Active Quantitative Equity

Don’t Waste Resources on Forecasting the Oil Price When Choosing Energy Stocks

- In recent decades, oil-price movement has increasingly explained movement in energy-sector stock prices.
- Forecasting oil-price moves is challenging; company fundamentals still matter a lot when picking stocks within the energy sector.
- We see a lot of opportunity for stocks in the energy sector to do well in both emerging and developed markets for different reasons.

May was a volatile month for the oil price and in the energy sector. The oil price was up 5.5% during the first few weeks, then sharply dropped 7% into the end of the month. Much of the prevailing commentary responding to a rapid oil-price rise has focused on its impact on consumers, GDP growth and the macro economy. In this month’s commentary, we are going to zoom in to examine the energy sector itself.

The oil price, without question, is a major driver of stock prices in the energy sector as a whole—one that has increasingly dominated many investors’ decision making regarding energy stocks in recent years. This opens the question: should investors concentrate their efforts to choose better energy stocks on predicting the oil price?

We believe the answer is no. Investors should instead expand their focus beyond the oil price to include careful evaluation of company fundamentals when choosing energy stocks. Forecasting oil prices is notoriously challenging. We prefer to focus on measurable, bottom-up fundamental attributes to discern the most attractive stocks within the sector.

When considering stocks within the energy sector, we see opportunities in both emerging markets and in domestic markets. In emerging markets, we’re seeing attractive valuations; in domestic markets, positive sentiment is a major contributor to our overall view.
Exploring the explanatory power of the oil price

During May, energy stocks moved almost in lock step with the oil price, in both emerging and developed markets. (See Figure 1.)

Figure 1. Energy-stock prices and the oil price tracked closely in May.

We know that the major driver of stock prices in the energy sector is the change in the oil price, but how important a driver is it on average, and has it changed through time? We analyzed the degree to which the oil price explains moves in energy stock price indices by taking monthly returns in the oil price and regressing them against monthly excess returns for two energy stock-price indices: MSCI World Energy and MSCI Emerging Markets Energy, as measured against their broad reference indices (MSCI World and MSCI Emerging Markets, respectively). We carved up the past 20 years or so into three periods, each spanning seven to eight years, to conduct the analysis. The analysis shows that the oil-price movement has increasingly explained energy-price movement over this period.

Focusing our attention on domestic markets, during the period from 1995 to 2002, oil stayed in a range of $15 to $35. For every 10% move in the oil price, stock prices in the energy sector would only move around 2.5% in excess of the market return, on average. The explanatory power of this relationship was low, with a coefficient of determination (or “r-squared”) value of just 0.09. In other words, only 9 percent of the variability in energy-sector excess returns could be explained by changes in the oil price over this period. (See Table 1.)

Table 1. Our regression analysis shows that, since 1995, oil-price movements have increasingly explained energy-stock movements.

<table>
<thead>
<tr>
<th>Crude Oil Futures Price (USD/barrel)</th>
<th>Developed markets</th>
<th>Emerging markets</th>
</tr>
</thead>
<tbody>
<tr>
<td>1995 – 2002</td>
<td>0.09</td>
<td>0.04</td>
</tr>
<tr>
<td>2003 – 2010</td>
<td>0.23</td>
<td>0.23</td>
</tr>
<tr>
<td>2011 – 2018</td>
<td>0.35</td>
<td>0.34</td>
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The picture changed during the period from 2003 to 2010, when the oil price went on a tear from $20 to $140 and back down to $35. Looking again at domestic markets, the relationship between the commodity and the stocks in this time frame was much stronger. Every 10% move in oil price corresponded with about a 5% move on average in excess returns for energy stocks, with an r-squared of 0.23.
Over the most recent seven years, the relationship between oil prices and energy-sector has been similar. During this period in domestic markets, oil has traded from $80 a barrel up to $110, then down to $30 and back up to current levels of $70. From 2011 to 2018, a 10% move in oil would on average lead to a 5% move in energy stock prices, yielding an even higher r-squared of 0.35.

What about in emerging markets? A very similar relationship took shape between oil prices and energy-stock excess returns. In our earliest period, from 1995 to 2002, the r-squared value in this analysis for emerging markets was only 0.04. In the middle period, from 2003 to 2010, r-squared for emerging markets was higher, at 0.23. In the most recent period, from 2010 to 2018, r-squared was higher still at 0.34, again in line with domestic markets.

An analysis of the risk measure, beta, reinforces the overall point: as oil price gained explanatory power vis-à-vis energy-stock prices, stock prices in the energy sector also became increasingly sensitive to oil-price volatility. (See Table 2.) This is particularly true in emerging markets, where beta analysis shows that energy stocks generally respond more directly to oil-price changes than in developed markets.

<table>
<thead>
<tr>
<th>Year Period</th>
<th>Crude Oil Futures Price (USD/barrel)</th>
<th>Sensitivity (beta)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Start</td>
<td>End</td>
</tr>
<tr>
<td>1995 – 2002</td>
<td>20</td>
<td>26</td>
</tr>
<tr>
<td>2003 – 2010</td>
<td>26</td>
<td>89</td>
</tr>
<tr>
<td>2011 – 2018</td>
<td>89</td>
<td>70</td>
</tr>
</tbody>
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Source: Bloomberg Finance L.P. and State Street Global Advisors

The challenge of predicting the oil price

Given the increasingly tight relationship between the oil price and energy-stock prices, a reasonable investor might conclude that concentrating effort and resources into predicting the oil price would provide the key to energy-stock selection. The problem with this reasoning is that predicting the oil price is notoriously difficult, for a number of reasons.

First, the price elasticity of oil is comparatively high, because oil supply is hard to adjust in the short term. Quick shifts in demand can result in large moves in the oil price.

Second, economic and geopolitical developments can heavily influence oil production decision making and therefore supply levels, resulting in volatility in oil prices. A great deal of oil tends to come from unstable places, including Iraq, Nigeria, Libya and Venezuela. Furthermore, because the fiscal budgets of OPEC member countries depend on oil revenues, incentives are high to increase production whether prices are dropping or rising. When prices go down, member countries often encourage production in order to meet their budgets. When prices go up, countries are also incented to boost production in order to reap additional revenues. This means that supply-cut agreements tend to be effective only in the short term, reducing overall oil-price predictability. Meanwhile, non-OPEC production is difficult to manage and coordinate; Russia has only recently started cooperating with OPEC. U.S. and Canadian production is effectively a free for all.
Third, it’s important to remember that oil trades across the price curve. OPEC countries trade their production at spot prices, but others trade six or even twelve months forward. The forward price is ordinarily lower the spot price, but this can vary: the forward price is currently about a $5 premium per barrel, 12 months out.

Finally, it’s critical to remember that oil is not a uniform commodity. Light sweet crude oil, which is lower in sulphur and easier to refine, trades at a sizeable premium compared with heavy sour crude, which can only be refined at scale in the United States. These price differentials are a function of refining costs and capacity, transportation costs and capacity, and the dynamics of end demand.

Taken together, these and other factors form a highly complex, far-ranging and dynamic landscape of oil-price influences, which even the most sophisticated investors might struggle to master. Rather than focusing our own energy stock-picking efforts on attempting to predict the oil price, we prefer instead to focus on measurable company fundamentals within the energy sector—attributes that relate to their valuation (e.g., cash flow, balance sheet, earnings), quality (e.g., solvency, sustainability, balance sheet, leverage), as well as market sentiment (e.g., consistency of returns, hedge-fund positioning, forecast revenues).

**Opportunities in energy stocks**

On that basis, we currently see energy stocks as generally attractive across both developed and emerging markets.

We formed our directional views by focusing on a proprietary set of attributes that are important indicators of performance:

- **Value** (i.e., whether the stock is expensive or cheap compared with the broader market);
- **Quality** (i.e., company performance on key financial measures versus the market);
- **Sentiment** (i.e., the prevailing attitude toward the stock and its pricing, whether poor or positive);
- **Volatility** (i.e., whether the company is high or low risk)

In developed markets, positive sentiment is a prominent contributor to our overall view. Developed-market energy stocks are generally more expensive on measures of valuation (as assessed through a number of contrasting metrics and ratios), compared with the rest of the market. On the spectrum of quality attributes, including balance-sheet performance, earnings, solvency, abnormal growth and sustainability, we hold a neutral view on energy stocks in developed markets. Our multi-dimensional view on sentiment, which was very negative for developed-market energy stocks last year, has improved markedly this year. *(See Figure 2.)*

In emerging markets, valuation is the major driver of our positive view on energy stocks. Emerging-market energy stocks look cheap on valuation measures. Our view on quality measures for EM energy stocks is relatively neutral. Finally, while absolute returns have been strong in for energy stocks in emerging markets over the last year, other proprietary measure of sentiment of dropped off—in particular, those relating to near-term revenue forecasts and hedge-fund positioning.

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Oil is not a uniform commodity
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Among major energy sub-sectors, explorers are the most sensitive to the oil price, with beta values of around 0.75. Refiners tend to have lower exposure (beta = ~0.25).

In terms of overall attractiveness on our measures, we like integrated energy firms and refiners the most, compared with other sub-sectors. Refiners and integrated firms are generally more attractively valued, compared with storage/transport companies and explorers. Integrated energy names are more appealing based on quality and sentiment measures than their counterparts. And, in general, both refiners and integrated firms register as much less risky on our volatility measures than energy explorers. (See Figure 3.)

Within the energy sector, integrated energy firms and refiners appear most attractive based on our measures.

The bottom line

Given that the oil price explains so much of stock price returns in the energy sector, should we put all our efforts into predicting the oil price in order to improve our stock picking? We prefer to focus on measurable, bottom-up fundamental attributes of companies that relate to their valuation and quality, as well as market sentiment. With these forecasts, we aim to add value mostly through stock selection within the sector.

In general, although the energy sector remains volatile, we currently see energy stocks as attractive from an expected-return standpoint across both emerging and developed markets. Energy refiners and integrated energy firms look particularly attractive in our view, based on our proprietary measures. According to that same proprietary framework, among energy sub-sectors, integrated energy firms and refiners are more attractive than storage/transport firms and explorers.
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