Commodity Price Boom: Is Financialisation a Factor?

Introduction

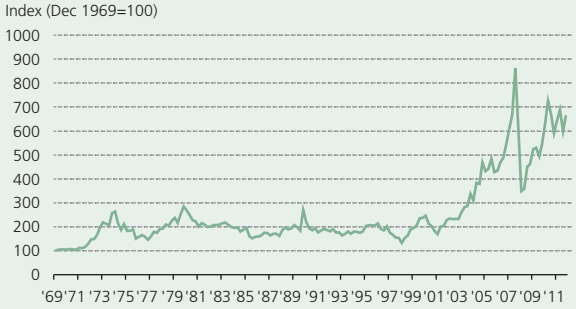
Following decades of relative stability, global commodity prices rose sharply during the recent decade and have experienced considerable volatility since then (Chart 1). This noticeable shift has generated considerable debate and polarised opinion on the drivers of commodity prices. Historically, the primary drivers of commodity prices have been fundamental changes in global demand and supply factors. Short-term shocks such as sudden disruptions in supply that create shortages globally have at times also affected commodity prices. These factors continue to be important. However, the acceleration and swings in commodity prices in recent years combined with the rapid proliferation of financial instruments indexed to commodity prices have raised questions on the role that financial market participants have in determining commodity prices. This article looks at both sides of the argument and leverages on available literature and studies to provide some insights on the extent that greater financialisation of commodities, through the creation of financial products based on commodities, drive the recent trends in commodity prices.

The role of demand and supply conditions in driving commodity prices

There is a general consensus that historically, fundamental factors such as changes in global demand and supply conditions have been important drivers of commodity prices. The recent acceleration in global commodity prices, specifically between 2004 and 2008, was no different.

Chart 1

Global Commodity Prices



Source: S&P GSCI Spot Index, Bloomberg

Following a sustained period of strong world economic growth, global oil consumption increased more rapidly between 2001 and 2007 than in the previous decades[1]. Most of this increase can be attributed to the rising demand from emerging economies (especially PR China and India), as a combination of steady income and population growth propelled the growth of economic activity. Emerging economies' energy and food consumption have been increasing steadily since 1996, growing at an annual rate of 3.0% and 1.7% respectively[2]. PR China's energy and food consumption alone grew at 7.1% and 1.8% over the same period. Conversely, in the advanced economies, energy consumption declined by 0.1% while food consumption grew at a modest rate of 0.8% during this period[3] (Charts 2 and 3).

The demand for agricultural inputs for the production of biofuels was another significant factor. The introduction of subsidies for biofuel production, especially in Australia, Canada, PR China, European Union and the US during the 2006-2009 period caused a diversion of some food commodities to the production of biofuels. As a result, biofuel production accounted for a significant share of global use of several food commodities – 20% for sugar cane, 9% for vegetable oil and coarse grains and 4% for sugar beet[4]. In fact, under the US law, 40% of the corn harvest must be used to make biofuel[5].

[1] Based on European Central Bank (2010), the annual average growth of global oil consumption was about 27% between 2001 and 2007, compared to 19% and 2% in 1991-2000 and 1980-1990 respectively.

[2] British Petroleum Statistical Review, FAO, OECD, and Bank Negara Malaysia calculations (Emerging economies include Brazil, PR China, India, Russian Federation, Bangladesh, Indonesia, Iran, Iraq, Kazakhstan, the Republic of Korea, Myanmar, Pakistan, the Phillipines, Saudi Arabia, Thailand, Turkey, Vietnam, Egypt, South Africa, Ethiopia, Nigeria, Mexico, Argentina, Chile, Colombia, Peru, Venezuala, Serbia and Ukraine).

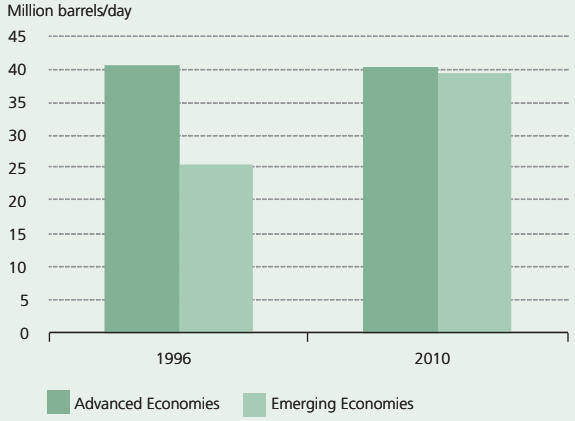
[3] British Petroleum Statistical Review, FAO, OECD, and Bank Negara Malaysia calculations (Advanced economies include Australia, Canada, European Union, Japan and the US).

[4] Policy report on Price Volatility in Food and Agricultural Markets contributed by FAO, IFAD, IMF, OECD, UNCTAD, WFD, World Bank, WTO, IFPRI and the UN HLTF.

[5] Energy Independence and Security Act of 2007.

Chart 2

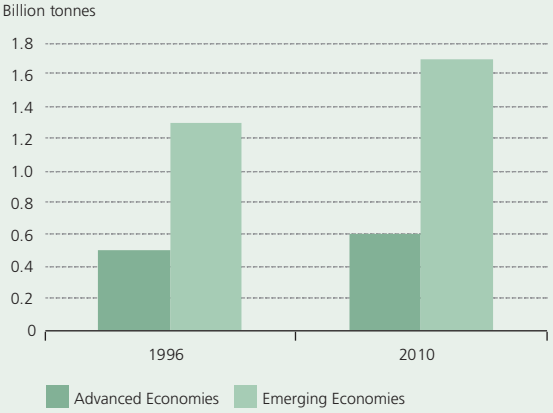
Global Energy (Crude Oil) Consumption



Source: British Petroleum Statistical Review

Chart 3

Global Food (Cereal) Consumption



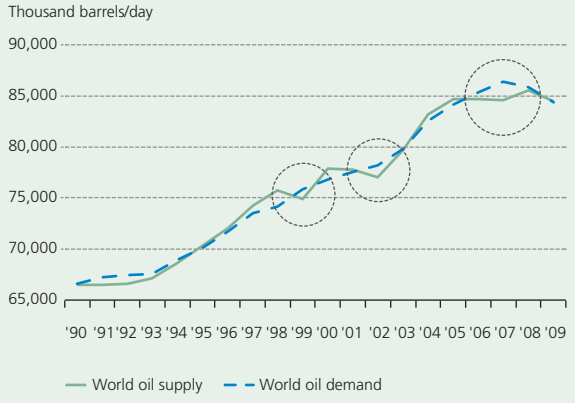
Source: Food and Agriculture Organisation of the United Nations (FAO), Organisation of Economic Co-operation and Development (OECD)

The rise in biofuel production also created pressure on prices of agricultural products which are not used in the production of biofuels, as more agricultural land was converted to produce crops needed for biofuel production.

The impact of rising demand for commodities on prices was more pronounced because supply could not keep up. For example, the sharp rise in global commodity prices occurred at a time when there was increasing tightness in global oil supply. World oil production began to stagnate between 2004 and 2009, mainly due to geological constraints in some of the large non-OPEC oil-producing countries. It has been viewed that the sudden slowdown in world crude oil production during this period contributed to the sharp rise in oil prices[6] (Chart 4).

Chart 4

World Oil Demand and Supply



Source: US Energy Information Administration (EIA)

Unexpected short-term supply disruptions from socio-political and weather-related events also caused surges in prices over this recent decade. Climatic factors, for example, were major contributors to the rise in prices of agricultural commodities between 2007 and 2010. In 2008, a drought in Australia, which is an important global supplier of wheat, led to a shortage of wheat supply in an already tight market, causing a sharp rise in prices[7]. More recently, in 2010, severe drought and wildfires in the Russian Federation destroyed one fifth of Russia's crop, which caused their annual wheat production to fall by 25 million tonnes. As a result, wheat prices rose sharply, from USD5 per bushel in August 2010 to a peak of USD9 per bushel in February 2011. The fall in supply and subsequent rise in prices were exacerbated by Russia's decision in August 2010 to ban grain exports for the remainder of that year.

[6] Kaufmann (2011), European Central Bank (2010).
[7] Wheat supply was already tight following consecutive droughts in Australia in 2006 and 2007 and a frost that damaged crops in the US in mid-2007.

Growing influence of non-commercial traders on the commodities market
While there is no doubt that the long-term trend of commodity prices can, for the most part, be attributed to fundamental shifts in global demand and supply of commodities, there are signs to suggest that financial market participants are increasingly becoming more influential in the commodity markets, relative to the traditional, commercial traders.

First, funds allocated to commodity derivatives have risen substantially since 2004. The increasing interest in the commodities market by non-commercial traders[8] has led to a more than six-fold increase in the outstanding futures and options contracts on commodity exchanges, from roughly 10 million contracts in 1999 to over 60 million contracts in 2011[9]. The low interest rate environment, which triggered investors to search for higher returns in non-traditional asset classes, and financial innovation allowing a wider base of investors to have exposure to the commodities market, are cited as reasons behind the rise and the attractiveness of commodities as investment alternatives.

Second, there has been unprecedented growth in index investment[10]. A major element behind the recent inflow of financial investments into commodities markets is the emergence of commodity index investors. The rise in index investment is substantial, with the estimated assets allocated to commodity index trading strategies rising from USD15 billion in 2003 to USD210 billion in 2012[11]. Collectively, index investors make up a significant portion of non-commercial participants in commodity markets. Their unique motivation and specific investment strategy[12], which could at times be detached from the fundamentals of the underlying commodities, coupled with the sheer volume of their investments have led many market observers to conclude that the participation of index investors could exert considerable influence on commodity price movements.

Third, non-commercial trades (speculators and index investors) outnumber commercial commodity trades. Financial market transactions currently overwhelm actual trading of physical commodities. A recent report[13] suggests that non-commercial trades now account for at least 64% of all recorded oil trading positions. In the past, non-commercial positions in oil trading usually accounted for 30% of total trades[14].

Fourth, there is a strong co-movement between speculative net buying and selling activities in the commodity futures market and commodity prices. To some extent, the net speculative positions of commodity futures contracts, which nets off the non-commercial traders' 'buy' and 'sell' orders, can be a reflection of investor sentiments and their views on the future[15].

[8] Agents in the commodities market are typically categorised into commercial and non-commercial traders. The United States Commodity Futures Trading Commissions (CFTC) defines commercial traders as those that either produce or consume physical commodities while non-commercial traders are purchasers of commodity futures that do not operate in the physical market and do not have exposure to the prices of the physical commodities. The non-commercial traders include not only the speculators, who can buy and sell commodity futures contracts based on their views, but also the index investors, who passively hold commodity futures position as a component of a diversified portfolio.

[9] Bank for International Settlements (2011).

[10] Index investment is no different from a mutual fund, whereby the funds invested in the commodity index are used to purchase the basket of commodities specified by the index, which explains the reason why index investors have only buy (long) positions in the commodities market.

[11] US CFTC's Index Investing Data

[12] Given their motivations to hold commodities as part of a diversification strategy, index investors may continue to maintain their commodity holdings regardless of market conditions or price movements. This provides artificial demand in the market. On the other hand, if investors decide to withdraw their investments due to reasons unrelated to the fundamentals of the underlying commodities, index managers in such indices will have no choice but to liquidate their positions, regardless of their outlook for the commodities. In addition, the rigidity of the weights attached to each commodity in an index may require the buying and selling of certain commodities to maintain the original allocation. Again, these transactions may not necessarily reflect the fundamental factors driving the commodities underlying the index.

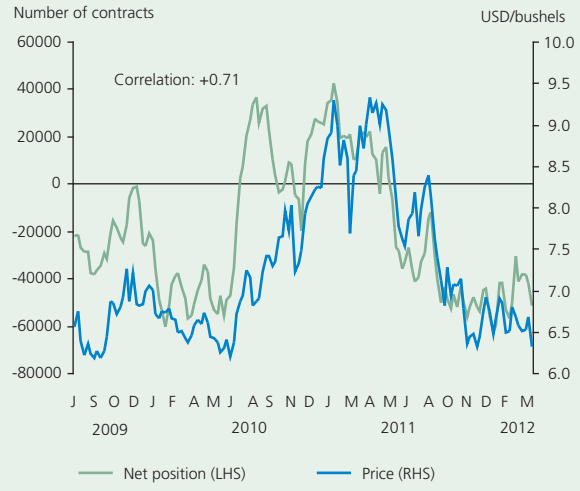
[13] US CFTC Commitment of Traders Report 2012

[14] Hall (2012)

[15] Typically, in the commodities market, there are buyers and sellers of the futures contracts of the same commodity. The buyers' and sellers' orders, when 'netted out', becomes the net speculative position. When there are more buy orders relative to sell orders, there is a net speculative long position and when there are more sell orders compared to buy orders, there is a net speculative short position.

Chart 5

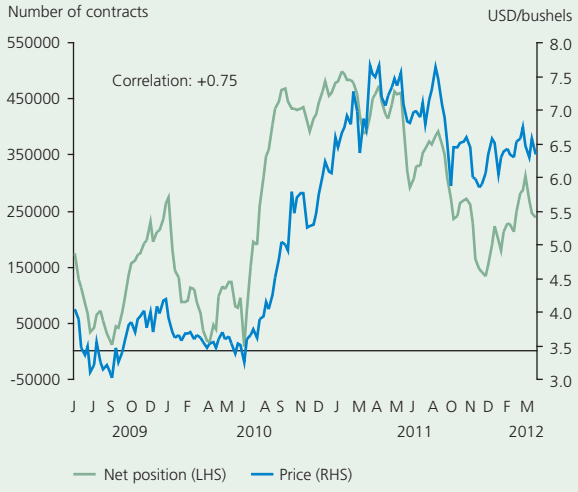
Net Speculative Positions on Wheat Futures Contracts and Impact on Price



Source: US Commodity Futures Trading Commission (CFTC)

Chart 6

Net Speculative Positions on Corn Futures Contracts and Impact on Price



Source: US Commodity Futures Trading Commission (CFTC)

The high degree of co-movement between net speculative positions and spot commodity prices provides some indication of the influence speculators have on commodity price movements (Charts 5 and 6).

Fifth, there is rising co-movement between global commodity indices and equity indices. Prior to 2004, movements in the commodity and equity markets appeared uncorrelated. Commodity prices were mostly influenced by the fundamentals behind each commodity while the equity market was more susceptible to swings in the risk appetite of investors. Since 2004, however, the increased participation of financial investors meant that global commodity markets became more sensitive to portfolio rebalancing by financial investors. This caused movements in commodity prices to be more correlated with prices in other asset markets, including the equity markets. Between the period 2006 and 2012, the correlation between commodity[16] and equity[17] indices rose substantially, from almost zero in 2004 to 0.6 in 2012[18].

The extent of influence of financialisation

Given the growing consensus that both fundamental and financial factors do, to varying degrees, have a role in influencing commodity price movements, research and studies have naturally turned to assessing their relative importance. The common conclusion from existing literature is that while global demand continues to account for the long-run trend of commodity prices, speculative investment flows into commodity markets amplify the movements in commodity prices[19]. Notwithstanding the different categorisation of financial participants in the commodities market and the varying methodologies applied, empirical evidence suggests that, on balance, fundamental factors appear to matter more in explaining commodity price trends. Financialisation of commodities, however, can and did exacerbate the boom-bust cycle in commodity prices in the short-run. More specifically, a range of studies found that speculative activities amplified commodity price movements by between 15-28% (Table 1).

[16] S&P GSCI Spot Index
[17] S&P 500
[18] Bank Negara Malaysia calculations.
[19] While some studies attribute speculative activities to all non-commercial investors and quantify their impact as a whole, others disaggregate the non-commercials to distinguish the impact of only the index investors given the nature of their investment strategies and the significant amount of their investments.

Table 1

Summary of Studies That Have Tried to Quantify the Impact of Speculative Activities in the Commodities Market

Studies	Impact (%)
Gilbert (2009)	~15
Van der Molen (2009)	26.8
Khan (2009)	19-28*
United Nations Conference on Trade and Development (2011)	20-25
Pollin and Heintz (2011)	26.5*
Davies (2011)	25*
Lombardi and Robays (2011)	15
Lenzner (2012)	22*
Juvenal and Petrella (2012)	~15

* Includes Bank Negara Malaysia calculations

Conclusion

The rapid increase and sharp swings in commodity prices in recent years have led to a reassessment on the drivers of commodity prices. While there is increased acceptance on the role that the financialisation of commodities has in driving commodity prices, its importance relative to fundamental factors remains an open question. Certainly, the impact that non-commercial traders have on global commodity price movements and the dynamics behind them needs to be better understood. An area of research interest which is largely absent in the existing literature is the relationship between monetary policy and commodity prices. Among key questions of interest are the extent to which highly accommodative monetary policy globally in recent years has contributed to the financialisation of commodities and hence commodity price swings, the impact on global food prices and the supply for human consumption, and the efficacy of monetary policy in addressing supply-related inflation, especially in highly-open emerging economies.

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