | 36.5%        | 47.0%        | 38.5%        | 41.8%        |
| Antero Resources Corporation                    | NYSE:AR       | 3,955         | 2,388         | 3,214         | (39.6%)        | 34.6%        | 1,221        | 1,418        | 1,520        | 30.9%         | 59.4%        | 47.3%        | 45.1%        | 53.3%        |
| Black Stone Minerals, L.P.                      | NYSE:BSM      | 393           | 312           | 401           | (20.5%)        | 28.2%        | 251          | 266          | 283          | 63.9%         | 85.2%        | 70.6%        | 74.6%        | 77.9%        |
| Chesapeake Energy Corporation                   | NYSE:CHK      | 12,764        | 3,991         | 4,591         | (68.7%)        | 15.0%        | 2,435        | 1,300        | 2,139        | 19.1%         | 32.6%        | 46.6%        | 25.8%        | 39.6%        |
| Cabot Oil & Gas Corporation                     | NYSE:COG      | 1,357         | 1,194         | 1,757         | (12.0%)        | 47.2%        | 815          | 553          | 1,076        | 60.1%         | 46.3%        | 61.2%        | 53.2%        | 53.8%        |
| ConocoPhillips                                  | NYSE:COP      | 30,935        | 24,258        | 32,682        | (21.6%)        | 34.7%        | 6,348        | 5,189        | 12,153       | 20.5%         | 21.4%        | 37.2%        | 21.0%        | 29.3%        |
| Carrizo Oil & Gas, Inc.                         | NasdaqGS:CRZO | 623           | 546           | 678           | (12.4%)        | 24.2%        | 455          | 386          | 478          | 73.0%         | 70.6%        | 70.5%        | 71.8%        | 70.6%        |
| Concho Resources Inc.                           | NYSE:CXO      | 1,804         | 1,646         | 2,634         | (8.8%)         | 60.0%        | 1,713        | 1,635        | 1,829        | 95.0%         | 99.4%        | 69.5%        | 97.2%        | 84.4%        |
| Denbury Resources Inc.                          | NYSE:DNR      | 1,769         | 997           | 1,130         | (43.7%)        | 13.4%        | 939          | 402          | 454          | 53.1%         | 40.3%        | 40.2%        | 46.7%        | 40.3%        |
| Devon Energy Corporation                        | NYSE:DVN      | 13,145        | 10,372        | 12,253        | (21.1%)        | 18.1%        | 5,267        | 2,486        | 3,795        | 40.1%         | 24.0%        | 31.0%        | 32.0%        | 27.5%        |
| Energen Corporation                             | NYSE:EGN      | 879           | 583           | 930           | (33.6%)        | 59.4%        | 740          | 292          | 552          | 84.2%         | 50.0%        | 59.4%        | 67.1%        | 54.7%        |
| EOG Resources, Inc.                             | NYSE:EOG      | 8,757         | 7,384         | 10,354        | (15.7%)        | 40.2%        | 4,084        | 2,864        | 5,110        | 46.6%         | 38.8%        | 49.4%        | 42.7%        | 44.1%        |
| EP Energy Corporation                           | NYSE:EPE      | 1,908         | 939           | 1,152         | (50.8%)        | 22.7%        | 1,641        | 1,037        | 710          | 86.0%         | 110.5%       | 61.6%        | 98.2%        | 86.1%        |
| EQT Corporation                                 | NYSE:EQT      | 2,340         | 1,783         | 2,767         | (23.8%)        | 55.2%        | 1,382        | 1,243        | 1,776        | 59.1%         | 69.7%        | 64.2%        | 64.4%        | 67.0%        |
| Diamondback Energy, Inc.                        | NasdaqGS:FANG | 447           | 511           | 1,104         | 14.4%          | 115.9%       | 457          | 355          | 815          | 102.3%        | 69.4%        | 73.8%        | 85.9%        | 71.6%        |
| Gulfport Energy Corporation                     | NasdaqGS:GPOR | 709           | 568           | 1,153         | (20.0%)        | 103.1%       | 362          | 412          | 719          | 51.0%         | 72.6%        | 62.4%        | 61.8%        | 67.5%        |
| Hess Corporation                                | NYSE:HES      | 6,561         | 4,844         | 5,675         | (26.2%)        | 17.2%        | 919          | 1,318        | 2,215        | 14.0%         | 27.2%        | 39.0%        | 20.6%        | 33.1%        |
| Kosmos Energy Ltd.                              | NYSE:KOS      | 472           | 442           | 799           | (6.3%)         | 80.8%        | 73           | (60)         | 408          | 15.5%         | NM           | 51.1%        | NM           | NM           |
| Laredo Petroleum, Inc.                          | NYSE:LPI      | 607           | 592           | 795           | (2.3%)         | 34.2%        | 472          | 438          | 468          | 77.8%         | 73.9%        | 58.9%        | 75.9%        | 66.4%        |
| Marathon Oil Corporation                        | NYSE:MRO      | 5,861         | 4,481         | 5,849         | (23.6%)        | 30.5%        | 3,206        | 1,533        | 2,652        | 54.7%         | 34.2%        | 45.4%        | 44.5%        | 39.8%        |
| Murphy Oil Corporation                          | NYSE:MUR      | 3,033         | 1,874         | 2,304         | (38.2%)        | 22.9%        | 1,230        | 804          | 1,446        | 40.6%         | 42.9%        | 62.8%        | 41.7%        | 52.8%        |
| Noble Energy, Inc.                              | NYSE:NBL      | 3,133         | 3,539         | 4,604         | 13.0%          | 30.1%        | 1,815        | 2,437        | 2,908        | 57.9%         | 68.9%        | 63.2%        | 63.4%        | 66.0%        |
| Newfield Exploration Company                    | NYSE:NFX      | 1,557         | 1,457         | 1,918         | (6.4%)         | 31.7%        | 1,070        | 888          | 1,148        | 68.7%         | 61.0%        | 59.8%        | 64.8%        | 60.4%        |
| Oasis Petroleum Inc.                            | NYSE:OAS      | 790           | 711           | 1,133         | (10.0%)        | 59.4%        | 820          | 489          | 692          | 103.9%        | 68.8%        | 61.0%        | 86.3%        | 64.9%        |
| PDC Energy, Inc.                                | NasdaqGS:PDCE | 595           | 501           | 928           | (15.8%)        | 85.2%        | 443          | 466          | 648          | 74.4%         | 92.9%        | 69.8%        | 83.7%        | 81.4%        |
| Parsley Energy, Inc.                            | NYSE:PE       | 266           | 462           | 958           | 73.6%          | 107.5%       | 195          | 336          | 662          | 73.4%         | 72.7%        | 69.1%        | 73.1%        | 70.9%        |
| Pioneer Natural Resources Company               | NYSE:PXJ      | 4,825         | 3,775         | 4,758         | (21.8%)        | 26.1%        | 1,747        | 1,934        | 2,515        | 36.2%         | 51.2%        | 52.9%        | 43.7%        | 52.1%        |
| Range Resources Corporation                     | NYSE:RRC      | 1,598         | 1,424         | 2,499         | (10.9%)        | 75.4%        | 1,469        | 687          | 1,205        | 91.9%         | 48.2%        | 48.2%        | 70.1%        | 48.2%        |
| Southwestern Energy Company                     | NYSE:SWN      | 3,133         | 2,440         | 3,176         | (22.1%)        | 30.2%        | 1,237        | 672          | 1,269        | 39.5%         | 27.5%        | 40.0%        | 33.5%        | 33.8%        |
| Whiting Petroleum Corporation                   | NYSE:WLL      | 2,051         | 1,257         | 1,688         | (38.7%)        | 34.2%        | 1,140        | 770          | 1,019        | 55.6%         | 61.2%        | 60.4%        | 58.4%        | 60.8%        |
| Cimarex Energy Co.                              | NYSE:XEC      | 1,453         | 1,246         | 1,919         | (14.2%)        | 54.0%        | 753          | 643          | 1,200        | 51.8%         | 51.6%        | 62.5%        | 51.7%        | 57.1%        |
| <b>Average</b>                                  |               | <b>4,309</b>  | <b>3,243</b>  | <b>4,333</b>  | <b>(16.7%)</b> | <b>45.6%</b> | <b>1,674</b> | <b>1,259</b> | <b>2,038</b> | <b>57.8%</b>  | <b>57.0%</b> | <b>55.9%</b> | <b>58.2%</b> | <b>56.5%</b> |
| <b>Median</b>                                   |               | <b>1,856</b>  | <b>1,551</b>  | <b>2,401</b>  | <b>(17.9%)</b> | <b>34.4%</b> | <b>1,226</b> | <b>846</b>   | <b>1,237</b> | <b>58.5%</b>  | <b>57.7%</b> | <b>59.6%</b> | <b>61.8%</b> | <b>54.7%</b> |

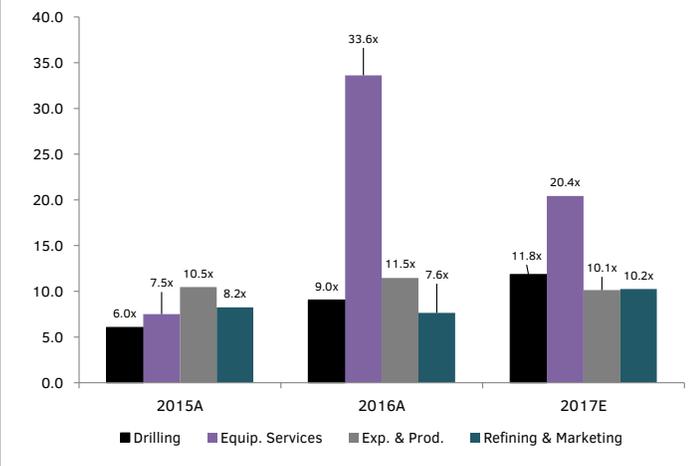
# Comparison Graphics: Oil & Gas Upstream

## Historical Relative Equity Performance

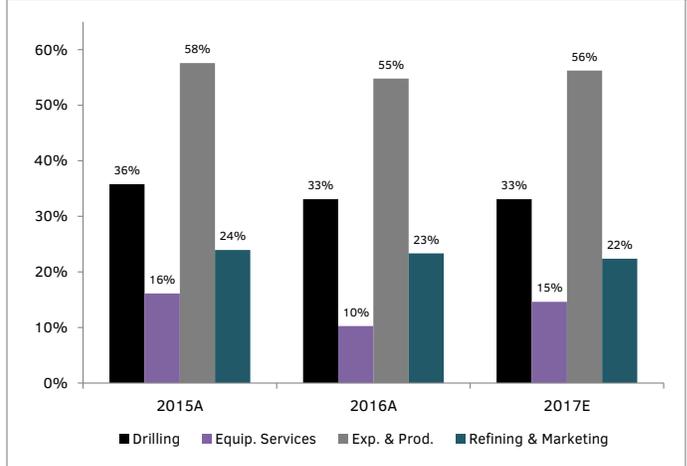


Index, 100 = January 30, 2012

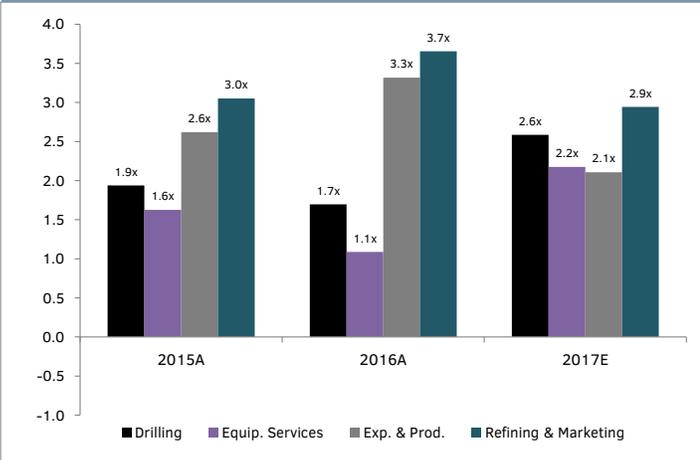
### Enterprise Value / EBITDA



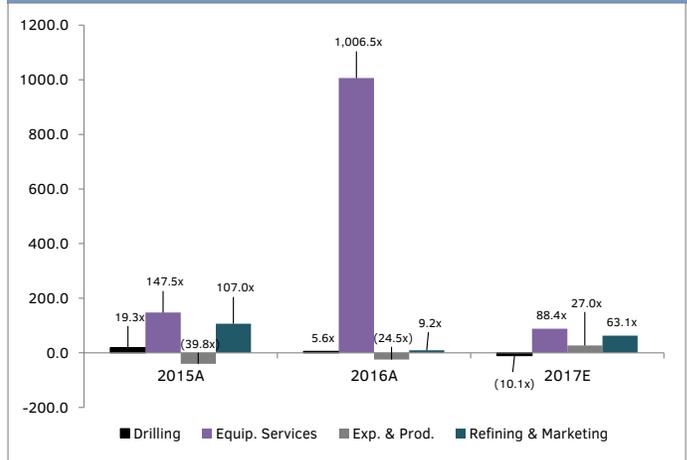
### EBITDA Margin (%)



### Net Debt / EBITDA



### Enterprise Value / (EBITDA - CapEx)



## Oil & Gas Upstream Transactions

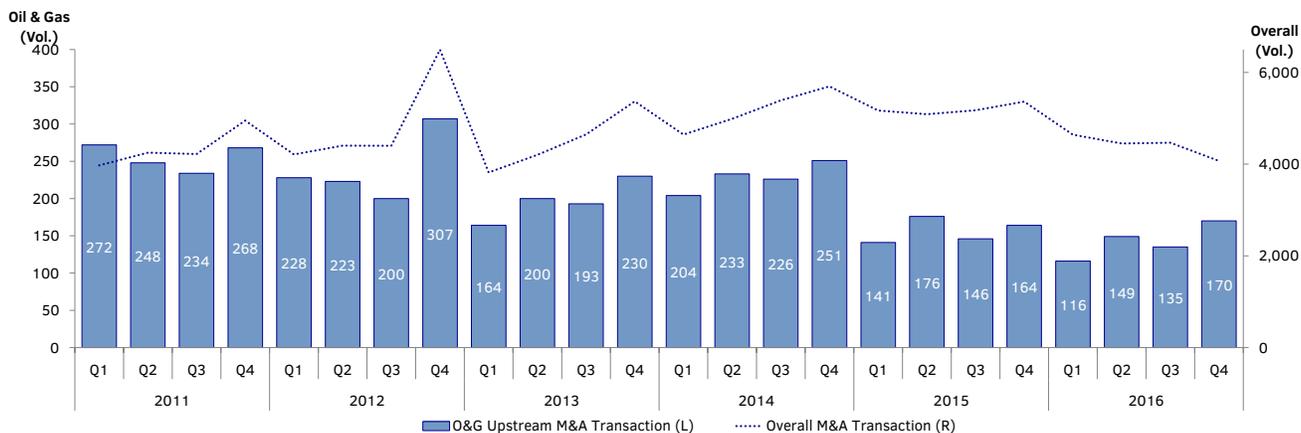
| Announced Date | Target   | States          | Sector | Acquirer  | Comments   | Transaction Value (MM) |
|----------------|--|-----------------|--------|---|--|------------------------|
| 1/31/2017      | Royal Dutch Shell Plc                                  | UK              | E&P    | Chrysaor Holdings Ltd                                       | To buy mixture of new and late-life UK North Sea oil and gas assets. (Expected to close 2H 2017)   | \$ 300.0               |
| 1/31/2017      | Southern Cross Petroleum & Exploration Pty Ltd.        | Australia       | E&P    | TAG Oil Ltd.  | Purchased 100% interest in an oil and gas lease in Australia's Surat Basin.  | \$ 2,500.0             |
| 1/31/2017      | Total SA   | Norway          | E&P    | Kuwait Foreign Petroleum Exploration Co.                    | Bought upstream interests located offshore Norway in the Greater Sleipner Area; adds about 46 Mmboe in net reserves.   | \$ 300.0               |
| 1/31/2017      | Royal Dutch Shell                                      | Thailand        | E&P    | Kuwait Foreign Petroleum Exploration Co.                    | Bought upstream interests located offshore Norway in the Gulf of Thailand; adds about 68 Mmboe in net reserves.  | \$ 900.0               |
| 1/26/2017      | EP Energy Corp.  | TX              | E&P    | Wolfcamp Drillco Operating LP, Apollo Global Management LLC | Formed JV to fund up to 150 wells in the Wolfcamp Shale in the Permian's Midland Basin; Wolfcamp Drillco will fund 60% costs in exchange for 50% WI in JV wells.   | \$ 450.0               |
| 1/24/2017      | Undisclosed  | Alberta, Canada | E&P    | Point Loma Resources Ltd.                                   | To buy 55,000 net acres in W Central Alberta with 410 boe/d (95% natural gas) of production.   | \$ -                   |
| 1/24/2017      | Samson Exploration LLC                                 | TX              | E&P    | Halcon Resources Corp.                                      | To acquire nearly 36,000 net acres in the Delaware Basin primarily in Pecos County, TX; includes an optional acreage purchase in Ward and Winkler counties, TX. (Expected to close March)                                    | \$ 705.0               |
| 1/24/2017      | Halcon Resources Corp.                                 | TX              | E&P    | Hawkwood Energy LLC   | To purchase the E TX El Halcón Project covering 80,500 net acres in the Eagle Ford Shale; includes 21.8 MMboe of proved reserves. (Expected to close March)  | \$ 500.0               |
| 1/19/2017      | Undisclosed  | TX              | E&P    | Lario Oil & Gas Co  | Bought more than 10,000 net acres in the Midland Basin, primarily in Midland and Martin counties, TX, through multiple agreements; includes 1,850 boe/d of net production and Spraberry and Wolfcamp locations.              | \$ 345.0               |
| 1/19/2017      | Equity Nasional Berhad                                 | Malaysia        | S&S    | UMW Oil & Gas Corporation Berhad                            | To buy Malaysia-based offshore support vessel provider Icon.   | \$ 132.0               |
| 1/18/2017      | Undisclosed  | TX              | E&P    | Diamondback Energy Inc.                                     | Acquired additional 34,210 gross (887 net) royalty acres in the Permian during 4Q 2016.  | \$ 68.1                |
| 1/18/2017      | Bureau of Land Management                              | CO              | E&P    | Petrogas  | Purchased 161 acres of oil and gas leasehold in Lincoln County, CO.  | \$ -                   |
| 1/17/2017      | Chief Exploration and Development LLC                  | PA              | E&P    | Kalnin Ventures LLC   | Acquired nonoperated interests in about 170 wells in the Marcellus Shale in PA.  | \$ 63.0                |
| 1/17/2017      | Laredo Petroleum Inc.                                  | TX              | E&P    | Undisclosed   | Sold 2,900 net acres in the Midland Basin, likely in Glasscock and Howard counties, TX. Expected to close on Jan. 17.  | \$ 60.0                |
| 1/17/2017      | Bass Companies   | NM              | E&P    | ExxonMobil Corp.  | To acquire Bass family companies, based in Fort Worth, TX; includes about 275,000 acres, of which 250,000 is Permian leasehold.  | \$ 6,600.0             |
| 1/16/2017      | Clayton Williams Energy Inc.                           | TX              | E&P    | Noble energy Inc.   | To purchase Midland, TX-based Clayton Williams; includes 71,000 net acres and 2,400 gross drilling locations in the core Delaware Basin. (Expected to close 2Q 2017)   | \$ 3,200.0             |
| 1/12/2017      | Anadarko Petroleum Corp.                               | TX              | E&P    | Sanchez Energy Corp., Blackstone Energy Partners            | To purchase 318,000 gross (155,000 net) acres in the W Eagle Ford Shale primarily in Dimmit and Webb counties, TX, through a 50/50 JV. (Expected to close 1Q 2017)   | \$ 2,300.0             |
| 1/12/2017      | Synergy Resources Corp.                                | CO              | E&P    | Undisclosed   | To buy about 10,000 net undeveloped acres and about 700 boe/d of associated production in the D-J Basin. (Expected to close 1Q 2017)   | \$ 71.0                |
| 1/12/2017      | Panther Energy Co. II LLC, Carrier Energy Partners LLC | TX              | E&P    | WPX Energy Inc.   | To acquire 18,100 net Delaware Basin acres with about 6,500 boe/d of production (55% oil); includes 920 gross undeveloped locations.   | \$ 775.0               |
| 1/11/2017      | Horizon Well Testing LLC                               | OK              | S&S    | Alphine 4 Technologies Ltd.                                 | To buy 100% of the shares of privately-held, McAlester, OK-based Horizon Well Testing. Effective Immediately.  | \$ 5.5                 |
| 1/10/2017      | Undisclosed  | TX              | E&P    | Contango Oil & Gas Co.                                      | Purchased 1,250 net acres in the Delaware Basin in Pecos County, TX.   | \$ 25.0                |
| 1/10/2017      | Undisclosed  | TX              | E&P    | Parsley Energy Inc.   | To acquire in multiple, unrelated transaction about 23,000 net leasehold acres in the Midland and Southern Delaware basins in W TX; includes 660 net royalty acres in the Southern Delaware. (Expected to close in February) | \$ 650.0               |

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) |
|----------------|---|-----------------|--------|---------------------------------------|---|------------------------|
| 1/9/2017       | Bayou City Energy Management LLC          | OK              | E&P    | Alta Mesa Holdings LP                 | Acquired additional working interest in 24 operated wells in OK's Stack Play.   | \$ -                   |
| 1/9/2017       | Tullow Oil Plc                            | Uganda          | E&P    | Total SA                              | To buy additional 21.57% interest in the Uganda Lake Albert oil project.  | \$ 900.0               |
| 1/6/2017       | The Technologies Alliance Inc.            | TX              | S&S    | Dril-Quip Inc.                        | Bought the Houston-based provider of offshore riser systems and components, proprietary threaded connectors and other products.   | \$ 20.0                |
| 1/5/2017       | Total Belief Ltd., New Times Energy Corp. | UT, WY          | E&P    | Foothills Exploration Inc.            | To purchase Uinta Basin properties in UT; includes additional interest in WY's Greater Green River Basin and shares in Grey Hawk Exploration.   | \$ 10.8                |
| 1/5/2017       | Summit Partners LLP                       | UK, AU, UAE     | S&S    | Schlumberger Ltd.                     | Acquired Peak Well Systems, which designs and develops advanced downhole tools for flow control, well intervention and well integrity; includes offices in the UK, Australia and UAE. | \$ -                   |
| 1/5/2017       | Bruce Anchor                              | UK              | S&S    | Acteon Group Ltd.                     | Acquired control over the UK-based provider of temporary and permanent mooring systems.   | \$ -                   |
| 1/4/2017       | Founders Oil and Gas LLC                  | TX              | E&P    | Houston American Energy Corp.         | To purchase a 25% WI in about 800 acres in the Delaware Basin in Reeves County, TX. (Expected to close mid-January)   | \$ 1.1                 |
| 1/4/2017       | IronHorse Resources LLC                   | CO              | E&P    | U.S. Energy Corp.                     | Will acquire a 40% of the Seller's working interest in Wattenberg development project.  | \$ -                   |
| 1/4/2017       | Kelt Exploration Ltd.                     | Alberta, Canada | E&P    | Undisclosed                           | To buy oil and gas assets in the Karr area of Alberta; includes 5.1 MMboe of proved reserves. (Expected to close Jan. 18)   | \$ 100.0               |
| 1/4/2017       | Rex Energy Corp.                          | OH              | E&P    | Antero Resources Corp.                | Bought Warrior South assets in the Utica Shale; includes 4,100 net acres in Guernsey, Noble and Belmont counties, OH.   | \$ 50.0                |
| 1/4/2017       | Fortuna Resources Holdings LLC            | TX              | E&P    | PDC Energy Inc.                       | Acquired 100% working interest and operations in about 4,500 net acres in the Delaware Basin in Reeves and Culberson counties, TX; includes 300 boe/d of current net production.      | \$ 118.0               |
| 1/3/2017       | Magnum Hunter Resources Corp.             | TX              | S&S    | Undisclosed                           | Purchased the shallow-well contract drilling rig services business of subsidiary Alpha Hunter Drilling LLC.   | \$ -                   |
| 1/3/2017       | SM Energy Co.                             | TX              | E&P    | Venado Oil & Gas LLC, KKR & Co. LP    | To purchase nonoperated assets in the Eagle Ford's Maverick Basin in S TX; comprised of 37,500 net acres with 27,260 boe/d of production in 3Q 2016. (Expected to close 1Q 2017)      | \$ 800.0               |
| 1/3/2017       | Undisclosed                               | TX              | E&P    | Lucas Energy Inc., Camber Energy Inc. | Acquired a leasehold position in the Permian's Central Basin Platform initially comprising of 16,322 gross (3,630 net) mineral acres in W TX.   | \$ 1.5                 |

### 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 traded within a relatively tight range throughout January, with U.S. Crude futures closing at \$53.88 on February 1, 2017 and Brent futures closing at \$56.80. Prices benefited from evidence that major oil exporters are cutting production and U.S. production activity declining slightly. While some remain skeptical that OPEC producers will stick with their commitment to reduce daily output by 1.2MM barrels per day in the first half of 2017, the evidence indicates they have done just that and reduced production slightly over 1.0MM barrels per day. U.S. stockpiles continued to put downward pressure on prices, as they rose by 6.5 million barrels in the last week of the year. However, recent declines in Global production were enough to mitigate any meaningful decline in prices.

For the week ended February 3, 2017, the U.S. Oil rig count edged higher to 583, which was an increase of 17 rigs over the prior week and increase of 116 over the prior year. Given the competing forces impacting the market now; production cuts from OPEC and increasing production from U.S. producers the fact that prices have maintained a relatively tight range of \$50-\$55 over the course of the month should not come as much of a surprise. The M&A market remains active with notable deals announced in the quarter including Hawkwood Energy's acquisition of Halcon's East Texas assets for \$500MM and Targa buying the midstream assets of Outrigger in a deal valued at up to \$1.5 billion. With more favorable energy policies and the prospect of less regulation coupled with better price stability coming from committed production cuts by OPEC should provide the necessary foundation to foster a better M&A environment.

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Trefethen Advisors, LLC is an independent financial and strategic advisory firm, 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 Oil & Gas 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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