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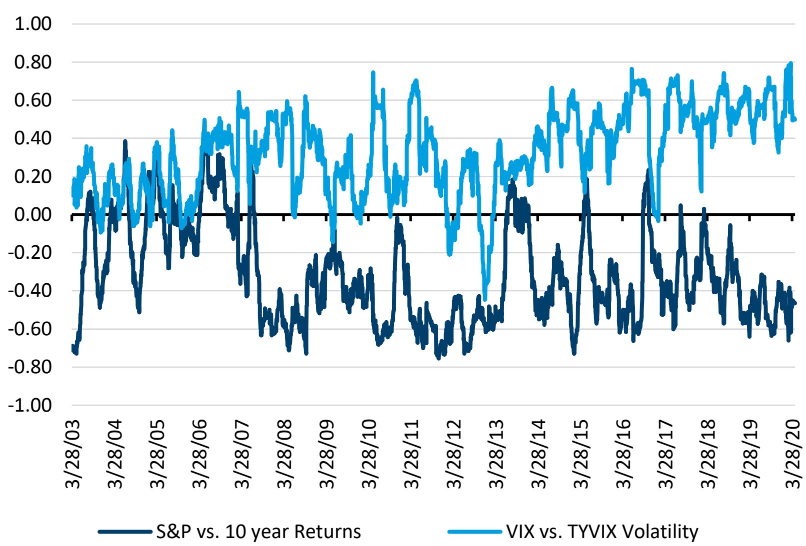
BEYOND THE VIX: OIL MARKET VOLATILITY

Since the beginning of the coronavirus outbreak, the investment community has been focused on market volatility. When investors want to measure market volatility, the usual metric of choice is the VIX, the CBOE (Chicago Board Options Exchange) Index of the volatility of the S&P 500 Index, as measured by the options markets one month into the future. There are many similarly constructed volatility indices out there, such as CBOE's TYVIX (10-year Treasury note) and OVX (crude oil prices), but the world tends to overlook them. One reason is expediency, but it goes deeper than that. Even the investment community tends to ignore these other volatility indices, because they tend to move in sync with each other.

The following chart is a particularly important case:

Exhibit 1: Comparing correlations – returns and volatility



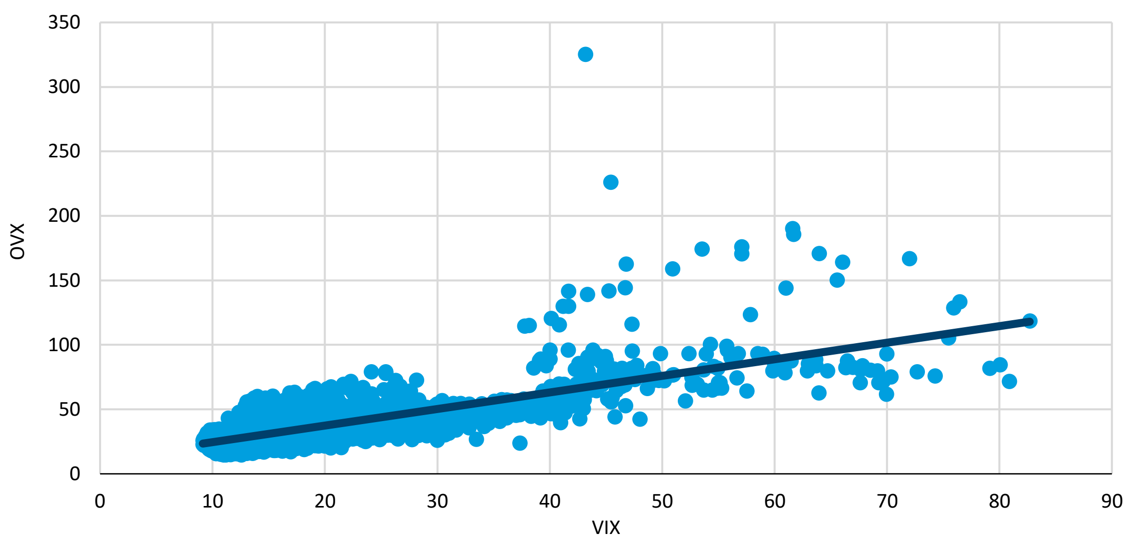
Source: Bloomberg; Columbia Threadneedle Investments- as of April 22, 2020. Daily return and volatility correlation between the S&P 500 Index and 10-year Treasury notes.

As seen in Exhibit 1, Treasuries and equities generally have a negative return correlation, which is why bonds provide such important diversification to a portfolio that contains equity. But Treasury volatility and equity volatility are generally positively correlated. When the stock market gets more volatile, all assets tend to exhibit a similar increase in volatility, whether they are going down alongside equities or going up as a flight to quality alternative.

Oil markets

Similarly, oil has been an asset class that has tended to move alongside equity in recent years. But structurally, the relationship between oil and equity markets is not inherently positive. An energy company will certainly have its profitability tied to the same direction as oil prices, but a technology company might only be using energy is an input to its process, which means higher oil prices could lead to higher costs. Countries can be net importers or net exporters—the relationship is multifaceted. Regardless of the connection between prices, we cannot ignore the positive relationship between oil volatility and stock market volatility. The OVX (CBOE Crude Oil Volatility Index) is the equivalent of the VIX for oil markets, and the two have tended to move in lockstep:

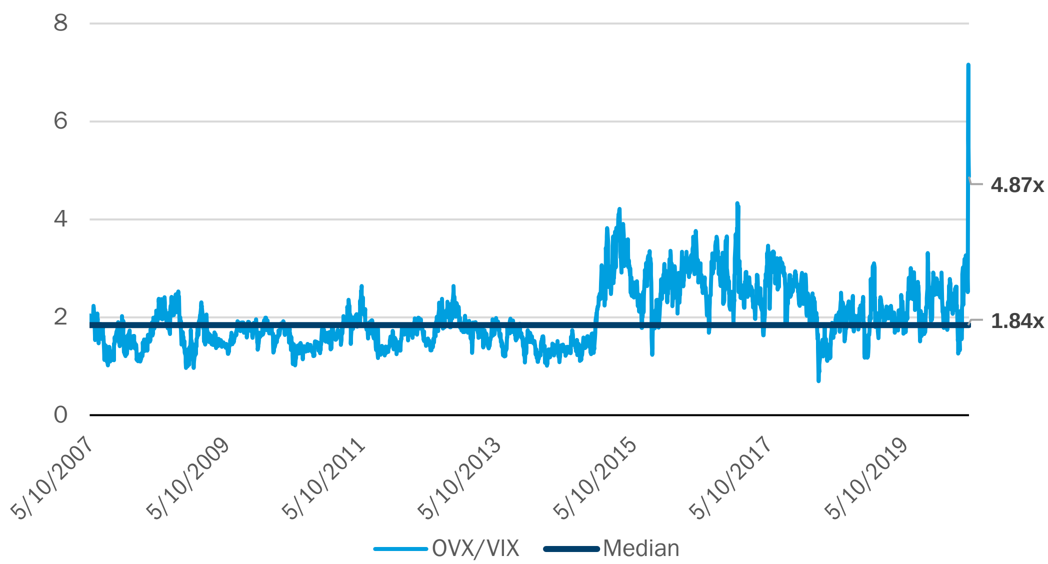
Exhibit 2: Comparing index movements – oil volatility (OVX) and stock volatility (VIX)



Source: Bloomberg; Columbia Threadneedle Investments; as of April 22, 2020. Daily index level for VIX (x-axis) and OVX (y-axis); from May 10, 2007 to April 22, 2020.

When we look at measures such as the OVX, we tend to care less about what they are doing in absolute terms, and more about how they behave relative to the well-known VIX measure, and we are now seeing historical levels for that relationship:

Exhibit 3: Volatility relationship – the ratio of OVX to VIX



Source: Bloomberg; Columbia Threadneedle Investments; as of April 24, 2020. The ratio of the daily index levels for OVIX and VIX; from May 10, 2007 to April 24, 2020.

Oil prices are generally more volatile than the S&P 500, so this measure has a median value under 2.0. But that value touched above 7.0 on April 21 before settling near 5.0 to end the volatile week. The previous high was 4.3 in 2016, after the end of the last OPEC-related oil crisis.

Implications

What does this all mean? A simple interpretation is that the price of oil has gotten so low that any meaningful move in the denominator, VIX, results in a giant, volatile return in either direction. But I tend to look at this ratio more for guidance as to what is going on in the market: we know the market is volatile, but is it an oil-related volatility? Or is it more restricted to financial markets? Most volatility charts show 2008 as a giant blip. But notice that the relationship between oil and stock price volatility was relatively stable during that period. Prior to 2020, the most extreme levels for this measure were during the OPEC pricing war that occurred starting in November 2014, so in looking at market volatility during that time, we know that it was more of an oil crisis. Right now, in 2020, it's starting to look like oil might once again becoming responsible for the volatility that investors are seeing throughout asset markets.

How might this impact a portfolio? As long as oil volatility remains high, we will see a flow through to the many asset classes that are tied to oil prices. Many high-yield bonds are energy-related, issued by U.S. companies that could struggle at these low price levels. Stock portfolios following a classic value sector approach will usually be tilted toward energy stocks, as well. And a multi-asset portfolio with either of those two asset classes, or even direct commodity investments in many cases, has to calibrate volatility exposures in an extremely difficult environment. This presents investors with an already complicated investment landscape that continues to get more difficult to navigate.