

ICI VIEWPOINTS

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Commodity Price Trends: It's Fundamentals, Not Funds

As gasoline prices approach a national average of \$4 per gallon, the role that [financial investment flows](#) into commodities markets play is once again in focus. In a forthcoming paper, I examine the relative importance of economic fundamentals and financial investment flows in explaining broad commodity price movements. Using ICI data on weekly and monthly flows into commodity mutual funds, I find little or no evidence that these flows affect the overall growth rate of commodity prices. These results are consistent with academic papers that find little or no impact of commodity index investors on commodity prices in individual markets (click [here](#) and [here](#) for two papers published in 2010). Instead, two fundamental economic factors—the broad trade-weighted value of the U.S. dollar as measured by the Federal Reserve and industrial production growth in emerging markets—are able to explain the broad pattern in commodity prices since 2004.

Emerging Market Industrial Production Growth and Commodity Price Growth

Monthly, 2005-2011*

Data to June 2011.

Note: The correlation coefficient between the two series is 0.83.

Sources: Netherlands Bureau for Economic Policy Analysis and Bloomberg

Economic Fundamentals Matter

To demonstrate the relative importance of economic fundamentals, I use the broad trade-weighted value of the U.S. dollar and the growth rate of industrial production in emerging market economies to explain monthly commodity price growth. Both of these factors have been used by others to explain commodity price movements in individual markets (see, for example, [box 1.4 in Chapter 1](#) on U.S. dollar depreciation and commodity prices in the IMF's April 2008 World Economic Outlook). Rapid emerging market growth over the last decade has significantly increased the [physical demand for commodities](#) and has been cited by many analysts as a reason for the tightness in global commodity markets. It serves as a good proxy of global demand growth for commodities, and the close connection between emerging market growth and commodity price movements is evident in the figure above.

With these two economic fundamentals alone, I can explain 35 percent of the monthly percentage change in commodity prices as measured by the [Dow Jones-UBS Commodity Index](#). This model forecasts the broad changes in that index since 2004 significantly better than a model based on commodity mutual fund flow data only. The figure below shows how the two models compare when they are used to dynamically forecast commodity prices movements starting from early 2004. The forecast from the flow-based model does not track commodity prices and, indeed, incorrectly forecasts falling prices in 2007 and 2008 because commodity mutual funds were experiencing net outflows at that time. By contrast, the fundamentals-based model produces a high positive correlation with commodity prices. It forecasts rising prices before 2008 and falling prices in late 2008 and early 2009, and it closely matches the recovery after the global recession.

Forecasts: Economic Fundamentals Versus Commodity Mutual Fund Flows

Monthly, 2004–2011*

*Data and dynamic forecasts are from February 2004 to November 2011.

Note: The correlation coefficient between the Dow Jones-UBS Commodity Index and the forecast based on economic fundamentals is 0.80. It is -0.05 for the forecast based on flows.

Source: Bloomberg

Diversification and Hedging—Not Speculation

Despite the evidence above, some commentators see long-term passive investment in commodities as “speculation” and insist that the rapid growth in assets invested in commodities has boosted commodity prices. There’s a much simpler explanation: the increasing popularity of commodity investing reflects the desire of investors to take advantage of the diversification benefits of broad commodity investment and to shield themselves from commodity price swings. Historically, the returns from commodity investments are not highly correlated with stock and bond returns, so commodity mutual funds bring diversification to investors’ asset allocations. Commodities are also generally considered to provide a natural hedge against inflation. Given the increase in commodity prices and heightened concerns about inflationary policies in many advanced economies, it would be surprising if investors chose not to invest in commodities.

Flows into Commodity Mutual Funds Do Not Drive Commodity Prices

The fact that flows to commodity mutual funds have little or no effect on commodity prices makes sense when one considers that commodity mutual funds are small relative to global commodity markets. As of the end of December 2011, the commodity mutual funds that ICI tracks had \$47.7 billion in assets under management. By comparison, global commodity markets trade trillions of dollars in physical products (barrels of oil, tonnes of gold, bushels of wheat, and so forth) each year, and futures and options markets trade trillions of dollars in notional value each month.

More importantly, flows into commodity mutual funds are spread across a wide range of separate markets. These funds invest in a diversified basket of commodities, and, therefore, do not concentrate investment in any one particular commodity market. More than 90 percent of the assets in commodity mutual funds benchmark their performance relative to the Dow Jones-UBS Commodity Index; the remainder benchmark relative to the [S&P GSCI](#). A major difference between the two indexes is that the Dow Jones index has a much lower weight on energy than the S&P index, especially for crude oil; the Dow Jones index's dominance therefore reduces the share of commodity mutual funds' flows directed to energy markets. To demonstrate this dispersion effect, I use the weights in these two commodity indexes to estimate the implied position that commodity mutual funds have in particular markets in the table below. The last column divides the implied position by the estimated monthly turnover in futures and options markets for that commodity according to Barclays Capital.

Commodity Mutual Funds' Implied Position in Commodity Markets

Market Weight in Dow Jones-UBS Commodity Index and S&P GSCI Percent Implied position in commodity, assets under management

Billions Share of index in market volume

Percent WTI-crude

16.2%

\$7.7

0.5%

Natural gas

10.4

4.9

1.5

Gold

9.7

4.6

0.2

Soybean

7.3

3.5

0.9

Copper

7.1

3.4

0.3

Corn

6.8

3.2

1.1

Aluminium

4.9

2.3

0.5

Wheat CBOT

4.5

2.1

3.5

Heating oil

3.7

1.8

0.5

Unleaded gasoline

3.6

1.7

0.5

Live cattle CME

3.3

1.6

2.1

Sugar

3.2

1.5

1.8

Silver

3.0

1.4

0.4

Soybean oil

2.6

1.3

N/A

Zinc

2.6

1.3

0.1

Coffee

2.2

1.1

1.3

Nickel

2.1

1.0

1.1

Lean hogs CME

1.9

0.9

2.3

Cotton

1.9

0.9

3.6

Brent crude

1.7

0.8

0.1

Gas oil

0.7

0.3

0.1

Wheat (KBOT)

0.1

0.0

0.1

Lead

0.0

0.0

0.0

Feeder cattle CME

0.0

0.0

0.2

Cocoa

0.0

0.0

0.1

Tin

0.0

0.0

0.0

Palladium

0.0

0.0

0.0

Note: Based on December 2011 commodity mutual fund assets of \$47.7 billion.

Sources: Dow Jones-UBS, Barclays Capital

The largest implied position held by commodity mutual funds is \$7.7 billion in West Texas Intermediate (WTI) crude oil, followed by \$4.9 billion in natural gas, and \$4.6 billion in gold. In relation to options and futures markets, these three largest positions constitute less than 2 percent of the monthly turnover in options and futures markets. In many cases, the effective dollar position in particular commodity markets is very small (zinc, nickel, cotton, and Brent crude oil) or zero (lead, tin, and palladium).

A Recent Example: Crude Oil and Natural Gas

A recent example illustrates that flows to commodity mutual funds have little, if any, influence on commodity prices. Over the period from December 2009 to December 2011, crude oil prices rose 140 percent while natural gas prices fell by 46 percent. Over the same period, commodity mutual funds invested an additional \$4.8 billion in WTI crude oil (based on the weights in the above figure) and \$3.1 billion in natural gas. Despite strong positive flows from commodity mutual funds into both markets, the price of oil rose while the price of natural gas fell. If strong inflows from commodity mutual funds are the driving force behind rising commodity prices—as some would argue is the case with crude oil prices—then it's hard to explain why natural gas prices simultaneously fell.

The explanation for these divergent price trends is simpler: worldwide [supply and demand](#). Political unrest in the Middle East is often cited as a factor boosting oil prices, while the development of “fracking” technologies and new resource discoveries have allowed a dramatic increase in natural gas production in the United States and Canada. When it comes to moving prices, these global economic forces are gushers compared to the garden hose of commodity mutual fund flows.

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