

## Large Cap Frackers Oil Price Moderators

	Symbol/Rating	Price	Market	Enterprise	EV/	EV/	PV/	Oil	Dist.	McDep
		(US\$/sh)	Cap	Value	Market	Ebitda	Ebitda	Prod'n/	Yield	
		16-Oct	Cap	Value	Cap	NTM	NTM	PV	NTM	Ratio
		2017	(US\$mm)	(\$mm)	Cap	NTM	NTM	(%)	(%)	(EV/PV)
EOG Resources, Inc.	EOG	97.21	56,300	63,500	1.13	11.5	10.2	86	0.7	1.13
Pioneer Natural Resources	PXD	143.69	24,400	26,100	1.07	9.2	9.6	87	0.1	0.96
Occidental Petroleum Corp.	OXY	64.77	49,600	62,400	1.26	10.4	11.7	80	4.7	0.89
Devon Energy Corporation	DVN	35.86	19,000	27,000	1.42	8.3	9.7	62	0.7	0.85
Marathon Oil Corporation	MRO B	13.85	11,770	18,900	1.61	9.4	11.6	79	1.4	0.81
ConocoPhillips	COP B	49.72	62,000	86,000	1.40	9.0	11.4	69	2.1	0.79
<i>Total or Median</i>			223,100	284,000	1.33	9.3	10.8	80	1.1	0.87

### Summary and Recommendation

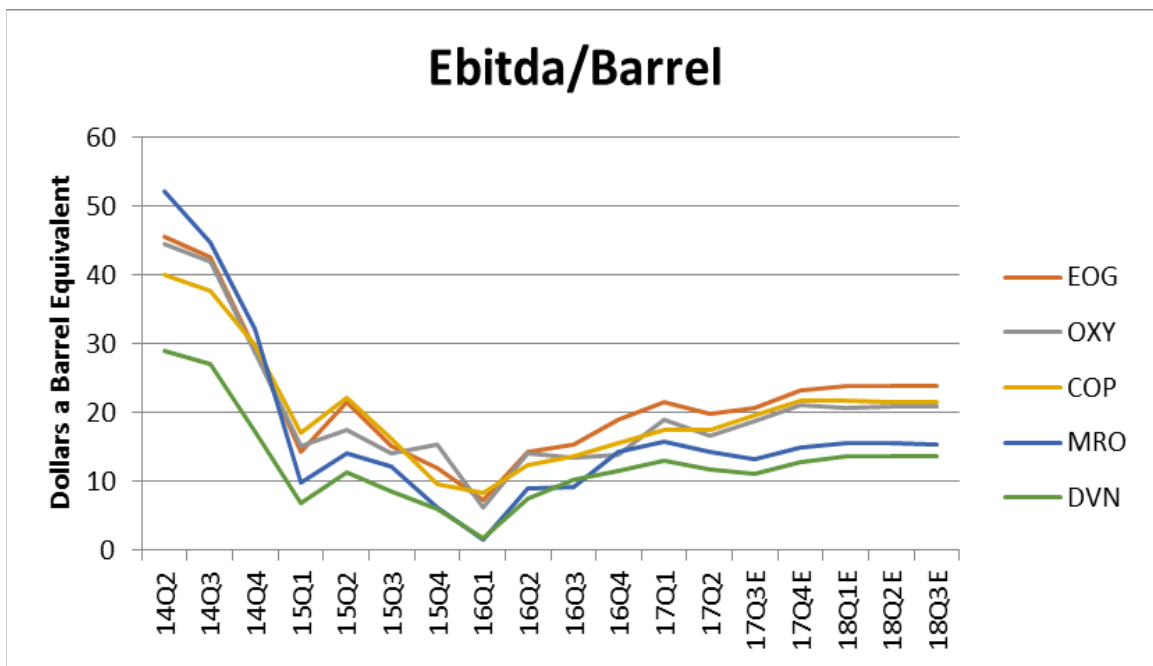
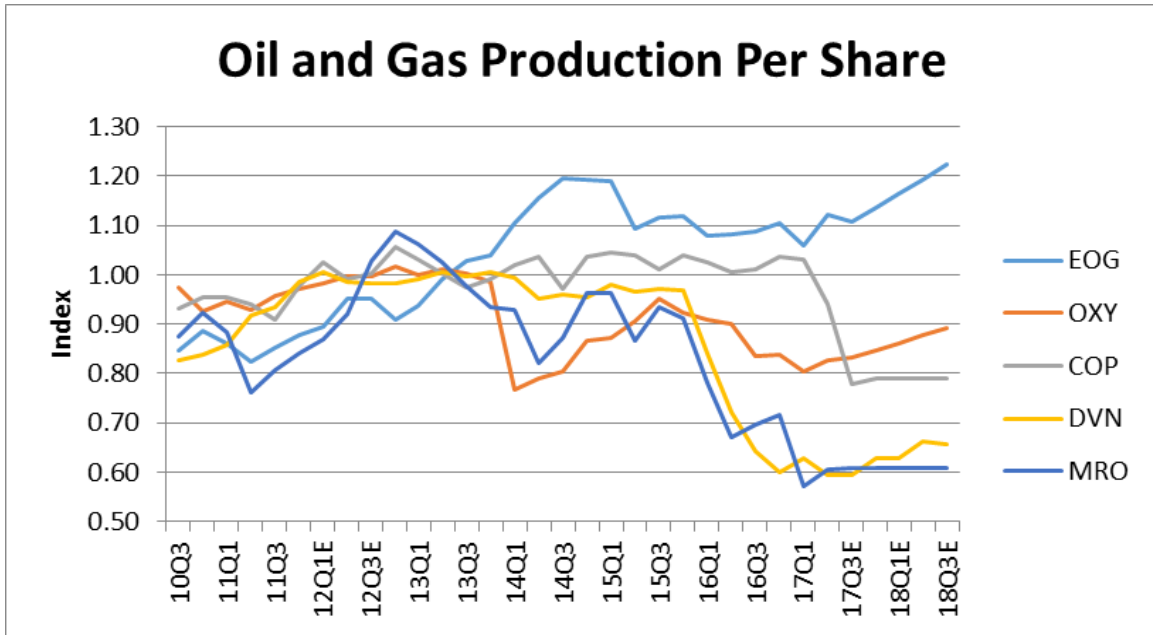
Large Cap Frackers offer money-making opportunity for investors at the same time they have demonstrated a moderating influence on international oil price. Buy recommendations **ConocoPhillips (COP)** and **Marathon Oil (MRO)** would appreciate 37% and 37% respectively to reach Net Present Value (NPV) of \$68 and \$19 a share, according to our framework. Five of the six stocks are trading at McDep Ratios below 1.0, i.e. less than our estimate of unlevered present value. Operations respond quickly to changes in international oil price. Accordingly, volumes dropped in 2015, including property sales, and have started to rise again in 2016 with more gains likely (see chart [Production](#) on page 2). In other words, lower price induced lower volume, lower volume induced higher price and higher price is inducing higher volume. Helped by rising demand accompanying synchronous global growth, the uptrend can continue for oil price, in our opinion. Rising volume is compounded by rising cash flow per unit (see chart [Ebitda/Barrel](#) on page 2). As a result, total cash flow is rising (see chart [Ebitda](#) on page 3). Operating leverage at a median of about 1.5 drives cash flow up 1.5% for each 1.0% change in price (see table [Operating Leverage](#) on page 3). Value also depends on how long cash flow will last, which is indicated partly by reported reserves (see table [Ranked by Reserve Life](#) on page 3). Valuation measures further relate each stock to 24 others in McDep coverage (see [Tables 1-4](#) on pages 4-7). Finally, we believe that oil and gas investments can contribute positively to the long-term performance of a diversified portfolio. The ability to increase oil and gas volume at moderate price is a competitive advantage for efficient producers and for the global economy.

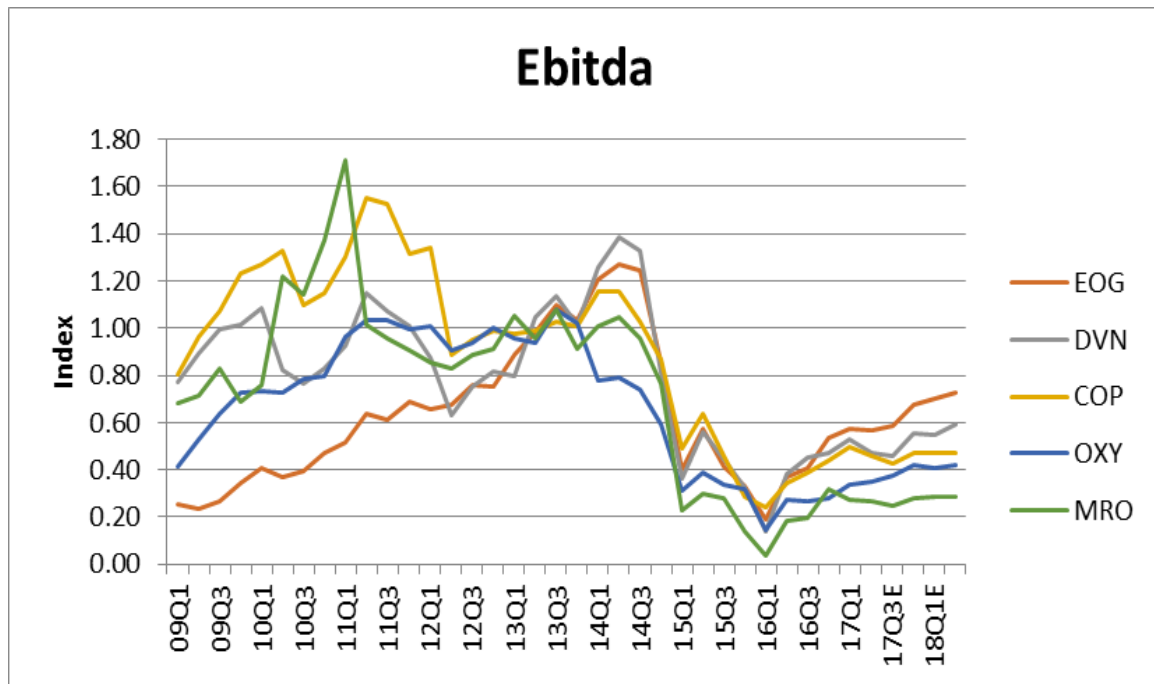
Kurt H. Wulff, CFA



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### Production Operating Leverage Ranked by McDep Ratio

	Symbol/Rating	Price (US\$/sh) 16-Oct 2017	Volume (mmboe)	Oil Price (\$/boe)	Operating Expense (\$/boe) Fixed Var. (%)	Ebitda NTM (\$/boe)	Ebitda NTM (\$mm)	Oper Lev Ebitda chg/Price chg	McDep Ratio
EOG Resources, Inc.	EOG	97.21	230	35.75	11 2	24.00	5,512	1.46	1.13
Pioneer Natural Resources	PXD	143.69	117	36.36	11 3	24.30	2,840	1.45	0.96
Occidental Petroleum Corp.	OXY	64.77	230	36.61	12 10	20.90	4,807	1.57	0.89
Devon Energy Corporation	DVN	35.86	184	26.90	10 5	15.50	2,855	1.65	0.85
Marathon Oil Corporation	MRO B	13.85	130	28.48	11 7	15.40	2,006	1.71	0.81
ConocoPhillips	COP B	49.72	439	35.47	8 16	21.70	9,523	1.37	0.79
<i>Total or Median</i>								1.52	0.87

### Net Present Value Per Share Ranked by Reserve Life (Adjustd Resrvs/Prod NTM)

	Symbol/Rating	Price (US\$/sh) 16-Oct 2017	Shares (mm)	Debt (\$mm)	Dividend NTM (\$/sh)	P/E NTM	Down-stream/PV (%)	Proven Undev. Resrvs (%)	Adjustd Resrvs/Prod NTM	Net Present Value (US\$/sh)
ConocoPhillips	COP B	49.72	1,237	24,405	1.06		-	20	10.3	68.00
Occidental Petroleum Corp.	OXY	64.77	766	12,800	3.04	48	14	23	9.2	75.00
Devon Energy Corporation	DVN	35.86	529	8,019	0.24	67	9	20	8.8	45.00
Marathon Oil Corporation	MRO B	13.85	850	7,129	0.20		-	39	8.6	19.00
EOG Resources, Inc.	EOG	97.21	579	7,250	0.67		-	30	7.0	85.00
Pioneer Natural Resources	PXD	143.69	170	1,700	0.08	45	-	7	6.0	150.00
<i>Median</i>									8.7	



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**Table 1**  
**McDep Energy Stocks**  
**Ranked by McDep Ratio**

			Price (US\$/sh)	Market Cap (US\$m)	Enterprise Value (\$mm)	EV/ Market Cap	EV/ Ebitda NTM	PV/ Ebitda NTM	Oil Prod'n/ PV (%)	Dist. Yield NTM (%)	McDep Ratio (EV/PV)
	Symbol/Rating		16-Oct 2017								
<b>Global Integrated</b>											
	Chevron Corporation	CVX	120.16	228,000	294,000	1.29	9.1	10.0	60	3.6	0.91
	Exxon Mobil Corporation	XOM	82.81	354,000	445,000	1.26	9.9	11.6	49	3.7	0.86
	Royal Dutch Shell	RDS-A B	60.88	252,000	379,000	1.50	7.4	8.9	51	6.2	0.83
	Total S.A.	TOT B	54.49	141,000	198,000	1.41	5.9	8.6	55	5.4	0.68
	<i>Total or Median</i>			<i>975,000</i>	<i>1,316,000</i>	<i>1.35</i>	<i>8.2</i>	<i>9.4</i>	<i>53</i>	<i>4.6</i>	<i>0.84</i>
<b>Large Independent</b>											
	EOG Resources, Inc.	EOG	97.21	56,300	63,500	1.13	11.5	10.2	86	0.7	1.13
	Pioneer Natural Resources	PXD	143.69	24,400	26,100	1.07	9.2	9.6	87	0.1	0.96
	Occidental Petroleum Corp.	OXY	64.77	49,600	62,400	1.26	10.4	11.7	80	4.7	0.89
	Devon Energy Corporation	DVN	35.86	19,000	27,000	1.42	8.3	9.7	62	0.7	0.85
	Marathon Oil Corporation	MRO B	13.85	11,770	18,900	1.61	9.4	11.6	79	1.4	0.81
	ConocoPhillips	COP B	49.72	62,000	86,000	1.40	9.0	11.4	69	2.1	0.79
	<i>Total or Median</i>			<i>223,100</i>	<i>284,000</i>	<i>1.33</i>	<i>9.3</i>	<i>10.8</i>	<i>80</i>	<i>1.1</i>	<i>0.87</i>
<b>Small Independent</b>											
	Cimarex Energy Company	XEC	115.88	11,000	12,500	1.13	10.8	11.1	63	0.3	0.97
	California Resources	CRC	10.50	500	6,500	14.3	10.0	12.6	89	-	0.79
	Continental Resources (32%)	CLR B	37.42	4,400	6,600	1.48	8.3	11.1	74	-	0.75
	Whiting Petroleum Corporation	WLL	5.26	1,900	5,500	2.88	6.1	11.2	92	-	0.54
	Range Resources	RRC B	19.51	4,800	9,200	1.92	8.3	16.4	31	0.4	0.51
	<i>Total or Median</i>			<i>23,000</i>	<i>40,000</i>	<i>1.92</i>	<i>8.3</i>	<i>11.2</i>	<i>74</i>	<i>-</i>	<i>0.75</i>
<b>Income</b>											
	San Juan Basin Royalty Trust	SJT	7.94	370	370	1.00	15.3	15.4	-	6.4	0.99
	Permian Basin RT	PBT	9.20	430	430	1.00	15.0	18.0	78	6.1	0.84
	Sabine Royalty Trust	SBR	40.65	590	590	1.00	17.5	25.8	59	5.7	0.68
	Dorchester Minerals, L.P.	DMLP B	14.65	470	470	1.00	10.3	16.9	72	9.4	0.61
	Cross Timbers Royalty Trust	CRT B	14.53	90	90	1.00	10.0	20.0	28	7.7	0.50
	<i>Total or Median</i>			<i>2,000</i>	<i>2,000</i>	<i>1.00</i>	<i>15.0</i>	<i>18.0</i>	<i>59</i>	<i>6.4</i>	<i>0.68</i>
<b>Canada</b>											
	EnCana Corporation	ECA	11.32	11,000	17,500	1.59	9.2	9.6	56	0.5	0.96
	Imperial Oil Limited (30%)	IMO	31.53	8,000	10,100	1.25	8.3	9.6	67	1.6	0.86
	Suncor Energy	SU B	33.64	56,000	74,400	1.33	8.3	10.3	84	3.0	0.81
	Cenovus Energy Inc.	CVE	9.73	12,000	22,200	1.85	6.5	10.9	83	1.6	0.60
	Birchcliff Energy Ltd.	BIREF B	4.20	1,100	1,700	1.53	6.0	11.5	30	1.9	0.53
	<i>Total or Median</i>			<i>88,000</i>	<i>126,000</i>	<i>1.53</i>	<i>8.3</i>	<i>10.3</i>	<i>67</i>	<i>1.6</i>	<i>0.81</i>

EV = Enterprise Value = Market Cap and Debt; Ebitda = Earnings before interest, tax, depreciation, amort.

Estimated Ebitda (cash flow) tied to NTM futures prices for oil and natural gas. NTM = Next Twelve Months ending 9/30/18.

Estimated Present Value (PV) presumes a long-term price for oil of US\$70 a barrel and natural gas, \$4.00 a million btu.

McDep Ratio = Market cap and Debt to present value of oil and gas and other businesses. For historical research see [www.mcdep.com](http://www.mcdep.com)



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			<i>Price</i>		<i>Oil</i>	<i>Operating</i>					
			<i>(US\$/sh)</i>		<i>Equiv.</i>	<i>Expense</i>		<i>Ebitda</i>	<i>Ebitda</i>	<i>Oper Lev</i>	
	<i>Symbol/Rating</i>	<i>16-Oct</i>	<i>Volume</i>	<i>Price</i>	<i>Fixed</i>	<i>Var.</i>	<i>NTM</i>	<i>NTM</i>	<i>Ebitda chg/</i>	<i>McDep</i>	
	<i>B = Buy</i>	<i>2017</i>	<i>(mmboe)</i>	<i>(\$/boe)</i>	<i>(\$/boe)</i>	<i>(%)</i>	<i>(\$/boe)</i>	<i>(\$mm)</i>	<i>Price chg</i>	<i>Ratio</i>	
<b>Global Integrated (excl. Downstream)</b>											
Chevron Corporation	CVX		120.16	873	38.61	11	14	22.10	19,300	1.50	0.91
Exxon Mobil Corporation	XOM		82.81	1,464	38.88	4	43	18.30	26,800	1.22	0.86
Royal Dutch Shell	RDS-A	B	60.88	1,292	37.53	6	13	26.50	34,232	1.23	0.83
Total S.A.	TOT	B	54.49	962	39.76	0	38	24.80	23,868	1.00	0.68
	<i>Total or Median</i>									<i>1.22</i>	<i>0.84</i>
<b>Large Independent (excl. Downstream)</b>											
EOG Resources, Inc.	EOG		97.21	230	35.75	11	2	24.00	5,512	1.46	1.13
Pioneer Natural Resources	PXD		143.69	117	36.36	11	3	24.30	2,840	1.45	0.96
Occidental Petroleum Corp.	OXY		64.77	230	36.61	12	10	20.90	4,807	1.57	0.89
Devon Energy Corporation	DVN		35.86	184	26.90	10	5	15.50	2,855	1.65	0.85
Marathon Oil Corporation	MRO	B	13.85	130	28.48	11	7	15.40	2,006	1.71	0.81
ConocoPhillips	COP	B	49.72	439	35.47	8	16	21.70	9,523	1.37	0.79
	<i>Total or Median</i>									<i>1.52</i>	<i>0.87</i>
<b>Small Independent</b>											
Cimarex Energy Company	XEC		115.88	71	26.19	6	15	16.20	1,157	1.37	0.97
California Resources	CRC		10.50	47	39.79	15	28	13.70	645	2.09	0.79
Continental Resources (32%)	CLR	B	37.42	33	31.63	3	14	24.20	787	1.12	0.75
Whiting Petroleum Corporation	WLL		5.26	47	33.60	9	16	19.10	907	1.47	0.54
Range Resources	RRC	B	19.51	133	17.40	8	6	8.30	1,105	1.96	0.51
	<i>Total or Median</i>									<i>1.47</i>	<i>0.75</i>
<b>Income</b>											
San Juan Basin Royalty Trust	SJT		7.94	3	15.22	5	15	7.98	24	1.63	0.99
Permian Basin RT	PBT		9.20	1	32.21	10	5	20.45	29	1.49	0.84
Sabine Royalty Trust	SBR		40.65	1	29.33	2	11	24.20	34	1.08	0.68
Dorchester Minerals, L.P.	DMLP	B	14.65	2	31.84	7	10	21.76	46	1.32	0.61
Cross Timbers Royalty Trust	CRT	B	14.53	0	34.52	8	10	23.17	9	1.35	0.50
	<i>Total or Median</i>									<i>1.35</i>	<i>0.68</i>
<b>Canada (excl. Downstream)</b>											
EnCana Corporation	ECA		11.32	113	29.76	12	3	16.76	1,893	1.72	0.96
Imperial Oil Limited (30%)	IMO		31.53	67	37.56	17	6	18.30	1,222	1.93	0.86
Suncor Energy	SU	B	33.64	283	47.71	22	4	23.68	6,699	1.93	0.81
Cenovus Energy Inc.	CVE		9.73	212	26.59	11	3	14.85	3,147	1.74	0.60
Birchcliff Energy Ltd.	BIREF	B	4.20	23	17.81	4	8	12.30	286	1.33	0.53
	<i>Total or Median</i>									<i>1.74</i>	<i>0.81</i>

For historical research see [www.mcdep.com](http://www.mcdep.com)



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			<i>Price</i> (US\$/sh)					<i>Down- stream/ PV</i>	<i>Proven Undev. Resrvs</i>	<i>Adjustd Resrvs/ Prod NTM</i>	<i>Net Present Value</i> (US\$/sh)
	<i>Symbol/Rating</i>		<i>16-Oct</i>	<i>Shares</i>	<i>Debt</i>	<i>Dividend</i>	<i>P/E</i>				
	B = Buy		<i>2017</i>	<i>(mm)</i>	<i>(\$mm)</i>	<i>(\$/sh)</i>	<i>NTM</i>	<i>(%)</i>	<i>(%)</i>		
<b>Global Integrated</b>											
Exxon Mobil Corporation	XOM		82.81	4,271	91,152	3.08	23	27	31	11.5	100.00
Total S.A.	TOT	B	54.49	2,583	57,015	2.93	11	22	42	8.9	90.00
Chevron Corporation	CVX		120.16	1,893	66,793	4.32	29	20	32	8.9	135.00
Royal Dutch Shell	RDS-A	B	60.88	4,146	126,975	3.76	18	24	25	8.8	80.00
	<i>Median</i>									8.9	
<b>Large Independent</b>											
ConocoPhillips	COP	B	49.72	1,237	24,405	1.06		-	20	10.3	68.00
Occidental Petroleum Corp.	OXY		64.77	766	12,800	3.04	48	14	23	9.2	75.00
Devon Energy Corporation	DVN		35.86	529	8,019	0.24	67	9	20	8.8	45.00
Marathon Oil Corporation	MRO	B	13.85	850	7,129	0.20		-	39	8.6	19.00
EOG Resources, Inc.	EOG		97.21	579	7,250	0.67		-	30	7.0	85.00
Pioneer Natural Resources	PXD		143.69	170	1,700	0.08	45	-	7	6.0	150.00
	<i>Median</i>									8.7	
<b>Small Independent</b>											
Range Resources	RRC	B	19.51	245	4,392	0.08	36	-	44	11.8	56.00
Whiting Petroleum Corporation	WLL		5.26	363	3,589	-		-	53	11.7	18.00
Continental Resources (32%)	CLR	B	37.42	119	2,124	-		-	59	11.4	56.00
California Resources	CRC		10.50	42	6,000	-		-	29	10.3	50.00
Cimarex Energy Company	XEC		115.88	95	1,442	0.32	28	-	21	6.1	120.00
	<i>Median</i>									11.4	
<b>Income</b>											
Sabine Royalty Trust	SBR		40.65	15	-	2.33	17	-	4	11.9	60.00
San Juan Basin Royalty Trust	SJT		7.94	47	-	0.51	16	-	-	10.2	8.00
Permian Basin RT	PBT		9.20	47	-	0.56	16	-	12	9.4	11.00
Cross Timbers Royalty Trust	CRT	B	14.53	6	-	1.12	13	-	-	9.1	29.00
Dorchester Minerals, L.P.	DMLP	B	14.65	32	-	1.37	14	-	-	6.6	24.00
	<i>Median</i>									9.4	
<b>Canada</b>											
Suncor Energy	SU	B	33.64	1,665	18,419	1.03	19	16	44	13.6	44.00
Cenovus Energy Inc.	CVE		9.73	1,229	10,221	0.16		4	55	12.8	22.00
Birchcliff Energy Ltd.	BIREF	B	4.20	268	601	0.08	20	-	69	12.4	10.00
Imperial Oil Limited (30%)	IMO		31.53	255	2,041	0.51	12	32	23	9.2	38.00
EnCana Corporation	ECA		11.32	973	6,457	0.06		-	43	5.5	12.00
	<i>Median</i>									12.4	
P/E = Stock Price to Earnings. For historical research see <a href="http://www.mcdep.com">www.mcdep.com</a> .											



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Table 4										
McDep Energy Stocks										
Total Return Year-to-Date 2017										
Ranked by Unlevered Total Return										
			Price	Price			Equity	Unlevered		
			(\$/sh)	(\$/sh)	Price	Cash	Total	Debt	Total	McDep
	Symbol/Rati		16-Oct	30-Dec	Change	Distrib.	Return	(\$/sh)	(%)	Ratio
			2017	2016	(%)	(%)	(%)			
<b>Global Integrated</b>										
	Royal Dutch Shell	RDS-A B	60.88	54.38	12	5	17	31	11	0.83
	Total S.A.	TOT B	54.49	50.97	7	3	10	22	7	0.68
	Chevron Corporation	CVX	120.16	117.70	2	3	5	35	4	0.91
	Exxon Mobil Corporation	XOM	82.81	90.26	(8)	2	(6)	21	(5)	0.86
	<i>Median</i>				4		7		5	0.84
<b>Large Independent</b>										
	ConocoPhillips	COP B	49.72	50.14	(1)	2	1	20	1	0.79
	EOG Resources, Inc.	EOG	97.21	101.10	(4)	0	(3)	13	(3)	1.13
	Occidental Petroleum Corp.	OXY	64.77	71.23	(9)	2	(7)	17	(6)	0.89
	Marathon Oil Corporation	MRO B	13.85	17.31	(20)	1	(19)	8	(13)	0.81
	Devon Energy Corporation	DVN	35.86	45.67	(21)	0	(21)	15	(16)	0.85
	Pioneer Natural Resources	PXD	143.69	180.00	(20)	0	(20)	10	(19)	0.96
	<i>Median</i>				(15)		(13)		(9)	0.87
<b>Small Independent</b>										
	California Resources	CRC	10.50	21.29	(51)	-	(51)	142	(7)	0.79
	Cimarex Energy Company	XEC	115.88	135.90	(15)	0	(15)	15	(13)	0.97
	Continental Resources (32%)	CLR B	37.42	51.54	(27)	-	(27)	18	(20)	0.75
	Range Resources	RRC B	19.51	34.36	(43)	0	(43)	18	(28)	0.51
	Whiting Petroleum Corporation	WLL	5.26	12.02	(56)	-	(56)	10	(31)	0.54
	<i>Median</i>				(43)		(43)		(20)	0.75
<b>Income</b>										
	San Juan Basin Royalty Trust	SJT	7.94	6.62	20	6	26	-	26	0.99
	Permian Basin RT	PBT	9.20	7.71	19	6	25	-	25	0.84
	Sabine Royalty Trust	SBR	40.65	35.15	16	4	20	-	20	0.68
	Dorchester Minerals, L.P.	DMLP B	14.65	17.55	(17)	5	(12)	-	(12)	0.61
	Cross Timbers Royalty Trust	CRT B	14.53	17.97	(19)	4	(15)	-	(15)	0.50
	<i>Median</i>				16		20		20	0.68
<b>Canada</b>										
	Suncor Energy	SU B	33.64	32.69	3	1	4	11	3	0.81
	EnCana Corporation	ECA	11.32	11.74	(4)	0	(3)	7	(2)	0.96
	Imperial Oil Limited (30%)	IMO	31.53	34.76	(9)	1	(9)	8	(7)	0.86
	Cenovus Energy Inc.	CVE	9.73	15.13	(36)	1	(35)	8	(23)	0.60
	Birchcliff Energy Ltd.	BIREF B	4.20	7.01	(40)	1	(39)	2	(30)	0.53
	<i>Median</i>				(9)		(9)		(7)	0.81
	<i>Grand Median</i>				(9)		(9)		(7)	0.81
	<b>Natural Gas (\$/mmbtu)</b>		2.96	3.74	(21)					
	<b>Oil -West Texas Intermediate (\$/bbl)</b>		51.87	53.72	(3)					
	Total Stock Market - U.S.	VTI	131.45	115.32	14					
	Developed Markets - ex US	VEA	44.11	36.54	21					
	Emerging Markets	VVO	45.14	35.78	26					

Source: McDep LLC, Yahoo, CME Group, Bloomberg

For historical research see [www.mcdep.com](http://www.mcdep.com)



## Analysis of Oil and Gas Stocks

October 17, 2017

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