State of the E&P Market

July 10, 2019

By: Jeff Knupp
What a Difference a Month Makes

Oil Bouncing Back

![WTI ($/bbl) Chart]

Supply/Demand Fundamentals

![Chart showing global liquids demand growth]

Market Recovering, too

Total Return Since June 1, 2019

![Bar chart showing total return]

Source: FactSet, Bloomberg.

(1) Permian peer group: CPE, CDEV, XEC, CXO, FANG, ESTE, HK, JAG, LPI, MTDR, PE, PXD; Majors: BP, CVX, E, XOM, RDS.A, EQNR, TOT.
Apathy is at an All-Time High

($ in millions unless otherwise noted)

Investor Sentiment Today

- Frustrated with underperformance
- Energy not relevant in growth indices (<1%)
- The “New World” (RETURNS >> GROWTH) likely here to stay

The Optimal E&P Company

1. Scale: >$5Bn
2. Slow Growth: ~10%
3. CF+: Paying Dividend
4. BS: <1.5x debt/EBITDA

S&P Energy Weightings

Energy Weighting in the S&P Halved in ~5 Years

Source: FactSet, Bloomberg.
Why Are Investors So Angry?

**E&P vs. S&P**
*Current Value of $100 Invested at T=0*

<table>
<thead>
<tr>
<th>Year</th>
<th>XOP</th>
<th>S&amp;P 500</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>$258</td>
<td>$258</td>
</tr>
<tr>
<td>2011</td>
<td>$228</td>
<td>$228</td>
</tr>
<tr>
<td>2012</td>
<td>$228</td>
<td>$228</td>
</tr>
<tr>
<td>2013</td>
<td>$201</td>
<td>$201</td>
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<tr>
<td>2014</td>
<td>$155</td>
<td>$155</td>
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<tr>
<td>2015</td>
<td>$140</td>
<td>$140</td>
</tr>
<tr>
<td>2016</td>
<td>$141</td>
<td>$141</td>
</tr>
<tr>
<td>2017</td>
<td>$128</td>
<td>$128</td>
</tr>
<tr>
<td>2018</td>
<td>$107</td>
<td>$107</td>
</tr>
</tbody>
</table>

**Relative Equity Performance**
*Indexed to September 2014*

- **S&P 500**: 50%
- **XOP**: (18%)
- **AMZ**: (52%)
- **XOI**: (57%)

**Relative Equity Performance**
*Indexed to January 2019*

- **S&P 500**: 19%
- **XOP**: 14%
- **AMZ**: 9%
- **XOI**: (1%)

Source: FactSet, Bloomberg.
Market Comparison

<table>
<thead>
<tr>
<th></th>
<th>2012</th>
<th>2019(2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Combined EV ($Bn)</td>
<td>$517</td>
<td>$526</td>
</tr>
<tr>
<td>Combined EBITDA ($Bn)</td>
<td>$120</td>
<td>$102</td>
</tr>
<tr>
<td>Combined G&amp;A ($Bn)</td>
<td>$71</td>
<td>$94</td>
</tr>
<tr>
<td>US Production (MMbbl/d)</td>
<td>6.5</td>
<td>12.45</td>
</tr>
<tr>
<td>Oil Price</td>
<td>$94.18</td>
<td>$55.42</td>
</tr>
<tr>
<td>Rig Count(3)</td>
<td>1,879</td>
<td>940</td>
</tr>
</tbody>
</table>

Upstream companies generated cumulative cash flows of ($114Bn) from 2012-2018

Source: FactSet, Bloomberg.

(1) 53 public companies: CPE, CDEV, XEC, CXO, FANG, ESTE, HK, JAG, LPI, MTDR, PE, PXD, COP, EDG, OXY, APA, CRC, CRZO, CLR, DNR, DVN, ECA, HES, MRO, MUR, NBL, PDCE, QEP, SM, WPX, CHK, CRK, GPOR, RRC, CHAP, CLR, DVN, MRO, ROAN, AR, COG, CNX, MR, EQT, SWN, NOG, OAS, WLL, EPE, MGY, PVAC, SBOW, BCEI, XOG, HPR, and SRCI.

(2) EIA 2019 forecast as of June 2019.

(3) TPH Research horizontal and vertical rigs.
Growth at Any Cost (2012-2018)

Capex ($Bn)  FCF ($Bn)  U.S. Upstream ECM ($Bn)  U.S. Upstream DCM ($Bn)

Capex & FCF, 2012-2018

Cum. 2012-2018

<table>
<thead>
<tr>
<th>Year</th>
<th>Capex ($Bn)</th>
<th>FCF ($Bn)</th>
<th>U.S. Upstream ECM ($Bn)</th>
<th>U.S. Upstream DCM ($Bn)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td>$117</td>
<td>($38)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2013</td>
<td>$117</td>
<td>($19)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2014</td>
<td>$132</td>
<td>($22)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2015</td>
<td>$84</td>
<td>($27)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2016</td>
<td>$43</td>
<td>($7)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2017</td>
<td>$63</td>
<td>($3)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2018</td>
<td>$82</td>
<td>$1</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Cumulative 2012-2018:

- Capex: $636
- FCF: $98
- U.S. Upstream ECM: $208
- U.S. Upstream DCM: ($114)

Source: FactSet, Bloomberg.
Valuations Today (vs. a Year Ago)

**Assets Are Cheap**
*EV/EBITDA: June 2018 vs. June 2019*

**Disconnect with NAV**
*Market Cap as a % of NAV (1)*

Source: IHS, Dealogic.

(1) TPH Research.
What’s Driving Valuations Today

Summary of Factor Relationships with Valuation

Correlation with EV/EBITDA for SMID and Large Cap E&Ps

- **Avg EV**: 64.6%
- **Current Div Yield**: 80.4%
- **2020 EBITDA Growth**: 35.1%
- **YE 2020 Leverage**: 59.2%
- **R Squared**: (45.4%)
- **Correlation**: (18.3%)

**EV/EBITDA vs. EV**

Source: FactSet as of 6/7/2019.
M&A Activity Nearing All-Time Lows
Cumulative Transaction Volume ($Bn)

Source: IHS, Dealogic.
Note: U.S. resource transactions greater than $50 million.
Upstream Corporate M&A Activity
Public-to-public Transactions Since 2009

2010-2018 Average: 2 transactions; $13Bn

<table>
<thead>
<tr>
<th>Year</th>
<th># Transactions</th>
<th>E&amp;P Index Annual Absolute Return</th>
<th>E&amp;P Annual Return Relative to S&amp;P 500</th>
<th>Prompt vs. 24-Month Forward WTI Spread ($/Bbl)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009</td>
<td>2</td>
<td>43.7%</td>
<td>20.2%</td>
<td>$15.81</td>
</tr>
<tr>
<td>2010</td>
<td>3</td>
<td>12.8%</td>
<td>0.1%</td>
<td>$8.76</td>
</tr>
<tr>
<td>2011</td>
<td>2</td>
<td>(8.1%)</td>
<td>(6.2%)</td>
<td>$2.83</td>
</tr>
<tr>
<td>2012</td>
<td>2</td>
<td>0.7%</td>
<td>(12.8%)</td>
<td>($1.72)</td>
</tr>
<tr>
<td>2013</td>
<td>1</td>
<td>27.0%</td>
<td>(2.6%)</td>
<td>($8.39)</td>
</tr>
<tr>
<td>2014</td>
<td>3</td>
<td>(14.0%)</td>
<td>(25.4%)</td>
<td>($12.12)</td>
</tr>
<tr>
<td>2015</td>
<td>1</td>
<td>(36.2%)</td>
<td>(35.5%)</td>
<td>$8.72</td>
</tr>
<tr>
<td>2016</td>
<td>1</td>
<td>31.5%</td>
<td>22.0%</td>
<td>$7.97</td>
</tr>
<tr>
<td>2017</td>
<td>2</td>
<td>(8.7%)</td>
<td>(28.1%)</td>
<td>$1.18</td>
</tr>
<tr>
<td>2018</td>
<td>5</td>
<td>(4.8%)</td>
<td>(6.8%)</td>
<td>($6.72)</td>
</tr>
</tbody>
</table>

Source: IHS and Dealogic.
Note: Excludes transactions that announced but failed to close.
Bread & Butter A&D Grinding to a Halt

Transaction Activity by Year (# of Deals)

E&P Transactions by Basin

Source: IHS and Dealogic.
Note: All charts exclude recent Corporate M&A transactions. U.S. resource transactions greater than $50 million.
Why is the Market in Gridlock?

Capital Markets have Dried Up

Markets Under-Valuing Acreage

- Buyer’s limited ability to fund
- Market not valuing long-term inventory
- Cash is precious
- Sellers not distressed yet (like 2015-16)
- Bid-Ask spreads still significant

- Corporate M&A makes sense...but it’s hard

Source: FactSet, Bloomberg, and IHS.
The Bull Case for Oil...It’s Simple

NYM crude oil vol and structure in five environments

Source: NYM, TPH.
The Bull Case for Oil...Simplified

- Remember, this is a CYCLICAL business
- It’s all about VOLATILITY
- Global Demand: growth rate slowing; but not contracting
- U.S. Supply: nearly impossible to sustain recent growth

Source: Factset, EIA.
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Contact Us
Houston (Research, Sales and Trading): 713-333-2960
Houston (Investment Banking): 713-333-7100
Houston (Asset Management): 713-337-3999
Denver (Sales): 303-300-1900
Denver (Investment Banking): 303-300-1900
New York (Investment Banking): 212-610-1660
New York (Research, Sales): 212-610-1600
London: +011 44(0) 20 7268 2800
Calgary: 403-705-7830

www.TPHco.com

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