



**FINANCIAL INVESTMENT IN COMMODITIES MARKETS:
POTENTIAL IMPACT ON COMMODITY PRICES & VOLATILITY**

IIF Commodities Task Force Submission to the G20

September 2011

Preface

Amidst increasing concerns about global growth prospects and financial market volatility, commodity prices continue to be a focus for policymakers. The French G-20 presidency has made this topic a priority, emphasizing the potential role of financial investment in driving trends in commodity markets. With commodity prices closely linked to inflation trends, particularly in low-income countries where food security is a vital issue, the search for policy tools to combat volatility and upward price pressure has intensified.

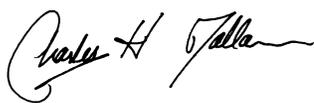
To provide policymakers with private-sector views on these issues, the Institute was asked by the G-20 leadership to bring together senior market practitioners to add their perspectives to the debate. The IIF Commodities Task Force, including market professionals, academics and other private-sector researchers, was convened in February 2011; the productive and robust discussions held among members of this Task Force are reflected in this position paper. We would like to highlight the following key points:

1. A review of the academic literature and studies by official sector bodies suggests that despite periods of correlation, there is **little evidence of a causal link between financial investment in commodities and trends in commodity prices and volatility**.
2. These same studies broadly support the well-established view that **commodity price trends and volatility continue to be driven far more by market fundamentals**. In recent years, **rising demand from emerging markets** has contributed to the trajectory of commodity prices and volatility, exacerbated by periodic or structural supply constraints (e.g. impact of inclement weather, demand for biofuels, infrastructure bottlenecks, etc.).
3. Financial investment (sometimes referred to as “speculation”) does not take place in the absence of fundamentals: rather, it **allows new information in spot and futures commodity markets, such as changes in fundamental supply and demand-related factors, to be processed**. Constraints on financial investment could dampen price signals to suppliers—and hence the supply response.
4. It is important to bear in mind that **financial investment is an integral part of commodities trading**.
5. Measures to enhance the transparency of data provision to regulators on prices, trading activity, and factors affecting the supply and demand of individual commodities are broadly welcomed.
6. The potential impact of a tighter regulatory environment should be carefully scrutinized, as **additional regulation (e.g. position limits) may have unintended and damaging consequences**, including impairment of market liquidity and efficiency and market distortions, as well as a shift of trading activity to unregulated markets and/or physical commodity markets.
7. By far the most effective way to tackle the problem of excessive commodity price volatility and upward pressure on prices is to **directly address underlying supply/demand imbalances**. Measures should include steps to alleviate supply constraints, e.g. removing restrictions on the supply or export of key commodities, or investment in productive capacity.

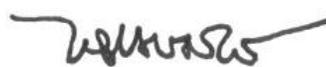
From the discussions of the IIF Commodities Task Force, it was clear that market participants fully acknowledge policymakers’ challenges in mitigating the impact of rising commodity prices and volatility. However, it is essential to strike the right balance, thereby safeguarding the provision of efficient trading and liquidity in commodities markets.

Best regards,

Sincerely,



Charles Dallara
Managing Director



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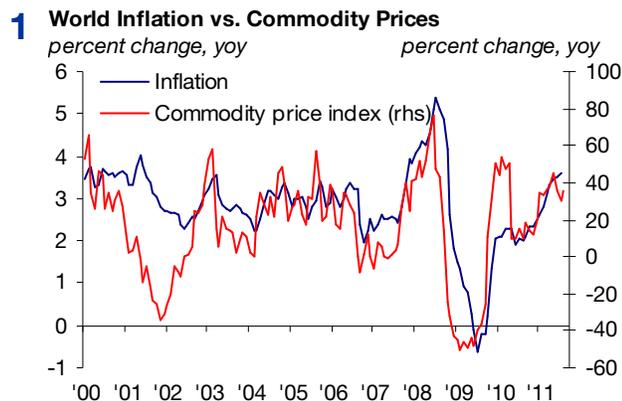
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Executive Summary

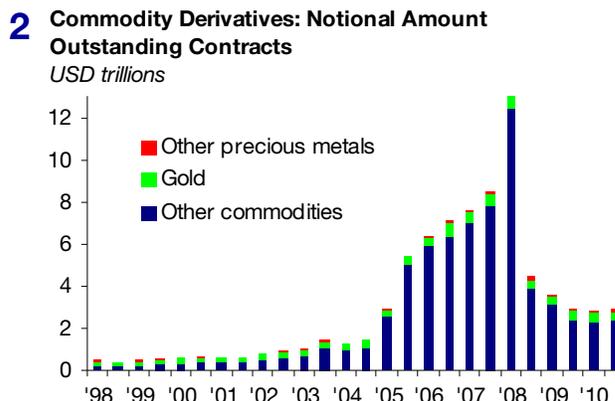
- Over the past year, debate over the role of financial investment in commodity markets—sometimes referred to as “speculation”—has heated up. Flows to commodity funds—and commodity prices—have surged in recent years. Concerned about the impact of higher commodity prices on inflation (Chart 1), as well as potential hardship for food consumers in low-income countries, policymakers have warned that they intend to take action to address increasing prices and volatility.
- In his role as the 2011 G-20 chair, **President Sarkozy has recently reiterated previous calls for more transparency and tighter regulation**—including position limits on commodity derivatives trading. There is, however, an evident divergence of views within the G-20 on the need for enhanced regulation. In the U.S., regulatory developments include proposals for position limits by the Commodity Futures Trading Commission (CFTC), under the expanded authority of the Dodd-Frank Act; a vote on implementation is expected in autumn 2011.
- There is **little convincing evidence linking financial investment with trends in commodity prices and volatility**. While there have been periods of correlation (sometimes attributed to “herding” behavior) in recent years, including among previously uncorrelated markets, researchers have not documented a clear *causal* link between financial investment and commodity prices.
- However, the strong link between commodity prices and fundamental supply and demand factors is indisputable. **Higher commodity prices and volatility should be seen in the context of a steady increase in demand (mainly from emerging markets) and periodic supply constraints**.
- **Financial investment is an integral part of commodity trading**. Commercial market participants who need to hedge their exposures (e.g., heavy users of commodities

such as airlines or food manufacturers) will tend to hold net short positions; on the other side of the transaction, financial investors such as commodity index traders generally take long-only positions as a hedge against inflation and for portfolio diversification. Both sides thus benefit—**financial investment provides essential market liquidity and counterbalancing positions**. The ability to hedge against inflation and invest in commodities as part of a diversified portfolio reflects the social utility of financial investment in commodities, and is of particular value for long-term investment vehicles, such as retirement plans.

- **Speculation** does not take place in the absence of fundamentals: it facilitates **the processing of new information** in spot and futures commodity markets in response to developments in fundamental supply and demand-related factors. Without speculation, the price signals to suppliers—and hence the supply response—would be dampened.
- While proposals to enhance the transparency of data provision to regulators on commodity prices and trading activity are broadly welcomed by private-sector market participants, **the imposition of additional regulations such as position limits on trading activity could impair market liquidity and efficiency**.
- **Proposals** by policymakers to directly address fundamental supply/demand imbalances that have contributed to price volatility—e.g., measures to unblock supply constraints or remove restrictions on the supply or export of key commodities—would be welcome. Investment in productive capacity could help minimize market distortions, contributing greatly to reducing commodity price volatility.



Source: Bloomberg; S&P GSCI; IIF calculations



Semi-annual data
 Source: BIS

I. Introduction

Following marked volatility in 2008, prices of major commodities have generally been rising sharply. The GSCI overall commodity index more than doubled during that time before pulling back somewhat in recent weeks, while prices of precious metals rose beyond their July 2008 peaks to new record levels. Some blame financial investment* in commodity markets for these price increases; as commodity assets under management topped a record high of \$450 billion in April 2011 before edging lower in recent months, and now stand at \$431 billion. (Chart 3).

The surge of interest in commodity exchange traded funds (ETFs) has also been cited as another potential culprit. Since 2006, net inflows to commodity ETFs have more than doubled (Chart 4), and ETFs now represent over a third of total commodity assets under management. While gold ETFs are currently the world’s largest exchange traded funds by volume, other commodity-backed ETFs (notably copper) have been gaining ground. This rapid growth has prompted concerns that a reversal in what has been largely one-way positioning could prompt a significant increase in volatility.

Policymakers’ concerns: enhanced regulation...

The impact of financial investment in commodity markets has been of considerable interest to policymakers and global policy-coordinating bodies such as the G-20, given the significant potential impact of rising commodity prices and inflation on global growth. Indeed, ***the French G-20 leadership has put commodity prices and their impact on food security near the top of its 2011 G-20 agenda.*** A working group (co-chaired by France and Russia) on international coordination of measures to address commodity price volatility has been established; G-20 Economic Ministers met in Argentina on May 18-19 to

discuss commodity price volatility; and the first-ever meeting of G-20 Agriculture Ministers was held in Paris on June 23-24.

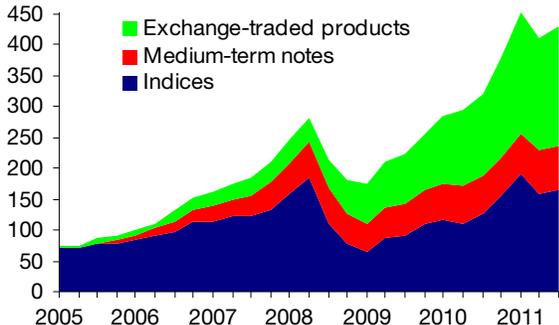
At the national level, regulators—notably the U.S. CFTC and the French *Autorité des Marchés Financiers (AMF)*—have been asked by their governments to develop enhanced frameworks for regulation of commodities markets. The U.S. Congress has put the decision on whether to impose position limits into the hands of the CFTC (see page 14). Consideration of position limits is imminent: CFTC Chairman Gensler stated that position limits are among “the next [...] items in the queue for the CFTC to consider.”¹ However, the CFTC has noted that more time is needed to review more than 12,000 public comments, including statements from banks, traders and exchanges noting that position limit rules would make it harder to hedge risk, reduce liquidity and increase consumer costs.

The AMF, in a May 2011 report entitled “*Finding the Right Framework for Regulating Commodity Markets,*” took a measured view of the need for regulation, noting that “there is no reason to exempt [commodities] markets from the general trend towards re-regulation” but that “the actual impact of financial investment on commodity markets...is not yet conclusive.”

Most recently, the June 2011 communiqué of the G-20 Agriculture Ministers meeting welcomed initiatives aimed at more disclosure and transparency (see below), and also called for enhanced regulation and supervision, including as appropriate position limits and “other powers of intervention” (see page 15). Regulation of commodities markets has now been put on the agenda of the G-20 Finance Ministers for their meeting in September 2011.

3 Commodity Assets Under Management

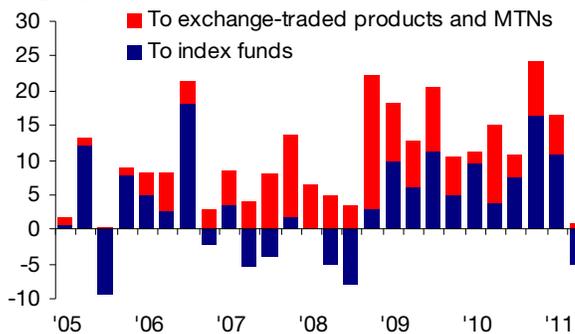
USD billions



Source: Bloomberg, MTN-I, ETP Issuer Data, Barclays Capital

4 Total Commodity Investment Inflows

USD billions



Source: Bloomberg, MTN-I, ETP Issuer Data, Barclays Capital

* Although the term “financial investment” is often used interchangeably with the term “speculative activity/speculation” in the media, this background note will talk about financial investment in a broader sense. The use of the term “speculative activity/speculation” will be reserved for a context-specific discussion (e.g. specific research papers, data analysis, etc.)

1. CFTC Press Release. 08 September 2011.

...and more transparency

At the behest of the French G-20 leadership, an initiative on cooperation in compiling agricultural data—comparable to the existing Joint Oil Data Initiative (JODI)—is underway. The “Agriculture Market Information System” (AMIS) is intended to reduce price volatility in agricultural commodities by gathering information on global stocks and production (page 16). French President Sarkozy has also proposed setting up a database of food prices (shared by advanced countries and major emerging markets), aimed at helping the authorities curb market volatility and avoiding “excessive speculation” in commodity markets. This idea has been welcomed by the UN FAO; FAO Director General Jacques Diouf pledged support on behalf of his organization.² Concerns, however, remain about the timeliness and accuracy of individual countries’ reporting practices, which have proven to be an obstacle for JODI.

On the oil data front, JODI has made moderate progress, with its second yearly data update completed in July 2011 (though the organization still faces criticism for data lags). The JODI Oil Report stated that data releases now include updates from Brazil, Iran, Libya and others.³

Gauging the impact of financial investment on prices...

In their debate, policymakers have focused on the relationship between financial flows and commodity prices during 2009-2011, when both have been high. What is often left aside are periods when financial flows were negligible even as commodity prices rose sharply (H1 2008), or periods of strong flows and broadly stable commodity prices, e.g. 2006 (Chart 5).

Part of the difficulty in any assessment of the impact of financial investment on commodities markets is that the available data are limited—only short time series are available, and the classification of market participants (as financial vs. “commercial” traders) has acknowledged flaws (page 7 and Appendix II). Within the limits of the

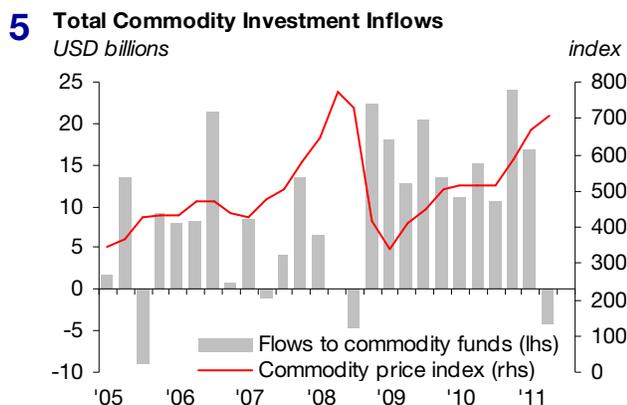
available data, the academic literature on the subject covers the spectrum of opinions, but even the strongest proponents of the view that financial flows drive commodity prices acknowledge that the primary price drivers are fundamental supply and demand factors.

In theory the price effect of commodity financial investment is ambiguous. On the one hand, well-informed, rational investors should add liquidity to commodity derivatives market, facilitating price discovery and keeping prices more aligned with fundamentals. As commodity investors buy when prices are low and sell when prices are high, this should help clear the market. However, some argue that “ill informed” investors exhibiting herding behavior could add to price volatility (page 6).

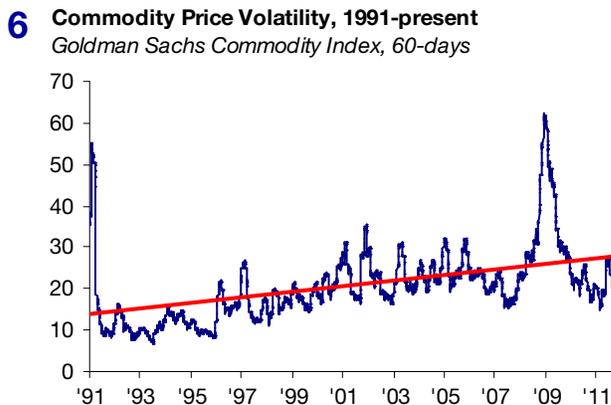
That said, most empirical studies find that financial investment in commodities does **not** have a significant effect on commodity prices. The World Bank, commenting in its June 2011 Global Economic Prospects, observes that “[d]espite such contrasting views [on the relationship between investment fund activity and commodity prices], the empirical evidence is, at best, weak.”⁴ Moreover, financial investment plays a key role in liquidity provision, and some speculation is needed to clear commodity derivatives markets.

...and volatility

The French G-20 leadership and other official sector entities have also expressed concern regarding the potential role of financial investment in causing commodity price volatility. The most recent upswing in commodity prices beginning in 2009 was accompanied by a sharp rise in commodity price volatility, peaking in February 2010, though volatility has since returned to levels prevailing during 2000-2009 (Chart 6). However, the even more striking increase in commodity prices



Source: Barclays Capital, Bloomberg



Source: Bloomberg

2. Hagstrom, Jerry. 11 July 2011.
 3. JODI. July 2011.

4. World Bank (2011). p. 62

during 2008 was not accompanied by a commensurate increase in commodity price volatility.

Broadly speaking, research on the impact of financial investment on commodity price volatility—including work done by the BIS in 2007, the IMF in 2008, and the OECD in 2010—suggests that there is *little evidence linking financial investment in commodities to higher commodity price volatility*. Indeed, some researchers have found that the presence of key financial investors (index and swap funds) actually helps reduce market volatility.⁵ That said, some recent research indicates that new investment vehicles may have been responsible for at least part of the post-2005 volatility in commodity prices.⁶

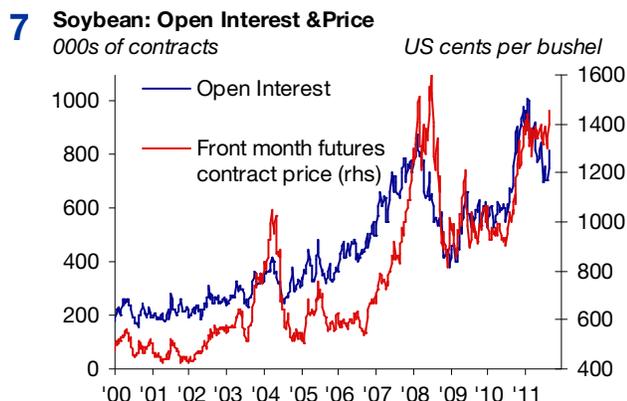
II. Weighing the Evidence

Over the past several years, a number of studies conducted both by academics and in the official sector have analyzed financial investment (often referred to as “speculative activity”) in commodities markets, with the goal of determining whether such activity has an impact on commodity price trends and volatility. These studies can be divided into two groups, with broadly opposing viewpoints. Proponents argue that speculation does have a measurable impact on trends in commodity prices and contributes to increased volatility. The other group takes the position that there is no solid evidence of a causal link between financial investment and commodity price trends; rather, despite periods of correlation, supply and demand fundamentals remain the primary drivers of both price and volatility.

Yes, it does: arguments suggesting financial investment does have an impact on commodity prices and volatility

Higher levels of financial activity drive prices

A number of studies suggest that the higher levels of financial activity prevailing since 2006 (measured by



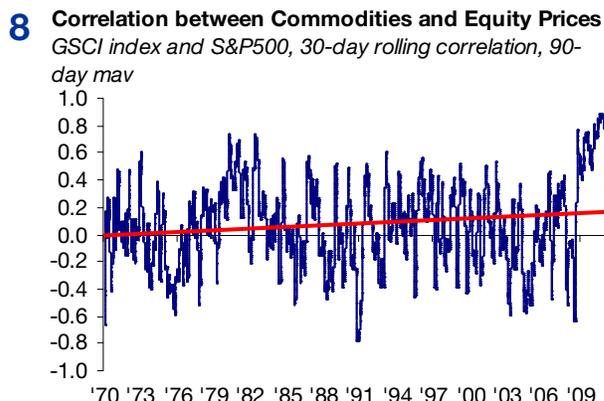
Source: Bloomberg

open interest, or the number of active futures contracts trading in the market) have led to sharp price changes. This conclusion has been based on the high correlation between futures prices and open interest in futures markets for commodities such as soybeans (Chart 7). Another term sometimes used for this phenomenon is financialization of commodities markets.⁷ *The line of argument is that financial investors see commodities as just another asset class, and thus do not necessarily trade on the fundamental supply-demand relationships* specific to each commodity—that is, they are “un-informed” traders. If such non-fundamental factors are affecting commodity prices, then commercial market participants (i.e. producers and consumers of commodities) will get “unreliable” price signals.

Proponents of this view argue that financial (also referred to as “non-commercial”) investors have created greater interdependence between financial and commodity markets—meaning that at times, these “un-informed” financial investors are the drivers of commodity prices.

Financialization of commodity markets has led to “herding” and more correlation among previously uncorrelated asset classes

A related argument states that the rising weight of financial investment in commodity futures markets—particularly via such practices as algorithmic trading and the “herding effect,” has led to investors being broadly indiscriminate among different asset classes—using information collected in one market (e.g. equities) to form expectations about price movements in another (e.g. commodities), irrespective of fundamentals in the latter.⁸ This would suggest that financial investment has led to increasing correlation between commodities and other markets (Chart 8). However, it should be noted that this same trend of closer correlation can be seen in other



Source: Bloomberg, IIF calculations

5. OECD (Irwin and Sanders). (2010). IMF World Economic Outlook. (October 2008). BIS Quarterly Review. (March 2007).
 6. World Bank (2011). p. 62

7. Mayer, Jörg (2009). p. 23.
 8. Mayer, Jörg (2009). p. 29.

asset classes, e.g. emerging market and mature market equities; moreover, many would argue that financial investors do indeed take fundamentals into account—if not, they would soon be driven out of the market.

Additional research using non-public data suggests that some speculative activity (of hedge funds in particular) is positively related to greater correlation between commodities and other asset classes (however, this same research finds no such effect for other classes of traders).⁹ Similarly, some recent studies find that “...return correlations of commodities with stocks, the US dollar, and with each other have significantly increased in recent years. This volatility “spillover” also contributed to the high price volatility of commodities in 2008.¹⁰

Identifying “speculative” financial activity—singling out commodity index traders

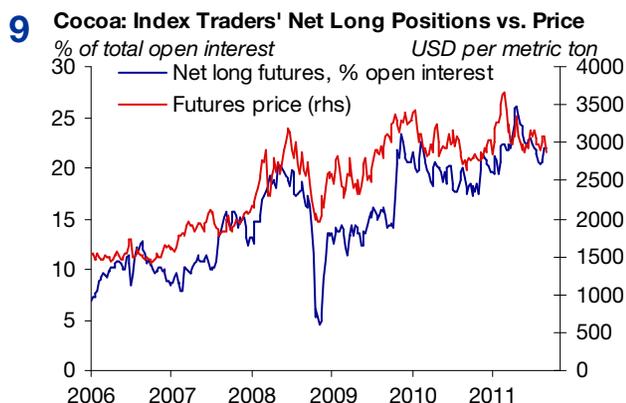
One of the main challenges for any study looking at the impact of financial investment on commodity markets is the limitations of the available data on trader positions. First, there is only one data provider—the Commodity Futures Trading Commission, or CFTC. Second, for most commodities, only a few years of data—with limited detail—are publicly available. Third, the CFTC’s system of classification of traders (e.g. between commercial and non-commercial) needs updating and revision. Finally, the most detailed set of data—the CFTC’s Large Trader Reporting System—is not yet public. Further discussion of data limitations can be found in Appendix II.

Given these limitations, a key goal of a number of studies is to *isolate purely financial (non-commercial) activity from commercial activity such as hedging* by commodity producers. A number of studies taking this approach focus specifically on commodity index traders—those investors, typically long-only, who seek to replicate an index and thus have no commercial interest in the physical commodities.¹¹ To correct for the rising level of

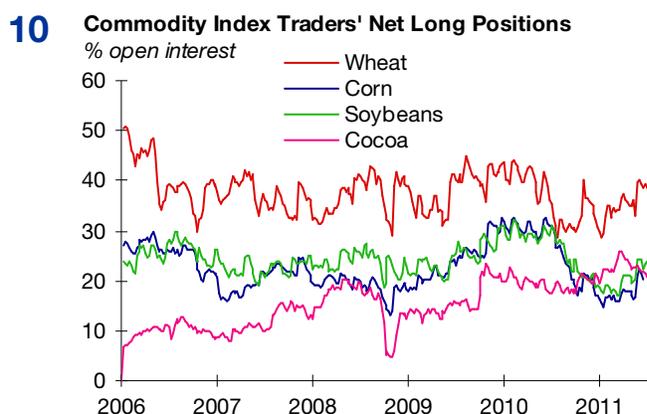
commodity market activity over time, commodity traders’ positions are often shown as a percentage of total open interest (Chart 9).

The rationale for choosing index traders is 1) that they represent “un-informed” traders who are basing their decisions on factors other than fundamentals; and 2) they are large enough relative to the market that they can have a “weight of money” effect—i.e., that the sheer volume of their activity is enough to create momentum and drive prices. Some studies find some tentative evidence that index traders (including e.g. pension funds and swap dealers) have at times driven prices in certain agricultural commodity markets, e.g. soybeans.¹² However, other studies counter these findings, citing among other factors the limitations of the data and the classification system (for example, some market participants engage in both commercial and non-commercial transactions).¹³

Taking their case further, the authors examine index trader positions in non-agricultural markets such as crude oil and base metals. As the CFTC does not provide data on index trader positions in non-agricultural markets, the distribution of index traders in agricultural commodity futures markets is applied to non-agricultural futures markets, making the assumption that the investment preferences of commodity index investors in both markets are broadly similar.¹⁴ Using this method, one study finds tentative evidence of speculative bubbles related to index traders’ positions in certain non-agricultural commodities markets, including in particular copper.¹⁵ Concentrating specifically on the oil price boom/bust of 2008, another study—adhering to the same methodology—finds a positive relationship between increasing index trader positions and oil futures returns.¹⁶ Another study, running Granger-causality tests following similar meth-



Source: Bloomberg, IIF calculations



Source: Bloomberg

9. Büyüksahin and Robe (2010), p. 4ff.

10. Tang, Ke and Xiong, Wei (2010), p. 3-4.

11. Commodity index traders’ positions, along with other categories of traders including money managers and “other reportables”, can be found in the CFTC’s Disaggregated COT data.

12. Gilbert, Christopher. (2010), p. 28.

13. Sanders, Dwight; Irwin, Scott. (2011).

14. Gilbert, Christopher. (2010), p. 17f. Mayer (2009), p. 11f

15. Gilbert, Christopher. (2010) p. 28.

odology, finds that positions of index traders were positively correlated with “prices of a wide range of commodities” between January 2006 and June 2009.¹⁷

Again, other researchers rebut these conclusions, in part due to the methodology used and in part via analysis suggesting that supply shocks and other fundamental factors may have had more of an impact during these price spikes.

Divergence between futures-spot prices causes mispricing

Proponents of this view argue that “excessive speculative activity” can lead to a significant divergence between futures and spot prices, creating short-term “mispricing” in commodity spot prices. For example, a 2009 staff report of a U.S. Senate subcommittee investigating trading activity in wheat futures markets¹⁸ noted that commodity index traders (CIT) accounted for a high proportion of trading (open interest) in wheat futures relative to other agricultural commodities (Chart 10, previous page), and that long positions (number of contracts) of these CITs had risen significantly between 2004 and mid-2008 from an average of around 30,000 per day in early 2004 to some 220,000 in mid-2008. This report connects this rise in CIT long positions with a sharp increase in the daily difference between the futures and the spot price of Chicago wheat (the basis) from less than 50 cents per bushel between 2000 and early 2006, to \$1.50-2.00 per bushel in the first half of 2008. Moreover, the authors found that the average difference between cash and futures prices for Chicago wheat at contract expiration was close to \$1.50 in early 2008, from levels closer to \$0.13 in 2005.

According to the Senate report, this divergence between futures and cash prices, particularly when close to contract expiration, can be interpreted as an indicator of excessive speculation, which could lead to “mispricing” not only of the commodity in question but of substitute

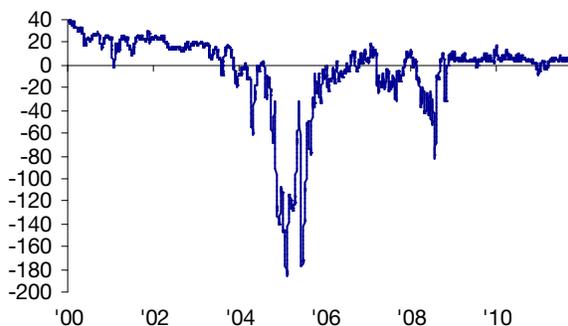
goods—even those with no futures market. The Senate report thus proposed to limit index traders’ position size; this line of argument has been used to help justify other official-sector proposals for limits on position size, such as those put forth by the CFTC in January 2011 (see page 14).

However, it is worth noting that some commentators have found that the divergence between futures and cash prices described above was caused by specifications with respect to *delivery* that were stipulated in the Chicago Board of Trade (CBOT) futures contract and not by speculation. It was found that once the contract specifications were modified, the divergence greatly decreased in subsequent delivery months. This observation points to the fact that ***futures contract design and specifications are also an important factor in considering what drives exchange pricing.***

Other researchers find that there is no compelling evidence that commodity index trading in futures markets distorts cash markets. Instead, index investors are merely liquidity providers who do not purchase or hoard the physical commodity (rolling over exposures instead). Moreover, many observe that there is no well-established causal link between futures market activity and cash prices; for example, recent work on oil trading markets finds that changes in futures prices only have implications for spot prices if they change decisions about inventory holdings, production levels and oil consumption.¹⁹ Finally, a look at basis levels over time and across different commodities suggests that short term periods of markedly wider or more narrow basis are not uncommon (Chart 11). Such periods are often associated with higher volatility, which in turn is often linked to a supply shock.

11 Copper Prices: Daily Difference Between Futures and Cash Prices

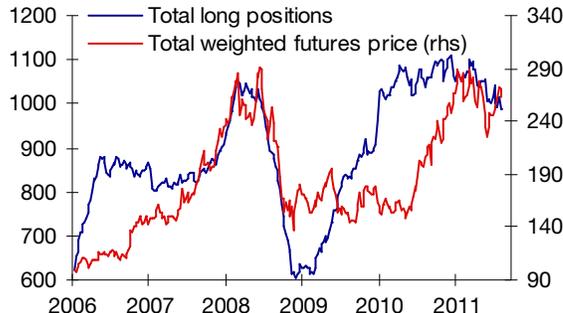
USD/MT, 20-day mav



Source: Bloomberg

12 Commodity Index Traders' Long Positions vs. Price: Wheat, Corn, Cotton, Cocoa, Soybeans

000s of contracts weighted average futures price



Source: Bloomberg

16. Singleton (2011), p. 27.
17. Mayer (2009), p. 23.

18. Permanent Subcommittee on Investigations, United States Senate. (2009).
19. Sanders and Irwin. (2011). Headey and Fan (2008).

Financial investment may affect fundamentals

Some researchers have found that for oil markets, financial investment could lead to higher prices if investors start to build up or increase their accumulation of inventories. Challenging the classic Friedman theory that speculators stabilize markets, one study suggests that the recent climb in private oil inventories (reversing a 20-year trend of decline) signals that there might be excessive speculation in the oil market driving gasoline prices.²⁰ Other researchers postulate that speculators in oil markets can send misleading signals to producers by disguising the true level of demand (i.e. by affecting the perceived price elasticity). This could exacerbate price trends in both directions.²¹

Speculators create “new demand”

Although rolling over futures positions is in theory neutral for commodity prices, some researchers maintain that this is true only if the number of trading positions is broadly stable—new (long-only) commodity index investors need to be met by new short sellers (commercial hedgers or speculative shorts). The cyclical rise in commodity prices in 2007-08—unlike previous cyclical commodity price upswings such as the post dot-com surge of 2002-early 2003—happened at a time when interest in commodity investment was rising rapidly (chart 12, previous page). On this line of argument, this “new money” coming in to the market via index investment represents “one-sided demand” in somewhat of a vicious circle—prices rise, attracting new longs, and prices then need to rise further to encourage new shorts to enter the market. Similarly, the sheer number of new (long-only) commodity index investors coming into the market can outweigh the traditional beneficial “market-stabilizing” impact of financial investment (buying low, selling high).²²

Rebutting this hypothesis, other researchers observe that the most significant growth in commodity index trad-

ers’ long positions predated the first half of 2006—a period when commodity prices were not rising—and that Granger causality tests show no evidence that CIT positions cause price changes.²³

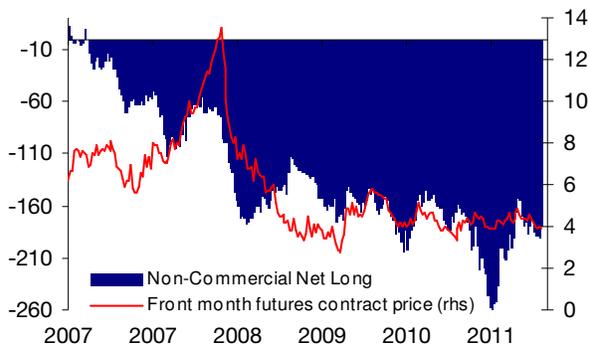
No, it doesn’t: arguments suggesting that there is no solid evidence of a causal link between financial investment and commodity price trends and volatility

Correlation between price and financial investment varies greatly among different commodities over time...

One commonly used technique to assess the impact of financial investment on the prices of individual commodities is to look at net non-commercial (speculative) positions in futures markets (these positions include those of commodity index traders, swap dealers, and money managers). For some commodities, such as precious metals, the correlation between these positions and the price of the commodity is quite strong, lending support to those who believe financial investment drives prices. However a careful study of these correlations over time suggests that they vary considerably by commodity and by the time period under consideration. Some commodities markets, e.g. natural gas in fact show very little or negative correlation between net non-commercial positions and price (Chart 13)—note that during much of 2007 futures prices were rising even as net non-commercial short positions were increasing).

Moreover, even correlations that look quite robust for certain time periods look considerably less so over other time periods or for a longer time period. For example, although the correlation of platinum futures prices with non-commercial net positions is almost 0.9 for 2009-2011, this correlation

13 Natural Gas: Net Noncommercial Position & Price
000s of contracts USD per metric ton

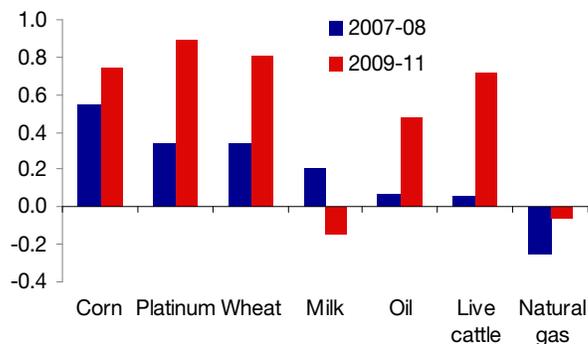


Source: Bloomberg

20. Kaufmann, Robert. (2011).

21. Hamilton, James. (2009). p. 21f.

14 Correlation: Non-Commercial Positions vs. Futures Price
selected commodities, net non-commercial positions



Source: Bloomberg; IIF calculations

22. Petzel, Todd E. (2009).

23. Sanders, Dwight; Irwin, Scott. (2011). Sanders, Irwin, Merrin. (2008).

drops to 0.28 when looked at for the full 2007-2011 period (Chart 14 shows correlations for 2007-08 and 2009-2011 for selected commodities).

...and is *not* causation

A number of studies make the point that even a very strong correlation between different measures of financial investment (e.g. net non-commercial positions, commodity index traders' positions) and commodity prices does not imply causation. Some of these studies perform formal causality tests; most of them find no evidence (or only very weak evidence) of causality.²⁴ In some cases, notably for oil, researchers have found evidence that causality runs in the other direction; in other words, that price changes precede changes in non-commercial positions.²⁵

Index traders' positions vary across commodities and over time

A similar argument with different metrics looks at the net non-commercial positions of commodity index traders relative to total open interest in that commodity (a proxy for overall financial activity). As noted above, it has been claimed that index traders drive prices in commodity markets—the argument is that they are holding mainly long-only positions, and have sufficient financial power to influence prices.

However the share of such index trading in total open interest varies considerably both for individual commodities over time and across commodities; in some cases, such as wheat, there is actually a measurable downward trend in index traders' positions as a percent of total open interest (Chart 15). Moreover, for many other commodities the share of index traders' positions in total open interest is substantially lower than for wheat (35-40%)—for corn, index traders' positions have been less than 30% this year, for soybeans 20% or less, and cotton less than 15% (see Chart 12, page 8). It is noteworthy that commodity markets that have similar levels of index trader position-

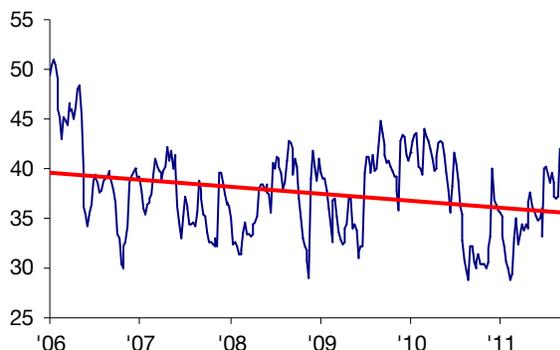
ing do not necessarily experience similar pressure on prices; similarly, markets with the highest levels of index trader positioning do not experience the highest pressure on prices.

The appropriate level of financial investment has to be seen in the context of levels of hedging

Building on a metric devised in a 1960 study on speculation on hedging markets,²⁶ recent academic studies suggest that it is important to look at financial investment in the context of overall hedging activity.²⁷ This relationship can be assessed by looking at, for example, the level of long speculative positions relative to the level of short hedging—an absolute value ratio known as the “Working’s T” index. For example, a Working’s T ratio of 1.15 would indicate a level of long speculation 15% above what would be minimally required to meet short hedging needs (if short hedging needs are greater than long hedging needs), or vice versa (a level of short speculation 15% in excess of what is needed to meet long hedging needs, if long hedging needs are greater than short hedging needs).

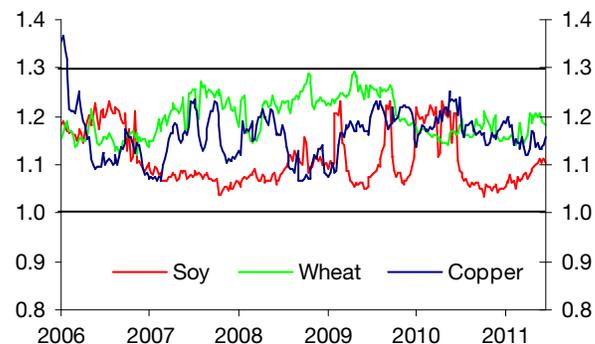
However, long and short hedging positions cannot always be expected to offset each other perfectly (a Working’s T ratio of 1), even in markets where these positions are of comparable magnitudes. Financial investment above this minimum level may thus be necessary for a smoothly functioning market. The question then becomes whether the rising number of “long-only” speculative positions in many commodities in recent years has been met by a similar rise in the number of short hedging positions; broadly, this has been true. Indeed, a look at this ratio across commodities suggests that the Working’s T index has been relatively stable for a number of different commodities over time, independent of price movements (Chart 16).

15 Wheat: Share of Index Trading in Total Open Interest percent



Source: Bloomberg

16 Working's T: Soy, Wheat and Copper index



Source: Bloomberg

24. Ibid.

25. Büyüksahin, Bahattin and Harris. (2011). p. 201.

26. Working, Holbrook. (1960).

27. Irwin, S. H. and Sanders, D. R. (2010).

Taking this analysis further, some researchers have broken out commodity index traders using the CIT data (rather than just looking at the broader commercial/non-commercial breakdown in the Commitments of Traders (COT) data), and calculated Working’s T for this subset of financial investors.²⁸ For commodity index traders in nine agricultural commodity markets studied over the period 2006-2007, the T index averaged 1.27—somewhat higher than the 1.14 seen from the broader markets, but still broadly stable.

Prices of non-traded commodities often move in tandem with those of traded commodities

Another way of isolating the impact of financial investment is to look for commodities which do not have (or have very limited) futures markets. The RIND index calculated by the Commodities Research Board (CRB) tracks a number of atypical raw materials, including metal scrap, burlap, hides and tallow. The prices of these commodities reflect industrial demand, but are not traded in futures markets—as such, the index is seen as speculation-free and hence a good indicator of underlying supply and demand factors.

During the first half of 2008, broad commodity prices did rise more sharply than those of non-traded commodities; however, over the past few years the two have moved more or less in tandem (Chart 17). This lends support to those who argue that financial investment has little effect on commodity prices—if both traded and non-traded commodity prices are rising, financial investment is not driving them both. It also highlights the very basic point acknowledged by both sides of the debate: macroeconomic fundamentals are the main drivers of commodity price trends and volatility.

It is also important to note that during the first three quarters of 2008, when broad commodity prices were ris-

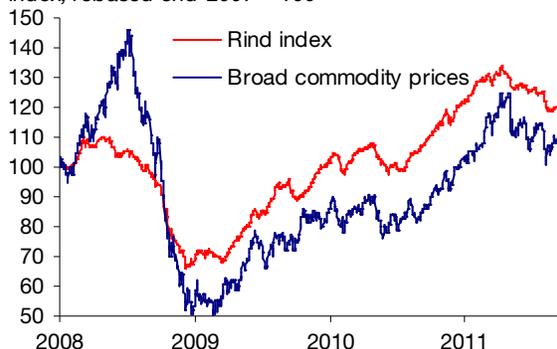
ing sharply, actual flows to commodity funds during the first three quarters of 2008 were minimal (see Chart 5, page 5). The same is true of commodity index traders’ net long positions as a share of total futures market activity—the share of “speculators” in total open interest changed very little for many commodities during 2008 (see Chart 10, page 7).

Vital role of financial investment

Regardless of one’s position on the role of financial investment in driving commodity prices and volatility, **it is indisputable that “speculators” provide valuable and necessary information about projected changes in fundamentals to the market.** Spot market participants make use of the information given by speculators, since speculators’ projections about futures price movements are reflected in the futures price curve. Speculators are thus an essential part of the futures and spot markets, as they help equilibrate price differentials between the two markets.

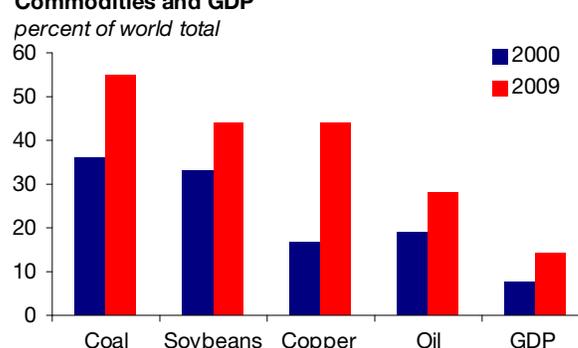
Commercial market participants (hedgers) in most commodity markets mainly take short positions in futures to hedge price risk and to satisfy their liquidity needs. Commodity index investors generally take long-only positions, as a hedge against inflation and for portfolio diversification. Since these long and short positions of commercial traders and index investors do not balance, speculators fill the need for counter-positions, going long or short depending on their market views. Financial investment thus has a vital role in enhancing market liquidity and mitigating price risk for commercial investors.

17 Traded vs Non-Traded (RIND Index) Commodity Prices index, rebased end-2007 = 100



Source: Bloomberg

18 EM* Share of the Global Demand for Selected Commodities and GDP percent of world total



Source: Barclays Capital. *India, China, Brazil and Middle East

28. Sanders, Irwin, Merrin. (2008).

Market fundamentals

It is widely acknowledged, even by those targeting speculators, that supply and demand fundamentals are the main drivers of trends in commodity prices and volatility. Broadly, supply shocks have been a major determinant of short term price trends, while long term price trends have been governed by the lagging supply response to increased demand, particularly from rapid population growth and industrialization in emerging market countries. These developing economies have accounted for virtually all of the growth in demand for commodities in the past few years, reflecting the greater commodity intensity of their economies relative to advanced countries (Chart 18, previous page). With most easily accessible resources already exploited, this increased demand makes it difficult for technological advances to increase supply to keep pace, pushing up prices.

The recently released OECD-FAO Agricultural Outlook 2011 discusses both supply/demand developments and other significant factors affecting agricultural commodity prices and volatility, including energy prices, bio-fuels production, exchange rate trends and trade restrictions. While noting that “financialization of agricultural markets” is suggested as a potential cause of price volatility, the report noted that much of the relevant research—including work done for the OECD, by IOSCO and by the IMF—did not find a clear link between the two.

Although demand for commodities is rising and supply shocks are frequent...

While China figures prominently in assessments of rising demand for oil (Chart 19) and other commodities, demand from other emerging markets—both for energy and for other non-food commodities such as base metals—is of course also rising sharply. Along with rapid growth in emerging markets has naturally come more demand for food (Chart 20). Combined with many supply shocks due to weather developments and other events in

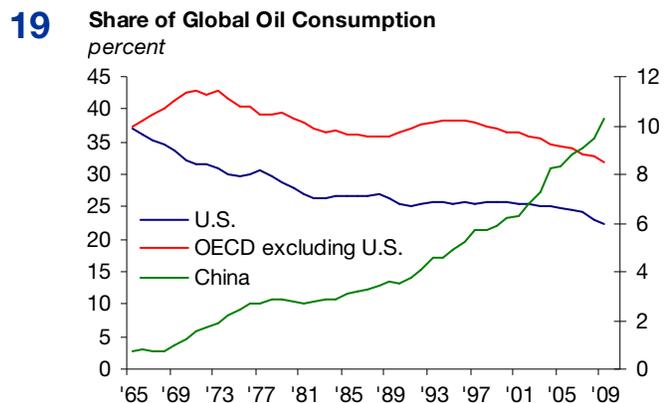
recent years, this has meant a significant drop in inventory-to-consumption ratios for a number of agricultural commodities over the past decade.

Agricultural production has risen sharply over the past few years as vast amounts of land have been diverted and agriculture has been progressively mechanized. However, given the time lags involved and the rapid pace of demand growth, supply-side stresses have persisted, causing global grain stock-to-use ratios to fall below their historical averages (Chart 21, next page). In addition, low inventories compounded the effect of weather on agricultural price volatility in 2010. Adverse weather conditions during 2010 led to harvest shortfalls in wheat (in Russia and Ukraine), rice, rubber, cotton and vegetables (in South and Southeast Asia), corn (in the U.S.) and sugar (in India). The price responses to supply setbacks were exacerbated by trade restrictions (e.g. grain export bans in Russia and export quotas in Ukraine).

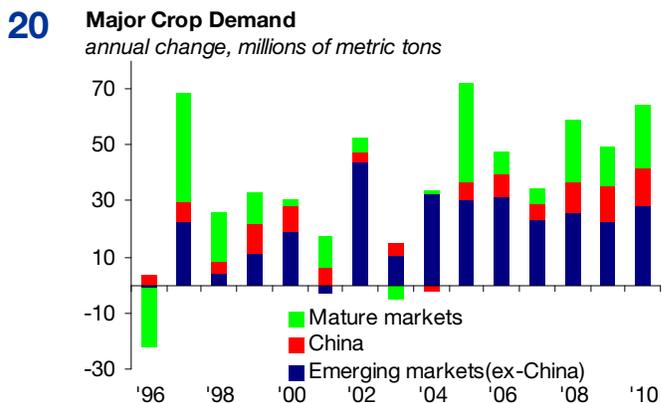
...supply remains relatively inelastic

In an environment of sustained demand growth, the supply response has been rather limited. For crude oil in particular, geological and technological constraints as well as infrastructure bottlenecks have boosted the average cost of production in marginal fields and projects. In addition, policy restrictions have limited production growth, while shortages in skilled labor and specialized equipment have raised investment costs. As a result, market equilibria have been reached only by means of unexpectedly large draws on inventories for many commodities. The narrow margin between production and consumption has exacerbated commodity price volatility.

As demand continues to increase at a rapid pace—putting upward pressure on prices—this in turn should stimulate technological advances to increase production to meet that demand. However, as production con-



Source: IMF.



Source: IMF.

tinues to step up, scenarios of excess supply is expected to remain limited, making commodity prices extremely susceptible to small shocks. Weather changes, geopolitical factors, disruption of production and other factors may thus create large price fluctuations, exposing countries to big swings in production and consumption costs.

Rising demand for biofuels

Another element to the supply-demand picture is the rising use of some agricultural commodities for biofuels. Increased biofuel demand has contributed to the rise in prices of other substitute and complementary goods. The IMF found that “...higher biofuel demand in the United States and the European Union (EU) has not only led to higher corn and soybean prices, it has also resulted in price increases on substitution crops and increased the cost of livestock feed by providing incentives to switch away from other crops.”²⁹

Productivity of metal production is falling

Global consumption of all base metals except tin is estimated to have reached a new high in 2010. With rapid industrialization requiring heavy infrastructure investment, China is investing at higher rates than during peaks seen in Japan (39.7% in 1970) and South Korea (39.9% in 1991), while India’s investment rate climbed 16% over the last decade. It is estimated by the McKinsey Global Institute that to keep up with the pace of urban population growth, China would have to add 40 billion square meters of floor space and India between 800-900 million square meters each year through 2030, as well as paving some 2.5 billion square meters of roads. This process will put increasing pressure on base metal prices.

Currently, Chinese demand alone accounts for 38% of global copper demand, almost twice that of the U.S. Beijing Antaika Information Co. predicts China will increase its share by 8% (to over 40% of global demand) in 2011. Despite its high share in world consumption, China’s per

capita copper consumption is quite low. If China’s copper consumption levels reach those of other Asian countries, Chinese demand alone would be higher than current global copper production.

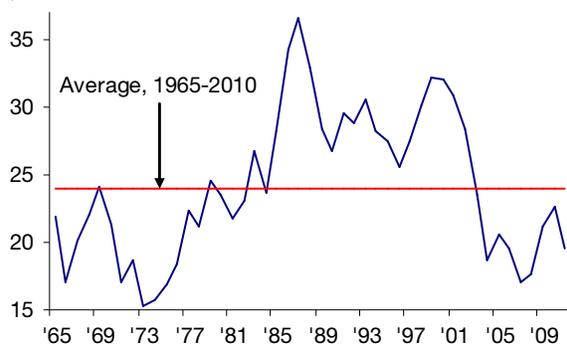
The supply of base metals has responded to rising prices only sluggishly (Chart 23), due to slow development in mining capacity, rising energy costs, stricter environmental standards (aluminum production cuts in China) and labor disputes (strikes in copper mines in Chile). As a result, inventory buffers have declined, normalizing to historical averages (and even falling below average in the case of copper). Moreover, productivity has declined: Although global copper ore reserves have risen over the past decade, the yield grade of copper reserves has fallen from 0.8% to just over 0.5%.

Addressing fundamental imbalances

The majority of academics agree that addressing short-term and long-run supply and demand consideration is key to helping reduce commodity price volatility. Even those who believe that speculation has a significant effect on commodity prices and volatility also broadly support the view that policymakers—in considering regulation for commodity futures markets—should pay more attention to long-term distortions in market fundamentals, rather than short-term market irregularities.³⁰

Key recommendations of the 2011 OECD-FAO Agricultural Outlook to address supply-demand imbalances (and other factors that could cause market distortions) include advancing productivity growth in agricultural commodities and the designing of a market environment with greater resilience to external shocks.³¹

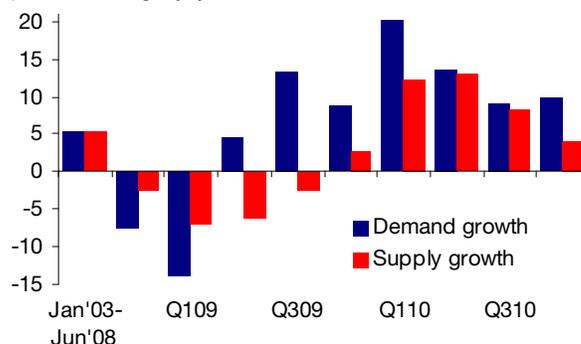
22 Global Grain Inventories-to-Consumption Ratio percent



Source: IMF.

29. IMF. (2007)

23 Base Metals: Global Demand and Supply Growth percent change, yoy



Source: IMF.

30. Hamilton, James. (2009) p. 42f.

31. OECD-FAO Agricultural Outlook 2011-2020

III. Official sector recommendations and proposed regulatory measures

With commodity prices high on this year's G-20 agenda, international regulators have been tasked with working on proposals to increase oversight, functionality and transparency of commodity derivatives markets. Moreover, the G-20 has formed several working and study groups—including a G-20 Development Working Group, the G-20 Working Group on Energy and a G-20 Study Group focused on commodity markets. These different groups cooperate with relevant UN organizations, the World Bank, national regulator and other official sector bodies. While increased transparency in commodity futures markets is supported by virtually all public-sector officials, there is considerable disagreement over the scope for increased regulation.

Current regulation of commodities markets

Currently, the regulatory environment for commodities trading is most highly structured in the United States. For commodity futures traded on U.S. exchanges, the relevant regulatory body is the Commodity Futures Trading Commission (CFTC), an independent regulatory agency of the U.S. government.

For commodities traded on futures exchanges other than those in the United States, however, there is only limited supervision of futures trading practices. In recent years, national regulators in Europe—with encouragement from global policy coordination bodies—have been discussing the possibility of establishing potential pan-European and/or international regulation of commodity markets. This discussion has been given more prominence under the French G-20 leadership: former Finance Minister Lagarde, for example, has stated that a European equivalent of the U.S. CFTC would be “highly welcome.”

Potential changes to the regulatory environment

In line with the provisions of the Dodd-Frank Act, the CFTC has proposed “to establish combined position limits for futures contracts and contracts that are related thereto.” In a two-phase process, the U.S. regulatory authority would impose limits on “certain commodity futures contracts and economically equivalent swaps” by Q2 2012. During the first phase, the CFTC would impose spot-month limits, set at 25 percent of estimated deliverable supply. (It would be up to the CFTC to determine deliverable supply on an annual basis.) In addition, the CFTC would also introduce position limits for cash-settled contracts, including cash-settled futures and swaps during the first phase. In the second phase, non-spot-month position limits would be imposed based upon over-

all open interest in the aggregate or on a per class basis (futures and options are one class; swaps are another). Exemptions would apply to ‘bona fide hedging activities’ and some pre-existing positions. The CFTC’s proposal has attracted more than 12,000 comment letters, and the agency is at present still working through them. CFTC Chairman Gensler stated that the agency “may consider” rules related to the implementation of position limits in early fall.

However, the July 16 deadline for regulations (put forth by the CFTC as a result of the Dodd-Frank Act) to become effective has been pushed back up to six months, until the CFTC has resolved all the issues related to its rule-writing process. In the meantime, the CFTC has been approving various rules to ameliorate transparency in reporting practices and data collection. On July 7, it was established that clearinghouses and swaps dealers must report the swaps activities of large traders in the commodity swaps markets. In addition, on August 3, the CFTC ruled that regulators will be provided with detailed information on how to use data collected by swap data repositories (SDRs) which will be launched to collect data on OTC derivatives trading; these repositories relate to the law requiring most types of OTC derivatives to trade on exchanges or in new swap execution facilities. Further, on August 10, the CFTC lifted exemptions on agricultural swaps, which had been in place since 1993, making them subject to the same trading practices as other swaps. Although envisioned in the Dodd-Frank Act, this new rule does not mandate any new reporting practices or clearing requirements. The CFTC has postponed the treatment of these issues until further notice.

The **French G-20 leadership** has also called for stricter treatment of trading of commodity derivatives (in line with the provisions of the EU’s Markets in Financial Investments Directive (MiFID*) on derivatives more generally), including as appropriate position limits and the use of margin requirements (cash deposits), in connection with central counterparty clearing, France is seeking a common position on the matter for EU countries. Similarly, Michel Barnier, the EU’s Financial Services Commissioner, has called for restrictions on traders, including position limits to be discussed in Istanbul and other G-20 meetings in the run-up to the Cannes Summit.

A **European Commission report** in February found a correlation between positions on derivative markets and spot prices but rejected the claim of a causal linkage. The report noted that “it is difficult to assess fully the interactions and the impact of movements in the derivative markets on the volatility of the

32. European Commission. (2011). p. 11, 21.

* MiFID is a regulatory effort by the European Union and Iceland, Norway and Liechtenstein. The main goals of the Directive are to promote competition and consumer protection in investment services.

underlying physical markets.”³² In addition to the regulatory measures proposed under MiFID, the European Commission pledged to spend considerable time and resources—some of which, e.g. the Raw Materials Initiative, are already in place—to promote better understanding of key developments in commodity derivatives markets.

MiFID is currently being reviewed, and a revised MiFID is expected to become effective some time in 2012. MiFID currently defines three trading categories: (i) regulated markets, (ii) multilateral trading facilities and (iii) “systematic internalisers” (i.e., firms that executes orders from its clients against its own book or against orders from other clients). The European Commission has suggested introducing a fourth category—an “organised trading facility” (OTF), which would be similar to the swap execution facility that U.S. law mandates for derivatives. It would be used both to bring some currently off-exchange share trading into a more formal structure. This proposal has been controversial, both generally and with respect to its impact on particular groups of traders. Currently, some commodity traders/dealers are subject to less scrutiny under MiFID, however this exemption might be revoked under MiFID II. So-called “high-frequency traders” may well fall into this category.³³

The **UK Treasury and Financial Services Authority (FSA)** both point out that the impact of high-frequency trading is not clear and that their activities should be better understood before imposing further regulation. Both stressed that there was no justification for an additional broad-based OTF category aimed at capturing “unspecified trading activities.” They argue that the European Supervisory Authorities (ESA) already have the ability to ban derivatives products, therefore, an extension of MiFID’s regulatory jurisdiction into the responsibilities of the ESA seems redundant, if not counterproductive. Finally, both institutions point out that any position limits could harm market liquidity, above all, further evidence of the utility of position limits needs to be determined.³⁴

The communiqué of the **G-20 Agriculture Ministers**, who met on June 23-24, looked forward to final recommendations from IOSCO on regulation and supervision of commodity derivatives trading in both cash and derivatives markets. The communiqué made particular reference to addressing market abuses and manipulation, “...such as through formalized position management powers including the authority to set ex-ante position limits where appropriate, among other powers of intervention.”³⁵ While this topic is expected to be on the agenda at the September 23 G-20 Finance Ministers Meeting, many observers believe that it will be difficult for ministers to reach an agreement on tougher regulation—in part because there is significant divergence of views among G-20

members on this issue.

An **UNCTAD report** released on June 5 recommends increased transparency and supply-side measures in commodity markets along with tighter financial regulation such as position limits, prohibiting banks from proprietary trading (application of the Volcker Rule), and, similarly prohibiting physical traders from taking financial positions due to their participation in physical markets.

UNCTAD suggests that beyond transparency and tighter regulation, occasional direct intervention may at times be warranted. The authors therefore note that proposals for additional price stabilization measures deserve due consideration. Such proposals include a multi-tier transaction tax system for commodity derivatives markets where “a progressive transaction tax surcharge would be levied as soon as prices start to move beyond the price band defined either on the basis of commodity market fundamentals (Nissanke, 2010) or on the basis of the observed degree of correlation between the return on investment in commodity markets, on the one hand, and equity and currency markets on the other.”³⁶

Other official sector recommendations for addressing higher commodity prices and volatility

The FAO and the OECD have coordinated a joint report by ten multinational agencies in response to the 2010 G20 request to assess price volatility of agricultural commodities. The report was released on June 2 for delivery to the G-20 Agriculture Ministers. It included a number of recommendations to help address commodity price volatility, including supply-side measures such as rescinding national policies that subsidize or mandate production and consumption of bio-fuels, which are thought to contribute to agricultural price volatility.³⁷

While the FAO-OECD report does not find evidence that financial investment in commodities is a primary determinant of agricultural price volatility, it does note that such investment may catalyze an increasing correlation between oil and non-oil commodity prices, making the latter even more vulnerable to swings in oil prices. The report also makes clear that well-functioning derivatives markets for agricultural commodities could play a significant role in smoothing price fluctuations.

A Commodities Task Force formed by the **International Organization of Securities Commissions (IOSCO)** also found no evidence for a clear causal

33. European Commission (2010), p. 6; European Parliament (2004), p. 13.

34. HM Treasury/FSA (2011) p. 5.

35. G-20 Communiqué (2011).

36. UNCTAD and Arbeiterkammer Wien. (2011), p. 52f.

37. FAO, OECD et al. (2011).

connection between non-commercial trader positions and commodity spot prices. In their concluding report IOSCO instead identifies “commodity futures markets [as] price discovery markets, in which the futures price tracks the prices of and signals information and expectations about the direction of the underlying markets [...]” Supporting transparency initiatives, the IOSCO report notes that “information about the underlying physical commodity is key for the satisfactory functioning of the futures market and reliable price discovery.”³⁸

With the intent to increase granularity of financial market information, the IOSCO task force recommends close monitoring of commodity futures markets, improvements in transparency, greater cooperation among futures market regulators, and the establishment of an appropriate legal framework. As noted above, the G-20 Agriculture Ministers have asked that IOSCO’s final report (to be submitted ahead of the G-20 Finance Ministers’ meeting in September) include recommendations on enhanced regulation and supervision.

The **World Bank/IFC** has identified cooperation with the private sector as a means of addressing food price volatility. With private-sector market participants, the World Bank/IFC recently unveiled the Agricultural Price Risk Management (APRM) product, designed to facilitate access to hedging instruments. It will provide up to \$4 billion in total to help provide hedging to consumers, farmers and producers of (agricultural) commodities in developing countries from volatile food prices. The project was initially rolled out by the IFC and JP Morgan—both starting the project with credit exposure of about \$200 million each. The World Bank anticipates participation from other banks in the near future.³⁹ Addressing the acute concerns of many policymakers about food price volatility, the president of the World Bank, Robert Zoellick, wrote in a Financial Times opinion piece, “**the answer to food price volatility is not to prosecute or block markets, but to use them better.**”⁴⁰ A July 2011 study from Ecole De Hautes Etudes Commerciales (EDHEC) echoes this point of view.⁴¹

Initiatives by policymakers to increase transparency in commodity markets

Under the auspices of the French G20 presidency, one initiative tied to commodity futures pricing has already been launched in the first half of 2011. A new agency—the **Agriculture Market Information System (AMIS)**—is tasked with the collection of comprehensive agricultural market and production information. The aim behind establishing this initiative is to help authorities reduce price volatility in agricultural commodities to ensure food secu-

rity, especially in developing nations. Caveats, however, are individual countries’ readiness, timeliness and accuracy in reporting. Those concerns have proven realistic with a previous initiative, **Joint Oil Data Initiative (JODI)**, which was tasked in 2002 with a similar mandate for gathering oil market information.

To date, JODI’s mandate has only been partially fulfilled. Information about oil market and oil production is still not as readily available as was originally envisioned at the founding of JODI. For instance, not all members of the initiative live up to the organization’s reporting standards.

Modest progress has been made with the recent completion of a data update in July 2011. The JODI Oil Report stated that data releases now include updates from Brazil, Iran, Libya and others.⁴²

IV. Views of the IIF Commodities Task Force

Financial investment is not a primary driver of commodity prices or volatility

In gauging the extent to which regulation and supervision of commodity derivatives markets require enhancement, policymakers should bear in mind that to date there has been no conclusive evidence that financial investment/speculation is in fact driving commodity prices. The research supporting this view has been conducted not only by academics and private sector market participants, but by a number of official sector bodies — including the IMF, the OECD, the European Commission, IOSCO and the CFTC as well.

Speculation is a vital component of well-functioning commodities markets

While financial investment has grown rapidly in recent years, it has grown broadly in parallel with the increase in the volume of commodities trading generally. Speculators fill the need for counter-positions, helping to bridge the inevitable imbalances between the short and long positions of commercial traders and commodity index traders. Financial investment thus provides essential market liquidity as well as critical information about expected changes in fundamentals.

In addition to its essential contribution to efficient commodity markets, financial investment in commodities benefits a wide range of stakeholders, including households and small businesses via, e.g., their pension holdings. Financial investors include not only hedge funds and index traders who trade for their own

38. International Organization of Securities Commissions (IOSCO). (2011). p. 7, 12.

39. World Bank (21 June 2011).

40. Zoellick, Robert. (05 January 2011.)

41. Till, Hillary. (July 2011).

42. Joint Organisations Data Initiative Oil (JODI Oil). July 2011.

account, but also investment management firms and pension fund managers. The growing interest in commodities as an asset class of these latter categories of stakeholder has brought significant benefits in to their clients in aggregate.

In this context, particularly for long-term investors, financial investment in commodities has significant social utility. Like investment in real estate, investment in commodities represents tangible assets--a very desirable feature for certain classes of private investors--but offer more liquidity than most real estate investments. Moreover, portfolio diversification is vital for such investors, given their long-term horizons. Retirees, for example, benefit generally from well-diversified portfolios, but also more specifically from having commodities in the mix as a hedge against inflation; inflation hedging enables maintenance of consumption levels and a better standard of living post-retirement.

Thus, when considering further regulation of commodity derivatives markets, policymakers need to bear in mind that they are not only targeting traders' activities in financial markets. Regulation can also have a much broader societal impact. Protection of the investment options of long-term investors (who will often fall into the category of targeted groups such as commodity index investors) should be an important consideration in any proposed change to the regulatory environment for commodities trading.

Position limits may not be effective

The CFTC itself finds no causal linkage between speculative positions and commodity prices; indeed Commissioner Michael Dunn notes that "to date, CFTC staff has been unable to find any reliable economic analysis to support either the contention that excessive speculation is affecting the markets we regulate or that position limits will prevent excessive speculation [...] with such a lack of concrete evidence my fear is that at best, position limits are a cure for a disease that does not exist or at worst, a placebo for one that does."⁴³

This view is echoed by other official sector bodies — for example, the U.K. Financial Services Authority, which noted in a 2009 report that it "does not believe, nor have we seen evidence, that a blanket approach through specific position limits is necessarily the most effective way" to monitor or deter manipulative behavior in derivatives markets.⁴⁴

The CFTC has also made provisions to grant certain exemptions to position limits (one such exemption to a major commodity derivatives trader has already been granted.)⁴⁵ Such exemptions could potentially create a

non-level playing field and dilute the impact of broad position limits, resulting in market distortions.

Position limits could reduce market liquidity

Imposing general position limits on commodity traders may have unintended consequences for financial markets. For example, the first stage of the CFTC's proposed position limits would be based on a percentage or multiple of "total deliverable supply." However, imposing such a broad-brush position limit across commodity markets--when trading volumes for individual commodities vary widely--could mean that the limits might in some cases be too severe or not severe enough relative to trading volumes.

In the second stage of implementation, CFTC limits have been proposed to be based on open interest. As this would be done without reference to underlying physical supply, it could increase costs and lessen flexibility for market participants, reducing market liquidity. Moreover, definition of "deliverable supply," not to mention determination of underlying supply for commodity markets on a global scale would be very challenging, as the bulk of this information is "beyond the reach of applicable regulation and supervision."⁴⁶

Finally, the proposed position limits would be set on the basis of the existing classification of traders. Given the acknowledged limitations of these classifications (see above), it would seem more prudent to base any enhanced regulation on an updated and revised classification system.

Further study of the market impact of position limits is needed

Neither the CFTC nor international/EU regulators have provided a robust analysis of the impact of proposed regulation on the functioning of commodity markets. In this context, the position limits (and the methodology used to determine them) that CFTC proposes seem arbitrary. The thousands of comments received on the agency's proposals underscore the need for further analysis.

Tougher regulation could result in unintended consequences

Broad-brush regulation of commodity futures markets would tamper with the market's inherent equilibrating forces, which could lead to even more pronounced swings in commodity prices and volatility. Speculators could potentially be drawn into participating in other, less regulated markets—reducing both

43. The Bureau of National Affairs, Inc. (2011). p. 4f.

44. Financial Services Authority & HM Treasury. (December 2009). p.33

45. CFTC Regulation 1.3(z), 17 CFR 1.3(z).

46. Deutsche Bank. (2011). p. 1f.

liquidity and transparency, as well as complicating price discovery in commodity futures markets.

One example of a negative externality resulting from tighter regulation could be that speculators move into physical commodity markets as an alternative to commodity futures markets. This is particularly true in cases where investing in physical assets has become increasingly attractive—e.g. for many industrial metals, such as copper, zinc or palladium. While storage is of course an issue, investment in physical commodities spares investors from having to deal with a financial intermediary, and investors can also benefit from the hedge to inflationary risks.

It is also important to note that uncoordinated measures to tighten regulation (e.g. in the U.S. and in the European Union) could result in significant market distortions and hamper the effective functioning of global firms (both commercial and non-commercial traders) across borders. **Commodities task force members would therefore welcome efforts to harmonize regulation and reduce potential redundancies in reporting practices.**

Enhanced transparency to regulators is broadly welcomed

The members of the Commodities Task Force broadly encourage increased transparency in commodity derivatives markets and support the continued in-depth reporting of trader positions to regulators. It is, however, important to note that data provided by market participants should be reported on a post-trade basis to safeguard the sensitive traits of trading in commodity derivatives markets. Failure to preserve confidentiality could in fact lead to an outcome directly counter to what policymakers are trying to achieve: liquidity could decrease and volatility could spiral out of control, greatly increasing the costs of hedging.

Similarly, additional broad-based trading categories for monitor/regulatory purposes—as proposed by the European Commission for MiFID II—could have negative implications for liquidity and market equilibria in commodity derivatives markets. The impact of re-categorization on certain types of traders—including high-frequency traders—could exacerbate these problems and prompt large-scale shifting of positions into other markets, such as physical commodity markets. However, assuming discretion in public disclosure of investor reports on trader positions by regulators, the Commodities Task Force believes that the release of aggregated data by the CFTC from the Large Trader Reporting Program (LTRS), on a post-trade basis, would greatly enhance transparency.

To achieve increased transparency in commodity market pricing, task force members also encourage information gathering on supply and demand factors (production, inventories, demand for substitute goods, etc.) to assess the needs/activities of market participants. This will allow for inference about future market movements. Initiatives like JODI are welcome policy tools, however, improvements can be made in reporting practices and monitoring thereof. Some of the information sharing concerning supply/demand in individual countries is still so rudimentary that inference about future market movements is difficult.

Addressing long-run supply and demand concerns

A number of official sector bodies have put forth recommendations to address periodic supply constraints, both short-term and long-run. These include advancing productivity growth in (agricultural) commodities and an enhanced market resilience to external shocks. In addition, official sector bodies agree that more comprehensive data needs to be available for further research—especially in agriculture commodities—to achieve better information about commodity market activity.

Against the backdrop of clearly documented long-run trends in global demand for commodities (notably population growth in emerging markets and growing demand for alternative energy sources such as biofuels), the commodities task force would welcome the implementation of measures to unblock supply constraints (e.g. incentives to invest in productive capacity) or restrictions on the supply or export of key commodities. Such measures would directly address market fundamentals that affect the outlook for commodity supply and demand.

V. Concluding Policy Assessment

1. Policymakers calling for tighter regulation of trading in commodity markets have not demonstrated convincing evidence that financial investment is a significant driver of higher commodity prices and volatility.
2. No robust and well-founded definition of speculation has been put forward that adequately separates speculative activity from hedging and other commercial trading activities. Indeed, many market participants engage in both speculation and commercial trading. Effective and fair regulation requires an accurate classification system for market participants and accurate information about their positions (particularly outside the U.S.).
3. Financial investment plays a vital role in commodity market trading, facilitating price discovery and providing market liquidity. Financial investment also helps equilibrate markets by providing counterbalancing positions to the hedging activity of commercial traders. It also channels new information about fundamental supply and demand factors to commodity spot and futures markets.
4. Tighter regulation could have unintended and damaging consequences, including impairment of market liquidity and efficiency as well as a shift of trading activity to unregulated markets and/or physical commodity markets.
5. Regulators have not provided a robust analysis of the impact of proposed measures, such as position limits, on the effective functioning of commodity markets.
6. Policymakers' concerns about upward trends and volatility in food, oil and other commodity prices are understandable, as they add to inflation risks and jeopardize the sustainability of economic growth in both mature and emerging market countries, and affect the poor disproportionately.
7. However, commodity price volatility has been driven much more by market fundamentals--in particular, rapidly rising demand from emerging markets, coupled with periodic supply constraints (e.g. the impact of inclement weather, demand for biofuels) than by the impact of financial investment in commodities or "excessive" speculative activity.
8. Measures to minimize market distortions and alleviate supply constraints (e.g. via investment in productive capacity) would contribute greatly to reducing commodity price volatility.
9. Proposals by policymakers to enhance the transparency of data provision on prices, trading activity, and the factors that affect the supply and demand of individual commodities are broadly welcomed; however, provision of data to the general public needs to be handled with discretion, as even aggregate data can be revealing about individual firms' trading positions.
10. Any measures to impose position limits or other forms of regulation on commodity markets such as a transactions tax, should be carefully considered and informed with substantive impact analyses. To avoid a non-level playing field, any enhanced regulation should be internationally coordinated.

Appendix I: Commodity market basics

Important definitions

Speculation in futures markets describes a financial activity, whereby investors seek to make a profit by benefiting from price differentials between the futures and the spot markets. A significant market contribution of speculative activity is the provision of necessary information about projected changes in the market fundamentals to the (spot) market. Thus, speculators are an essential part of the futures and spot markets, as they equilibrate price differentials between the two markets, after allowing for the impact of interest rates, storage costs and intrinsic benefits.

Participants in commodity futures markets represent a variety of types of traders. The Commodity Futures Trading Commission (CFTC), an independent regulatory agency of the U.S. government, defines the different trader categories, the main being commercial, non-commercial, index investors, and swap dealers¹:

- *Commercial traders* represent producers, merchants, processors and users of commodities. They mainly take short positions in commodity futures markets to hedge price risk and to satisfy their liquidity needs.
- *Non-commercial traders*, however, include – in broad terms – speculators, while the CFTC admits that this definition might be an outdated one, which does not reflect speculative activity in its entirety.² Over the past decade, financial activity in futures markets has become far more complex. In other words, a trader can be hedging and speculating at the same time.

Relationship between futures and spot prices

To understand the impact of speculation – through the channel of futures price movements – on spot prices, the relationship between futures and spot prices has to be understood first. The futures price is defined as the spot price multiplied by the compounded interest rate, raised by the time to maturity plus the storage costs, minus the intrinsic benefits of ensuing future holdings of commodities.³ In other words, the relationship between spot and futures price is dependent on the periodic interest rate and the time until the contract matures.

Speculators typically pursue a common strategy when trading in futures markets. They enter the market with the intent to exploit the price differentials between the spot market and the futures market. This process is called arbitrage.

Arbitrage occurs when a futures contract is trading under or above its theoretical price. If the futures contract is overvalued, thus too expensive, the arbitrageur will sell the futures contract and, at the same time, will buy the commodity in the spot market. By selling short in the futures market, the trader is automatically obligated to deliver her position. The trader thus honors her commitment by a contract bought in the spot market. If the futures price is undervalued relative to the theoretical value of the futures contract, the arbitrage process will be reversed.

Rolling over futures contracts

While in the physical market participants take delivery of commodities, normally, futures traders do not take physical delivery. With the purchase of a futures contract the intention is either to hedge a certain position or to gain profit by arbitrage. The intention of a passive hedger/index investor is to buy the futures contract with the next following maturity if the current one is just about to mature. This effect is called “rolling over” of futures contracts and applies to most futures contracts especially those from the CME and CBOT. “Rolling over” takes place always eight days before the expiration date of the futures contract with a quarterly expiration date on every third Friday of the respective month of March, June, September and December.

Most futures traders shift from the current futures contract into the next futures contract on “roll-over” dates. Thus, the volume of an expiring contract becomes less while – at the same time – the spreads widen and the trading volume for the next futures contract increases. For liquidity reasons, the environment for “rolling-over” a current futures contract into the following period’s futures contract is better on “roll-over” day.

¹ Non-commercial speculative activity is active in nature, as participants take both, short and long positions. Index investors are classified as “passive” investors; they mostly take long-only positions. Swap dealers are entities that primarily deal in swaps for a

commodity and use the futures markets to manage or hedge the risk associated with those swaps transactions

² CFTC Staff Report (2008), p. 47-48.

³ $F(t) = S(t) \times (1 + r)^{(T-t)} + C - I$

Appendix II: Methodology

Data sources

The literature on commercial and non-commercial activity in commodity future markets can be grouped into two opposing viewpoints. One argues that speculation has a measurable impact on commodity futures – and thus, spot – prices and increases volatility. The other group objects to this point of view, explaining price increases by relying on market fundamentals (supply and demand).

The methodology used by both, proponents and opponents, is mainly based on public data provided by the U.S. Commodity Futures Trading Commission (CFTC). The CFTC presents its data in so-called Commitments of Traders (COT) reports, supplemented by Commodity Index Traders (CIT) reports, and the Disaggregated Commitments of Traders (DCOT) report of September 2009. The underlying indices for the CIT data are listed on the CBOT (corn, soybeans, soybean oil, wheat) the KCBOT (wheat), the NYBOT (cotton, coffee, sugar, cocoa), the CME (live cattle, feeder cattle, lean hogs) and the NY-MEX (crude oil and natural gas). Researchers make use of weekly CIT and DCOT data (CIT starting from January 3, 2006 and DCOT beginning on June 13, 2006).

CFTC data is limited to traders' activities in U.S. commodity markets. Although it is known that the CFTC also collects data from foreign banks regarding their trading activity in commodity futures markets outside the United States, the Commission does not release this data publicly. Other regulatory bodies' reporting activities – in Europe or in other advanced economies – is limited, as, for instance, BIS and German Bundesbank reports do not provide data to the same extent as the CFTC reporting practices.

In addition, proponents and opponents rely on data from various commodity indices (S&P GSCI⁴ and DJ-AIG⁵) and U.S. exchanges, such as the Chicago Mercantile Exchange (CME). For supply and demand figures, studies use various data sources, such as OECD, the IMF, International Energy Agency, OPEC and private sector research reports.

There is consensus across the board that the available data does not accurately reflect the volume of speculative activity in commodity futures markets. A study by Büyüksahin (a former CFTC Senior Econometrician) et al., however, relies on the novel Large Trader Reporting Data (LTRS) of the CFTC, grouping futures traders into 28 sub-categories as opposed to data from COT reports and their CIT supplements, which are constrained to only a few rubrics of traders. This data, however, is not readily available to the public.⁶

It can be argued that the 28 sub-categories from the CFTC's LTRS data set facilitate a much more refined definition of speculative activity in oil futures markets, as opposed to the limited number of categories that has been used to describe speculative activity to date. It is commonly known that the CFTC's COT reports and their CIT supplements are not comprehensive enough to capture the full extent of what speculative activity truly entails; in other words, the CFTC has not yet found a perfect measure of speculative activity in futures markets. The LTRS data – to a large extent – helps to measure speculative activity more accurately, as the overall category entitled “non-commercial traders” has been specified through numerous sub-categories. The net positions of these categories, such as hedge fund, floor broker, floor trader, etc. give a more accurate indication of the speculative activity that actually takes place in futures markets. The accuracy of this measure is of course based on the assumption that hedge funds, floor brokers, floor traders and others are primarily engaging in speculation (vs. hedging).

Proponents and opponents alike would be able to benefit if the CFTC made its LTRS data set openly available, allowing a clearer assessment of the possible impact of speculation on prices. This would help ameliorate transparency in commodity pricing in futures as well as spot markets.

Data “break”

Despite the fact that CFTC data has only covered a short time frame (reporting since 2006) of commodity futures trading activities, there is nevertheless a “break” in the data regarding the length of non-commercial trader position, which coincides with the 2008/09 financial crisis. It is apparent that the number of non-commercial futures contracts traded after the height of the 2008/09 financial crisis is exceedingly higher than pre-crisis levels. There is, however, a fairly simple explanation for this phenomenon. In light of the Lehman Brothers collapse in 2008, several OTC traders were trying to cut back on counterparty exposure to mitigate their credit risk. Therefore, traders shifted into more regulated exchange trading in 2008/09. Although CFTC data was available prior to Lehman's downfall, it is not reflective of a large part of futures trading activities, as data did not reflect large OTC volumes. Furthermore, due to this break in data, the two time periods are rather non-comparable, as the overall trade volumes in both categories, OTC trading and exchange trading, changed significantly in the aftermath of the crisis.

4 Index for investments in the commodity markets and a measure of performance of commodities over time; formerly Goldman Sachs Commodity Index. Developed by Goldman Sachs but sold to Standard & Poors in 2007. Tradable index and available to market participants at the CME.

5 The Dow Jones-AIG Commodity Index; composed of futures contracts on physical commodities

6 Bahattin Büyüksahin is now a Senior Oil Market Analyst with the in Paris located International Energy Agency

Measurements of Speculation

Inflows / Assets Under Management: Following the market volatility in 2008, the prices of major commodities have generally been rising sharply since early 2009. The GSCI overall commodity index has more than doubled, while the prices of precious metals have risen beyond their July 2008 peaks to new record levels. Commodity assets under management continue to reach new highs (\$451 billion in Q1 2011 according to Barclays estimates).⁷

Open interest: “Open interest is the total of all futures and/or option contracts entered into and not yet offset by an opposite transaction, e.g. by delivery, by exercise (for options), etc. The aggregate of all long open interest is equal to the aggregate of all short open interest. Percents are calculated against the total open interest for the futures-only report and against the total futures-equivalent open interest for the options-and-futures-combined report.”⁸

Net Speculative Length: Net speculative length means the total long positions minus total short positions of non-commercial traders. A positive result indicates a net-long position (more long positions than shorts) while a negative result indicates a net-short position (more short positions than longs). Therefore a trader with large but relatively balanced long and short positions in a single market may be among the largest traders in the gross long category and at the same time the gross short category; but on a net basis may not be among the largest traders.

While net speculative length is one of the most commonly used measures for speculative activity in commodity futures markets, it is not a perfect measure. It fails to capture whether traders are actually holding a contract with the intent to speculate vs. to hedge.

In other words, the definition itself, net *speculative* length, presumes that non-commercial traders are primarily speculating, when in fact trading in commodity futures markets has become somewhat more complicated in recent years, clouding formerly acceptable definitions – net speculative length being one of them. The CFTC itself admits that this definition might be an outdated one, which does not accurately reflect speculative activity in its entirety.⁹

Holbrook Working’s “speculative T index”: Holbrook Working’s speculative T index evaluates the proportion of speculators as opposed to commercial hedgers and is a tool to measure whether speculation is excessive in (agricultural) futures markets.¹⁰ The formula is as follows and based on the CFTC Commitment of Traders reports:

$T = 1 + SS / (HL + HS)$ if $(HS \geq HL)$ or $T = 1 + SL / (HL + HS)$ if $(HL > HS)$, where open interest held by speculators (non-commercials) and hedgers (commercials) is denoted as follows: SS = Speculation (Short), SL = Speculation (Long), HL = Hedging (Long) and HS = Hedging (Short).¹¹

While Working’s T Index is a popular measure to put speculative activity into perspective, there are two concerns about Working’s basic assumptions. First, it is not clear whether Working’s assumption, which propels that speculators follow hedging decisions, implies the right direction of causality. Perhaps, some researchers suggest, hedgers follow speculative moves. But regardless of direction, the second issue of ‘contamination’, which describes the inability to isolate hedging and speculation as two different activities, is a larger concern. An investor who is speculating might also be hedging and likewise the reverse. Thus, like in the case of net speculative length, researchers are presented with a measurement difficulty, which makes data collection to further conduct research on the phenomenon of index speculation quite difficult.¹²

Net notional value of commodity index business: Net notional value of commodity index trading includes the portfolios held by swap dealers doing index business with their counterparties plus the notional value of positions held by index funds trading directly on exchanges. “For swaps and leveraged swaps, notional value is the dollar amount on which periodic payments are calculated. For index funds, notional value is normally the value of invested funds; but for leveraged funds the notional value may be some multiple of the invested funds.”¹³

7 Leff, Jonathan. (2011). p. 44f.

8 CFTC Explanatory Notes.

9 CFTC Staff Report (2008). p. 47-48.

10 Irwin, Sanders (2008). p. 10.

11 “Peck (1980, p. 1037) notes that the speculative index, “...reflects the extent by which the level of speculation exceeds the minimum necessary to absorb long and short hedging, recognizing that long and short hedging positions could not always be expected to offset each other even in markets where these positions were of comparable magnitudes.” Working is careful to point out that what may be ‘technically an ‘excess’ of speculation is economically necessary’ for a well-functioning market (1960, p. 197).”

12 Sanders, Irwin, Merrin (2008). p. 14

Further Contributions to the Work of the IIF Commodities Task Force

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