Box 4

FINANCIALISATION OF COMMODITIES

Surging and volatile commodity prices have been a concern for policy-makers over the last few years from many different angles. One such angle has been the "financialisation of commodity markets", whereby commodity markets would be increasingly influenced by agents with limited interest in hedging physical exposures, but rather an interest in commodities as an asset class. One particular financial stability risk stems from the potential for concentrated exposures and unexpected spillovers among markets that create pockets of instability that may affect individual financial institutions and could have repercussions on the wider financial system. This box outlines the main aspects of this debate, first describing the basic premise, followed by an assessment of the literature, and the reporting of some illustrative results of an empirical model designed to capture time-varying correlations of selected commodities with financial market developments.

In considering the basic mechanics of the financialisation of commodities, futures markets play an integral role. In addition to *commercial traders*, who mainly seek to hedge an underlying exposure to commodity risk, two other groups are noteworthy given their interest in commodities predominantly as an asset class. This group includes both *non-commercial agents*, who actively seek exposure to commodity price fluctuations in an attempt to achieve returns, and *index-related traders*, i.e. passive investors aiming to replicate and hold a diversified commodity index as part of their asset allocation strategy, so as to benefit from its low correlation with financial asset returns. Index investors have grown in numbers over the last years as the creation of exchange-traded commodity index funds has made it possible for investors to channel their money into commodity funds, which in turn place them in a defined basket of commodity futures or aim to track a given index.

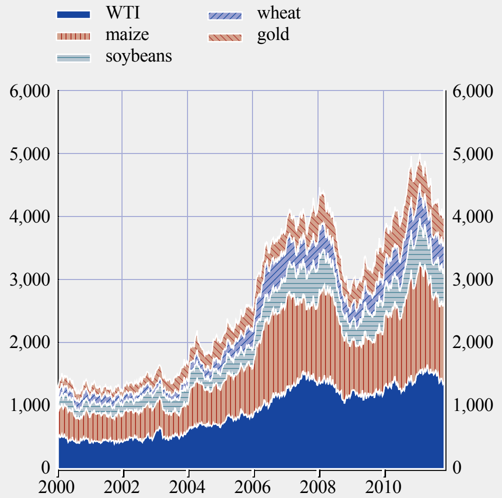
Over the past decade or so, commodity prices have shown a fairly steady parallel rise in concert with signs of increased financial activity of such investors (see Chart A). Some commentators have argued that the financialisation process is in part responsible for high and volatile commodity prices, as well as for the increase in the return correlation between commodities and equity indices, which has historically been very low. In addition, the concomitant creation of financial investment products related to commodities was seen as strengthening the linkages between the two sets of assets.

The academic literature on the topic of index investing and commodity prices has reached mixed conclusions focusing in two different directions. First, many studies have examined the extent to which financialisation has affected the price formation mechanism, in terms of both direction and volatility. Stoll and Whaley (2010)[1] reported that index investment does not cause changes in futures prices, while Irwin and Sanders (2010)[2] found that it does not increase volatility. On the

1 H. Stoll and R. Whaley, "Commodity index investing and commodity futures prices", *Journal of Applied Finance*, 20, pp. 7-46, 2010.
2 S. H. Irwin and D. R. Sanders, "The impact of index and swap funds on commodity futures markets", *OECD Food, Agriculture and Fisheries Working Paper Series*, No 27, 2010.

Chart A Open interest in selected commodity futures

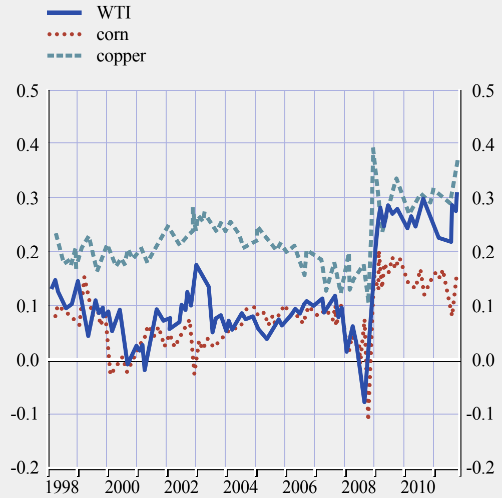
(Jan. 2000 – Nov. 2011; thousands of contracts)



Source: Commodity Futures Trading Commission.
Note: WTI stands for West Texas Intermediate oil.

Chart B Correlations between selected commodity returns and the US financial stock market index

(Jan.1998 – Nov. 2011)



Sources: Bloomberg, Thomson Reuters, Commodity Futures Trading Commission and ECB calculations.
Note: Based on a multivariate GARCH model.

other hand, Mou (2010)[3] found that index funds affect futures prices around rollover dates and Singleton (2011)[4] reached the conclusion that index investment affects prices beyond the short term. Second, a different strand of literature studies the extent to which financialisation has pushed up correlations of commodities with other asset classes. Empirical findings also diverge: Büyüksahin and Robe (2011)[5] concluded that the increase in commodity correlation is to some extent caused by hedge funds, contrary to the findings of Tang and Xiong (2010)[6] who claim that it is caused by index investment.

Following the collapse of Lehman Brothers, the correlations of commodities with other asset classes increased markedly (see Chart B) and have remained at heightened levels since then. This can be attributed to both commodity and equity prices having become more sensitive to investors' risk aversion and to news about the global economy rather than to sector-specific fundamentals.

All in all, robust evidence to support the hypothesis that serious financial stability consequences follow from the financialisation of commodity prices remains scarce. That said, it has to be borne in mind that the structure of the market itself (the sources and demand for major commodities) and the structure of the market players (the increased share of non-commercial market participants in commodities markets) has significantly changed during recent years. This requires an attentive surveillance of the developments in commodities markets in order to ensure the proper functioning of these markets.

3 Y. Mou, "Limits to arbitrage and commodity index investment: front-running the Goldman roll", working paper, Columbia Business School, 2010.
4 K. J. Singleton, "Investor flows and the 2008 boom/bust in oil prices", working paper, Stanford Graduate School of Business, 2011.
5 B. Büyüksahin and M. Robe, "Does 'paper oil' matter?", working paper, Johns Hopkins University, 2011.
6 K. Tang and W. Xiong, "Index investing and the financialization of commodities", working paper, Princeton University, 2011.