

The Impossible Quest for Diversification

Are commodities still diversifying in today's integrated financial markets?

By Steve Ohana & Jean-Jacques Ohana

COMMODITIES MARKETS HAVE long been considered as relatively isolated from the turbulence of financial markets due to their close connection to supply and demand cycles.

It has often been argued that commodities bring diversification to portfolios of financial assets thanks to their lack of correlation to the stock market and their positive correlation to inflation. In fact, financialized post-Lehman commodity markets have little to do with the commodity markets of the 1980s and 1990s, where futures markets were dominated by hedgers and commodities prices were evolving according to inventory cycles. From consumables deriving their value from their use as inputs in industrial processes, commodities have become an integrated investment class¹ subject, like other financial assets, to the versatility of investors' attitude towards risk. In this context, the evolution of commodities prices can only be understood by taking a broader perspective on the speculative mechanisms underlying financial markets in the era of financialization.

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Financial markets have undergone profound transformations over the past five years. In Figure 1, we observe that 2006 represents an important breaking point in the level of financial markets integration; the Lehman's demise in September 2008 has further increased market interconnectedness in a structural rather than transitory manner as the effect is still present more than two years after. There was an increased density of the cross-asset correlation network after 2006. Risky assets average correlation network of the period 2002-2006 was 23%, rising to 43% between 2007-2010.

Several factors have contributed to this dramatic evolution. On the one hand, lax monetary policy has favoured the recourse to the wholesale funding market to finance investment strategies. On the other hand, the use of short-term performance measures (like Return-on-Equity or Sharpe Ratio) to benchmark banks and hedge funds strategies has aligned financial players' positions. Both factors have aggravated players' interconnectedness, and this in turn has strengthened asset class integration.

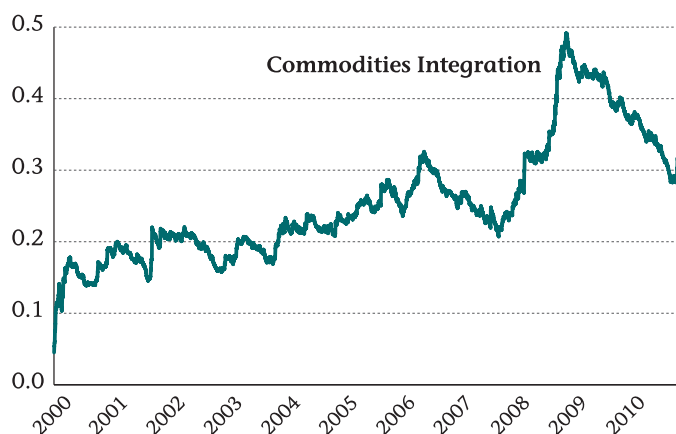
The wholesale funding market and the forced asset liquidations of distressed financial institutions serve indeed as canals of transmission of the shocks from one asset

class to another. An improvement in global financing conditions (e.g. caused by some important asset price rises improving bank balance sheets) allows fund managers to leverage further their positions in their other assets, boosting in turn their prices. Conversely, a deterioration of liquidity conditions (margin calls due to losses in a given asset class,

Figure 1: Financial & Commodities Integration

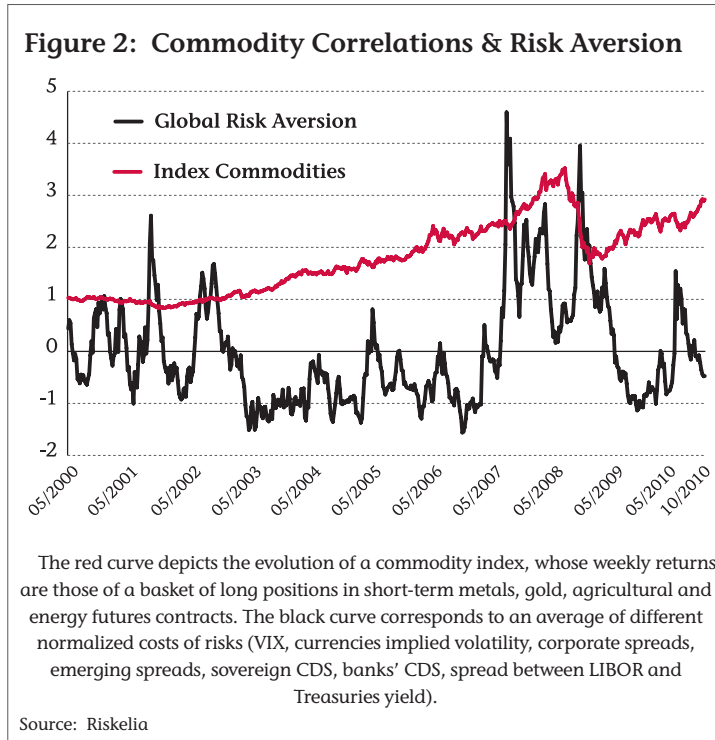


This indicator corresponds to the proportion of the global daily asset price variations (i.e. the equities, corporate credit, currencies, bonds, interest rates futures, and commodities' price variations) which can be explained by a common risk factor, viewed as the average dynamics of risky assets against bonds.



This indicator corresponds to the proportion of the global daily commodity price variations (i.e. base / precious metals, agriculture, energy) which can be explained by a common risk factor, viewed as the average dynamics of commodity prices.

Source: Riskelia



fund redemptions, refinancing issues in the wholesale funding market) prompts all players to deleverage their common positions in herds.

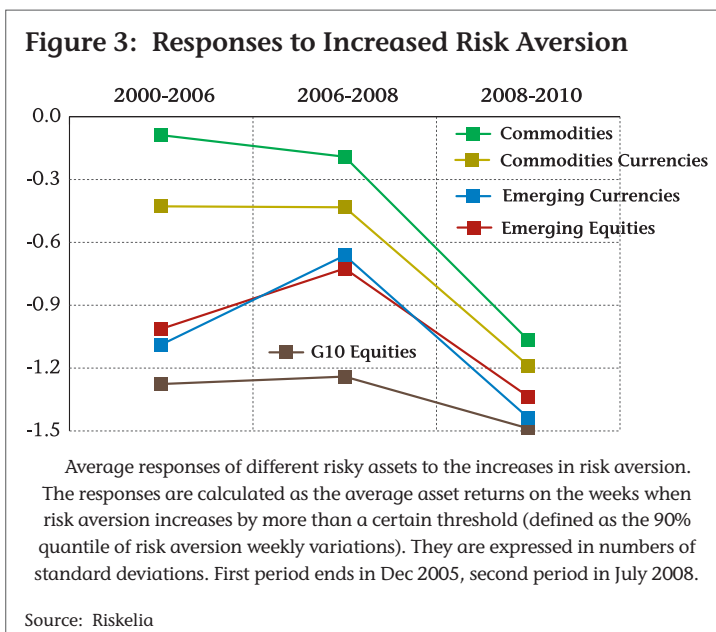
The systematization of VaR-based risk management systems is another factor inducing cross-asset class spillover effects: asset price turbulence (e.g. following a sharp fall in a given asset class) increases the estimated Value-at-Risk, hence commands liquidating the different assets in portfolio to comply with the pro-cyclical capital rules.

assets, that they finance using the low-yield US dollar as a funding currency; this results in a decline of the US currency and a parallel increase of emerging currencies, equities, corporate bonds and commodities. When, for any reason, risk aversion surges, the positions are rapidly unwounded, leading to a liquidity dry-up and in turn to a brutal drop in the price of risky assets at the benefit of the US dollar.

Commodities, even gold, have not been spared by this new trend. They are actually at the very core of the risk on/risk off switching machine. Figure 2 shows that, up to the massive deleveraging of August 2008, commodities have efficiently diversified the surges in risk aversion. The behaviour of the period August 2007-August 2008 is particularly interesting as commodities, contrary to equities, have been robust to the

liquidity dry up of August 2007 and to the developments of the subprime crisis up to the summer 2008.

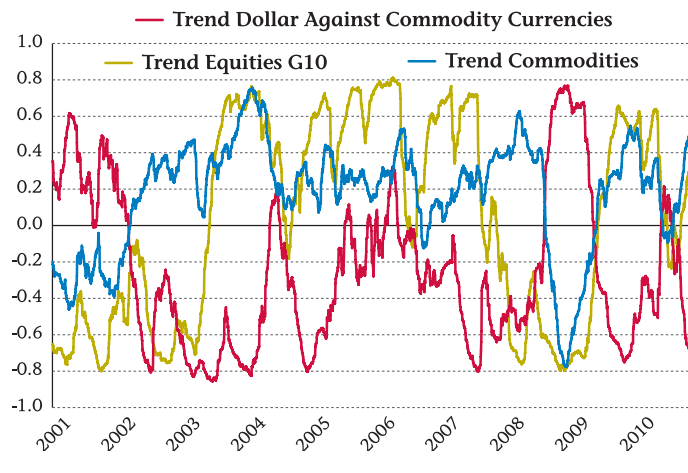
However, from August 2008 onwards, commodities prices closely respond to the evolution of risk aversion: periods of relief are bullish for commodities whereas periods of fear are detrimental to them, as they are to the rest of risky assets. Figure 3 confirms that commodities, whereas they played a useful diversifying role in portfolio of diversified assets up to 2008, now behave similarly to other risky assets in episodes of large scale deleveraging.



Risk On/Risk Off or Bubble On/Bubble Off?

Figure 5 provides a different perspective on the risk on/risk off paradigm, showing that markets behave in fact more like a

Figure 4: Momentum Investing



Momentum investing on commodities and equities and commodity currencies (Australian dollar, New Zealand dollar, Canadian dollar). The trend score represents the proportion of trending systems going long or short out of 50 trend following systems (breakout, Bollinger windows, regression of moving averages on time ...). A score of 1 (resp. -1) means that all the systems are long (resp. short).

Source: Riskelia

bubble on/bubble off alternator: in periods of risk appetite, positive momentums develop simultaneously on all asset classes, bubbles expand up to a point where some worries on euro zone banks' financial health or some rumours on a possible tightening of Chinese monetary policy resurface. Bubbles then pop and start again once investors recover their risk appetite.

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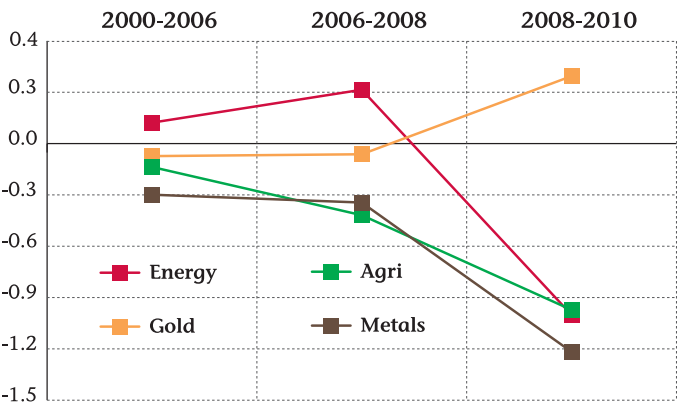
Two such cycles have been observed since May 2009 (where the trends of risky assets get back to zero): a first cycle stretches from May 2009 to July 2010, with the succession of a boom up to May 2010 and a deleveraging episode in May-June 2010, triggered by Spanish debt issues and the ensuing surge in banks' financing costs. The second cycle boom period starting in the summer 2010 has taken a halt following interest rate increases by China provoking a large unwinding of positions. The Irish debt crisis has had, so far, a limited impact on assets outside Europe, a replay of the "bear euro/bull commodities" story of the

period January April 2010 ... which ended in tears in May 2010. The coming weeks will tell if this is the beginning of the downward phase of the cycle or only a temporary break in the boom.

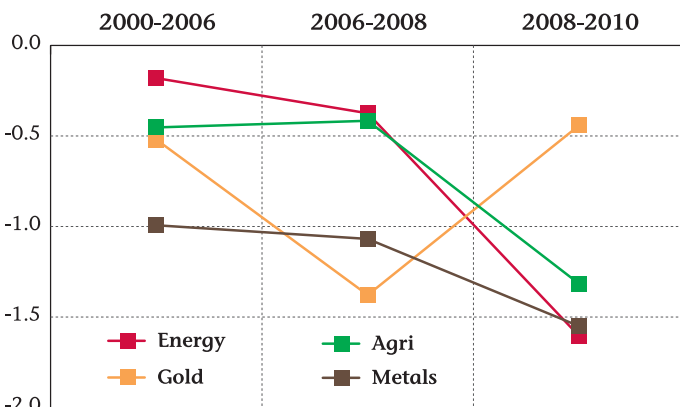
All Commodities Are Equal ... But Some More Than Others

We have so far examined the diversification properties as an asset class. It is worth investigating now the differences in the diversification behaviour of agricultural, metal and energy commodities. Commodities have undergone the same process of integration as global financial markets. During the period 2002-2006, which paves the way to the financialization of commodity markets, commodities are - without surprise - correlated within sectors but not across sectors. During the

Figure 5: Commodities Diversification



Average responses of different commodities sectors to the increases in risk aversion. The responses are calculated as the average asset returns on the weeks when risk aversion increases by more than a certain threshold (defined as the 90% quantile of risk aversion weekly variations). They are expressed in numbers of standard deviations. The first period ends Dec 2005, the second in Jul 2008.



Average responses of different commodities sectors to the large decreases in global risky assets. The responses are calculated as the average asset returns on the weeks when the average return of risky assets (average of the returns of commodities, emerging/commodity currencies against dollar, G10/emerging equities) is less than a certain threshold (defined as the 10% quantile of risky asset variations). They are expressed in numbers of standard deviations. The first period ends Dec 2005, the second in Jul 2008.

Source: Riskelia

period 2006-2010, where index investing gained momentum, commodities have started to form a coherent asset class with correlations not only within sectors but also across different sectors. This development is probably due to the behaviour of commodity index investors, who pour money into all commodities when they enter and sell all commodities at the same time when they withdraw.

Beyond classical correlation metrics, which only give insights on the behaviour in the core of the distribution, the differences in diversification power across commodities can be better grasped by the behaviour in periods of large scale market downturns. Figure 5 compares the diversification properties of different commodities sectors. Gold has the most versatile behaviour, alternating between a highly speculative mode in 2006-2008 and a status of diversifier if not haven in 2008-2010. The transformation of energy and agricultural commodities from diversifying to liquidity-sensitive assets is noticeable. As regards metals, their cyclical behaviour has kept increasing over the period.

Medium-Term Perspectives: Commodities, China & the Fed

The Fed intervention is an essential part of the problem. Since September 11, 2001, the Fed has been indeed feeding a liquidity doom loop. When liquidity dries up to a point where the integrity of the financial system is endangered, the Fed has no other choice than to lower its target interest rates and bail out failed systemic institutions. This creates the conditions for new asset price bubbles whose implosion may again lead to a large scale market dislocation and prompt a new Fed intervention, and so on and so forth.

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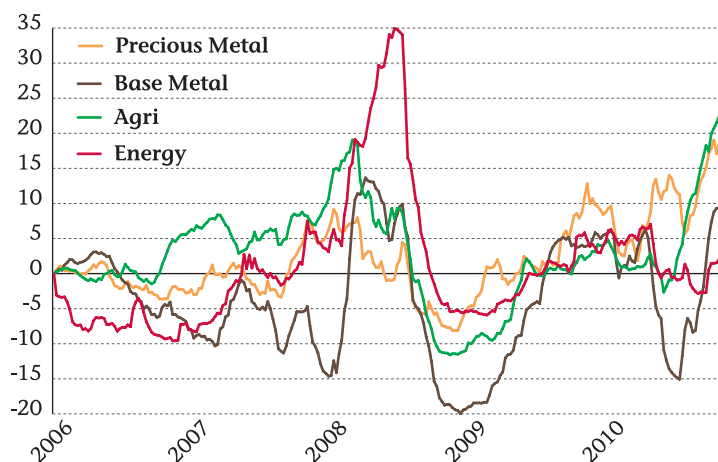
The recent QE II has provoked a maniac bullish move on base and precious metals (Figure 6) coordinated with an attack on the dollar. However, recent developments in China warn us that this new card stack is fragile and could well collapse. Commodities are indeed becoming the stake of a fierce central banks' war: while the People Bank of China tries to combat domestic inflation by tightening its monetary policy, the Fed is engaged in a resolute fight against deflation through its quantitative easing policy.

Footnote:

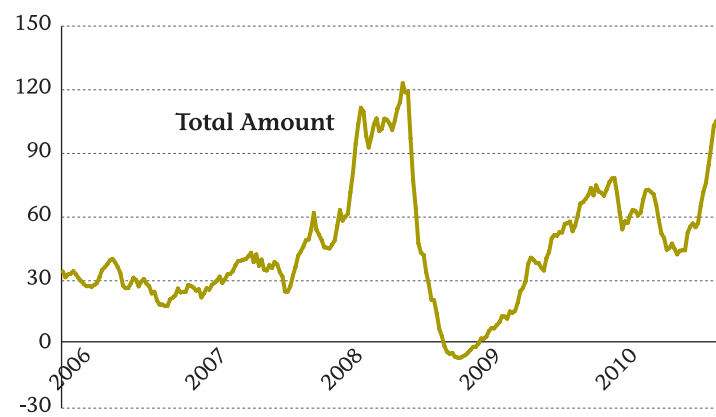
1. The CFTC disaggregated reports available for US agricultural futures markets reveal that long passive (index) investors hold between 20% and 50% of the long positions in commodity futures markets

Figure 6: Commodities & Hedge Funds

Net cumulative flows of hedge funds into commodities (US\$ Billions)



Net hedge funds commodities exposure (US\$ Billions)



Source: Riskelia

Commodities will certainly be the least diversifying asset if China defeats the Fed and a deflationary spiral sets off on risky asset prices. The other looming threat for commodities stems from European banks. The recent Irish debt crisis, although severely dampening eurozone banks' financing abilities, has so far spared commodities and equities outside the EU but, given the system interconnectedness, a repetition of the May 2010 market dislocation cannot be excluded. •

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