Frontier Markets and Commodities – Not much Linkage

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It is often said that frontier markets are driven by commodity prices, since many are exporters of oil or other raw materials. On the other hand, some frontier markets are not self-sufficient in energy resources or even food, so they also import commodities. In this study, we review the behavior of frontier and other markets relative to commodities.

Turbulent times like these can certainly test our impressions of how the world works. The recent behavior of commodity prices has been exceptional, even for an asset class that is known for its volatility. First was the supply crunch in the spring of 2008 that was especially felt by developed countries in the price of gasoline; but it was even more painful in emerging and frontier countries because of a spike in food prices. According to the Economist (5/23/09), prices of soybeans and rice rose 110% from the beginning of 2007 to mid-2008. India and Ukraine even banned wheat exports, and there were food riots in places like Cote d’Ivoire. From the peak, however, commodity prices have plunged.

In this report, we look at the behavior of three major commodities; oil, copper and gold. The first two charts, in exhibit 1, simply show recent returns, from the market high in mid-2007. They show the late 2007 divergence as developed markets fell while emerging markets were stable and frontier markets rose. Then, emerging and frontier markets joined the decline, but in 2009, they have been strong on the upside. The regional frontier market chart on the right shows that Africa has been more stable than the other regions and has lagged recently (based on our sample of 28 markets globally).

Exhibit 1

Index Changes (Cumulative 7/19/07 to 5/29/09)

Source: Bloomberg, MSCI, Frontier Market Asset Management, May 2009
The behavior of commodities, relative to our frontier markets sample is shown below.

Exhibit 2

![Index Changes (Cumulative 7/19/07 to 5/29/09)](image)

Oil had the most violent swings, but all three commodities have had huge recent gains from their lows: oil is up 54%, copper up 65% and gold up 37%. Theories abound, but it is possible that the oil price increase is due to actions of the OPEC cartel, while copper may be up on demand from China for its stockpile. As for gold, it has performed the best over the past two years, initially because of fear and recently because of fear combined with a whiff of inflation.

The influence of these commodities on markets can be examined by calculating correlations. This can be done over a variety of time horizons, and it is often customary to look at a rolling window of 36 months. Given the recent turbulence, however, we believe that it is worthwhile to use a shorter window and to use daily data. One problem with this approach is that the world is round. Because of this, everyone is not experiencing the same date at the same moment. When it is noon in California, the U.S. market in New York is still open, markets are closed in Europe, and it is early tomorrow morning in Tokyo. Thus major news in the U.S. can impact the S&P today, but will have its effect on many global markets tomorrow. To minimize the distortion of this, we use five-day windows of returns. Then we use independent, non-overlapping five-day windows, and we calculate the correlation over 30 such periods. For example, we calculate the correlation of two indexes from the five-day period ending January 23, 2006 to the five day period of June 17, 2006. We believe that these windows of 150 days strike a reasonable balance between missing the texture of longer periods and being dominated by the volatility of shorter ones.

Stock Markets

When we examine the behavior of broad stock market indexes, in exhibit 3, the spike in correlations on October of 2008 stands out. In the global panic, the S&P 500 was closely mirrored by the behavior of the MSCI EAFE Index, the MSCI Emerging Markets Index, as well as our index of 28 frontier countries. Since October, the correlations of EAFE and Emerging Markets have remained around 0.80, while the frontier markets correlation has drifted down from 0.60 to 0.45. The right panel shows that within frontier markets, the lion’s share of the rise in correlations was due to Eastern Europe, while Asian frontier markets have had low correlations over most of the period.
Exhibit 3

Correlations with S&P 500 - 150 days, based on 30 Non-overlapping 5 Day Periods

Exhibit 4

Correlations - 150 days, based on 30 Non-overlapping 5 Day Periods

Oil

Turning to the correlation of the indexes with commodities, we first look at oil in Exhibit 4. When oil was soaring in the first half of 2008, markets were falling in fear of the high prices. Then, when oil was falling in late 2008, the cause/effect relationship reversed. The market dropped in the financial crisis causing a fall in economic activity, with oil reacting in fear of that. Finally, in 2009, oil has rallied, and stock markets have used this as a signal that economic activity may be improving.

Exhibit 4

As exhibit 4 shows, during 2006 and 2007, the market correlations with oil prices have been low and variable until recently. However, in mid 2008, for the U.S. market, the correlation reached -0.40, when investors worried about the impact of high oil prices on the economy. In 2009, the correlation has reversed to positive levels, rising above 0.50, with emerging markets at roughly the same level, while
frontier markets are somewhat lower. At the country level, we found none of the frontier markets had correlations with oil that were consistently strong. It is interesting to compare the oil producers, Russia with Nigeria, in exhibit 5. Both have similar correlations with oil today, but Russia correlation over the whole period is 0.42, while Nigeria’s is only 0.15. This suggests that the behavior of the Nigerian market is driven by many local factors that generally overwhelm the influence of global oil prices.

Exhibit 5

Gold

As shown in exhibit 2 (page 2), gold has risen during the crisis period. It may be that initially gold was viewed as an inflation hedge when other commodity prices were rising. Then, gold may have been viewed as a haven of safety when the world financial structure seemed to be falling apart. Now, given huge stimulus programs in many parts of the world, at the margin inflation-hedge buyers may be replacing those who feared a global meltdown.
Exhibit 6 shows that markets had generally positive correlations with gold prior to the U.S. market peak in mid-2007, possibly because strong economic activity fed concerns of inflation. Since then, the correlations turned negative before reaching near zero in the recent market recovery. In the period beginning in 2006, the highest country correlations with gold are for Russia, 0.15 and India, 0.12, while the lowest is for Abu Dhabi, which has a correlation of -0.12 despite the many customers who flock to Middle Eastern gold souks.

**Copper**

Copper has turned in an overall dismal performance in the past three years. With peaking in the U.S. housing market in 2006, copper came under pressure and it never ran up much during the commodity spike. Then, copper participated fully on the downside.

Exhibit 7

The correlations of stock markets with copper have been largely positive based on copper’s history as an indicator of economic activity. Frontier markets, however, have had generally lower correlations than emerging markets or the S&P. Peru has had the highest correlation with copper, at 0.49, (it is an emerging market in the MSCI Index rather than a frontier market). It is interesting that today, given the global economic jitters; the S&P has a higher correlation with copper than Peru.

Exhibit 8
Conclusion

In the past three years, correlations of markets with the S&P have risen and so have correlations with oil. Gold correlations, on the other hand, fell into negative territory and are now close to zero. As for copper, it seems to be an indicator of economic recovery, but oil prices are having a stronger positive influence on markets these days.

Based on the charts, frontier markets have lower correlations with the S&P and with oil and copper than the other stock markets. Frontier markets tend to be driven more by local factors than by the influence of the S&P or commodities such as oil, gold and copper. Frontier markets generally have low foreign investor participation, so prices move based on local politics and economics. This means that they continue to offer useful diversification for global portfolios.

About Frontier Market Asset Management

Founded in 2006, Frontier Market Asset Management holds more than 35 years worth of investment experience including work in Emerging and Frontier Markets since 1987. For more information, please contact us at (858) 456-1440.

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