



# Do long-short speculators destabilize commodity futures markets? <sup>☆</sup>



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## ABSTRACT

This paper contributes to the debate on the effects of the financialization of commodity futures markets by studying the conditional volatility of long–short commodity portfolios and their conditional correlations with traditional assets (stocks and bonds). Using several groups of trading strategies that hedge fund managers are known to implement, we show that long–short speculators do not cause changes in the volatilities of the portfolios they hold or changes in the conditional correlations between these portfolios and traditional assets. Thus calls for increased regulation of commodity money managers are, at this stage, premature. Additionally, long–short speculators can take comfort in knowing that their trades do not alter the risk and diversification properties of their portfolios.

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## 1. Introduction

The surge in commodity investing and its potential impact on prices (or the so-called “financialization” of commodity markets) has been the subject of an intense debate, both in the political and regulatory arenas and in academic circles. Commodity futures became increasingly desired by investors due to their equity-like returns, inflation hedging and diversification benefits (Erb & Harvey, 2006; Gorton & Rouwenhorst, 2006), resulting in substantial increases in trading volumes and open interest (Irwin & Sanders, 2012). It has been reported that volatility was greater in the late 2000s than in the past and this may increase hedging margin call costs and diminish the willingness of commodity purchasers to engage in forward purchases, thereby reducing farmers' chances of ensuring price certainty (Hailu & Weersink, 2010).

But did commodity investors damage the price-setting mechanism, driving commodity prices away from their fundamentals? This view has been repeatedly expressed by politicians and in the media. The 2009 Staff Report by the U.S. Senate Permanent Subcommittee on

Investigation argues in favor of this proposition, stating that a rise in the long positions of commodity index traders (CITs) caused a commodity price bubble.<sup>1</sup> In April 2012, Finance Watch further argues that excessive speculation and its positive impact on prices led to food riots and social unrest, preventing the risk transfer that usually takes place in commodity futures markets between hedgers and speculators.<sup>2</sup> In an attempt to curb speculation and volatility from occurring in the future, Finance Watch calls for greater transparency in hedgers' and speculators' positions, the definition of stringent position limits for speculators and a ban on commodity index instruments.

This article adds to the debate on the financialization of commodity futures markets by using a novel approach to testing whether long–short commodity investors have an impact on the volatility of the portfolios they hold and on the correlation between their long–short commodity portfolios and traditional assets (S&P500 composite index and Barclays Capital US Aggregate bond index). The large majority of research to examine the impact of speculators on commodity markets focuses on percentage price changes, rather than volatility or cross-market correlations. In addition, while the literature for the most part centers on the trade impact of net-long CITs, we study the role of long–

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<sup>1</sup> The report entitled “Excessive Speculation in the Wheat Market” is available at <http://www.hsgac.senate.gov/subcommittees/investigations/reports>.

<sup>2</sup> Lallemand, 2012, Investing not betting, Making financial markets serve society, A position paper on MiFID 2/MiFIR, April.

short traders (such as commodity trading advisors (CTAs) or more generally hedge funds), a topic that is solely addressed in Büyüksahin and Robe (2010) and Brunetti, Büyüksahin, and Harris (2011). The novelty of our approach relative to these two articles comes from the fact that we use a battery of strategies that hedge funds are known to follow (such as momentum and term structure investing) and then test the proposition that the trading of these long–short speculators Granger-causes (see Granger, 1969) a change in the volatility of their portfolios or a change in cross-market correlations. To our knowledge we are the first to examine such strategies in the context of their impact on commodity market price variability and correlations. Another advantage of our approach is that, relative to previous studies, it enables us to employ a much larger cross section over a longer time span. We are also able to test the hypothesis that long–short investors may be destroying through their actions the very risk diversification they sought out in the first instance. A finding that long–short commodity traders increase volatility and cross-market linkages could also legitimate popular claims for increased regulation.

Our results indicate that speculators have no significant impact on volatility or cross-market correlation. This conclusion holds irrespective of whether speculators are labeled as “non-commercial” in the CFTC (Commodity Futures Trading Commission) Commitment of Traders (COT) report or “professional money managers” (i.e., CTAs, commodity pool operators (CPOs) and hedge funds) in the CFTC disaggregated COT report. It follows that calls for increased regulation of commodity money managers are, at this stage, premature: they are unlikely to prevent volatility from rising again in the future. Our results also indicate that long–short managers can take comfort in the knowledge that their trades do not distort volatility and correlation and thus do not alter the risk and diversification properties of their portfolios.

The remainder of this paper is structured as follows. Section 2 sets up the debate on the financialization of commodity futures markets from an academic perspective. Section 3 presents the dataset we use. Section 4 introduces the methodologies employed to capture the returns earned by long–short speculators in commodity futures markets, the conditional volatility of their portfolios and the conditional correlation between their returns and traditional assets. Section 4 also highlights the methodology used to test whether changes in the positions of speculators Granger-cause changes in conditional volatility or in conditional correlations. Section 5 discusses our results and finally section 6 concludes.

## 2. Where does the debate stand in academic circles?

The academic debate as to whether the financialization of commodity markets is responsible for the observed volatility of commodity prices has been intense and is still on-going. The discussion centers around the potentially destabilizing role of *net-long* CITs and *long–short* speculators (such as CTAs) on commodity futures prices.

The evidence from the perspective of CITs is mixed. On one side, using various approaches including Granger-causality tests, Irwin, Sanders, and Merrin (2009) and Stoll and Whaley (2010) show that CITs had no role in the price rises observed in 2006–2008. Sanders and Irwin (2011a) further argue that in four grain futures markets, the rise in the participation of index traders took place two to three years before the price bubble observed in 2007–2008, a result that clears CITs of any accountability for the bubble. Likewise, Sanders and Irwin (2011b) conclude that swap dealers, who are considered as CITs, far from destabilizing markets, Granger-cause *decreases* in market volatility. Gilbert and Morgan (2010) further argue that there is evidence that the prices of foodstuffs actually became more stable during the 1990s and 2000s at the same time as the activities of CITs increased. According to this literature, rather than CITs, it is

fundamentals and supply and demand imbalances that are to blame for the price bubble.<sup>3</sup>

On the other hand, there are several noteworthy studies arguing that CITs did cause the 2007–2008 price spike by increasing correlations across indexed commodity futures. Gilbert (2010), in particular, argues that index activity was driven in part by a belief that economic growth in China would increase demand for numerous commodities, and in part by a desire to hedge falls in the US dollar. Likewise, Tang and Xiong (2012) see index traders as more influential on price determination than other factors such as a weakening in the US dollar, an increase in the demand for indexed commodities, the financial crisis that followed Lehman Brothers' demise, a sudden rise in inflation or the widespread use of biofuel. As a result of the financialization of commodity markets via commodity index funds, the prices of indexed commodities rose in tandem, causing an increase in their correlations. Relatedly, Cheng, Kirilenko, and Xiong (2012) argue that in times of distress, CITs, by reducing their net long exposures, fail to provide the insurance that short hedgers demand.

Another strand of research – which is perhaps more related to our article – focuses on whether *long–short* investors are to blame for the observed price changes. Here too, the conclusions thus far are rather inconclusive. Tests for excessive speculation support the idea that speculation rose merely as a response to a rise in hedging demand (Sanders, Irwin, & Merrin, 2010; Till, 2009) and thus that long–short speculators are not to blame for excessive price impact. Likewise, Brunetti et al. (2011) test whether changes in the net positions of hedge funds in three commodities (corn, crude oil and natural gas) Granger-cause volatility. They conclude that such funds, far from destabilizing markets, actually *decrease* volatility. Thus these articles refute the idea that long–short traders have harmful impact. Rather, they act as liquidity and insurance providers, being beneficial to markets overall. This conclusion ought to be viewed with caution, however, in the light of Büyüksahin and Robe (2010), who find hedge funds active in both equity and commodity futures markets responsible for the rise in conditional correlations between commodity and stock indices observed since 2008.

Therefore, the empirical evidence on whether long–short speculators have a destabilizing role is mixed. It is also not obvious from a theoretical perspective whether speculators move prices away from equilibrium. The traditional view, as put forward by Friedman (1953), is that speculators (or rational news traders) stabilize prices: by buying low and selling high, they bring prices closer to fundamentals. Yet, De Long, Shleifer, Summers, and Waldmann (1990) bring forward a theoretical model showing that rational news traders, by anticipating the price impact of trend followers (or positive feedback traders), actually end up destabilizing markets. In their model, rational speculators, in anticipation of the forthcoming buy/sell orders of trend followers, increase their long/short positions today in the hope of earning higher returns tomorrow. As a result, far from stabilizing prices, they end up setting price trends and deterring short-term prices away from fundamentals. It is thus not obvious from a theoretical standpoint whether long–short speculators stabilize markets.

Like Büyüksahin and Robe (2010) and Brunetti et al. (2011), this paper tests whether long–short speculators destabilize commodity futures markets by increasing volatility or cross-market correlations. Unlike the aforementioned articles, however, we use a novel approach that consists of first, modeling the returns that long–short speculators earn using a battery of strategies that they are known to follow and then, explicitly testing whether their trading has any impact on the

<sup>3</sup> For example, Hamilton (2009) blames the stagnation in global supply and the rapid growth in global demand for the oil price shock of 2007–2008. Kormiotis (2009) relates the sharp rise in spot metal prices in 2003–2004 to economic fundamentals such as rising demand and consumption or falling production and inventories. Calvo-Gonzalez, Shankar, and Trezzi (2010), examining a very long panel of commodity prices back to the end of the eighteenth century, argue that price volatility has risen and fallen enormously over the past century or so along with changes in fundamentals.

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