Metal Price Formation:

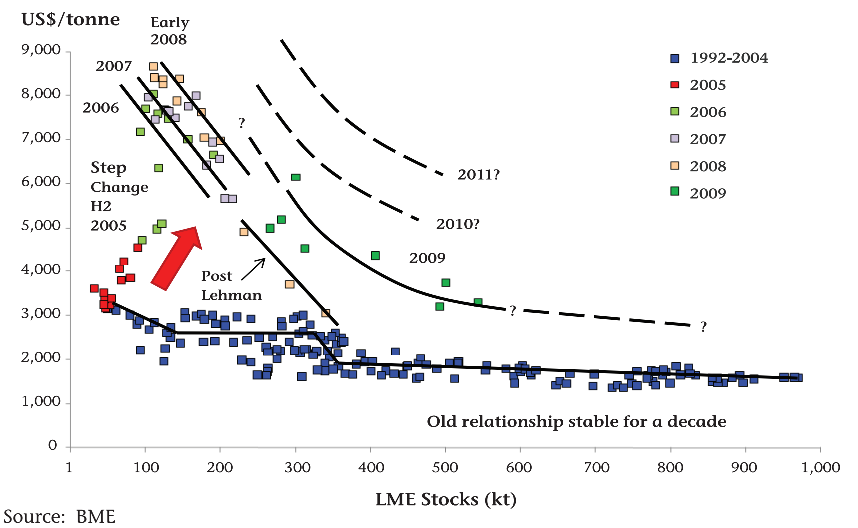
What if everything that we thought we knew was wrong?

By Peter Hollands

We – Bloomsbury Minerals Economics (BME) – have come to suspect that everything that the industry thought that it knew about price formation *was once correct* but is now quite wrong. If BME is right about what has changed, the implication would be that for many metals, both prices and physical stocks will be on an upwards trend for another decade or so and that many people will greatly underestimate prices and asset values over this period. However, the sting in the tail is that if price behaviour then reverts to its previous pattern, metal-producing industries could be blighted by mountains of excess stock.

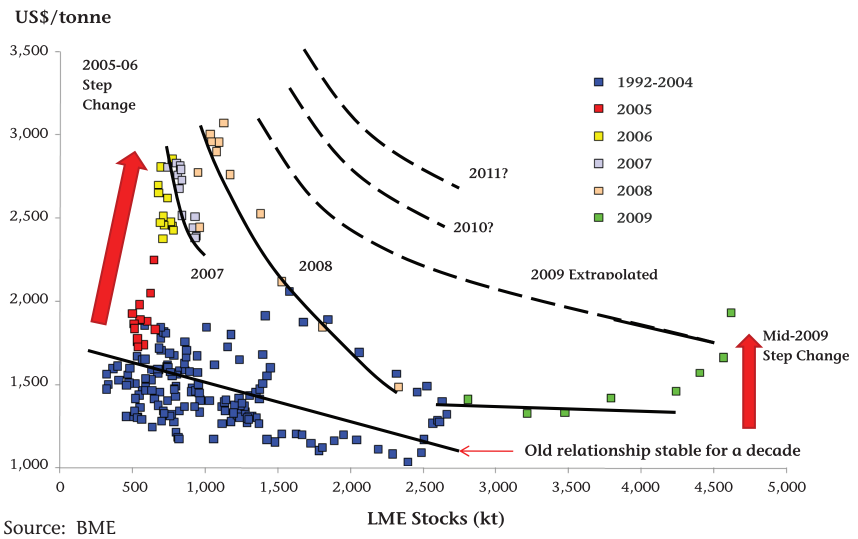
What did we all think that we knew about base metal price formation? For all of the LME metals, (and for many other types of exchange traded industrial or agricultural commodities) price equilibrium is established as a balance between buyers and sellers of futures. The starting point had a traditional asymmetry, derived from hedging behaviour. The volume of producer (and other) hedge shorts has traditionally always been larger than the volume of consumer hedge longs. Equilibrium thus used to be established when speculative longs exceeded speculative shorts by the same volume, to counter-balance the difference between producer (and other) hedge shorts and consumer hedge longs. *The equilibrium price was the price that brought just sufficient speculative longs into the market.*

Figure 1: Transformed – Copper Price vs. LME Stocks



Source: BME

Figure 2: Transformed – Aluminium Price vs. LME Stocks



Source: BME

However, around five years ago, BME believes that for metal after metal, that relationship reversed. During 2005, producer hedge shorts began to diminish in volume, while investment longs, in the form of Commodity Index Funds, materially entered the market. In addition, some major hedge funds bought and rolled forward large long positions that were essentially long-term investments based on the increasing urbanisation of China and the super-cycle theory. Quite suddenly (but at different times for different commodities) the balance of the futures market flipped and the sum of consumer hedge longs and investment longs started to exceed producer hedge shorts. From that point in time, *the equilibrium price of these commodities flipped to the price that brought just sufficient speculative shorts into the market.*

At one level, this change in market structure impacts the price dynamic, as it takes a higher price to draw in a net excess of speculative shorts over speculative longs. However, the underlying basis of contract fulfilment and the different risk profiles of speculative shorts and speculative longs creates additional impact. If a large-scale short position needs to be closed out in a market in which there is very little stock remaining, the holder of that short position may find that they are trying to buy back not just tonnes of a commodity that they do not yet own, but also quite possibly tonnes of a commodity that do not exist at all or do not exist in exchange deliverable form. This is a risk far beyond that of holding a speculative long position *and the result is that the psychology of speculative shorts is much more dramatically sensitive to low stock levels than is the psychology of speculative longs*.

The implications of many LME metals (and other commodities) flipping from being balanced by speculative longs to being balanced by speculative shorts, would be a step increase in price. In addition, the price dynamic would change, and the price to stock relationship would steepen at low stock levels. Looking at Figures 1-3, such step changes did take place; in the second half of 2005 for copper, in the second half of 2005 and through 2006 in aluminium; and in 2005 to 2006 for nickel. The trend for these metals was for increases both in prices and stocks. The link is that the price increase that results from the 'flipping' of the futures market equilibrium enablers from speculative longs to speculative shorts seems to have raised prices beyond physical market equilibrium to produce structural physical market surplus, a situation compounded by the current recession.

In the first three Figures, BME has indicated where it thinks stock to price relationships might be for the big three LME metals in 2010 and 2011. Onwards and upwards does seem to be the main conclusion (albeit with occasional setbacks!). Continuing changes in the price to stock relationship imply that traditional commodities analysts may continue *dramatically* to under-forecast prices. We say continue, as today's prices for some metals are almost double what many analysts had anticipated six to nine months ago, despite the continuing recession and the still depressing physical production-consumption balances (in surplus). Analysts may also have dramatically under-estimated the capital value of metal producing assets.

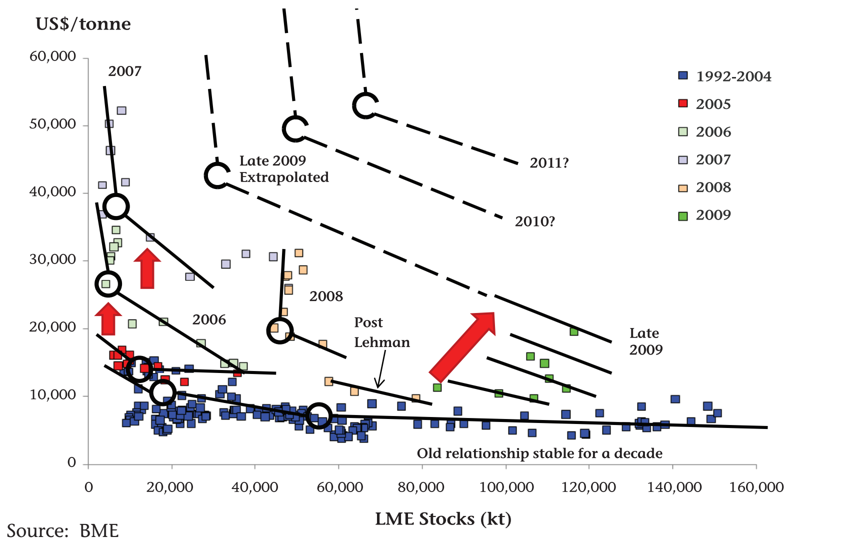
BME has charted changing price behaviour of gold as well, as a precious metal provides slightly different insights. For a decade, gold maintained a stable price relationship. A 10% change in the value of the dollar vis-a-vis the euro used to bring about a 9% change (in the opposite direction) in the dollar price of gold. However, all that changed dramatically in the second half of 2005. The gold price soared and entered into a much steeper relationship to exchange rates. From then on, a 10% fall in the dollar versus euro exchange rate appeared to correspond to a 25% increase in the dollar price of gold, a questionable and unstable relationship, if it were simply cause and effect (which it might not be). Thereafter, as Figure 4 shows, the slope of the curve has shifted so that a higher and higher gold price corresponds to any given dollar to euro exchange rate. BME ascribes the change to long only investment holdings in index funds and ETFs.

There are some subtleties to the relative power in the market of index fund longs and speculative shorts. While say one hundred tonnes of index fund long positions may have as a counterparty speculative shorts of one hundred tonnes, their influence on the market may be very unequal. If the market moves far enough against a speculative short, the position will be closed out. If the market moves against an investment index fund long, the position will not be closed out. Under some circumstances index fund longs might therefore be much more influential – tonne for tonne – than speculative positions (either short or long).

Not all 'open interest' in the market is equal.

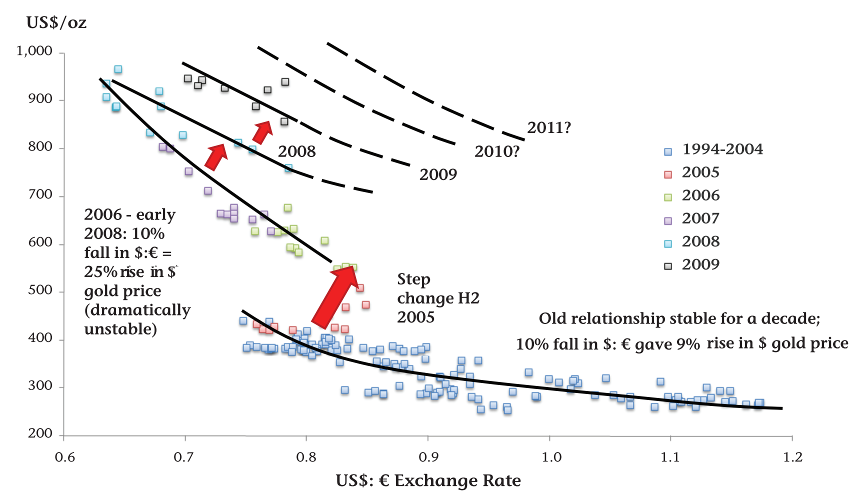
For all of the participants of the metals sector, the effect of 'Funds' has been material over the past four to five years. However, many, who hold tight their belief in physical fundamentals, dismiss this

Figure 3: Transformed – Nickel Price vs. LME Stocks



Source: BME

Figure 4: Transformed – Gold Price vs. Forex Relationship



Source: BME

In the markets for ***energy and foods***, changed price dynamics have attracted government and regulatory attention, in the USA most particularly. To BME's mind the focus has been misguided. There have been many attempts to prove or disprove that 'speculation' by index funds has shifted prices from some fundamental measure of value to create price bubbles. Many point out that whilst what they call 'speculative longs' (and the published data may indeed call them that) have increased, so have 'speculative shorts'. From this the consensus seems to infer merely an increase in total speculative activity, which the consensus generally considers helpful to price discovery. BME disagrees totally. A proportion (around 20%) of index funds is speculative, but most (around 80%) are not, they are long-term investments (mostly from pension funds), insensitive to price. Pension funds generally are raising the proportion of their assets invested in commodities from zero to 2% then around 5%, and are doing so *regardless of price*. These price-insensitive *investment* longs (wrongly equated to *speculative* longs in most American debates) which are rising on trend need to bring in ever more *speculative* shorts. And they can only do so at higher prices. Yes additional speculative shorts do match additional investment longs, but the result is not neutral, as much of the US debate seems to conclude, rather it drives equilibrium prices in futures markets higher, and will continue to do so until stocks rise sufficiently, or until a wave of producer hedging is stimulated.

effect as transitory. At BME, we believe that the emerging price dynamic is not transitory and that to ignore it is very dangerous. Understanding the nature and flow of fund movements and their effects on prices is now as important as keeping a tight grip on physical flows and stocks. This not only means keeping track of trends and events, such as increased or decreased long fund activity or the introduction of ETFs in base metals, but also in tracking the changing relationships between these factors and the price setting mechanism and translating these mid-term price expectations to enable buying, selling and investment decisions. BME has developed, and is continuing to refine, mathematical models of these price relationships.

The new price dynamics have not over-turned the forces of physical supply and demand. The newly crucial role of speculative shorts has raised the price of metals in the futures markets. For many base metals, the price is now higher than that needed for physical market equilibrium. The result will either be a trend increase in stocks, continuing until this takes prices back towards physical market equilibrium, or greatly increased levels of hedging by producers, or a combination of the two. •

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For those wishing to try to understand more deeply the impact of futures market investment on metals price behaviour, BME continues working intensively on research and analysis in this area. The resulting price models are available on license. Details from Robert Goldstein:

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