



March 28, 2011

Mr. David A. Stawick
Secretary
Commodity Futures Trading Commission
Three Lafayette Center
1155 21st Street, NW
Washington, DC 20581

Re: Position Limits for Derivatives
(CFTC RIN 3038-AD15 and 3038-AD16)

Dear Mr. Stawick:

Better Markets, Inc.¹ appreciates the opportunity to comment on the above-captioned proposed rules (the “Proposed Rules”) of the Commodity Futures Trading Commission (“CFTC”), the purposes of which are to establish position limits for certain physical commodity derivatives, as required by and pursuant to provisions of the Dodd-Frank Wall Street Reform and Consumer Protection Act (the “Dodd-Frank Act”).

INTRODUCTION

This letter demonstrates, with extensive analysis and empirical data, the following facts:

- speculation in commodity markets has dramatically increased and is excessive;
- excessive speculation has caused increased volatility and increased prices in the futures markets;
- price increases in the futures markets directly affect physical market prices and, thereby, have increased prices in the underlying commodities;
- while increased volatility and prices have increased the need for hedging by physical producers and purchasers, the increased costs to such hedgers as a result of the above have caused physical producers and purchasers to hedge less;

¹ Better Markets, Inc. is a nonprofit organization that promotes the public interest in the capital and commodity markets, including in particular the rulemaking process associated with the Dodd-Frank Act.

- much of this, but certainly not all, has been caused by the creation and explosive growth of commodity index funds;
- those commodity index funds are liquidity takers and not liquidity providers while depriving bona fide hedgers of sufficient market liquidity; and
- those commodity index funds have disrupted the commodities futures and physical markets in ways that distort price discovery.

In sharp contrast to much larger capital markets, commodity markets exist for the purpose of providing a venue for producers and purchasers of physical commodities to hedge their risks. Financial speculators are tolerated as commodity market participants solely to ensure that physical hedgers have sufficient liquidity. Historically, when commodity markets have worked well (i.e., when there is sufficient liquidity and meaningful price discovery for all physical hedgers who want to hedge), physical hedgers have constituted about 70% of the market and financial speculators have been about 30% of the market.

However, since deregulation a decade ago and Wall Street's creation, marketing and sales of so-called commodity index funds (now with an estimated \$300 billion invested in the commodity markets) and other financial derivatives that allow institutional investors to speculate in the commodity markets, those circumstances have been turned upside down. Today financial speculators have overwhelmed the commodity markets and driven out bona fide physical hedgers. The percentage participations have reversed in many markets with speculators now accounting for about 70% or more of the open interest in these markets while physical hedgers have fallen to only about 30% participation (and much lower in some markets). These facts (as set forth above and demonstrated below) require the CFTC to take action now to restore the commodities markets to their intended purpose.

The only way to do that effectively, and to fulfill its statutory duties (imposed by the requirements of the Dodd-Frank Act and the Commodities Exchange Act), the CFTC must strengthen its Proposed Rules by imposing aggregate position limits on excessive speculation, including in particular applying such limits to commodity index funds as a group or class (as specifically provided for in the law).

The statute requires the CFTC to establish such limits on the size of futures and options positions and swap positions held by "any person, including any group or class of traders," to achieve four express purposes:

- (i) to diminish, eliminate, or prevent excessive speculation as described under this section;-
- (ii) to deter and prevent market manipulation, squeezes, and corners;

- (iii) to ensure sufficient market liquidity for *bona fide* hedgers; and
- (iv) to ensure that the price discovery function of the underlying market is not disrupted.²

Congress also gave the CFTC broad new authority to implement position limits to achieve these goals. These provisions represent a Congressional intent to revise and expand regulatory control over the excessive speculation that is currently predominant in the commodity futures markets.

While the proposed rules adequately deal with the purpose of the statutes regarding deterring and preventing market manipulation, squeezes and corners (purpose ii above), they are totally inadequate in achieving purposes i, iii and iv. To satisfy the statutory obligation, the CFTC must impose robust position limits and to do so in a manner set forth below.

SUMMARY

The comment letter is divided into sections as summarized here.

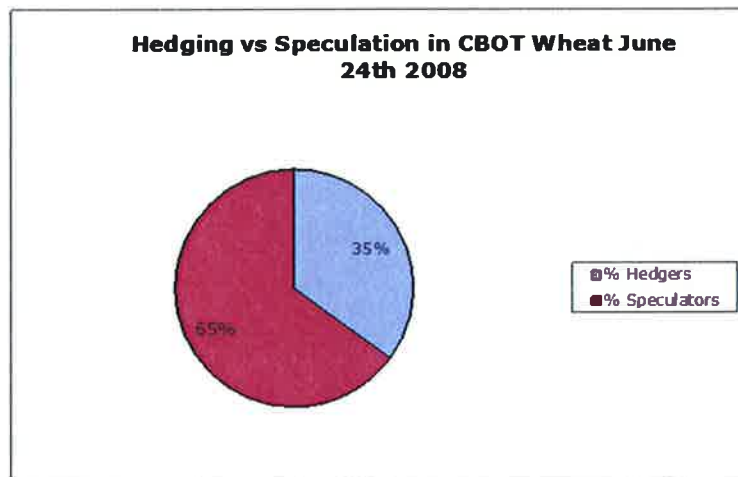
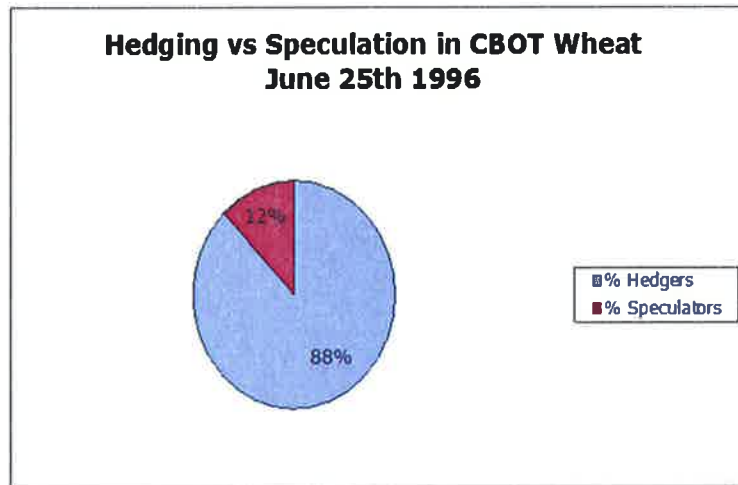
1. Speculation has Dramatically Increased and Has Reached Excessive Levels

In support of the expansion of the Proposed Rules to limit excessive speculation as well as concentration, we show how specific trading activities in the futures markets directly affect commodity prices. In addition, we demonstrate that current levels of speculation are excessive, and that as a result, the fundamental purposes of the commodities futures markets, as venues for hedging prices of essential products and price discovery, are not being fulfilled. We also show that by interfering with the hedging function of the futures markets, excessive speculation is causing commodity prices to rise, thereby driving up the prices of consumer goods such as food and energy.

This comment letter examines academic works and historical data. It applies knowledge developed independently and by academics to specific market structures and trading strategies, as well as the motivations of categories of participants in the commodities futures markets. It reaches several important conclusions:

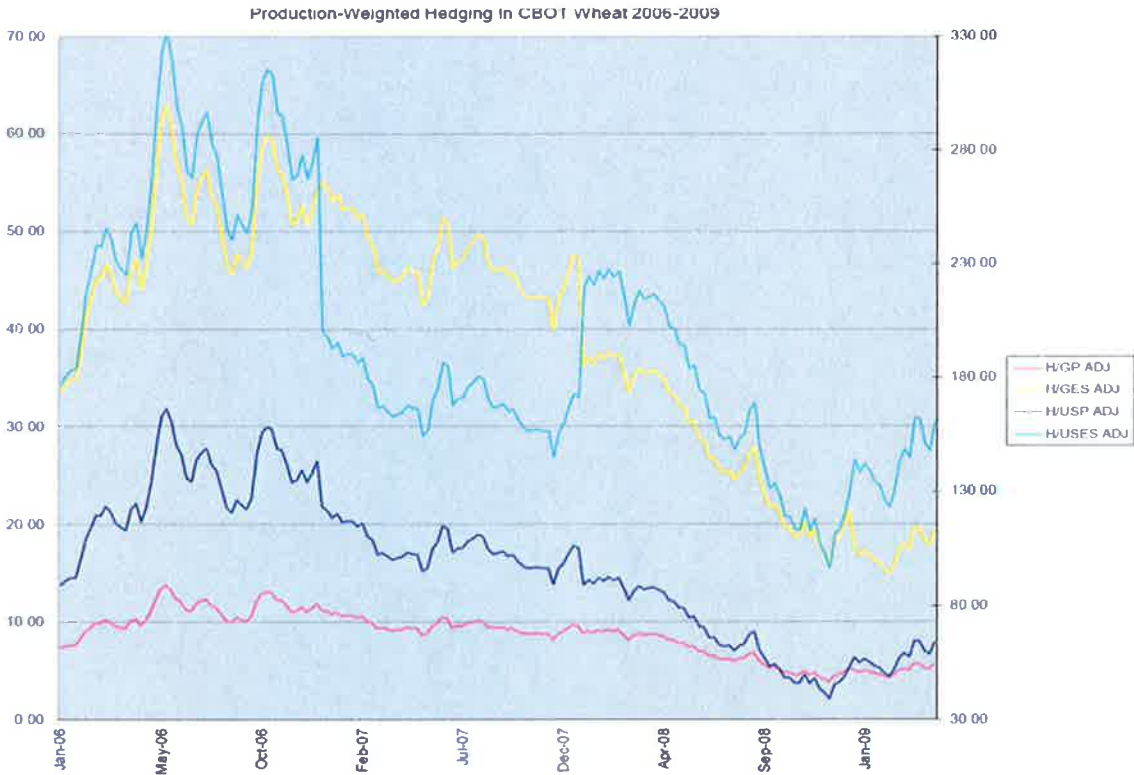
² Dodd-Frank Act, Section 737(a)(3)(B).

Various commodities markets have experienced periodic and sporadic large net cash inflows, largely deployed to speculative financial trading, compared with earlier periods, as demonstrated by CBOT wheat in the following charts:



There is a strong and demonstrable relationship between futures market volatility and the level of speculative inflows and associated new trading in those markets. This additional speculative trading far exceeds amounts necessary to provide liquidity for hedgers and, as a consequence, has increased price volatility in these markets.

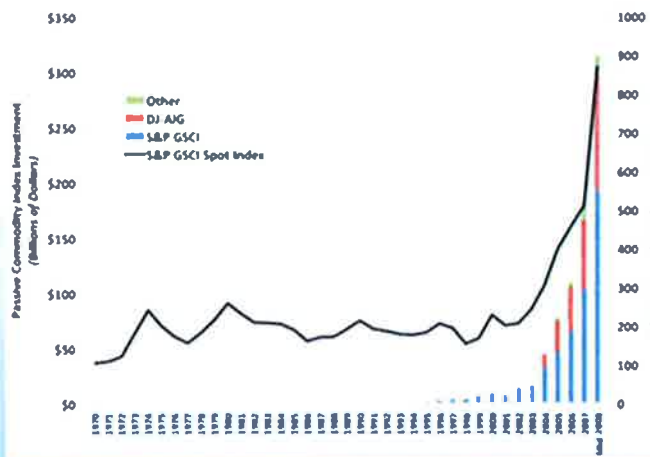
Hedging as a percentage of production has been decreasing for years. Hedgers report that the reason for their reduced hedging activity is the increased costs. Futures price volatility, which is strongly related to margin requirements, is the major source of this increased cost. As margin levels increase sharply because of futures price volatility, hedgers cannot afford the additional cost and are forced to abandon management of their price risk by hedging in futures markets. Just one example is the chart below which shows the drop of physical hedging in the CBOT Wheat market from 2006 to 2009:



- The increased cost of hedging has increased the cost of doing business for hedgers. For those who are no longer able to hedge because of costs, the price risk that they bear as a result is an indirect cost. Because producers are much more likely to hedge than commodity purchasers, and because the demand for essential commodities is relatively inelastic, these costs are passed along to consumers.

This letter also focuses specifically on index funds and index-based institutional strategies (collectively, “commodity index funds”), including their growing presence in the commodity futures markets, which cannot be overstated as shown in this chart:

Passive Commodity Index Investment



Source: Goldman Sachs, Standard & Poor's, Dow Jones, calculations based upon Commodities Futures Trading Commission (CFTC) Commodity Index Trader (CIT) Supplement. Mid 2008 figure is as of July 1.

In addition, we identify the specific, structural attributes of commodity index funds that influence commodity futures prices and, as a consequence, physical commodity prices as well. Generally, the trading motives associated with commodity index funds do not include the price effects of commodity-specific supply and demand factors and, as a consequence, disrupt price discovery and tend to de-link futures prices from fundamentals. In addition, the periodic roll of positions inherent in their structure, biases these futures markets to a contango forward curve. This increases prices through widely used delivery price-setting mechanisms. The following conclusions will be shown:

- Commodity index funds do not provide liquidity; in fact they are **liquidity takers**. Because commodity index funds consume and compete for liquidity, their activity has contributed significantly to futures price volatility.
- Futures prices over time have persistently been in a state of contango over an extended period for a majority of commodities. Commodity index fund investment has been a significant portion of futures trading activity during this period. A structural feature of commodity index fund market activity is the ongoing need to roll expiring futures contracts into futures contracts of greater duration near the end of each trading month. This practice bids up the price for longer duration futures. The commodity index fund roll has contributed significantly to fostering a contango forward curve in many commodities futures markets.
- In many markets, contracts for the physical purchase of commodities are indexed to nearby futures price.
- As a result of excessive speculation in general, and commodity index funds in particular, the forces behind convergence of futures prices to fundamental prices are less effective, which reduces the value of futures contracts as hedges. As a result, the costs of production have subsequently increased because hedging futures are less valuable as risk-mitigating instruments.
- With the futures prices of many commodities elevated significantly by excessive speculation and also with the forward price curves in a persistent state of contango as a result of commodity index fund activity, ***the prices of physical commodities have been structurally pushed higher.***

2. The Harmful Impact of Excessive Speculation

Excessive speculation is contributing to dramatic and unnecessary increases in the price of commodities such as food (wheat up 79.8% in 12 months), energy (heating oil up 47% in 12 months) and textiles (cotton up 140% in 12 months), which people depend upon not only for a decent quality of life, but for survival as well. For the vast majority of Americans, already beleaguered by years of deep and persistent recession, these price increases are a

heavy burden. For people in underdeveloped countries, many of whom already live on the verge of starvation, these price increases are a matter of life and death. It is therefore imperative that excessive speculation be brought under control through the establishment of effective position limits.

3. The Ample Statutory Authority and Specific Statutory Requirements

In the Commodity Exchange Act of 1936, Congress recognized that excessive speculation causes “sudden and unreasonable fluctuations or unwarranted changes” in commodity prices, resulting in “undue and unnecessary burdens on interstate commerce.” For that reason, Congress charged the CFTC with establishing position limits to curb excessive speculation and its burdensome consequences.

However, the position limits that the CFTC implemented under the authority of those statutory provisions have proven to be wholly inadequate to contain excessive speculation, especially in the form it has taken over the past decade. To address this problem, Congress, in the Dodd-Frank Act, gave the CFTC new tools for establishing effective position limits, including the authority to set limits for “any group or class of traders.” Moreover, Congress mandated that the CFTC use those tools to achieve four objectives, top among them being to “diminish, eliminate, or prevent excessive speculation.” Unless the Proposed Rules are enhanced to take full advantage of the new authority granted to the CFTC in setting position limits, Congress’s mandate will not be fulfilled, commodity markets will continue to be dysfunctional, and consumers will suffer the hardship of dramatic inflation in the cost of essential products ranging from gasoline to groceries.

4. The Proposed Rules Must be Changed to Impose Robust Position Limits

The Proposed Rules do nothing to, diminish, eliminate, or prevent excessive speculation, which is the first priority under the Dodd-Frank Act. They also fall short of accomplishing two of the other stated objectives in the Dodd-Frank Act, which are directly related to the consequences of excessive speculation: ensuring adequate liquidity for hedgers and preserving the price discovery function of the market. As described below, excessive speculation, especially indexed-based vehicles and tactics, materially affects levels of liquidity needed to provide physical hedgers with sufficient liquidity and dramatically impairs price discovery.

Therefore, the CFTC must make a number of specific changes to the Proposed Rules. Above all, the rules must impose a new regime for limiting excessive speculation generally and commodities hedge funds specifically, which will overlay the concentration limits in the Proposed Rules. In addition, the CFTC must strengthen the Proposed Rules in the following ways:

- Aggregate position limit rules on excessive speculation must be applied immediately to the futures markets. There is no reason to wait for additional data on swaps markets.

- Concentration position limits applicable to the futures markets must be applied immediately as well. The Proposed Rules call for separate position limit regimes for futures, swaps and the two combined. Information from large swaps dealers may be needed for swaps and swaps/futures combined. The CFTC must implement the futures regime first and immediately, which do not require any such information.
- Commodity index fund investor positions must be aggregated because they are “acting pursuant to an expressed or implied agreement or understanding,” ***as specifically provided for in the statute.***
- The “look-through” exclusion of positions offsetting swaps entered into with a customer who is entering into a bona fide hedge is a huge and unjustifiable loophole and must be deleted.
- The measurement of compliance must be more frequent.
- The standards included in the definition of a “referenced paired futures contract, option contract, swap or swaption” must be amended to more accurately reflect market practices and realities.

5. Appendix

The relationship between excessive speculation and commodity price increases is supported not only by the weight of empirical evidence but also by a large group of respected experts who have done studies on the subject. Nevertheless, some academics have contended that excessive speculation has not been responsible for the sharp commodity price increases witnessed in recent times. To put this debate in a fresh perspective, the Appendix reviews the extensive literature supporting the relationship between excessive speculation and commodity price increases and also examines some of the principal arguments advanced by those who discount the existence of this relationship. All of the authorities and studies cited in the Appendix and elsewhere in this comment letter are incorporated herein by reference as if fully set forth herein.

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Part 1. Speculation Has Increased Dramatically and has Reached Excessive Levels

Section I: Data Show That Commodity Markets Have Undergone A Radical Transformation

Commodity Markets Exist For Producers and Purchasers to Hedge Risks

The current state of commodity markets must be viewed in the context of the purposes for which these markets exist.

The Commodities Exchange Act statutorily establishes the purpose of commodities markets:

- (a) Findings. The transactions subject to this chapter... are affected with a national public interest by providing a means for managing and assuming price risks, discovering prices or disseminating pricing information through trading in liquid, fair and financially secure trading facilities.
- (b) Purpose. It is the purpose of this chapter to serve the public interests described in subsection (a) of this section....³

Any speculation in the commodities futures markets must serve, and certainly must not harm, the public interests as described above. Speculation is not acceptable to the extent that the central goals of providing hedges to manage risk and price discovery are impaired or, even worse, if the people intended to be benefited are harmed. ***Commodities futures and over-the-counter markets do not exist to provide speculative financial investment opportunities for institutions and individuals so that they can profit from trading.***

There are two primary reasons that futures markets for physical products exist. Producers and buyers of commodities can benefit from hedging price risk. Hedging can reduce future price uncertainty in their businesses. In addition, wide availability of information from a broad marketplace devoted exclusively to benchmark futures pricing based only on fundamental supply and demand helps to facilitate discovery of the most efficient price for a commodity.

Properly functioning commodities futures markets help *bona fide* hedgers to hedge price risk, which ultimately reduces the cost to the public at the supermarket, the gas station and in other transactions. In fact, when futures markets are working correctly, efficient

³ CEA, Section 5

hedging and price discovery by hedgers can help foster broad economic growth and stable employment. The value of futures markets to the society is measured by how well they serve these goals.

Recent years have seen a persistent coincidence of:

- Large increases in the flow of money for speculative purposes into the futures markets, well beyond the demand of hedgers for counterparties.
- The rise of investment vehicles with large amounts of money under management and very specific trading strategies which are completely unlike those historically employed in futures markets.
- Significant increases in the volatility of futures prices.
- Persistent state of contango in many commodities futures markets forward price curves.
- A steady decline over much of the last decade of the use of hedging by producers and purchasers of commodities to manage the price risks in their businesses, measured by contracts held by short hedgers vs. production, and contracts held by long hedgers vs. consumption.
- Historically high prices for commodities, mitigated only by the contraction in business activity following the recent financial crisis.

As the markets became more accessible and automated in the decade following enactment of the Commodity Futures Modernization Act of 2000 (“CFMA”), decreased regulation allowed them to mutate in many ways. In the futures markets, the level of speculative trading had historically been in the range of 15-30% the total market.⁴ As indicated by the charts below,⁵ this relationship began to change dramatically, as the percentage of speculative activity increased.

⁴ See e.g. Working (1960), Peck (1981).

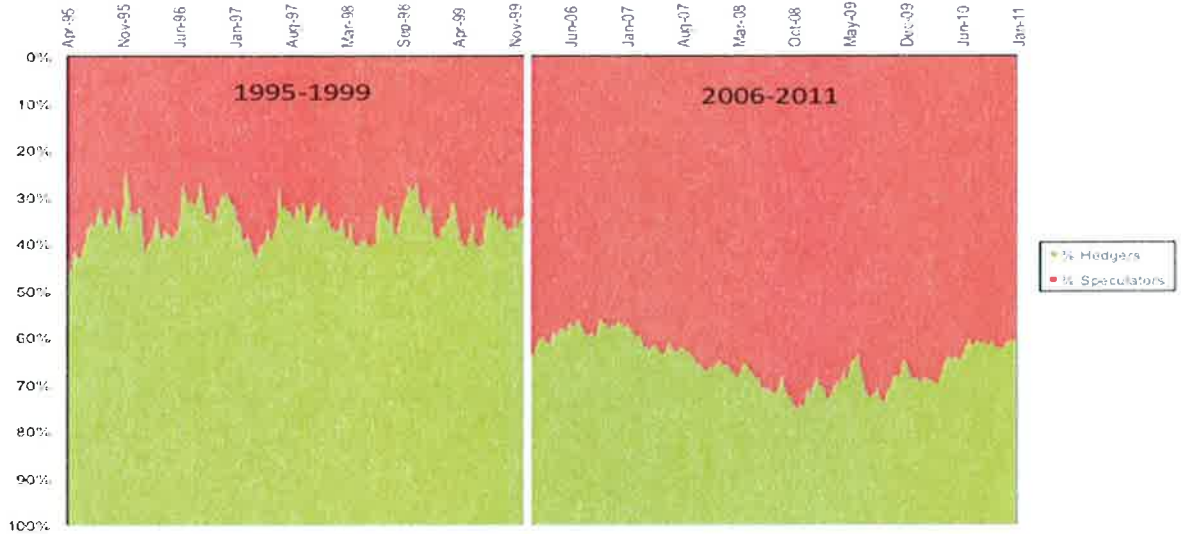
⁵ Pre-CFMA percentages are calculated from the CFTC COT report as commercial vs. non-commercial. Post-CFMA percentages are calculated from the CFTC CIT report as [CIT + Non-Commercial No CIT] vs. Commercial. The charts below are intended as a representative sample, but calculations have been run for all commodities in the CIT report. The percentages are highly robust across all commodities for which data is available, and do not change dramatically if spreads are included or not. The full data set is accessible online at www.bettermarkets.com.

Hedging and Speculation Before and After CFMA

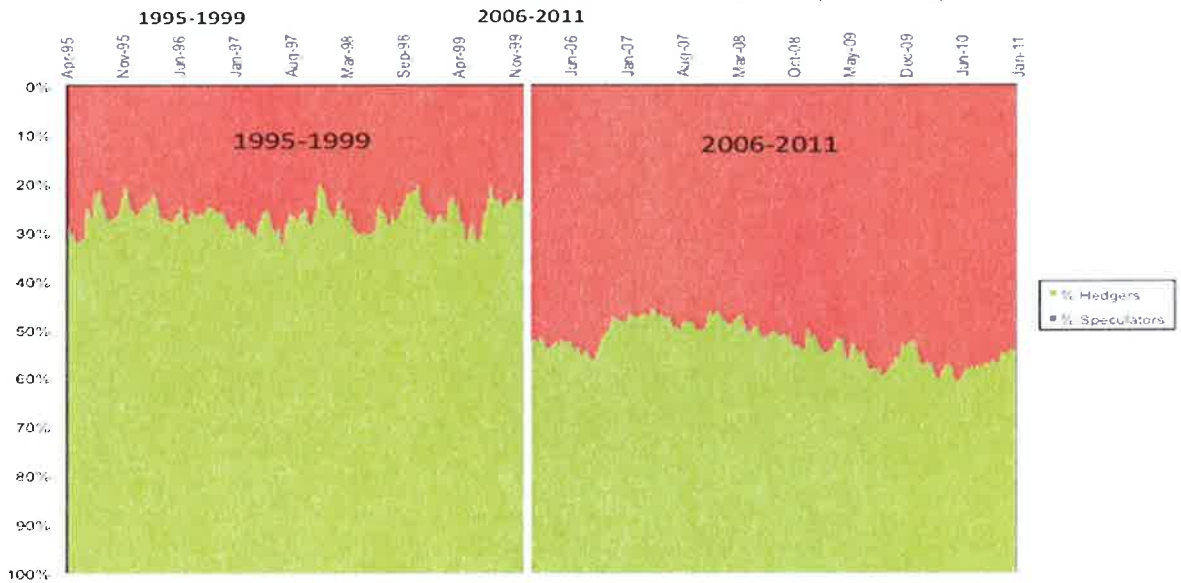
The charts below show how open interest (including spreading) has changed since CFMA, with speculators now controlling a far greater proportion of the market than in the past. For both wheat and corn, the dominant category of participant has reversed: non-commercial speculators have gone from around 30% of the market to around 70% in wheat, and from around 25% of the market to around 5% in corn.

Source: CFTC COT Report for pre-CFMA and CFTC CIT report for post-CFMA.

Commercial vs. Non-Commercial Before and After CFMA (CBOT Wheat)



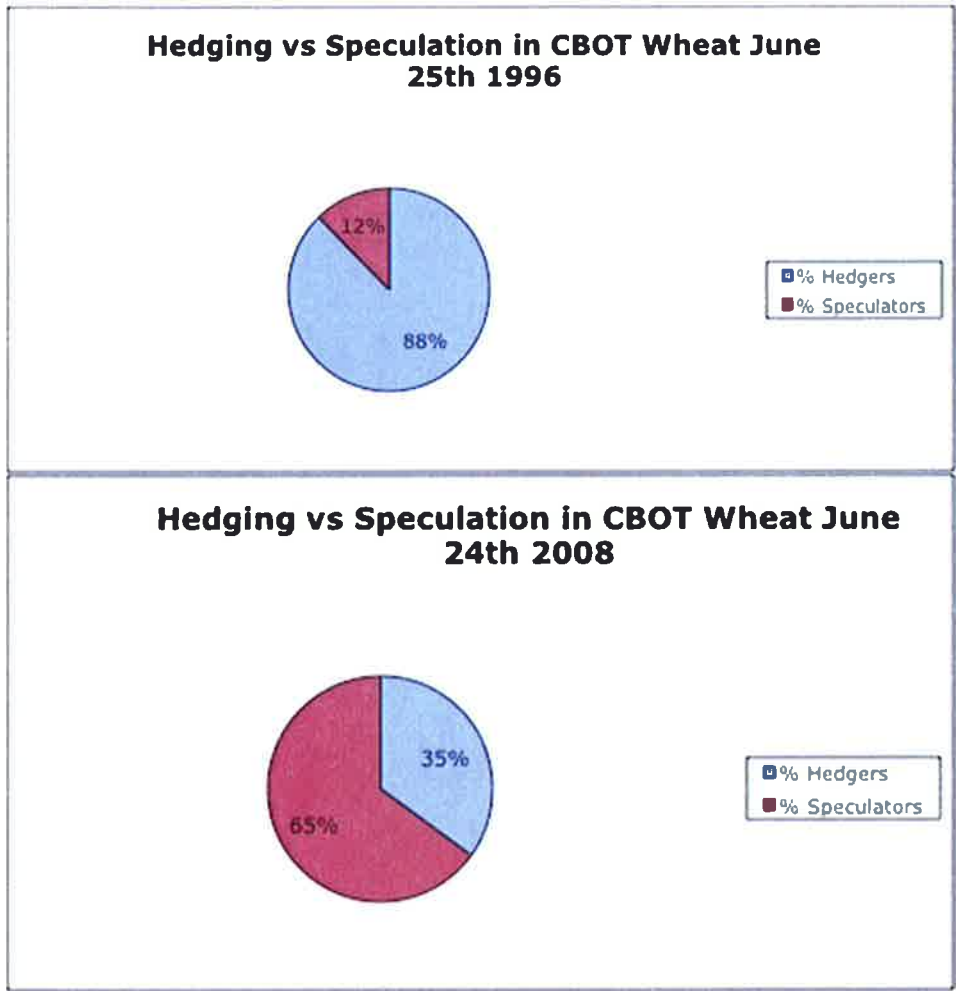
Commercial vs. Non-Commercial Before and After CFMA (CBOT Corn)

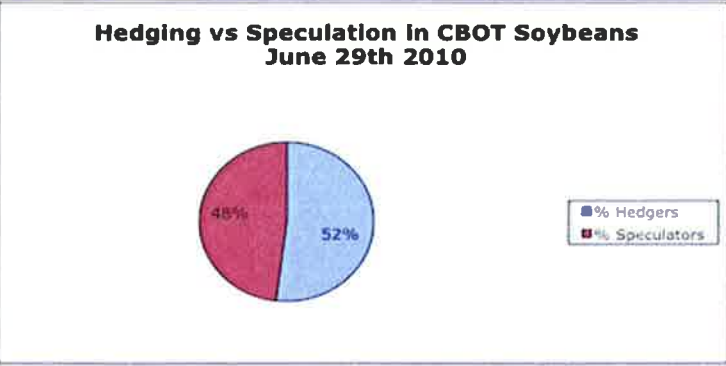
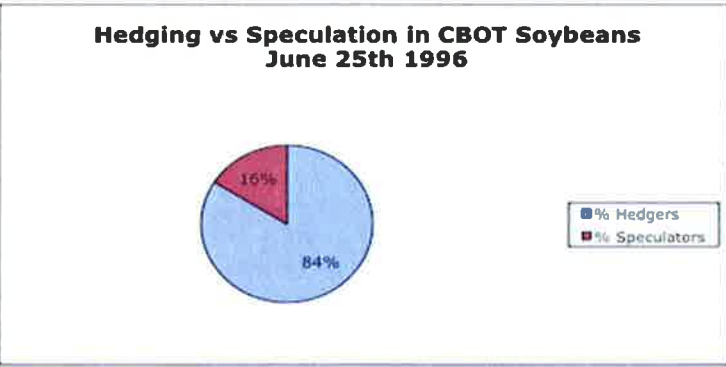
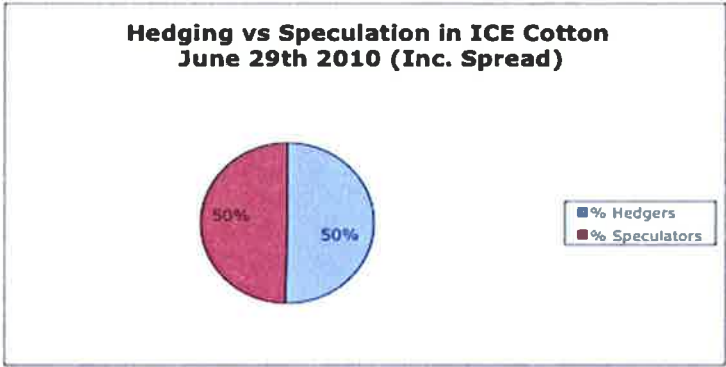
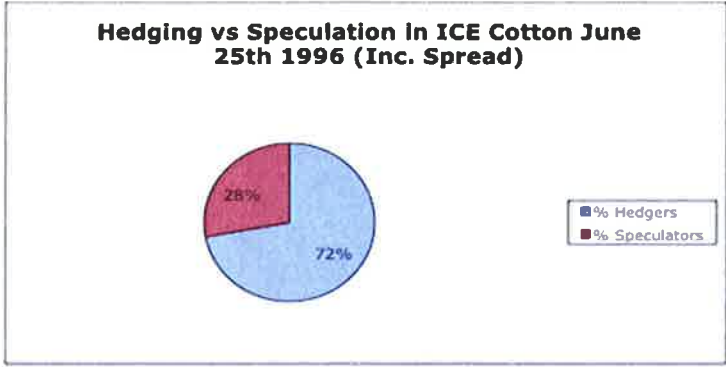


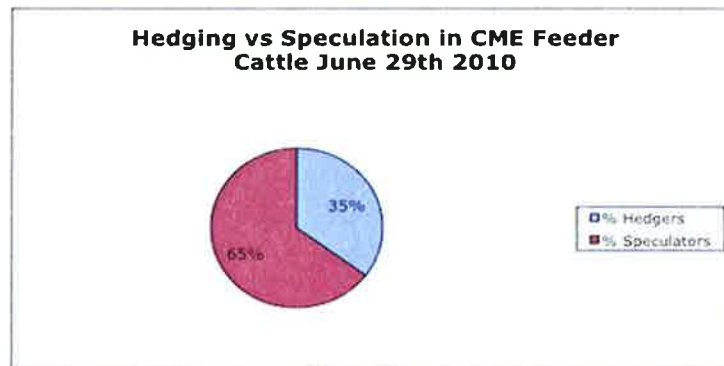
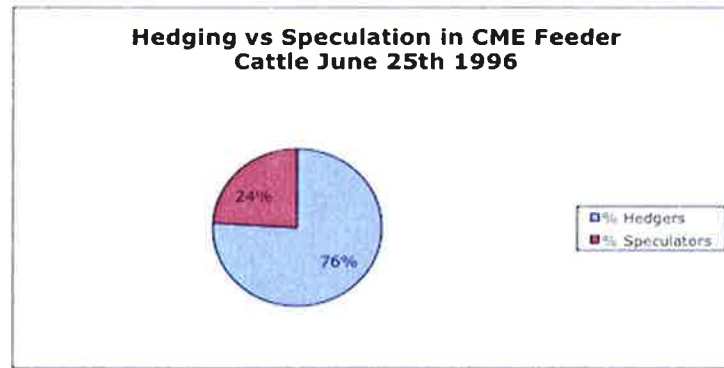
Hedging and Speculation Before and After CFMA

The pie charts below show how open interest has changed since CFMA for a wider range of commodities. As with wheat and corn, the change is dramatic for all commodities studied. The results are robust whether spreading is included or not. Therefore some commodities are shown with spreading included, and others without.

Source: CFTC COT Report for pre-CFMA and CFTC CIT report for post-CFMA.







Commodity Index Funds: A New and Powerful Category of Market Participant.

The dramatic shift during these years from hedgers to speculators happened at the same time as the rise of the commodity index fund. Commodity index funds hold long-only positions which are rolled into longer duration positions before they expire every month. The “innovation” was to create a new asset class for investment which continuously reflects a market-basket of physical commodity futures. In the search for a securities-like asset based on commodities prices, Wall Street actually created commodity index funds as a new pseudo- “asset class” which they then could sell to large investors. The following box describes the salient characteristics of commodities index funds.

Commodity Index Funds

History

- The first commodity index fund was created in 1991. The early funds were created via over-the-counter (OTC) total return swaps between a dealer (Goldman Sachs was the first) and a customer (such as a pension fund or other institutional investor). The dealer of these swaps then hedged the financial risk they created for themselves by buying futures contracts on listed exchanges like CBT and NYMEX.
- After CFMA (2000), there was no regulation of OTC total return swaps. Nor were there any limitations on swaps dealers' activities in the futures markets, as they were given a *de facto* exemption from position limits via letters of no action from the CFTC.
- In 2003, several analysts and academics noticed that commodities were historically uncorrelated with financial assets, and started to promote them as an asset class, claiming they provided diversification for institutional portfolios.
- From 2004 onwards, commodity index funds ballooned, with \$350 billion flowing in over a few years.
- Today, the basic structure is the same: a total return swap hedged via another product. But, swap dealers must still hedge the financial risk they create for themselves when they offer total return swaps. However, they now do so not just by buying traditional futures contracts, but also by buying physical products, by entering into other OTC swaps, and also through a variety of hybrid contracts.

Key Features

- Tracks a basket of commodities referred to as an "index" (commonly the GSCI or DJUBSCI) by buying a combination of futures, swaps and physical product in the same proportions as the chosen index.
- Constantly rolls contracts before expiration, as a practical matter occurring each month. Rebalances frequently if the value of portfolio components ceases to match their relative weights in the index.
- Buys when new investment money flows in, and sells when investment money is withdrawn regardless of price.
- Does not take a view on fundamental supply and demand for the commodities in the "basket" (index).

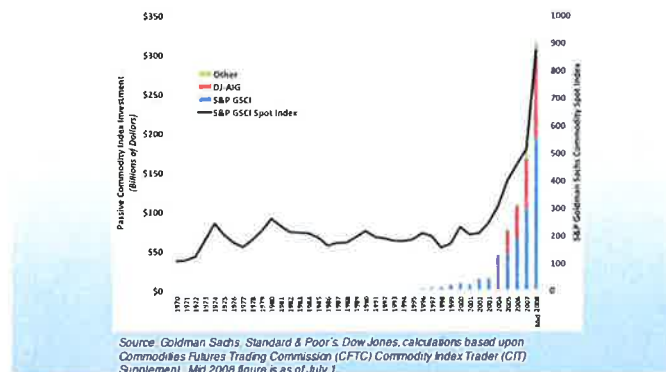
Assets Under Management

- Barclays and others estimate there to be over \$300 billion currently invested in commodity index funds and related strategies. Pension funds who have pledged up to 6% of their portfolios to commodities are typically just 2-3% invested now, meaning they are on average likely to roughly double their investments over the next few years.

Passive Commodity Index Investment

The chart below plots the inflows of passive commodity index fund investment, extrapolated using the CFTC CIT report and the published weightings of the most commonly used benchmark commodity indexes. Source: CFTC CIT report, Goldman Sachs, Standard & Pooers.

Passive Commodity Index Investment



Source: Goldman Sachs, Standard and Pooers, CFTC CIT report

Sufficient Levels of Liquidity

The primary benefit of speculation in commodity futures market is that it provides liquidity for hedgers and, by arbitraging futures prices which diverge from fundamentals thereby causing them to converge, price discovery. A threshold question in analyzing excessive speculation is how much speculation is required to achieve these benefits.

The concept of liquidity in commodity markets entails two basic categories of participant: (net) liquidity takers and (net) liquidity providers. The first group generally consists of those participants whose need to transact as a function of their underlying business. For commodity markets, this most obviously includes producers, merchants, processors and refiners of a product. The second group includes those participants who do not “need” to transact in the same sense as the first group. Instead, the second group chooses to trade because there is profit to be made either from facilitating the trading of the first group (market making, which is similar to intermediation between long and short liquidity takers), or from trading among themselves, profiting from price moves. In commodity markets, this category most obviously relates to traditional speculators.

The classic picture of a commodity futures market consists of net short hedgers demanding liquidity, and net long speculators providing that liquidity. Even though short speculators do not directly provide liquidity to short hedgers, the group of speculators as a whole does, in fact, do so, and does so more effectively as a result of the presence of the short hedgers.

The hallmark of a market provisioned with *adequate* liquidity is an environment of low and steady bid-ask spreads. This, in turn, should reduce “artificial” price volatility arising from futures market imperfections, so that the only volatility that remains is “natural” volatility arising from information flows concerning fundamental supply and demand for the underlying commodity.

Clearly, liquidity and volume are not equivalent. Bid-ask spreads are narrowed by liquidity providers who extract profit from the bid-ask spread; but if additional speculative volume causes higher overall price volatility, there is a trade-off between narrower bid-ask spreads and higher price volatility. Optimum liquidity is therefore not equivalent to maximal volume. The role of speculative position limits is to ensure speculation reaches a point where it provides sufficient liquidity, but does not become so dominant that it drives excessive volatility, and thereby pushes up costs for hedgers, the markets’ primary constituency.

The Changing Composition of Commodities Futures Markets Participation and its Consequences.

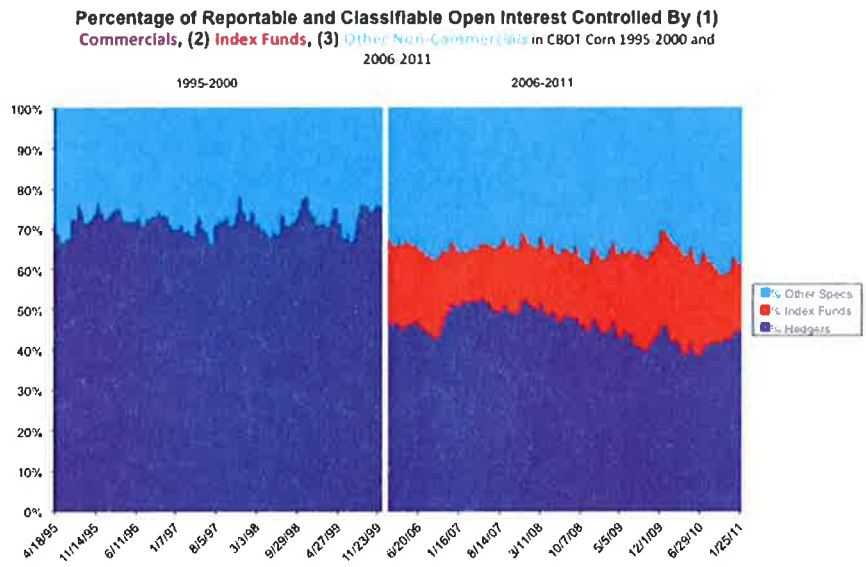
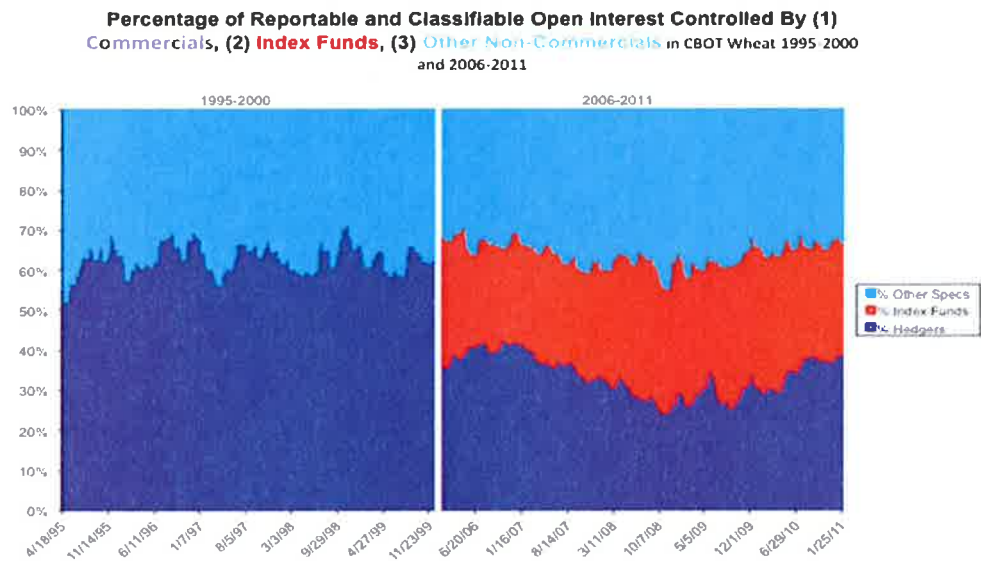
Commodity index funds existed from the early 1990’s, but starting in 2004-2005 investment levels grew significantly, climbing to more than \$300 billion according to some estimates. In large measure, this was a result of the promotion of commodity index funds as an asset to include in investment portfolios which also included equity positions. While

the validity of this assertion has been challenged, institutional investors continue to hold large commodity index fund positions.

The following chart illustrates the change in one of the physical commodity markets resulting from commodity index funds, from the years before significant investment in commodities index funds to the years following the 2005 breakout.

Hedgers, Commodity Index Funds and Other Speculators in Wheat Futures Markets.

The charts below show the role that commodity index funds have played in shifting open interest from commercial to non-commercial participants in wheat and corn. They have been the primary driver of this shift. The same results are evident across a range of other commodities. Source: CFTC CIT Report.



The observations of participants in the markets regarding these new speculative flows provide an insight into the effect they have experienced. Many hedgers have concluded that the performance of the futures markets since the commodity index funds have been such a large factor have substantially increased the absolute price levels and the volatility of prices for commodities. The following are just a few examples:

- “We are now in a bubble for all commodities, and the bubble will burst for sure”

Andrea Illy CEO of IllyCafe, March 2011⁶

- “I think it’s artificial. I think financial speculation has really stepped into the market.”

Howard Schultz CEO of Starbucks, March 2011⁷

- “The commodity industry finds itself in the middle of distorted prices and meaningless relationships between futures and cash. Money flowing into the market creates excessively high prices.”

*Joe Nicosia President of American Cotton Shippers Association,
January 2009⁸*

- “[Y]ou have a new set of players in a market who believe there will be a greater payout in taking a long position...We really have lost the relationship that is core to the price discovery mission of the futures market.”

*John Heimlich Vice President of Air Transport Association,
August 2010⁹*

- “The only thing that I’m concerned about is the pressure exerted by speculators, analysts and some investors in the futures market on prices to push them up or down away from market fundamentals”

*Ali al-Naimi Saudi Arabian Oil Minister¹⁰
January 2011*

⁶ <http://www.businessweek.com/news/2011-03-17/illycaffe-ceo-sees-coffee-up-to-50-overvalued-on-bubble-.html>

⁷ <http://www.bloomberg.com/news/2011-03-18/coffee-speculation-inflates-price-hurts-demand-starbucks-says.html>

⁸ <http://www.cotton247.com/cia/?storyid=343>

⁹ <http://www.risk.net/energy-risk/feature/1728077/aviation-bears-brunt-fuel-price-gyrations-rules#ixzz1H5qxrTSd>

¹⁰ <http://in.reuters.com/article/2011/01/24/idINIndia-54357620110124>

- “[E]xcessive speculation led to the commodity price bubble. Unfortunately, as speculators created this market bubble, many farmers ended up locking in higher input and feed costs. Now, following the market collapse, farmers and ranchers are struggling to pay these higher costs and rural communities, in turn, are feeling the pinch.”

*Roger Johnson, President of the National Farmers Union
June 2009¹¹*

A wide array of end-users identify increased financial participation in general, and commodity index funds in particular, as not only increasing costs, but doing so to such an extent that *bona fide* hedgers are being driven out of the markets that are supposed to exist for them:

- “Member companies historically use hedging practices to protect themselves from volatility and to increase predictability of the purchase price of natural gas. Since 2001, volatility has significantly increased in large part due to excessive speculation which has also increased the cost to hedge.”

Paul Cicio – Industrial Energy Consumers of America¹²

- “When fuel prices rose to unprecedented levels in July 2008, followed by a rapid drop before the year was out, airlines... [were] stung on several fronts – initially by high prices, then by hedging losses once prices fell...”

Pauline McCallion – Airline Analyst, Energy Risk¹³

- “To date, positions held by commodity index traders have been mostly long-only, held for extended periods, and non-responsive to changes in price. We believe that this situation, in which a large portion of the crop is not for sale at any price for extended periods, has sucked liquidity out of the contract and has contributed to extreme volatility such as seen last summer in the soft wheat contract.”

Thomas Coyle, Chairman of the National Grain and Feed Association¹⁴

¹¹ <http://67.15.32.179/news/news-archives/2009-news/90-economic-policy/256-nfu-statement-senate-report-on-speculation-in-wheat-market>

¹² Testimony before the U.S. Senate Permanent Subcommittee on Investigations, June 25th 2007 Available at http://www.ieca-us.com/documents/IECATestimony_06.25.07.pdf

¹³ <http://www.risk.net/energy-risk/feature/1728077/aviation-bears-brunt-fuel-price-gyrations-rules>

¹⁴ Testimony before the U.S. Senate Permanent Subcommittee on Investigations, July 21st 2009 Available at http://hsgac.senate.gov/public/index.cfm?FuseAction=Hearings.Hearing&Hearing_id=26f85374-c43a-4e2a-ac16-b64a40ca263a

- “We would respectfully suggest that the underlying function of a futures market is to allow market practitioners to mitigate risk in the physical market through the means of hedging. [From] the moment a market becomes purely a vehicle for speculation, it loses its usefulness. The cocoa industry [cannot] continue to trade on a futures market that is not offering [hedging value].”

Letter from coalition of cocoa producers and processors to NYSE Liffe July 2010¹⁵

Given that the commodity markets exist for these physical market participants to hedge, the remedy provided in the CEA is for the CFTC to require position limits on excessive speculative trading activity in aggregate, across market participants.

It should not be surprising that this issue has raised intense interest among political leaders, public interest groups and the financial sector. To date, more than 3900 comment letters have been submitted to the CFTC from industry, the financial sector, public interest groups and interested individuals. The stakes are very high. Speculative trading which increases costs of basic necessities, especially in times of stagnating and declining incomes and high unemployment, is intolerable. It is the equivalent of a tax disproportionately levied on American families. As an example, a single dollar increase in the price of jet fuel increases one airline’s cost by \$100 million.¹⁶ Ultimately, the price is paid by the traveling public in ticket prices and the airline workers in jobs.

This shows that the profit from speculative trading is enormous. If position limits eliminate excessive speculation, windfall profits will be lost by financial institutions and other speculators, exchanges and clearinghouses. With so much at stake for their narrow business interests, it is to be expected that the discussion by statutory imperative to end excessive speculation. Opponents of position limits are aggressive, but they are also inconsistent with the facts, and the purpose of commodity markets.

Speculation in the Deregulated Commodities Markets.

During the commodity index fund era, the commodity markets changed fundamentally. Hedging today is a much lower percentage of market activity, with percentages of open interest falling from around 70-90% (depending on the specific market) only around 10 years ago to around 30% today.

¹⁵ Letter available at <http://www.ft.com/cms/s/0/fa802828-94af-11df-b90e-00144feab49a.html#ixzz1HMAnNFF> It should be noted that this particular letter relates to manipulation rather than excessive speculation, taking place on a London futures market rather than a U.S. market.

¹⁶ See ATA Comment Letter to CFTC April 23rd 2010 available at: <http://www.airlines.org/PublicPolicy/Agency/Documents/SpeculativeLimitsNPRM-ATA%20Comments%20-%20Final.pdf>

Holbrook Working's Speculative T-Index,¹⁷ another measure of the balance of speculation and hedging, displays a historical range of 1.1 to 1.3 prior to the introduction of commodity index funds, with rare spikes in isolated cases taking it above 1.4 .

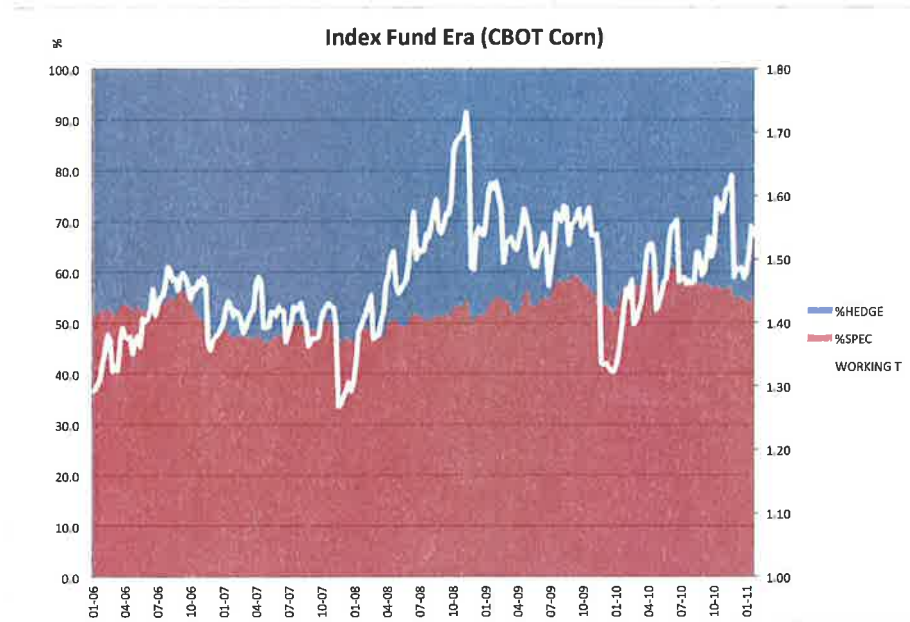
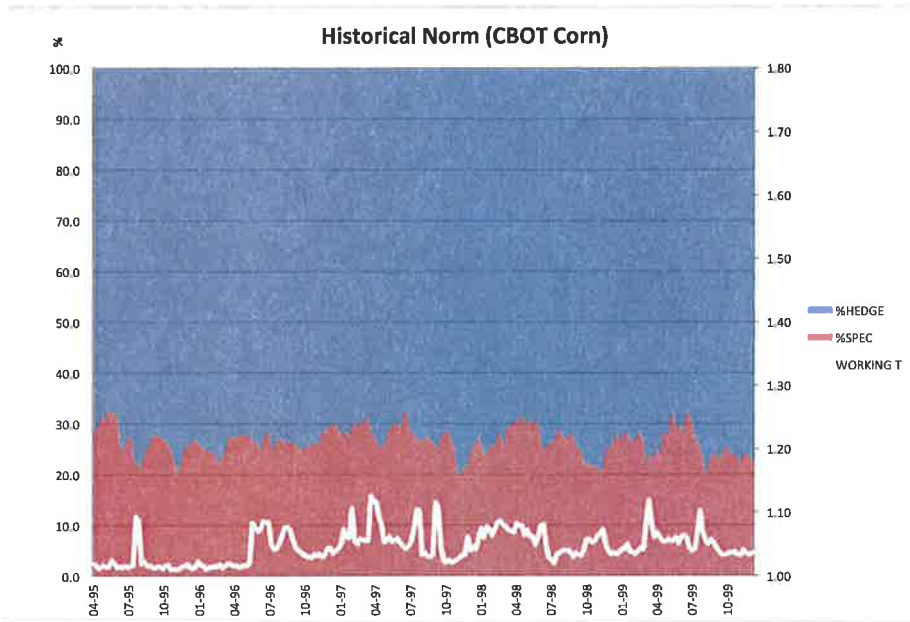
However, since the introduction of index funds, it is common for the T-Index to breach 1.6, occasionally rising above 2.0, historically unprecedented levels.

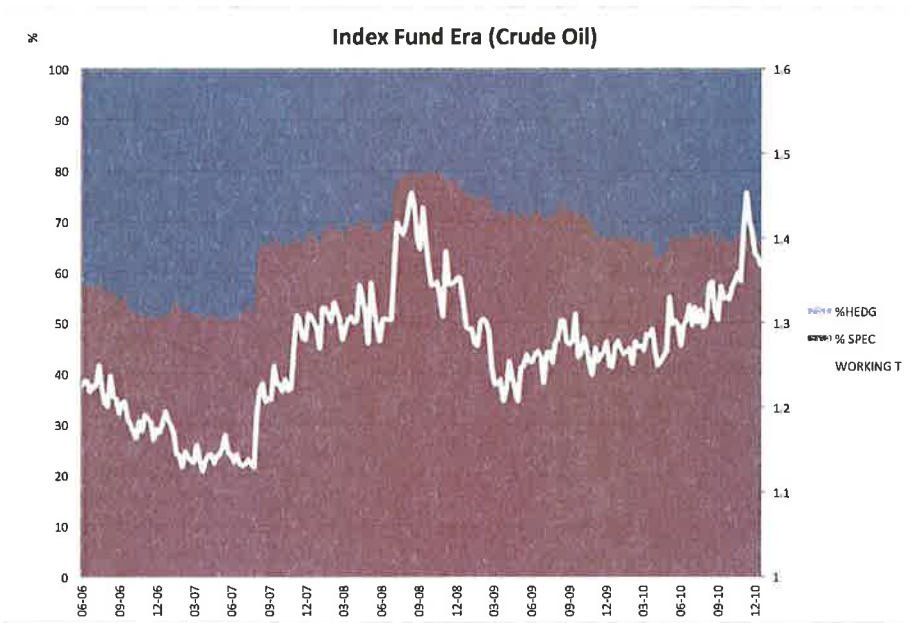
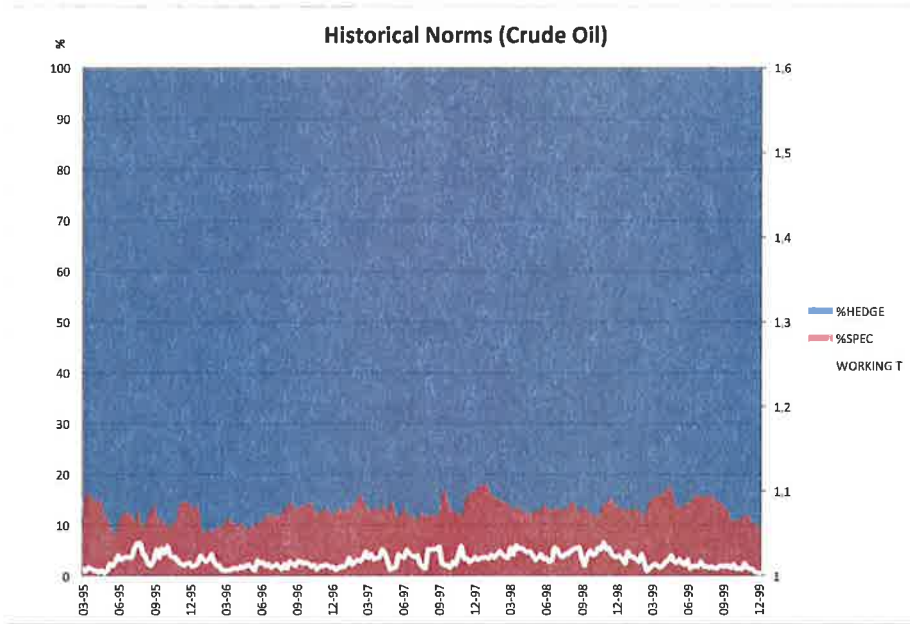
Historical Norms vs. Current Levels for Open Interest and Working's Speculative T-Index

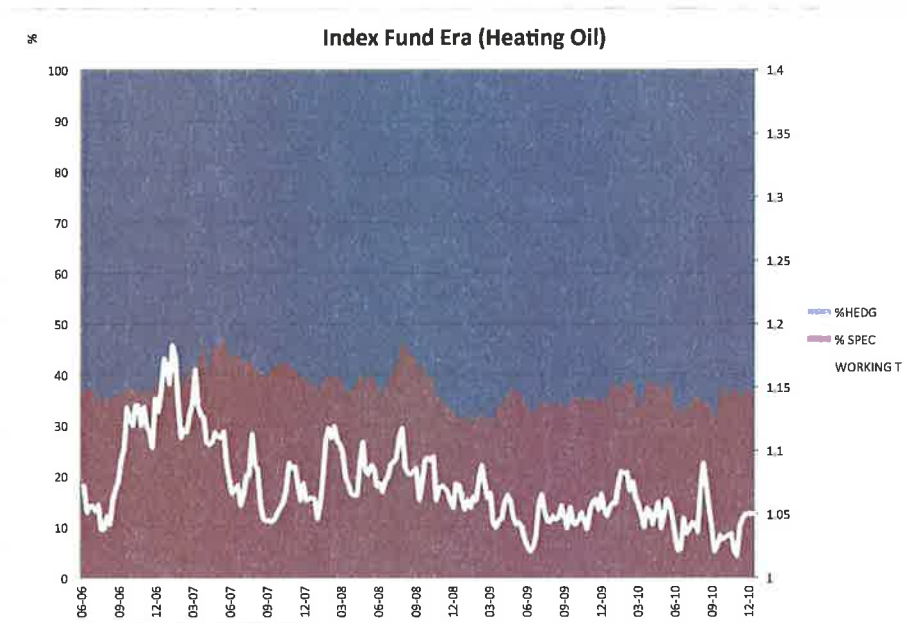
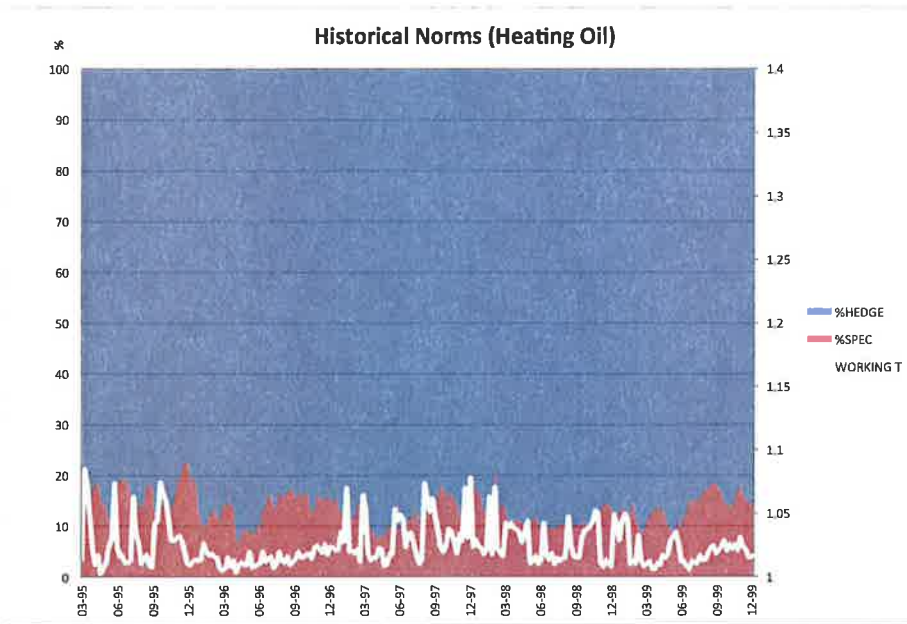
The charts below compare historical norms pre-CFMA (1995-2000) with current levels post-CFMA and post-the rise of the index funds (2006-2011). They show that by both open interest measures and Working's T Index, speculation has risen to unprecedented levels. Results are robust across a range of other commodities not shown here. These findings undermine unsubstantiated claims that current levels of Working's T Index are within historical norms. Source: CFTC COT report pre-CFMA, CFTC CIT report post-CFMA.

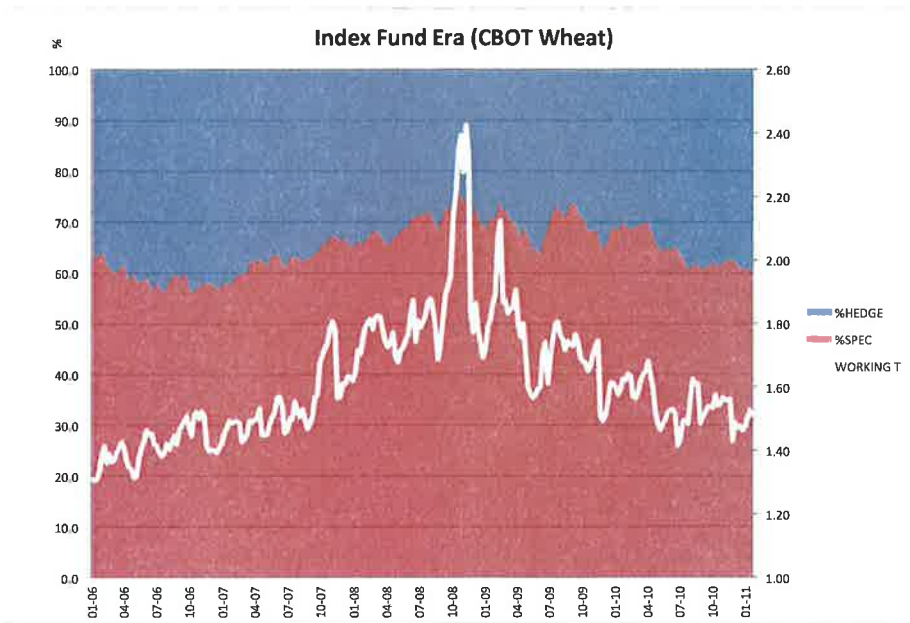
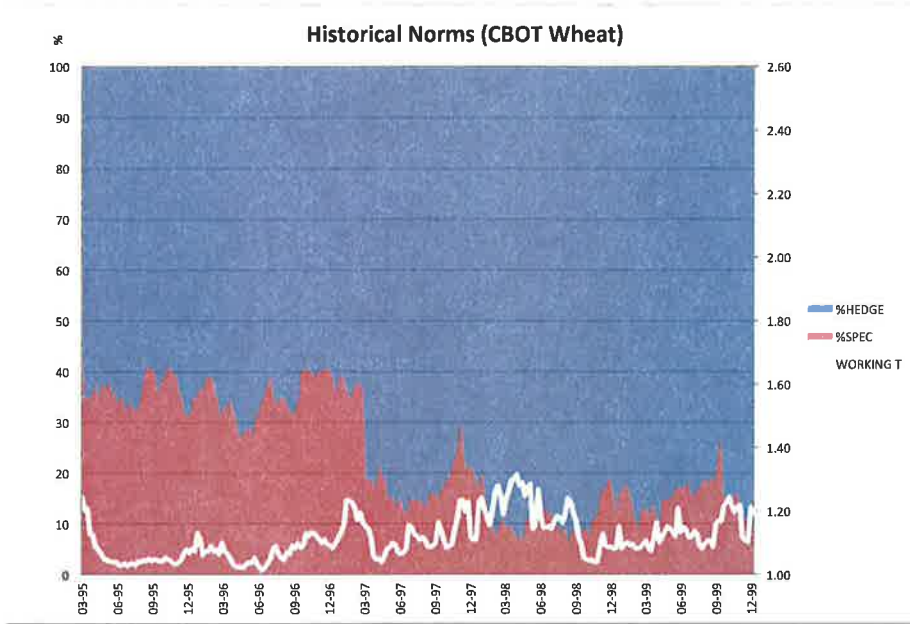
**[See Graphs
Next page]**

¹⁷ Working, H., Speculation on Hedging Markets, Food Research Institute Studies Vol. I, No. 2,1960.









Use Of These Measures For Position Limits Algorithms

It would be tempting to think that position limits could be dynamically computed using Working's T-Index. However, the algorithm is far less stable than the basic open interest breakdown. It is therefore not easily adapted as an operational algorithmic basis for a position limits regime, which requires relatively stable limits to function effectively. In addition, the T-Index does not take into account spreading positions, an increasingly large proportion of speculative positions in futures markets, and a type of position that has been shown to have statistically significant relationship with prices.¹⁸ On the other hand, the historical level of 30% of open interest held by speculators incorporates spreading positions and is consistent with Working's T-Index. It is a dependable and stable benchmark upon which a successful position limits regime can be based.

Section II: Data Show That Speculation and Volatility Have Risen Sharply

This letter demonstrates that the unprecedented rise in the volume of speculative trading on commodity futures prices has increased costs for hedgers, and ultimately harmed consumers. The most damaging development in futures markets has been the introduction of commodity index funds. These funds have become so large that they are now often the dominant market participant.¹⁹ This new breed of speculator has not only made futures prices more volatile, it has also pushed them structurally higher in price. These higher prices are then transmitted from futures to physical markets via various mechanisms described below. Consequently, commodity index funds have directly pushed up prices of food, energy, and other essential commodities not only for American consumers, but also for the world's households.

Physical Price Volatility Has Increased

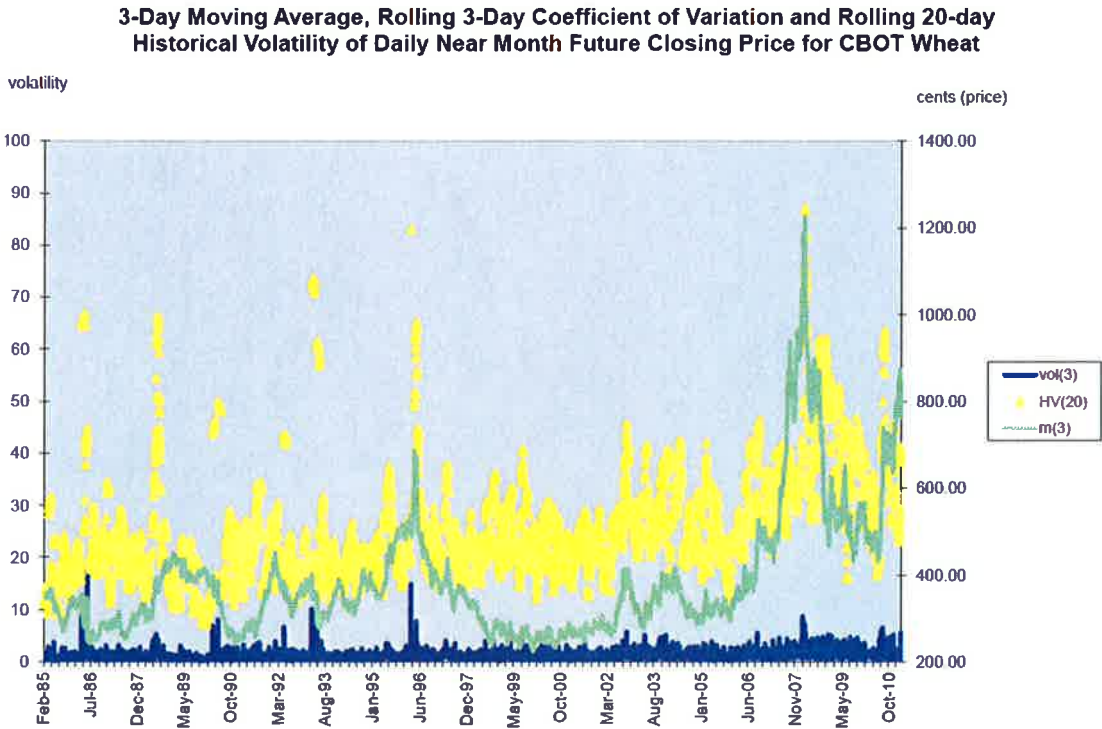
There is little doubt that commodity price volatility in both futures and physical prices has increased over the last decade.

For example, since 2000, grains have witnessed a steady increase in price variation, by several different metrics:

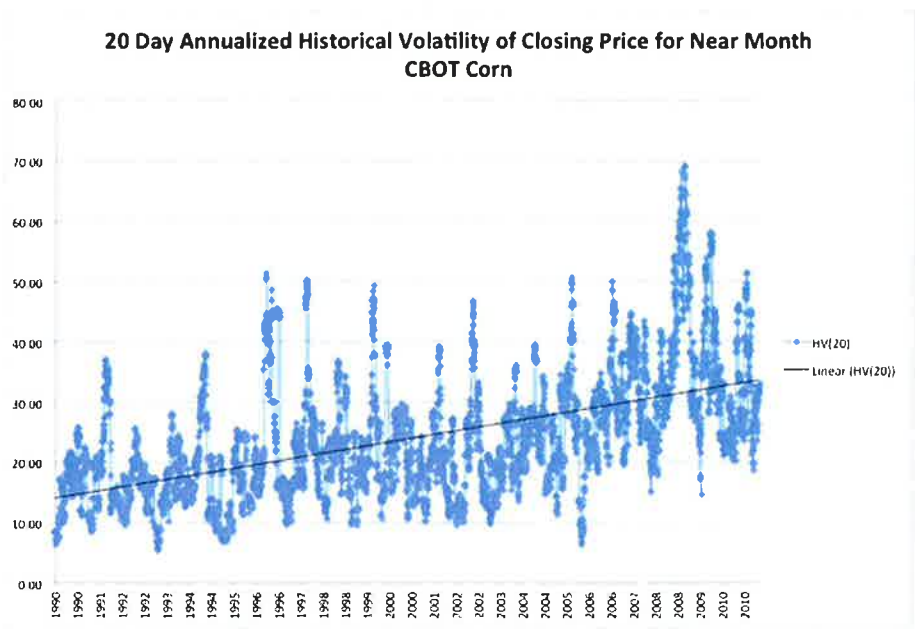
¹⁸ Singleton (2011)

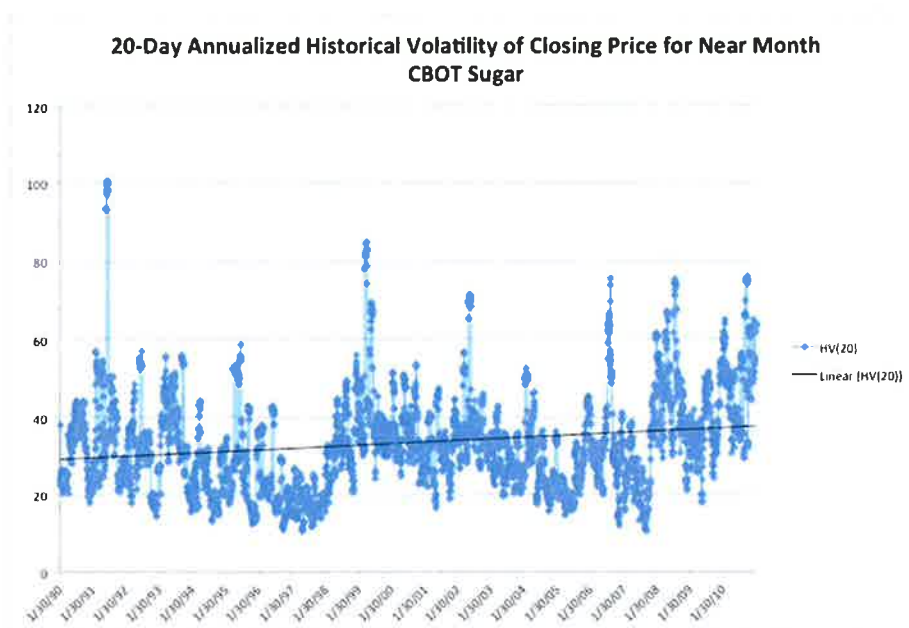
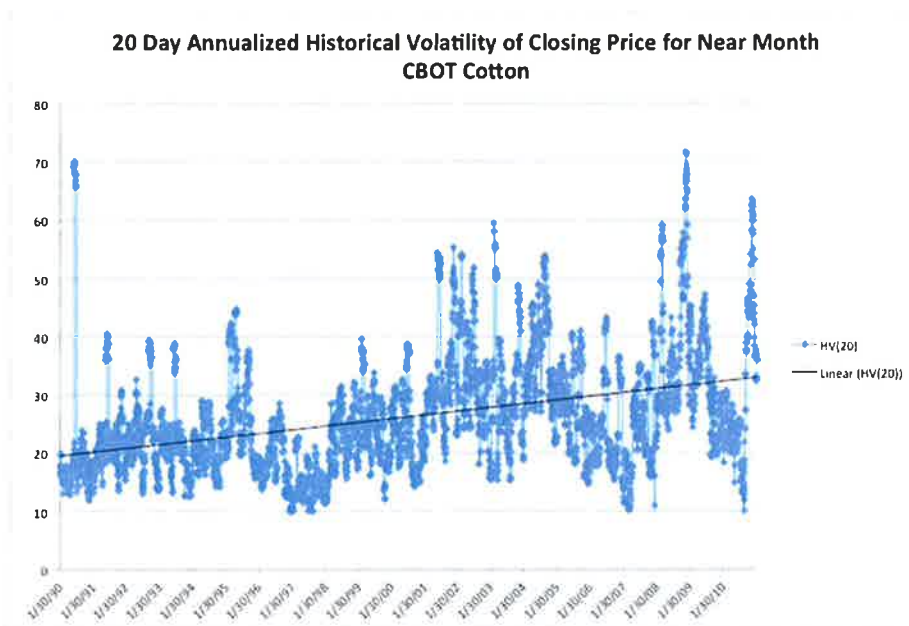
¹⁹ See Masters and White (2008), Frenk and Masters (2010)

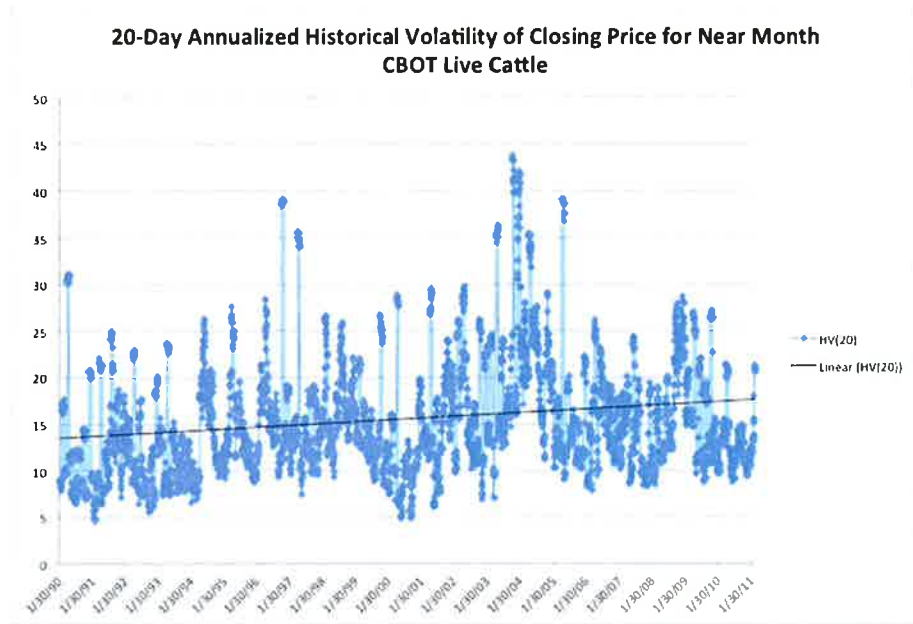
Volatility of Wheat Prices (Source Bloomberg)



Volatility of Corn, Cotton, Sugar and Live Cattle Prices (Source Bloomberg)



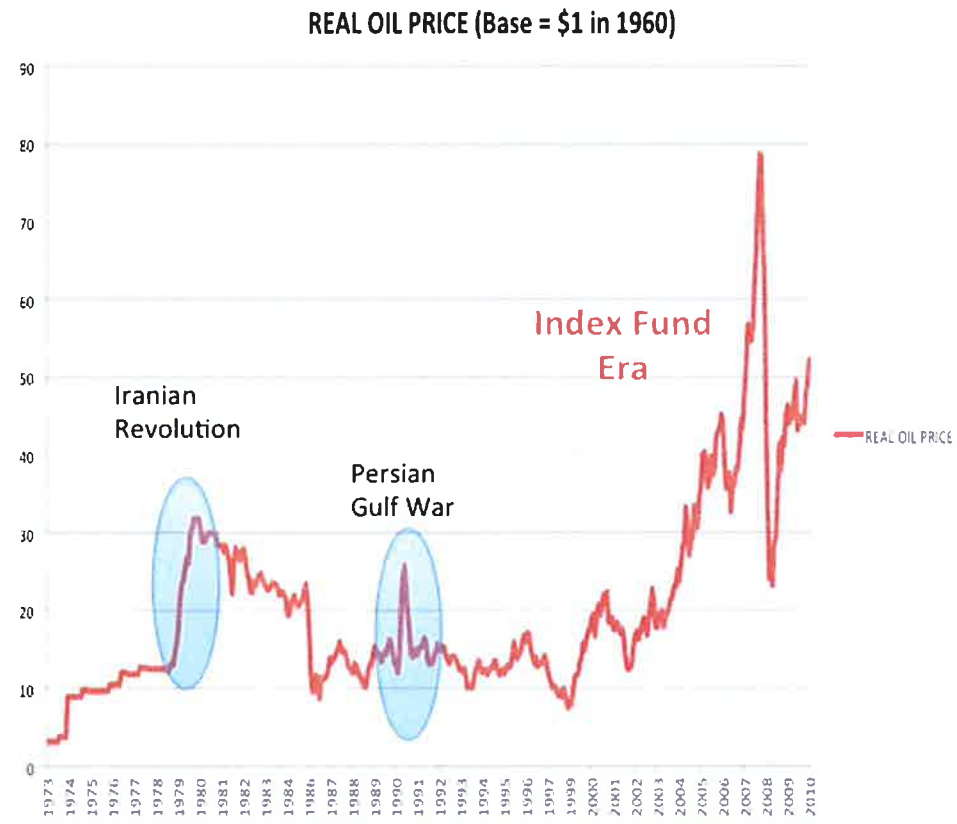




The same is true for energy commodities, as illustrated below. Note that even the volatility caused by the 1973 oil embargo, the Iranian revolution or the Persian Gulf War, each of which threatened to slash the world's supply of oil was not of comparable magnitude to the price volatility of the years following 2005.

Volatility of Crude Oil Prices

Source: St. Louis Fed FRED Database (adapted from Babak (2008))



The Role of Speculation in Physical Price Volatility

The analysis set forth herein details the adverse impact that excessive speculation has on commodities prices. *Importantly, the Dodd-Frank Act does not require the CFTC to find that these conditions exist before acting to curb excessive speculation.* Nevertheless, much has been written and said about the existence of relationships between futures and swaps markets and commodity prices. In one recent prominent example, Terrence Duffy, Executive Chairman of the Chicago Mercantile Exchange Group, Inc., contended (in a hearing of the Senate Committee on Agriculture, Nutrition and Forestry) with respect to speculators: “There is no evidence that they have anything to do with the effect of price, whether it comes from an academic or it comes from a government study or anyone else.”²⁰

²⁰ U.S. Senate Committee on Agriculture, Nutrition and Forestry, Oversight Hearing: Implementation of Title VII of the Dodd-Frank Wall Street Reform and Consumer Protection Act, March 3, 2011.

Mr. Duffy (and others who have made the same assertions) is simply factually wrong. ***There are numerous academic studies showing that speculation affects commodities prices.*** A list of several is included in Appendix A (each of which is incorporated herein by reference.)²¹ Moreover, there is strong evidence that large scale and highly structured speculation has increased commodity price levels and volatility, independently of fundamental supply and demand factors. This is not to suggest that the forces of supply and demand have no effect on prices. But the independent effects of excessive speculation are substantial and must be eliminated from commodities markets.

Because statements like Mr. Duffy's have been made on many occasions and from many sources, the relationship between speculation and commodities prices is described in this comment letter. An informed understanding of this interaction helps provide an important foundation for the implementation of the requirements of the Dodd-Frank Act to adopt meaningful position limits.

A number of academics have examined the relationship between futures speculation and commodities prices. A representative sample of these works is discussed in Appendix A below. *One thing is certain: there is a large and well-reasoned body of academic literature in support of the connection between futures prices and commodities prices.*

There are also academic studies that conclude that no causal relationship can be found. Some need to be read understanding that they are closely associated with self-interested industry advocates which have strong economic interests at stake. Many of the writers which do not have such an association nevertheless are deeply influenced by the "efficient markets hypothesis" ("EMH") theory, which was considered by many economists to be a kind of absolute law until the occurrence of the recent financial crisis showed it to be little more than an anachronism.

Common sense would suggest little doubt about the connection between increased commodities market speculation, growth of commodities index funds, and associated increases in commodities price volatility. Yet, efficient markets hypothesis hardliners can only believe that markets are always informationally efficient, and as a corollary they can only allow that fundamental supply and demand forces play an exclusive role in commodities price formation. Therefore, it is only expected that these studies are dominated by discussions of conditions affecting fundamentals, but limit the analysis of futures prices and commodities index funds to statistical devices which by design only measure causation in systems far less complex and volatile than commodities markets.

Predictably, these studies fail to find causal relationships between futures markets and commodities prices; but yet they do not conclude that there is no causal relationship.

²¹ For an in-depth discussion of market-based relationships between excessive speculation and commodities prices, see Michael Masters and Adam White, "The Accidental Hunt Brothers," available at accidentalthuntbrothers.com.

However, because of the influence of the efficient markets hypothesis on their analysis, they can only find results that fit their theory. The analogy about looking for lost keys under a streetlight because it's too dark to look for them where they were actually lost certainly seems appropriate.

The studies which support the existence of a relationship are different. While some notable studies, such as Singleton (2011), find direct statistical evidence of speculation driving prices (commodity index funds, as well as managed money spread positions), a majority of studies adopted an indirect approach. Recognizing the reality of using conventional regression techniques to demonstrate a causal relationship between investment flows into futures markets and historically high and volatile commodities futures prices, some of these studies analyzed the emerging characteristics of the commodities markets, by comparing them with other markets. As described above, some studies have observed that commodities markets have begun to behave like securities markets (e.g. Tang & Xiong (2010), Philips & Yu (2010), discussed in *Appendix A*).

As financial market participants increasingly sought to characterize commodities as asset classes that are useful for speculative investment, these studies identified a new phenomenon - the repeated experience of speculatively driven price bubbles, which can be enormously disruptive and damaging to the economy.

The analysis in this comment letter incorporates the work of these academics, both those considered to be proponents of a causal relationship between commodities futures markets prices and volatility in commodities prices, and those whose methods have failed to prove a relationship²². It is based on the a demonstration that relationships between commodities futures markets and commodities prices can be better understood by more completely understanding market participants and their motivation.

This approach is the very antithesis of the "Efficient Markets Hypothesis." There is no marketplace in which perfect equality of information and total arbitrage actually exists. It may seem to be the case in large and uniformly speculative markets like the securities markets. However, even in those contexts, EMH is at best a hypothetical image of actual market reality, conjured up by those who are willing to ignore actual human behavior and institutional requirements.

Unfortunately, in the complex, highly segmented and structured world of the commodities markets, the promotion of EMH is not simply an ivory tower intellectual exercise. When market observers fail to really understand the myriad forces which impact their market, price formation is damaged, which leads to higher hedging costs, and ultimately damage to the larger economy. That is why regulators must look critically at market behaviors which a theory like EMH conveniently ignores.

²² See Frenk and Masters (2010) and Frenk and Masters (2010B), for analysis focusing more intensely on the functions and structures of the realities in a marketplace driven by practices of market participants.

Section III: Other Indicators of Excessive Speculation

In addition to the evidence described above, there are several other indicators that strongly suggest that American commodity markets are currently in an ongoing state of excessive speculation. A few such indicators are briefly discussed in this section.

Persistent States of Contango in the Forward Curves of Many Commodities Futures Prices

Keynes' theory of normal backwardation is based on the principle that futures prices should reflect the cost of carry. According to this theory, prices should be lower in time the further out the forward price curve extends. Indeed, for much of the history of American commodity markets, prices tended to display clear backwardation a great majority of the time. However, since the index fund era began, this structural feature of the markets has mutated to the point where contango – higher prices further forward – has become the new normal state.

Commodity Index Funds Structurally Driving Contango

Futures markets for physical commodities have been characterized by a persistent contango since 2005. It is not coincidence that commodity index fund presence in the markets has increased at the same time. The constant rolling activity by institutional investors of pushing out expiring futures positions into longer duration positions continuously pushes futures prices to a contango state.

A primary mission of a commodity index financial product is to maintain investment in the required contracts. The roll of expiring contracts into longer dated positions may not increase the net open long positions in the market, but it constantly extends duration. Indeed, this may be the prime reason why most studies that aim to capture the relationship between changes in index funds' positions (measured in terms of open interest) and futures prices have failed to find statistical significance: they look only at changes in open interest, rather than changes in duration; **they therefore miss the vast majority of index fund transactions.** The only study to date that rigorously explores correlations between index fund activity and commodity price changes over longer durations (Singleton 2011) finds "statistically significant predictive powers of changes in the [long commodity index fund] and [managed money spread] positions on excess returns in crude oil futures markets."²³ In other words, "Increases in flows into index funds over the preceding three months [robustly] predict higher subsequent futures prices."²⁴

The market participants who are on the other side of the roll have one incentive: to make the commodity index fund sell low and buy high. This is a separate force from fundamental supply and demand: it is entirely unrelated to real world specific commodity fundamental

²³ Singleton, K. "Investor Flows and the 2008 Boom/Bust in Oil Prices," (March 23, 2011) p23.

²⁴ *Ibid.*

conditions. Therefore, it necessarily disrupts the price discovery function demanded by hedgers of the futures markets.

Moreover, the roll also continually biases the markets toward a contango state by placing a perpetual bid on longer-dated contracts and a perpetual offer on the near month. The exact impact clearly varies from month to month, depending on the number of index fund contracts being rolled and the behavior of those attempting to trade around the roll. For this reason, statistical tests aimed at capturing the effect of the roll must be carefully designed. However, a more important fact is that the presence and forcefulness of the index fund-driven bias towards contango is obscure to market participants. A signal is given that succeeding months' futures prices should be higher, and ***it is impossible for market participants to discern how much this signal is a function of the non-fundamental influence of the roll.***

The persistence of the mixed signals from the roll and persistent contango drive expectations of market participants, which undoubtedly affect current spot prices. However, prices are affected by contango for reasons well beyond expectations. Many physical commodities are priced using nearby futures contracts. If futures markets are in a state of contango, then when the nearest contract expires, spot prices are automatically dragged up, as their benchmark price moves to a new higher-priced futures contract.

Mou (2010)²⁵ has demonstrated convincingly that the effect of the commodity index fund roll is real and large. He characterizes it as "a significant and persistent market anomaly in the commodity futures markets".²⁶ By comparing excess returns around the dates of the rolls of futures in the GSCI (the most popular benchmark for commodity index funds) with those of futures not included in the GSCI, he shows that huge arbitrage opportunities (inefficiencies) have been generated by the "Goldman Roll". These inefficiencies did not exist before the GSCI product was sold to institutional investors, but have existed consistently since. Over the same time period, these opportunities simply *did not arise* in commodities not included in the GSCI. Moreover, Mou finds that the more index fund money flows into commodities markets, the greater these inefficiencies increase. Finally, he finds that when other speculators' positions increase, the inefficiencies tend to be arbitrated away to a greater degree.

This important study therefore provides convincing evidence that the roll disrupts price discovery. Significantly, it ***also implies that the roll may increase volatility***, by creating a back-and-forth battle between the index funds who must structurally roll futures ahead of the delivery month and the other speculators who wish to trade ahead of (front-run) them. This battle is a logical candidate for explaining the failure of futures prices to converge to spot, as discussed below. This is because a trader taking a short position in advance of the

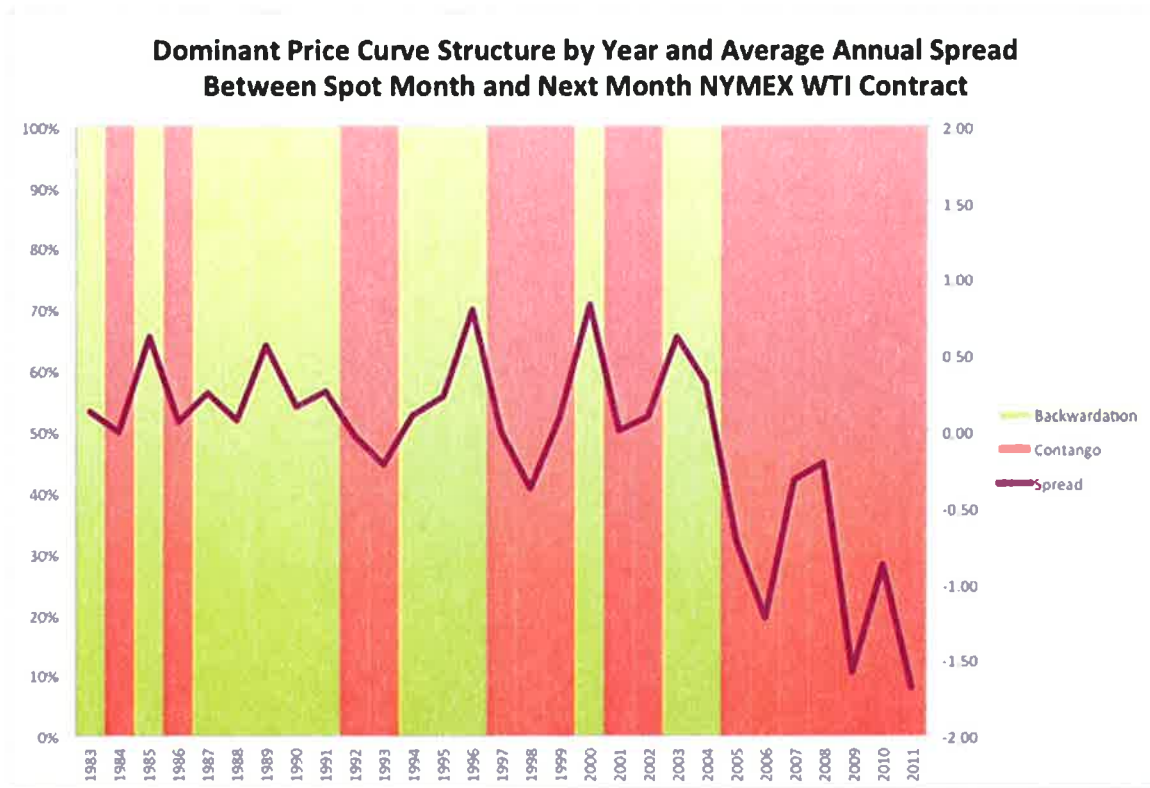
²⁵ Mou, Y. *Limits to Arbitrage and Commodity Index Investment: Front-Running the Goldman Roll* (Columbia University 2010)
http://www.nhh.no/Files/Filer/institutter/for/seminars/finance/2011_spring/180211.pdf

²⁶ *Ibid.*

roll, should he find himself unable to unwind that position fully during the roll (i.e. if front-runners as a whole overshoot), would then be left in the unenviable speculative position of holding a short contract with very little time before expiration. He would therefore be required to liquidate the position under extreme time pressure or face the prospect of taking delivery of the underlying commodity. The typical outcome of this synthetic short-squeeze would be for futures prices to be bid up above the spot price as the contract expires.

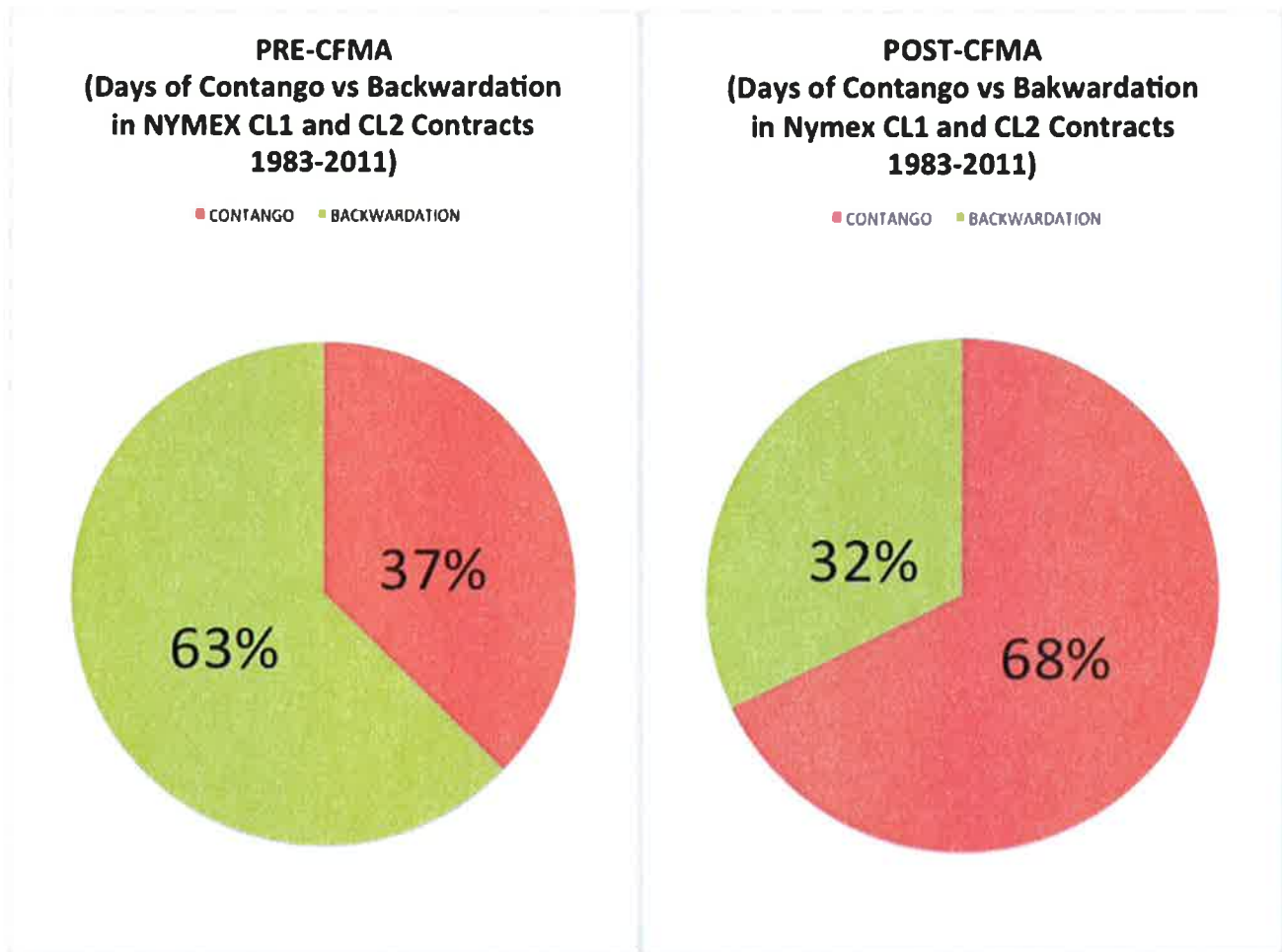
Backwardation and Contango in Crude Oil Pre- and Post-CFMA

The chart below shows that since the index fund era began, the historical proportion of days in contango vs. days in backwardation has reversed, and that the contango we see today is far steeper than in the past. (Source: Bloomberg)



Backwardation and Contango in Crude Oil Pre- and Post-CFMA

The chart below shows that since the index fund era began, the historical percentage of days in contango vs. days in backwardation has reversed. (Source: Bloomberg)



De-linkage and Non-Convergence between Commodities Futures and Spot Markets

The forces structurally connecting futures and physical markets each should cause prices to converge near the commencement of delivery, and to be closely related before that point. There are compelling, market-based reasons why these relationships should hold.

It is commonplace for futures market participants to trade across futures and physicals. As an example, if the price for copper in the spot market is \$1,700 a ton and the price of the copper futures contract with three weeks to delivery is \$1,900 per ton, then a copper producer could sell a futures contract, store the copper in a warehouse for three weeks, and deliver the copper against that contract. By doing this, the copper producer is taking this supply of copper off the spot market, which should cause spot prices to rise relative to the futures, while the equivalent sale of the futures contract would cause futures prices to come down.

Alternatively, a speculator could do the same thing by selling the futures contract, renting storage space, buying the copper on the spot market at \$1,700, paying the storage costs to store the copper for three weeks, and then delivering the copper against the futures contract. In this case, their purchase of the copper on the open market should push spot prices up, while the equivalent sale of the futures contract would push futures prices down.

The net effect of this strong linkage between futures prices and spot prices is that historically, when futures prices rise, spot prices rise along with them (and vice-versa).

So, when commodity index funds or other speculators employing trading strategies drive futures prices higher, the effects are felt immediately in spot prices and the real economy.

Interestingly, recent history has seen substantial periods during which futures prices failed to converge to spot prices prior to expiration of the futures contract. For example, wheat futures experienced failure to converge repeatedly over the 2007-08 period. Previous episodes of non-convergence were always based on contractual flaws or specific delivery anomalies.²⁷ Neither of these existed in 2007-08, so the phenomenon had no historic precedent.

It has been reported that the non-convergence was related to the roll of commodities index funds.²⁸ We agree. Specifically, these events were most likely influenced by speculators who held short positions in anticipation of the roll to trade opposite commodities index funds. Excess short futures positions held after completion of the roll had to be reversed immediately before the expiration of the futures contract. This buying pressure was due to aggressive short covering bid up the futures price during this critical period.

De-linkage of longer dated futures from fundamentals also illustrates the pervasive and powerful force of the activities of the commodities index funds. Because of their dominant presence in the markets, commodity index funds can have a massive impact on futures prices when weightings of specific commodities futures markets which make up the index change. The shift in money among markets can be extremely significant. Moreover, the change in weighting is difficult to predict by those without expertise in the arcane and obtuse methods of index rebalancing created by index providers.

²⁷ See, e.g., the historical problems at Toledo, OH and the CBOT/CFTC dispute of 1997-8.

²⁸ United States Senate Permanent Subcommittee on Investigations Report "Excessive Speculation in the Wheat Market" June 24th 2009 available at:
http://hsgac.senate.gov/public/_files/REPORTExcessiveSpeculationintheWheatMarketwoexhibitschartsJune2409.pdf

The WTI-Brent Anomaly

An extreme example is ongoing. WTI crude oil has historically traded at a premium to European Brent crude oil, because it is a superior grade. Occasionally, when stocks at Cushing, OK (the delivery point for WTI) get full, this relationship breaks down temporarily. Spot WTI becomes cheaper because there is a glut of it. This often also carries through into the first months in the futures price.

Recently, however, the price relationship broke down dramatically, with Brent moving to a huge premium to WTI, ***not only in the spot market but also across all future months.***

This is entirely unlike previous reversals of the WTI-Brent spread, which were short-term and concentrated at the front end of the forward curve.²⁹ The problems at Cushing are merely temporary, and yet the spread has reversed and subsequently widened beyond any historical measure. Moreover, this situation has persisted for close to two months at the time of this writing.

In part, there is a fundamental explanation. It is true that: (a) stocks at Cushing are currently at record highs, (b) Federal law³⁰ prohibits the shipping of WTI overseas, hindering direct arbitrage and (c) pipeline infrastructure prevents the surplus of WTI from being easily transported to non-PADD II refineries, hindering indirect arbitrage via refined products. However, the persistence of the Brent premium (it has gone on longer than ever before), the magnitude of it (it is higher than at any other time in history) and the time-structure of it (it is all along the curve) defy explanation based on fundamental factors alone.

This means that a value, unrelated to fundamentals, is embedded in one (or both) of the contracts and helping to drive price divergence. ***Interestingly, the emergence of this persistent breakdown of significant historical relationship coincided precisely with the annual rebalancing of the GSCI index***, which reweighted significantly from WTI crude into Brent crude. From July 2009 to January 2011, the GSCI percentage weighting spread between WTI and Brent dropped from around 25 to around 21, (a roughly 16% change). Over the same period, the WTI-Brent near month price spread steadily narrowed and then reversed. In January 2011, the GSCI weighting spread dropped suddenly by over 5 points (25%). Immediately, the reversed WTI-Brent price spread trebled in the space of just a few weeks.

Given that (i) the GSCI is the most popular benchmark for commodity index funds³¹, (ii) various estimates currently estimates in excess of \$300 billion is invested in commodity index funds³² and (iii) WTI was previously weighted at just over 1/3 of the GSCI, it is reasonable to assume that the 4% drop in the WTI weighting that occurred in January 2011 meant that close to \$4 billion of invested money had to be withdrawn from WTI futures over a short period of time, ***equivalent to***

²⁹ <http://ftalphaville.ft.com/blog/2011/01/27/471961/a-record-wti-brent-spread-a-new-paradigm/>

³⁰ 42 USC 6212

³¹ Hou (2011)

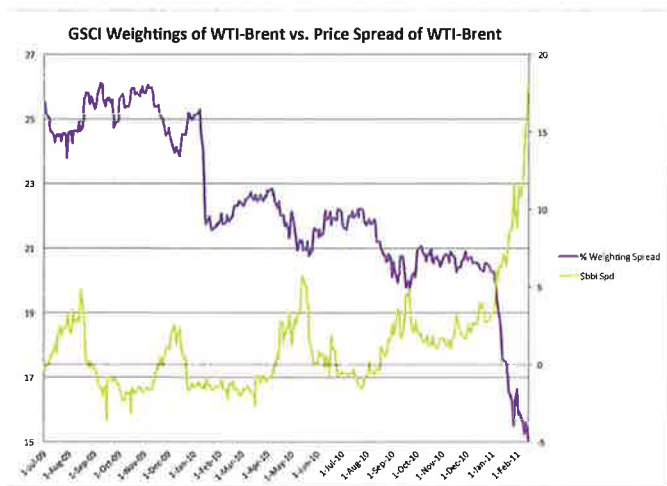
³² A similar figure can be reached by extrapolating from the CFTC's CIT reports to all indexed commodities.

the entire assets of the much-maligned USO ETF, which has widely been blamed for creating disruption in the WTI markets when it rolls its positions.³³ By the same token, large amounts of institutional capital *must have* flowed into Brent following the reweighting. **Given these facts, it seems highly likely that the GSCI reweighting significantly boosted the breakdown in the historical WTI-Brent relationship and thereby disrupted price discovery.**

The facts suggest that, at a minimum, the reweighting significantly exacerbated the situation, perhaps by sending misleading signals to the rest of the market, or by crowding out correlation-trade arbitrageurs who were trying to trade the two grades back into relationship. The index reweighting itself had nothing to do with the Cushing supply situation. In this instance, it happened that the index changes coincided with the fundamental variables to add huge pressure to an already strained marketplace. Therefore, it is a clear case of financial investor requirements, in this case the unpredictable decisions of commodity index providers, causing significant disruptions in the commodities markets.

WTI vs. Brent

The diagram shows the relationship between GSCI reweighting and the WTI-Brent price spread. In Jan 2011, after the GSCI implemented a huge annual reweighting of WTI into Brent, the price spread moved from within its historical range to an unprecedented premium of Brent over WTI. (Source: Bloomberg and Standard & Poor's)



Increased Correlations Between Commodities And Financial Assets

Tang & Xiong (2010) and others have pointed out steadily increasing correlations between commodity prices and financial assets since the appearance of large commodity index funds. While critics have pointed out that financial crises tend to create correlations across all asset classes, these latest correlations both pre and postdate the financial crisis of 2008-9.

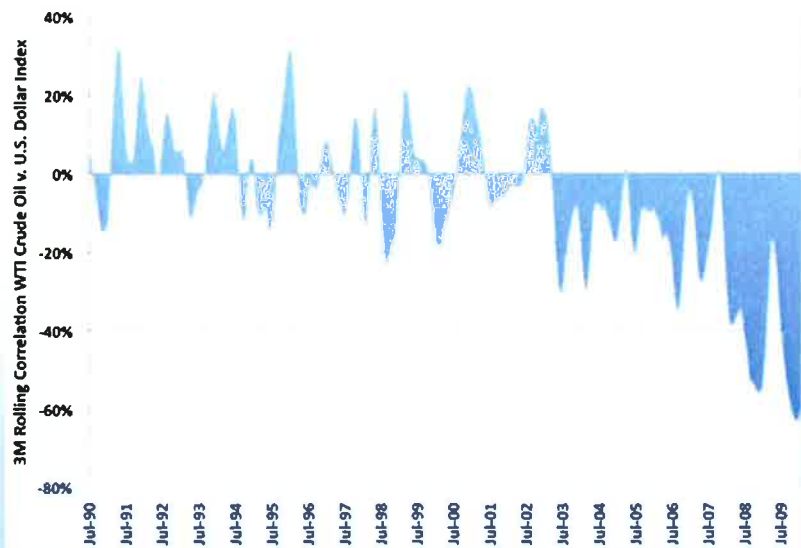
This strongly suggests that the behavior of financial participants in commodities markets, rather than underlying supply and demand, is now driving prices to a far greater degree than previously.

³³ See <http://ftalphaville.ft.com/blog/2009/02/25/52879/a-self-propelled-pyramid/>

Dollar vs. WTI

The diagram below shows the relationship between the Dollar Index and the near month WTI futures price on NYMEX. It shows that the correlations that exist today between oil and the dollar are a new phenomenon. (Source: Bloomberg)

Dollar vs. WTI



Source: Bloomberg. Rolling 3 month average of 3 month daily correlation of prices changes – U.S. Dollar Index (DXY) to WTI Crude Oil.

Breakdown of Traditional Inventory Levels and Commodities Price Relationships

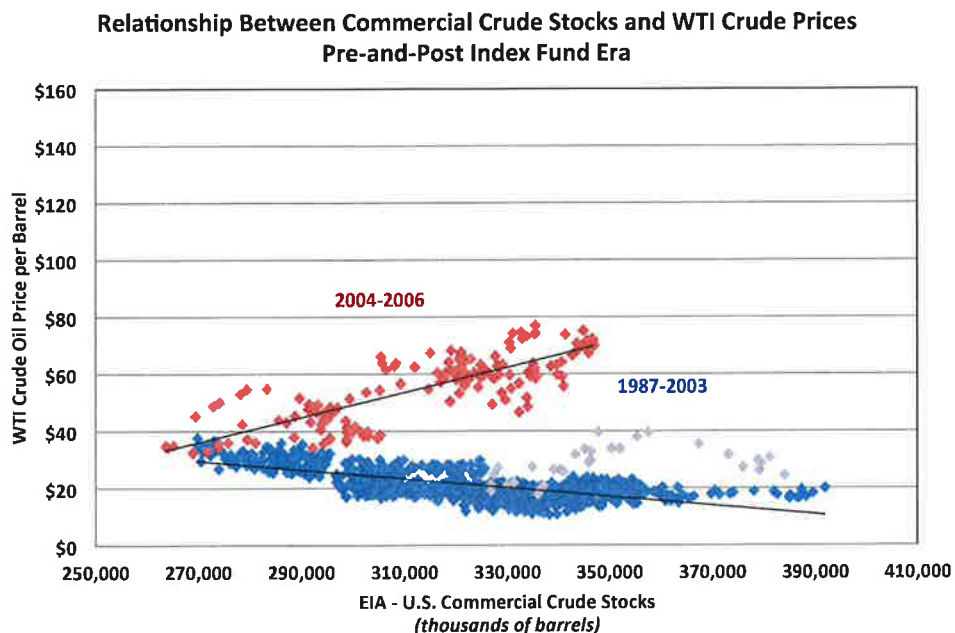
Additional evidence supporting the relationship of commodity index fund activity to commodity prices is found in the breakdown of traditional inventory relationships that persisted prior to the rapid growth in commodity index funds' assets in the early part of the 2000s.

Historically, in grain markets and in energy markets, prices had been strongly correlated with ending stocks and inventories: higher ending stocks meant lower prices, and vice versa. However, beginning in 2003, when institutional investors embraced the commodity index funds *en masse* (following the publication of the Yale/AIG paper cited herein and new promotion of commodities as an “asset class”), these prior relationships began to systematically break down.³⁴ This provides yet further evidence that a force other than only traditional supply and demand forces is driving commodity prices. The timing of these changes strongly indicates that this phenomenon is occurring because of the new entrants to the marketplace: the commodity index funds.

³⁴ <http://stopgamblingonhunger.com/wp-content/uploads/2010/11/response-to-CalSTRS-21Oct1.pdf>

Crude Oil Stocks vs. WTI Crude Price

The diagram below shows the relationship that historically existed between U.S. crude oil stocks and WTI crude oil prices broke down at the exact same time that commodity index investment in the WTI-heavy GSCI index took off. (Source: Bloomberg, EIA)



Part 2. The Harmful Effects of Excessive Speculation

Section IV: Futures Prices Affect Physical Prices

As discussed below, futures prices impact spot prices in three main ways:

- Volatility in futures prices pushes up costs for hedgers, which changes physical supply and demand curves.
- Futures prices influence expectations, which in turn affect bids and offers in physical markets.
- In many cases, physical prices are directly, contractually linked to futures prices.

The first two connections have been the subject of much comment. This last connection, while often overlooked in the debate, is actually the most direct, and perhaps most important. Each connection will now be discussed separately. Together, they constitute the mechanisms by which the volatility and non-fundamental price forces arising from excessive speculation are transmitted to physical commodity prices.

Volatility in futures prices pushes up costs for hedgers, which changes physical supply and demand curves.

It is clear from many of the views expressed by hedgers that the decline in the use of futures to hedge commodity price risk described above has been caused by a decline in the net value of futures as a hedge. When producers and purchasers do not hedge, it means that the benefit of price risk avoidance is low, either that the hedge does not adequately mitigate the price risk or that the cost is too high. If price hedging is sufficiently valuable to justify its cost, producers and some purchasers (fewer because of relative price inelasticity) would actively engage in the practice.

The benefit of a hedge directly depends on the amount of price risk that is avoided by taking on the position. High commodity price volatility means that the risk of price change is also high, so hedging against this risk should have great value.

In fact, as described above, price volatility for producers and purchasers of commodities has been at historically and unprecedented high levels during the period since 2005 (*see p26 Supra*).

One possible explanation for the decline of hedging activity is that the quality of available hedges as risk mitigants has deteriorated. Indeed, the quality of futures as hedges has diminished during the index fund era. The most notable case was the failure of futures prices to converge to spot (discussed below) in several situations. There is little doubt that this was an important factor.

However, lack of convergence, though itself an indicator of severe market problems, did not affect all commodities and was therefore not the sole reason for declining hedging. Moreover, lack of convergence did not entirely eliminate the value of hedging, but merely reduced it somewhat. Therefore, this phenomenon cannot by itself explain the large change in behavior.

Alongside increased basis risk from a lack of convergence in certain markets, ***the clear leading cause of declining hedging across all commodities was cost, not value.*** Indeed, the U.S. Airways 2009 Annual report explained that they did not enter any new hedging transactions after 2008 “due to the impact collateral requirements could have on our liquidity”.³⁵

³⁵ Cited at <http://www.risk.net/energyrisk/feature/1728077/aviation-bears-brunt-fuel-price-gyrations-rules>

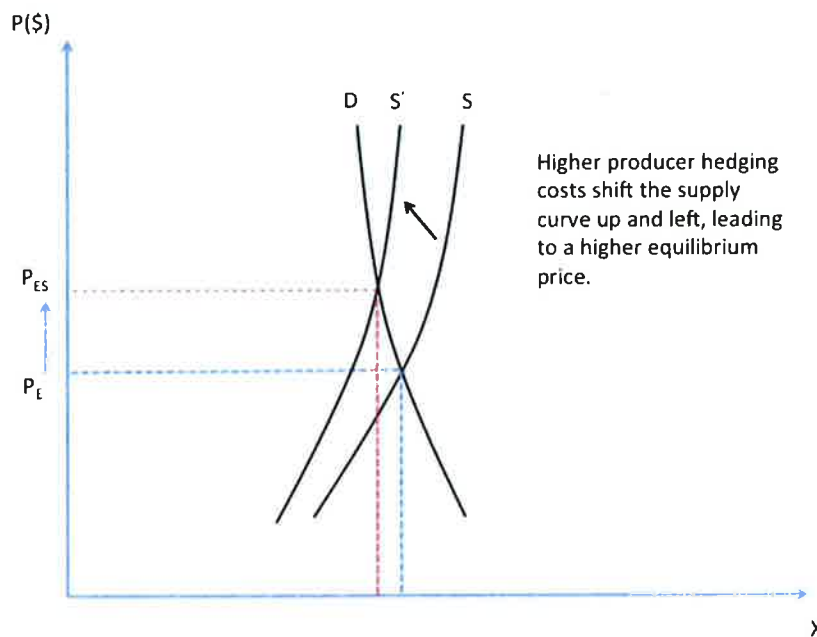
The cost, in other words, was funding the margin required for hedging futures. Maintenance margin increases for all short hedgers as futures prices increase. And, significantly, initial margin increases for all hedgers as market *volatility* increases. The cost during this period became so great that it overcame the value of hedging volatile commodities prices for many hedgers.

After a brief respite from these high-cost conditions, our commodity futures markets are in much the same situation today: high volatility and rising futures prices are mathematically increasing margin costs for hedgers. So, while there has been a recovery in hedging levels during the relative stability that characterized some of the period 2009-2010 (with notable exceptions), all the conditions are in place to expect hedgers to continue to leave the markets *en masse* until the CFTC fulfills its statutory duty, by imposing position limits and reducing excessive speculation to allow these markets to once again serve *bona fide* hedgers.

The higher cost of hedging (or indeed the higher price risk experienced by those producers and purchasers who elect not to hedge) means that the underlying costs of the hedgers' businesses have increased. It is axiomatic that this changes the supply/demand curve of the business, **increasing commodity prices for everyone**. The following chart depicts the fundamental principle of economics that a change in costs will shift the supply curve, changing the price equilibrium point at the intersection with the demand curve; and that the change in price is more pronounced where demand is relatively inelastic.

Higher Producer Hedging Costs Shift The Supply Curve

Higher producer hedging costs, the result of increased volatility, shift the supply curve up and to the left, leading to a higher equilibrium price.



Futures prices influence expectations, which, in turn, affect bids and offers in physical markets.

Futures volatility has a direct impact on producer hedging costs, increasing equilibrium prices for physical commodities. There is also an additional, indirect effect. Producers and consumers look to the futures markets for “price discovery,” and use it as a benchmark from which to bid in physical auctions.³⁶

Therefore, while more volatile futures prices change the supply curve of a commodity, higher futures prices alter the equilibrium price by changing the *perceptions* of supply and demand. A higher futures price leads to a higher starting point for bids and offers in physical auctions, leading ultimately to a higher physical price.

In many cases, physical prices are directly, contractually linked to futures prices.

Contractual practices have, increasingly in the last 15 years, ***explicitly linked commodities prices to futures prices***.³⁷ Many commodities are sold and purchased under forward delivery contracts in which prices are simply indexed to the first nearby futures contract.³⁸ This is reflected in publications from multiple agricultural product associations describing physical delivery contractual practices.³⁹

Moreover, this is systematized in the Platts assessments used as indices in many physical delivery energy contracts. Under Platt’s published procedures, the assessments refer to transactable values on NYMEX at 3:15 each day for light, sweet crude oil, New York gasoline and New York heating oil.⁴⁰ This is a direct consequence of the fact that futures markets tend to trade much higher volumes than physical markets, and therefore provide a more consistent source of price discovery.⁴¹

³⁶ Carver, F.C. “Wheat: Science and Trade” (pp. 544-8)

³⁷ Paul Horsnell, Oxford Energy Comment. May 2000, available at <http://www.oxfordenergy.org/comment.php?0005>.

³⁸ “The Structure of Global Oil Markets—A Backgrounder,” Platts, A Division of McGraw Hill Companies, July 2007, page 5. <http://www.platts.com/Resources/whitepapers/index.xml>. Additionally, conversation with Tom Buis, President of National Farmers Union, June 10, 2008.

³⁹ See e.g. <http://www.grainservice.com/article1.htm>, <http://agmarketing.extension.psu.edu/Commodity/PDFs/UndrstdBasisRisk.pdf>, <http://ludlowcoop.com/contracts.php>

⁴⁰ See <http://www.platts.com/IM.Platts.Content/methodologyreferences/methodologyspecs/usoilproductspecs.pdf>

⁴¹ In 2008, for instance, the NYMEX WTI futures market was 12 times the size of the WTI physical market. See (Masters and White 2008)

Similarly, in assessing non-U.S. prices for crude oil and deliveries, Platts uses ICE Brent futures prices as a primary input. In addition to futures prices, several other prices from various financial markets in oil like Exchange For Physical (EFP), Contract For Differences (CFD) and inter-grade swaps markets are used to assess the price of Brent and other crudes. These assessments, which rely heavily on benchmark commodities futures prices, are overwhelmingly used to price physical delivery contracts outside of the United States. Where Platts assessments are not used, BWAVE is a common alternative, and is purely based on futures prices with no physical auctioning considered.⁴²

Bassam Fattouh at the Oxford Institute For Energy Studies has summarized the point as follows:

Thus, one could argue that the level of the oil price is set in the futures markets; the financial layers such as swaps and forwards set the price differentials. These differentials are then used by oil reporting agencies to identify the price level of a physical benchmark.⁴³

⁴² See https://www.theice.com/publicdocs/ICE_Crude_Oil.pdf

⁴³ Bassam Fattouh, "An Anatomy of the Oil Pricing System", OIES Sept 2010 available at http://www.oxfordenergy.org/pdfs/comment_01_09_10.pdf retrieved March 17, 2011

Below are examples of contract terms commonly used in physical grain and energy markets:

Futures Prices Impact Physical Grain Prices

There are several kinds of contract used by producers and elevators that link cash prices to futures prices. One of the simplest is a basis contract.

Example

| | |
|-----------------|------------------------------|
| AGREEMENT DATE | JAN 2011 |
| DELIVERY DATE | AUG 2011 |
| VOLUME | 60000 BUSHEL |
| GRADE | #2 SOFT RED WINTER WHEAT |
| BENCHMARK PRICE | CBOT SEPT 2011 |
| BASIS | -\$0.31 |
| CASH PRICE | CBOT SEPT 2011 PRICE -\$0.31 |
| | |

In this example, the producer locks in a price for his August delivery at the elevator that is based on the CBOT September contract minus 31¢ basis. The cash price paid in August 2011 will therefore be determined by the price level of the CBOT September future at that time.

Basis contracts are not the only way in which futures prices determine cash prices for grains, but they are a common form.

Futures Prices Impact Physical Energy Prices

Example

| | |
|-----------------|--|
| AGREEMENT DATE | JAN 2011 |
| DELIVERY DATE | FEB 2011-FEB 2012 |
| DELIVERY TERMS | FOB GULF-HOUSTON |
| VOLUME | 100000 BARRELS/MONTH |
| GRADE | JET FUEL JP54 |
| BENCHMARK PRICE | PLATTS JP54 GULF PRICE ON DELIVERY DATE |
| CASH PRICE | PLATTS ASSESSMENT CALCULATED FROM VARIOUS ENERGY FUTURES PRICES EACH DAY |

In this example, an airline locks in a delivery arrangement for a portion of their monthly fuel requirements. The price they pay each month is determined by the Platts Price for JP54 Jet Fuel on the delivery day. The Platts Price is, in turn, based largely on energy futures prices on that day (NYMEX crude oil, heating oil, jet fuel). Therefore, the futures prices are the primary determinants of the cash price.

Section V: Liquidity in Commodities Futures Markets

The central function of speculators in the commodities markets is to provide liquidity so that hedgers can transact efficiently and the futures markets can provide reliable price discovery. A consideration of speculative activity to determine whether it is “excessive” as contemplated by the CEA must be founded on an understanding of liquidity in today’s markets. Moreover, the Dodd-Frank Act directs that liquidity must be a consideration in carrying out its statutory requirement regarding position limits.

The traditional Efficient Markets Hypothesis view holds that increasing speculation tends to make prices less volatile.⁴⁴ Speculation introduces rational arbitrageurs, who are able to bid prices back to some theoretical “intrinsic value.” “Uninformed” speculators might drive prices away from this value, but “informed” speculators drive prices back to this hypothetical level. *Moreover, this process itself constitutes volatility;* but EMH theorists assume that this volatility is offset by the reduction in bid-ask spreads that such speculative liquidity may provide.

⁴⁴ See e.g. Fama, E. “The Behavior of Stock Market Prices”. *Journal of Business* **38** (1): 34–105. January 1965

However, as noted below, EMH, while elegant in theory, has critical shortcomings when applied to the real world. Even Alan Greenspan, for years an EMH archetype, acknowledged that real world events exposed a “flaw in the [EMH] model ... that defines how the world works.”⁴⁵

EMH cannot adequately explain the occurrence of financial crises, or other “boom bust” scenarios, such as the spike and crash in oil prices in 2008, or the so-called “Flash Crash.” Critically, given that the Proposed Rules are part of the Dodd-Frank Act statutory and regulatory shift which *was specifically precipitated by one of the two largest financial crises in history, and the fact that such a crisis was a logical impossibility according to EMH*, it is crucial that regulators look past failed theories as they construct a new regulatory framework.

For instance, one important oversight of EMH is the idea that there is a sufficient level of liquidity, beyond which the marginal benefit of additional liquidity is zero, or even negative.⁴⁶ For EMH fundamentalists, the concept of “too much liquidity” does not exist. The EMH position is therefore a variant of what Keynes once described (in a different context) as “the fetish of liquidity.”⁴⁷

Sufficient Levels of Liquidity

Certain amounts of speculative activity provides liquidity, an important benefit to a commodity market. Hedgers alone are not able to provide reliable and efficiently priced matches for one another because those desiring a short position may not balance those desiring a long position at any given time or even at any time. If speculative activity is *sufficient*, hedgers will reliably find matches at competitive, efficient prices. Any analysis of excessive speculation must first consider the amount of speculation that is *necessary* to provide this function.

As described above in section X, the market consists of (net liquidity takers and (net) liquidity providers. The above framework helps to show the functionality of traditional speculators in the commodity markets. The traditional speculator may be criticized, but they can play an important role in well-functioning commodities markets. For example, such speculators may provide liquidity by engaging in direct market making activity, characterized by very short-term liquidity provision aimed at narrowing – and thereby extracting profit from – atypically wide bid-ask spreads. Additionally, they may also provide liquidity by placing an intermediate-term directional bet, whether on the long side or the short side of the market. Indeed, the classic picture of a commodity futures market consists of net short hedgers demanding liquidity, and net long speculators providing that

⁴⁵ http://www.msnbc.msn.com/id/27335454/ns/business-eye_on_the_economy/

⁴⁶ See, e.g. Blyth, M. “This Time It Really Is Different Europe, the Financial Crisis, and ‘Staying on Top’ in the 21st Century” (Watson Institute August 2010) Available at http://www.watsoninstitute.org/images_news/blyth_This_Time_It_Really_Is_Different.pdf

⁴⁷ Keynes, *General Theory*, p. 155.

liquidity. Even though short speculators do not directly provide liquidity to short hedgers, a group of speculators who are both long and short are thought of as a more effective liquidity environment for short hedgers because of their ability to interact agnostically.

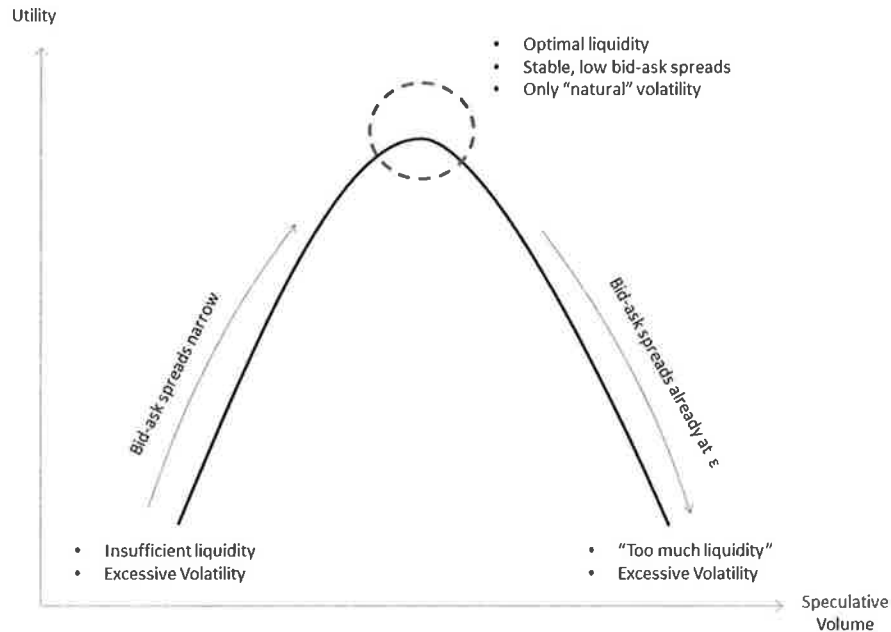
However, liquidity and volume are not equivalent. Bid-ask spreads are narrowed by liquidity providers who extract profit from the bid-ask spread; but at the point of sufficiency (denoted in the diagrams below as " ϵ "), the marginal benefit to hedgers (the "primary constituency" of the markets, as per the CEA) of further narrowing turns negative.

The point at which additional liquidity does not benefit hedgers is reached when the marginal benefit of narrower bid-ask spreads no longer outweighs the marginal cost of increased volatility generated by "uninformed" speculators (i.e., speculators having less accurate or timely information with whom other speculators can trade profitably). In addition to the "uninformed" speculators, such an environment attracts perfectly well informed speculators who employ strategies that intentionally profit by trading volatility. **Importantly, when enough traders trade volatility, the very act of their doing so will tend to increase volatility.⁴⁸ Thus, once ϵ is reached, costs for hedgers increase quite rapidly as volatility increases.**

⁴⁸ De Long, J Bradford, et al, 1990. " Positive Feedback Investment Strategies and Destabilizing Rational Speculation," *Journal of Finance*, American Finance Association, vol. 45(2), pages 379-95, June.

Optimal Liquidity

Once optimal liquidity is reached, at ϵ , additional speculative volume has negative marginal impact for hedgers.



Additionally, the increased use of electronic swap execution facilities, while adding immeasurably to transparency in the markets, provides additional opportunities and incentives for this latter type of speculative trading activity. Access to multiple futures and swaps platforms can in fact be exploited by moving funds rapidly among them to exploit differences in rules, procedures and volume rebates.

Quantifying Sufficient Liquidity ϵ

Holbrook Working's Speculative T-Index is regarded as the most famous research on this inflection point (ϵ). Working noted that because commodity hedgers (liquidity takers) tend to be predominantly short, one can then calculate how much long speculation is required to balance their needs. *Additional speculation only improves liquidity up to a point*, so that the perfect liquidity point would involve more speculation than was absolutely required to balance hedging. His index established that in the early 20th century this additional, beneficial speculation tended to vary between around 10% and 30%, depending on the specific commodity in question. Working contended that because markets would naturally tend towards ideal liquidity conditions, the actual historical data was close to optimal. In other words, he believed that this range was a good approximation of where the perfect point would be.⁴⁹

⁴⁹ Working, H., *Speculation on Hedging Markets*, Food Research Institute Studies Vol. I, No. 2, 1960.

Some pundits have argued that speculation in today's commodity markets is not excessive because the ranges they compute for Working's Speculative T-Index are within historical norms. However, the interpretation of their results has been very convincingly disputed. For one thing, there are clear cases in recent years where the Speculative T-Index is far outside of its historical range. In CBOT wheat, for example, the T-Index hovered around 100% excess speculation for much of 2008, 2009 and 2010, an unprecedentedly high level. While facts like this provide strong evidence that there has in fact been excessive speculation in commodity markets over the past few years, there is an additional deeper point that goes to the very heart of the purpose of imposing speculative position limits to manage excessive speculation, which the CFTC has been mandated to do.

The point is that today's commodity futures markets are structurally different from those that Holbrook Working originally studied. In 1960, when Working first designed and published his index methodology, the only liquidity takers in the futures markets were hedgers. ***In contrast, today, a new class of liquidity takers has appeared.*** While Working's methodology is sound, its use must appropriately take into account the presence of these new liquidity takers. ***This new class of speculators now outnumbers hedgers in several markets, and has therefore changed the entire dynamic of speculative liquidity provision and consumption.*** This class of market participant is the ***commodity index funds.***

Commodity Index Funds and Liquidity

In the debate surrounding liquidity, commodity index funds have come to dominate much of the discussion. On the one hand, some have argued that these funds have helped move commodity markets toward the point of liquidity sufficiency; others have argued the index funds have far exceeded this point. It is illuminating to consider the remarks of Gary Cohen, COO of Goldman Sachs, in testimony before the Senate Energy Committee in 2008, where he mentioned that the original motivation for offering index funds (beyond generating profits) was a perceived need for liquidity on the long side of the market:

Why you need the speculator in the market and why the commodity index was created many years ago is our industry, 20 years ago was a very difficult industry. We had only clients that wanted to sell future production forward. So we had many clients that wanted to go drill oil wells, but they needed some predictability of the price of oil they were going to receive out of the well to go borrow money. They tried to enter the market and sell the oil. There was no natural long in the market. The consumers are so fragmented that they don't amalgamate to a big enough position.

So we actually, as a firm, came up with the idea in the early 1990s to create a long only, static investor in the commodity markets. We

created the commodity index where we could allow people that were willing to commit large pools of capital into the market for a very long period of time to facilitate the actual producers and allow them to be able to hedge their production forward to increase their production.⁵⁰

Cohen's explanation is based on the obvious point that because hedgers are net short, speculators must be net long for the market to be balanced (which, structurally, it must). If there are insufficient long speculators to fulfill this balancing requirement easily, two main problems arise.

- First, commodity prices are pushed down to artificially low levels because the selling pressure of hedgers causes a drop in futures prices, which then brings down spot prices via the mechanisms described elsewhere in this letter. The initial drop in futures prices occurs because for every buyer there must be a seller (and vice versa). So, when there are many more sellers than buyers, prices must drop to a level where new buyers are attracted by cheap prices; and conversely when there are many more buyers than sellers, prices must rise to attract new sellers.
- Second, when there is insufficient liquidity on one side of the market, bid-ask spreads widen because of a lack of counterparties willing to take the long side of the trade. This raises costs because individual participants are forced to trade at prices further from their valuation. It also reduces effective price discovery for the same reason, because if participants must transact further from their valuations, then the published prices of those transactions less accurately represent the fundamentals-based views of the participants.

It is clearly debatable whether there was in fact a lack of liquidity on the long side when the first commodity index funds launched in the early 1990s. Actually, there were no widely reported complaints to this effect from hedgers; nor had there been an obvious departure of liquidity providers from futures markets that had worked effectively for decades. However, there is an even larger problem with Cohen's characterization of commodity index funds, and with the entire discussion of index funds and levels of liquidity. Namely, *commodity index funds do not generally provide liquidity. Rather, they systematically demand liquidity.*

Commodity index funds are not liquidity providers. Liquidity providers are available when liquidity takers want to transact. In the case of commodity index funds, this may happen only when these entities either had capital inflows (or outflows), or when they structurally roll their positions into longer duration futures contracts. Moreover, even during these times, it's more likely that commodity index funds will actually *demand liquidity from the market* to accomplish their funding and roll objectives.

⁵⁰ Gary Cohen – Chief Operating Officer – Goldman Sachs & Co., Senate Energy Committee Hearing (S. Hrg. 110-654) Transcript, September 12, 2008, pages 84-85.
http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=110_senate_hearings&docid=f:45837.pdf

Of course, there are some instances where commodity index funds actually provide liquidity: *however this is only incidental rather than systematic*. Other than these instances, rather than balancing the liquidity demands that already exist in the market, *commodity index funds create a new set of demands that must be met by new (speculative) participants*. This is especially true today, given that in many commodities they are among the largest class of participant.⁵¹ Finally, the large growth in index fund participation in commodity markets has required a diversion of other speculative activity aimed solely at meeting (and profiting from) the liquidity demands of the index funds themselves.

So, there are two main reasons why *commodity index funds are liquidity takers* rather than liquidity providers.

- Unlike other speculators in the market, their buying and selling is completely unrelated to (i) current liquidity demands (as in the case of a market maker); or (ii) any view the fund manager may have on the current level or future direction of specific commodity prices (as is the case with other traditional speculators). This is a structural feature of index funds: they buy contracts because
 - (a) new investment money flows in,
 - (b) prices move sufficiently to require portfolio rebalancing, or
 - (c) they have to roll an expiring contract into a further out month.

And they sell because investors withdraw money, to rebalance with respect to their benchmark, or to roll. ***Commodity index funds are not primarily motivated to buy or sell because they think individual commodity prices are too high or too low, or for any other reason related to specific market pressures or fundamentals.*** In fact, their flows are completely agnostic to the supply and demand fundamentals for a given commodity; after all, they are buying an index. Therefore, if they happen to buy when a hedger needs to sell, it is only by accident; they are just as likely to buy when there is a temporary excess of demand for liquidity on the long side as when there is a temporary excess of demand for liquidity on the short side.

- The second reason why commodity index funds are liquidity takers is that they have become such a large part of the market that they can often outsize hedgers. As recently as January 25th of this year the total size of index fund positions, as reported in the CFTC's CIT report, was over two-thirds of the total size of commercial positions for a wide range of commodities, from wheat (69.2%) to lean hogs (67.2%). At certain points in 2008, index fund positions were over 100% of

⁵¹ For instance, in the wheat market during 2008.

commercial positions for various commodities.⁵² It is obvious that if commodity index fund money is such a large portion of the market open interest, they can place substantial liquidity demands on the marketplace over bounded time periods.

Since commodity index funds are liquidity takers and predominantly long, there is an *apparent* balance with net short hedgers. However, this ignores important differences between the two. The motives of commodity index funds are based on investment inflows and outflows and the need to roll existing positions, completely different from the motives of hedgers. They are not a *reliable* balance to short hedgers, *and moreover, generally compete directly with long hedgers for their own liquidity requirements.*

A further point worth consideration is that Keynesian reasoning suggests that when commodity index funds become sufficiently large, their trading will disrupt rational arbitrage due to the “beauty contest” phenomenon. As Townsend (1983)⁵³ and Singleton (1987)⁵⁴ have discussed, trading on the basis of predictions about the behavior of other participants rather than fundamentals is generally the optimal speculative strategy under asymmetric information (which is *de facto* the situation in a market where commodity index funds trade on the basis of institutional requirement rather than fundamentals).

Because these funds are liquidity takers they have a large collective market positional impact, commodity index funds disrupt price discovery. In addition, they increase volatility because they divert speculative activity that would be allocated to providing liquidity for legitimate hedgers. In fact, today many speculators, anticipating the widely publicized trading pattern of the index funds, trade based on the institutional investor driven supply of and demand for futures contracts themselves rather than the fundamentals underlying a given commodity. ***Commodity index funds detach a futures market from its anchor in the fundamentals and thereby disrupt price discovery.***

In summary, without commodity index funds, speculation at a level of 30% or below of the market is a reasonable historic level of sufficiency (as described in detail herein). But commodity index fund presence only incidentally balances net short hedging, competes with long hedging, and operates in a manner that deemphasizes real world commodity supply and demand factors. Given the above, it is clear that commodities derivatives markets would be far better served by greatly limiting the index fund class through a strong class based position limit scheme.

⁵² See Masters and White, *The Accidental Hunt Brothers* (2008) available at www.accidentalthuntbrothers.com

⁵³ R. Townsend. Forecasting the forecasts of others. *Journal of Political Economy*, 91:546–588, 1983.

⁵⁴ K. Singleton. Asset prices in a time series model with disparately informed, competitive traders. In W. Burnett and K. Singleton, editors, *New Approaches to Monetary Economics*. Cambridge University Press, 1987.

Part 3. The Ample Statutory Authority and Specific Statutory Requirements

Section VI: Statutory Authority and Regulatory Approach

The changes to the Proposed Rules required fall well within the CFTC's statutory authority under the CEA, as amended by Dodd-Frank. These changes are not only permitted under the statute, they are also necessary to achieve Congress's expressed goal of eliminating excessive speculation in our commodity markets.

The CFTC Has Ample Authority

The CFTC clearly has the statutory authority to establish position limits on speculative traders as a group, or on subsets of those traders, including commodity index funds. In the Dodd-Frank Act, Congress amended the CEA so that the CFTC would have the power to establish position limits not just for any "person," but also for "**any group or class of traders.**"⁵⁵ Clearly, therefore, the CFTC may impose position limits on speculative traders as a group, or on subsets of speculative traders, including commodity index funds.

This amendment reflects Congress's understanding that speculation in today's commodity markets is "excessive," that this phenomenon is imposing huge burdens on our economy, and that the CFTC must have new tools at its disposal to address the problem. Congress obviously intended the CFTC to fashion position limits for speculative traders as a group or class, to the extent necessary to diminish, eliminate or prevent excessive speculation.

This specific amendment is just one among many in the Dodd-Frank Act reflecting Congress's sense of urgency surrounding excessive speculation and its decision to grant the CFTC broad discretion in addressing the problem. Under the original provisions of the CEA, the CFTC enjoyed great latitude in setting position limits. For example, the statute empowered the agency to act by rule, regulation, or order to fix whatever limits it deemed necessary to "diminish, eliminate, or prevent" the burdens arising from "excessive speculation," as defined in the CEA.⁵⁶ The statute also made expressly clear that the agency had the discretion to establish a wide variety of limits applicable to different commodities, markets, and delivery periods.⁵⁷

The Dodd-Frank Act retained all of this discretion and expanded upon it. The Dodd-Frank amendments repeatedly make clear that the CFTC is to set position limits "as appropriate," and that the CFTC shall have "discretion" as it seeks to achieve the four primary goals

⁵⁵ Dodd-Frank Act § 737(a)(3)(A), 7 U.S.C. § 6a(a)(1).

⁵⁶ 7 U.S.C. § 6a(a).

⁵⁷ *Id.*

enumerated in the statute.⁵⁸ The Dodd-Frank Act also expanded upon the CFTC's exemptive authority, giving it broad discretion to exempt, conditionally or unconditionally, "any person or class of persons," or any futures, option, or swap, from any of the requirements that the CFTC may establish with respect to position limits.⁵⁹

Clearly, the CFTC has all the authority it needs under the CEA, as amended by Dodd-Frank, to adopt all of the changes in the Proposed Rules that we advocate, including imposing position limits on speculative traders as a class, including commodity index funds.

The Approach We Advocate Is Necessary To Achieve the Mandatory Goals Set Forth in the Dodd-Frank Act

While Congress gave the CFTC broad discretion in establishing position limits of different types and at different levels, it also left no doubt that the agency must act quickly and aggressively to address the new forms of excessive speculation burdening our commodity markets.

The new statutory provisions are requirements, not simply as a grant of authority: ***The CFTC is required to establish new position limits.***⁶⁰ Moreover, the Dodd-Frank amendments set firm deadlines within which the CFTC must act, ranging from six to nine months.⁶¹

*Congress also enumerated four objectives that the CFTC must seek to achieve as it sets position limits.*⁶² First and foremost on the list, and "to the maximum extent practicable," *the agency must "diminish, eliminate, or prevent excessive speculation."* Other objectives include ensuring "sufficient market liquidity for bona fide hedgers," and ensuring that "the price discovery function of the underlying market is not disrupted." These goals are clearly aimed not only at excessive speculation *per se*, but also at the ancillary harms that excessive speculation can cause: destruction of the hedging environment and distortion of the price discovery function.

To eliminate any potential gaps in the new framework, Congress was careful to expand the universe of financial instruments subject to position limits to include swaps in addition to swaptions, futures contracts, and options.⁶³ Congress also strengthened the aggregation requirements contained in the original CEA. To guard against evasion of position limits, the CEA required positions to be combined in situations involving one entity controlled by

⁵⁸ Dodd-Frank Act § 737(4), 7 U.S.C. §§ 6a(2)(A), 6a(3), and 6a(3)(B).

⁵⁹ Dodd-Frank Act § 737(a)(5), 7 U.S.C. § 6a(a)(7).

⁶⁰ Dodd-Frank Act § 737(A)(4), 7 U.S.C. §§ 6a(A)(2) and 6a(A)(3).

⁶¹ Dodd-Frank Act § 737(A)(4), 7 U.S.C. § 6a(A)(2)(B).

⁶² Dodd-Frank Act § 737(A)(4), 7 U.S.C. § 6a(A)(3)(B).

⁶³ Dodd-Frank Act § 737(a)(2), 7 U.S.C. § 6a(a)(1); and DODD-FRANK ACT § 737(a)(2), 7 U.S.C. § 6a(a)(5).

another or positions held by multiple parties pursuant to express or implied agreements⁶⁴. **The Dodd-Frank amendments go further** and require the CFTC to establish limits on the aggregate number of positions held in the same underlying commodity across different designated contract markets, contracts traded on foreign boards of trade, and swaps that perform a significant price discovery function.⁶⁵

Thus, Congress has mandated action by the CFTC within specified time frames; enumerated specific goals that must be achieved to the “maximum” extent possible; expanded the application of position limits to swaps; and fortified the remedial provisions governing aggregation. **These amendments leave no doubt that, while the CFTC has broad latitude in deciding how best to eliminate excessive speculation, it must do so expeditiously and effectively.** As demonstrated in the discussion below in Section VIII, the only way to achieve this goal is to impose limits on the positions that speculators as a class may hold. In keeping with Congress’s statutory requirements, the CFTC must follow this approach.

The Listed Futures Markets Play A Unique Role In Price Discovery, And There Should Be No Delay In Implementing Position Limits For Futures

Much has been made of the fact that data on swaps and swaptions will not be fully available for some time, and it has been argued from some corners that this is a reason to delay implementing position limits. However, futures markets serve a unique role in price discovery, as they are the primary benchmarks that are used for pricing in physical markets as well as other derivatives markets.

For this reason, excessive speculation in futures markets has an immediate and wide-ranging effect, damaging price discovery across all venues, and thereby harming businesses and ultimately consumers. Regulation of excessive speculation in the swaps market will mirror the futures market rules. Swaps markets generally reference futures markets for pricing. While activity in swaps affects prices, price discovery is a function of the futures market. Furthermore, swaps markets do not have the structural relationships to prices that are a feature of the futures markets, as described herein. There is therefore neither a reason nor a justification for the CFTC to delay implementing position limits for futures markets, even if they deem it necessary to wait for more comprehensive swaps data before implementing position limits for swaps and for futures-and-swaps combined.

Position limits for futures, aimed at curbing excessive speculation in the futures markets, will reduce costs for *bona fide* hedgers. **With America’s businesses still struggling from the economic after-effects of the financial crisis, it is imperative that the CFTC acts now to remove the additional costs caused by excessive speculation in futures markets.**

⁶⁴ 7 U.S.C. § 6a(a).

⁶⁵ Dodd-Frank Act § 737(a)(4), 7 U.S.C. § 6a(6).

Section VII: Background of Position Limits and Evolution since De-Regulation in 2000

De-Regulation and the Evolution of Commodities Markets

Massive changes occurred in the derivatives markets in the first years of the 21st century, especially those for physical commodities. The Commodities Futures Modernization Act of 2000 (“CFMA”) dramatically weakened speculative position limits, which opened significant loopholes for financial speculation in completely unregulated shadow markets.

The CFMA also accompanied other deregulatory forces originating from the private sector that changed what and how derivatives were traded. The Enron Corporation created EnronOnline, which allowed the firm’s trading operation to become a central trading platform, clearinghouse and market maker, all in one. They also attempted to convert dozens of classes of commercial transactions into commodities derivatives, everything from highly illiquid power and gas to bandwidth. Of course, this chapter was closed by the disastrous collapse of Enron in 2001.

By that time, another new player had emerged in the derivatives market, the InterContinental Exchange (“ICE”). ICE was established by seven swaps dealers and oil companies in order to facilitate over-the-counter energy trades without brokers – a sort of eBay for energy derivatives. ICE displaced both voice brokers and conventional exchanges. It also offered automated systems to traders and increased the ability to transact. Initially, the transactions were bi-lateral and not cleared. Soon, ICE created the ability for traders to elect to clear trades.

As trading activity grew, financial institutions, energy firms, agricultural products businesses and many others rapidly increased their investment in information technology. This investment was intended to make trading more efficient and to enable these entities to analyze markets and create trading strategies. These firms brought in and trained traders, many picking up individuals orphaned by the collapse of Enron. Traders were no longer limited to Chicago and New York, as large desks were established from Baltimore to Green Bay and beyond.

Push to Transform Commodities Markets toward Tradable Asset Classes

De-regulation of the commodities markets induced financial institutions and other major traders to explore these markets for new opportunities. Financial intermediaries believed that if the commodities markets could be transformed to behave more like securities markets, they could increase trading opportunities, and target new speculative customers, like institutional investors. In fact, vehicles and strategies such as commodities index funds were structured and heavily marketed, aided by academic studies like the 2005 AIG-sponsored paper by Gary Gorton and Geert Rouwenhorst⁶⁶, which asserted that returns on commodities are inversely related to stock market returns, as well as promoting the benefits of “investing” in a backwardated futures price curve.⁶⁷

⁶⁶ Gorton, Gary B. and Rouwenhorst, K. Geert, Facts and Fantasies about Commodity Futures (February 28, 2005). Yale ICF Working Paper No. 04-20. Available at SSRN: <http://ssrn.com/abstract=560042>

⁶⁷ Ironically, the vehicle chosen to capture commodity market backwardation has resulted in a persistent state of contango as described above.

The contrast between capital markets and commodity markets is fundamental to understanding the implications of the purposes for commodities futures markets established in the CEA. Equities and debt markets exist to provide accessible sources of capital for businesses. All securities trading by its nature is speculative. If the markets are transparent and fair, this serves a useful purpose because it provides an enormous, liquid source for funding the capital requirements of corporate America.⁶⁸

In contrast, commodities markets are not sources of capital funding. They exist to facilitate hedging by producers and purchasers of commodities. ***Efforts to convert them into venues to trade asset classes as if they were securities are misguided and dangerous.***

Unfortunately, the massive changes in the commodities markets have had this effect. Several academic studies have documented changes that indicate these markets have begun to behave like securities markets (e.g. Tang & Xiong (2010), Philips & Yu (2010), discussed in *Appendix A*). Chief among these new phenomena is the repeated experience of price bubbles, which can be enormously disruptive and damage the economy. In speculative securities markets, bubbles can be ascribed to “irrational exuberance.” In commodity futures markets, they reveal that futures prices have detached from fundamentals and the risk hedging purpose of these markets is not being served.

As discussed herein, the direct effects of de-regulation and the exploitation of the commodities markets by transforming them to mimic securities markets are:

- a massive increase in speculation,
- use of trading techniques which increase and exploit commodities futures price volatility
- and the rise of a highly structured vehicle for speculation, the commodity index fund, which distorts price discovery and biases prices toward higher levels.

Sufficient speculation, in well-regulated doses, is an integral part of healthy commodities futures markets. However, excessive speculation, in overwhelming quantities, and in forms that directly undermine the price discovery function, present an undue burden of precisely the type that the CFTC has been clearly tasked to eliminate or prevent by imposing speculative position limits.

Changing Regulatory Approach to Position Limits

Recently, position limits have been employed almost exclusively in commodities futures markets to control market manipulation, a distinct form of profiteering (typically associated with the practice of “cornering” a commodity market or, in the capital markets, practices such as insider trading, illegal short sales, and front running). Further, the financial services industry, given their

⁶⁸ Frenk, D. and Masters, M., “Anthropic Finance: How Markets Function” (2010), available at <http://www.bettermarkets.com>

traditional capital markets focus, has consistently directed regulatory attention to commodity market manipulation, and away from excessive speculation.

But there are **critical differences** between a commodities market position limit regime focused just on manipulation, and one focused on preventing the very different concept of excessive speculation.

During the 1980's and 1990's, as financial futures in the capital markets were developed (notably in major fixed income instruments and popular equity indexes), the regulatory distinctions between financial and commodities futures decayed as the financial services industry promoted a "one size fits all" approach. Excessive speculation, a concept exclusive to commodities futures markets, historically had been regulated through the imposition of position limits. It soon became apparent that position limits regulating excessive speculation threatened the burgeoning, speculative business in financial futures market. Further, financial intermediaries were more familiar with position limits aimed only at preventing manipulation, in line with previous capital market practices. Unfortunately, commodity regulators, pushed by the financial services lobby, subsequently de-emphasized limits targeting excessive speculation in the commodities futures markets, conforming their regulatory approach to the approach employed in the financial futures markets.

However, unlike the capital markets in which all participants are speculators (even those said to be "hedging" are actually disposing of the risk embedded in another security), the commodities futures markets have always had *two* distinct participants, *bona fide* hedgers (whose purpose is to reduce price volatility associated with their physically based businesses) *and* speculators (whose purpose is to serve the hedgers by "providing liquidity").

Different from the much larger capital markets (and associated derivatives), if speculators come to dominate price discovery of a given commodity market, **then that market is no longer serving the primary constituency of these markets - *bona fide* hedgers**. Moreover, the essential link between the price behavior and actual supply and demand of the underlying commodity is weakened. For this reason, it is clear that excessive speculation as a concept merits continued regulatory scrutiny in the commodities futures markets. In fact, the sharp rise in commodity speculation over the last five years, increasing volatility and hedging costs for producers, has resulted in commodity price increases which have focused renewed public attention on the urgent need for broader and more rigorous position limits, ***ones that could address not only the threat of manipulation, but also the threat posed by excessive speculation.***

Beginning in the 1990s, position limits were gradually widened. Ann Berg, a former director and trader at the Chicago Board of Trade, reports that speculative limits for contracts in Corn, Soybeans and Wheat on CBOT (CBT prior to 1995) had for decades been set at 600 contracts per commodity.⁶⁹ By 2005, they had grown 22000, 10000 and 6500 contracts respectively, before being doubled again during the 2006-8 price spike. Berg's figures indicate a ***near 75 times increase in the level of position limits in just two decades*** leaving them arguably too wide

⁶⁹ Berg, A. *The Rise of Commodity Speculation: From Villainous To Venerable*" (2011) p15

even to mitigate manipulation, *and certainly well above the levels required to curb excessive speculation.*⁷⁰

Part 4. The Proposed Rules

Section VIII: Specific Comments on Proposed Rules

The approach to position limits must be expanded beyond the concentration limits set forth in the Proposed Rules. Again, concentration limits are concerned with manipulation, not excessive speculation. Dodd-Frank very clearly spells out the need for regulations pertaining to **both phenomena, not just manipulation.**

Procedures for reducing excessive speculation must be adopted. The process should be focused on the largest speculators and provide them an opportunity to adjust positions. However, there must also be a credible mechanism to required reduced positions if necessary.

In addition, commodity index funds must be significantly limited. Structurally, by affecting other types of speculators, they increase the transaction costs of hedgers causing prices to rise. And by contributing to a persistent contango state, they helped to increase prices through various physical contract index practices and pricing assessments. Commodity index funds, as a specific “class of traders” (in language of the Dodd-Frank Act) constitute a burden on American consumers.

The investors in commodity index funds hold swaps in which the sponsor is counterparty. Each of the swaps is priced in accordance with a specified commodity index. They all are following a common plan for investing in a market basket of commodities futures prices. Therefore the swaps that are indexed to each individual index must be treated as a single position under the aggregation rules.

The aggregate position limit rules must be applied immediately to the futures markets. As illustrated below, the relationships between the futures markets and commodity prices are affected by swaps markets, but indirectly. The largest relationship is the practice of dealers using futures as “futures equivalent hedges” to lay offset swap exposures to end users. While swaps market trading marginally, this “futures equivalent hedging” activity is not sensitive to prices. Furthermore, the interaction between the futures markets and physical commodity prices is largely embedded in structural elements of the futures markets which

⁷⁰ While many have claimed that agricultural position limits have not worked historically, the fact that limits have increased 75 fold in 20 years makes it completely clear that no one can say that historic lack of effect is proven. What would have been the result if consistent and meaningful limits had been in place? It seems clear that prices would have been more moderate.

function independently of the swap markets. Aggregate position limits on futures address these structural elements and their consequences.

Concentration position limits applicable to the futures markets must be applied immediately as well. The Proposed Rules call for separate position limit regimes for futures, swaps and the two combined. Information from large swaps dealers may be needed for swaps and swaps/futures combined. The CFTC must implement the futures regime first and immediately. ***The fact is that the futures market position limits are uniquely important. Swaps are almost all priced based on futures prices, so the futures markets influence swaps, rather than the reverse. More importantly, futures prices directly affect commodities prices paid by American consumers.***

Several detailed comments concerning the Proposed Rules are also addressed below. The thresholds for each category of position limits must be lowered. The “look-through” exclusion of positions offsetting swaps entered into with a customer who is entering into a bona fide hedge must be deleted. And the measurement of compliance must be more frequent. Finally, the standards included in the definition of a “referenced paired futures contract, option contract, swap or swaption” must be amended to more accurately reflect market practices and realities.

Look-Through Provision

Under the Proposed Rules, a trader may exceed the position limits to the extent, among other things, that a transaction or position

Reduces risks attendant to a position resulting from a swap that...
[w]as executed opposite a counterparty for which the transaction
would qualify as a *bona fide* hedging transaction....⁷¹

Therefore if a dealer enters into a swap which constitutes a referenced contract with a *bona fide* hedger and then hedges the risk of that swap, in whole or in part, with another referenced contract, the second referenced contract is not subject to position limits. This result is solely a consequence of the purpose of the dealer’s initial counterparty qualifying it as a *bona fide* hedging transaction.

The Proposed Rules limit positions in aggregate and by classes, the classes being (a) futures and options and (b) swaps; and it measures positions on a net long or net short basis.⁷² Therefore, if the dealer described in the above paragraph hedges the risk of the initial swap with a referenced contract swap, the quoted provision of the proposed rules have no practical consequence since the two swaps would be netted for all purposes. However, if the dealer hedges the initial swap with a referenced contract in the futures market, the

⁷¹ Proposed Rules, Section 151.5(a)(1)(iv).

⁷² Proposed Rules, Section 151.4(d).

futures contract would not increase the dealer's position in calculating the futures class open interest.

We are in agreement with the Proposed Rules to the extent that positions of dealers in the futures markets includes futures and options which offset swaps and swaptions executed with speculators. However, futures and options offsetting swap and swaption positions with *bona fide hedgers* should also be included. There is no reasonable connection between the purposes of the position limit rules and the "look-through" provision. There is a very real concern about the "look-through" provision is that it will provide a competitively advantage to dealers in providing swap hedges to *bona fide hedgers*. It is disingenuous to assert that dealers would withdraw liquidity from the swaps markets because offsetting positions in the futures markets count against the class position limit. If the dealer sees fit to manage class limits by avoiding futures, it can offset with a swap. As we have pointed out above, the futures markets have structural relationships to commodities prices that are specific and unique. This class position limit is extraordinarily important and the level of speculation must be brought under controls regardless of the motives of a counterparty indirectly related to the futures position.

Finally, the look-through provision focuses on intent and causal relationships that are difficult to ascertain. The existence of a futures position might be motivated by an intent to lay off swap risk. On the other hand, it might be the consequence of an algorithmic strategy to squeeze a commodity index fund engaged in a roll. If the purpose is the latter, the look-through rule should not prevent the futures position from counting in the position calculation. Policing the intent would be virtually impossible. *The "look-through" should be identified for what it really is: a potential regulatory loophole promoted by the swap dealer community for competitive purposes.*

Calculation Periods

In the Proposed Rules, the CFTC will fix concentration position limits on January 31 of each year, and publish them. The position limits then will become effective on March 1 and remain in effect for one year.⁷³

This process is inadequate, given the fluidity of trading activity and the availability to the CFTC of data under the reporting regime required by the Dodd-Frank Act. The CFTC will have the tools and capacity to responding to changing market conditions much more frequently than annually. The data will be provided by derivatives clearing organizations and swap data repositories. Large dealer reporting based on futures equivalent pricing will provide needed data promptly, The CFTC will have the ability to monitor and analyze this data at least annually under the Proposed Rules to set position limits. Running these procedures more frequently will be a matter of initiating automated processes.

⁷³ Proposed Rules, Section 151.4(h).

Updating the concentration position limits more frequently will have significant benefits to the marketplace. Position limit changes will more accurately reflect current market conditions and more precisely serve the purposes behind the position limits rules.

Moreover, a quarterly regime will allow regulators to adjust position limits up or down, as necessary to promote or deter speculative liquidity as necessary so that liquidity is sufficient. This could be an especially critical tool for regulators given the rapidly changing macro environment of the present.

Furthermore, infrequent calculations will undoubtedly create opportunities for abuse. As market conditions change, and position limits set earlier become outdated, they can easily become a “safe harbor” for trading activity which is precisely the type the Dodd-Frank Act seeks to eliminate.

Finally, a desirable regulatory result is to encourage large traders to monitor their own open interest in order to maintain compliance. More frequent updates of position limits will motivate these market participants to implement stringent monitoring and procedures to adjust their activities to maintain compliance. Perhaps the largest and most important practical consequence of position limits will not be enforcement, but new *self-regulation* by a majority of market participants.

This will only happen if the CFTC establishes concentration position limits on a quarterly basis, at a minimum.

Definition of “Referenced Paired Futures Contract, Option Contract, Swap or Swaption”

The Proposed Rules define “Referenced Paired Futures Contract, Option Contract, Swap or Swaption” as

- (1) Directly or indirectly linked, including being partially or fully settled on, or priced at a differential to, the price of any core referenced futures contract; or
- (2) Directly or indirectly linked, including being partially or fully settled on, or priced as a differential to, the price of the same commodity for delivery at the same location, or at locations with substantially the same supply and demand fundamentals, as that of any referenced futures contract.⁷⁴

The required use of futures equivalence, in conjunction with the CFTC’s proposed rule on “Position Reports for Physical Commodities Swaps,” is clearly a necessity as well as an excellent approach to making market data useful to regulators and the broader public. In addition to promoting sensible and market-based calculation of positions,

⁷⁴ Proposed Rules, Section 151.1.

this new requirement will dramatically add to overall market transparency in the OTC commodities derivatives markets.

The quoted definition should accomplish one primary purpose: it should cover contracts for physical commodities having different delivery points or differing in other ways, but having prices that are sufficiently related that they should be grouped for purposes of position limits.

Often, this sort of price relationship occurs because the different delivery points are subject to substantially the same supply and demand fundamentals. However, this is not always the case. The essential feature of the relationship is not the supply and demand fundamentals of the different delivery points, but rather the enduring price relationship between the two contracts. This link may rest on other factors than different delivery points with shared fundamentals. For example, it may arise between different grades of a commodity, or different secondary products of a single commodity, rather than between different delivery points for precisely the same commodity.

Therefore, by focusing the definition on the supply and demand relationships of the delivery points rather than the price relationships themselves, the Proposed Rules offer an unnecessarily narrow definition of a paired swap or swaption. This may be the cause of price relationships, but not in all cases. The focus must be shifted to the actual issue – market price relationships. Location issues should be considered along with other factors, but in a second level of analysis which involves examining the cause behind the relationship to validate the price relationships which are apparent from the market.

The markets for crude oil and derivatives such as jet fuel are good examples. Physical characteristics like storability, storage capacity and relative absence of distribution constraints can make the physical delivery points much less meaningful. Crude oil delivered in many different and remote locations is closely related in terms of price. The same is true of jet fuel. In contrast, products like electricity that are not easily stored and have severe limits on distribution capacity are less broadly correlated.

As a result, in the U.S. oil market, crude oil has a widely applicable reference price – WTI. In contrast, power contracts have few and very narrowly applicable reference prices, such as PJM West Hub.

Another consideration is the concept of the “same commodity.” Just as supply and demand similarities can cause two contracts to have related prices, so can the processing of one product that is the subject of a contract into another which is the subject of a second contract. For instance, crude oil grades have a strong price relationship with the crude oil reference price, regardless of delivery points. These grades are often hedged with WTI contracts, the widely used reference price. Even though they do not constitute precisely the same product, they are sufficiently closely related that these grades should be considered as valid pairs with WTI contracts. A swaps position in West Texas Sour (WTS) or Mars should therefore, for position limit purposes, be paired with a position in WTI as a position in crude oil outright. It should not be possible to artificially widen position limits

by claiming that a position in WTS is materially distinct from a position in WTI, so that the two should not be aggregated. Different grades of crude are all, in an important and relevant sense, the “same commodity.”

Returning to the jet fuel example, under common trading practices, it is widely accepted that there is a close relationship between heating oil, jet fuel and other middle distillates. Delivery locations are not significant to the correlations between jet fuel contracts because of the specific market structure, storage capacities and distribution capabilities. Rather than arising from fixed differentials between delivery points, the significant price relationships here are based on commonly understood relationships between various refined products. Traders recognize strong hedging relationships among jet fuel, heating oil and other middle distillates like diesel, based on the similarity of the products and enduring price correlations between them. They often use these contracts interchangeably, with minimal reference to location of delivery. This suggests strongly that the concept of the “same commodity” must be given a broad interpretation.

The concept of the “same commodity” must therefore be made broader to cover relationships beyond that of different delivery points with shared supply and demand fundamentals. The definition should reflect the market’s understanding of what constitutes the “same commodity,” which extends to different grades, and other variations that trade at a stable and well-defined differential, are commonly regarded as hedge equivalents, and display enduring and widely recognized price relationships.

The CFTC must adopt a layered approach to this definition, as follows:

1. Because participants have a financial stake in the existence of the relationship, a persuasive indication of strong price relationships is the behavior of the market. The analysis should consider the hedging relationships that are broadly used by market participants in hedging activities. If a listed contract is used as a hedge for a non-listed contract, for instance, this is a strong indication that the price relationships of the two contracts are sufficient to support pairing.
2. The practices of clearing organizations are also indicative. They provide netting of initial margin through credits for price correlated contracts. This is an indication of potential pairs. It should be noted, however, that the basic purpose of clearing organizations is credit management. As a result, the contracts qualifying for netting of initial margin constitute a narrower list than paired contracts that are appropriate for position calculations.
3. The existence of an enduring price relationship should qualify two positions to be considered paired, provided it is justified by the other considerations. Thus, although gold and silver may display an enduring price relationship, they clearly should not be considered as the same commodity for reporting purposes, because they are not treated as such by the market. However, jet fuel and heating oil, which would not be paired under the Proposed Rules as they stand, should be paired because of (a) their enduring price relationship, and (b) the fact that they are

generally used as equivalent hedges by market participants, and also pass the other tests listed below. Historic price correlations between the potentially paired contract and the listed contract can, in the proper circumstances, be predictive of future relationships. It is most useful in cases where hedging activity is difficult to determine. Market participant behavior as described in paragraph 1, is a more reliable factor. The strength of the correlation should indicate merely that the relationship is significant.

Finally, the physical characteristics of the subject of the futures, options, swaps or swaptions which might be paired based on the foregoing criteria should serve as a check on potential pairings. Where the cause for a relationship can be determined, it reinforces the conclusion drawn from the other factors. These physical characteristics may indicate that market practices, treatment by clearing organizations and historic correlations do, or do not, support pairing. Examples of the physical characteristics should include:

- a. Distribution systems and delivery locations in relation to supply and demand relationships. Where the supply and demand relationships are similar, the pairing of price-related contracts is supported.
- b. Relationships between grades of the same basic products, such as grades of crude oil. Where the specific products are grades of the same basic product, the pairing is supported.
- c. Relationships between the products based on common source for processing, such as heating oil, diesel and jet fuel. Where the specific products are produced by different processing of the same underlying product, pairing is supported.

Aggregation of Commodities Index Fund Swap Positions

The investors in commodity index funds hold swaps in which the sponsor is counterparty. Each of the swaps is priced in accordance with a specified commodity index. The price is adjusted by the profit or loss the fund manager receives in connection with the roll of futures used to off-set the swap. All of the investors are following a common plan for investing in a market basket of commodities futures prices - the swap payments follow the index as adjusted and calculated by the index provider and the rolls are managed in accordance with a common agreement and set of standards by the manager. Obviously, fund promoters will point out slight differences in the way different vehicles work. They are immaterial. The important facts are that: (a) they all track a single index; and (b) to avoid tracking error, all index fund participants must replicate the weightings in the index; (c) and they all must continuously extend maturities by rolling their positions forward.

The aggregation provisions of the Proposed Rules provide as follows:

The position limits set forth in § 151.4 shall apply to all positions in accounts for which any trader by power of attorney or otherwise directly or indirectly holds positions or controls trading and to positions held by two or more traders acting pursuant to an expressed or implied agreement or understanding the same as if the positions were held by, or the trading of the position were done by, a single individual.⁷⁵

The swaps which are indexed to each individual index must be treated as a single position under the aggregation rules. The investment plan as described above is the same, an expressed agreement.

This also is a sensible result given the reality of the marketplace. At the time of the roll or upon any re-weighting, the managers act in accordance with a common set of requirements, often collectively disrupting the commodities futures markets as described above. It is precisely this wave-like market activity that helps to cause the damage described herein.

Excessive Speculation

Rules relating to excessive speculation which overlay the manipulation-oriented concentration provisions of the Proposed Rules must be added. These rules must address two issues: what standards are used and what are the consequences of speculation exceeding those standards.

1. As discussed in the analysis above, historic data and analysis indicate that ***speculation by liquidity providers is much more than sufficient to provide necessary liquidity to hedgers if such speculation constitutes more than 30% of total open interest.*** Speculation levels above sufficiency must be deemed “excessive.”
2. ***For individual markets, this maximum aggregate level of 30% may still be too high.*** Therefore, as part of the biennial review of the effectiveness of position limits required by Dodd-Frank Act §719(a)(4), the Commission should also take into account the views of hedgers, the *primary constituents* of commodity futures markets, to determine whether a tighter limit might be appropriate in individual markets with unique liquidity conditions.
3. Commodity index funds must be dealt with separately because of the unique characteristics discussed above: they are liquidity takers who structurally increase volatility, they damage price discovery, and they have pushed commodity prices

⁷⁵ Proposed Rules, Section 151.7.

towards higher price levels. *This fits precisely with the Dodd-Frank Act authorization to establish position limits not just for any "person," but also for "any group or class of traders."*

Commodity Index Funds Class Position Limits

Currently, commodity index funds represent about the same percentage of markets as other speculators and hedgers, respectively. The interests of the public and the effective operation of the market to facilitate hedging and price discovery would best be served if their positions were limited to zero. **However, any limit below current levels would be constructive.** For example just limiting commodity index funds to 10% of the total market open interest would likely have significant beneficial effects.

Reducing Excessive Speculation

If a condition of excessive speculation exists for a material amount of time, the CFTC must require a reduction in non-commodity index fund speculation, commodity index fund speculation or both, depending on the circumstances. The method of reducing levels of excessive speculation would work as follows:

If the condition is a result of excessive non-index fund speculation,

- the largest market participants in this category representing one third of speculative activity must file a plan with the CFTC for the reduction of their speculative positions commensurate with the excess speculation over a reasonable period of time; and
- if the plans are deemed inadequate or do not have the effect of eliminating excess commodity index fund speculation, the positions of these market participants will be limited to a percentage of the market sufficient to eliminate excess speculation.

It has been pointed out many times that data from swaps markets are not yet available. This concern focuses on concentration, the approach used to target manipulation in the Proposed Rules. In contrast, excessive speculation, addressed in our proposed addition, is specific to each of the two markets – futures and options and swaps. There is no doubt that additional data provide greater knowledge. However, as described above, the futures markets are independently and structurally critical to the prices of commodities. In substantial part, the linkages described herein are not dependent upon any levels of activity in the swaps markets. Furthermore, swap prices are overwhelmingly indexed to futures prices. Swaps are routinely hedged with futures equivalent contracts. The foregoing rules regarding excessive speculation can and must be applied immediately to the futures and options markets. As data become available, similar approaches, analyzing hedging and speculation in relation to swaps using a parallel methodology, such as the hedge equivalent approach to the definition of Referenced Paired Futures Contract, Option Contract, Swap or Swaption.

Concentration Position Limits

In addition, for the same reasons, concentration position limits applicable to the futures markets must be applied immediately as well. The Proposed Rules call for separate position limit regimes for futures, swaps and the two combined. Information from large swaps dealers may be needed for swaps and swaps/futures combined. The CFTC must implement the futures regime first and immediately.

CONCLUSION

The position limits rules are unique in the effort to implement the Dodd-Frank Act. The Dodd-Frank Act Requires the imposition of new position limits that will, above all, eliminate excessive speculation. While the Proposed Rules address one of those purposes, concentration and the potential for manipulation, the other major purpose, the problem of excessive speculation is not addressed. We have articulated the serious need to expand the scope of the rule on position limits by demonstrating the effects of excessive speculation, and in particular speculation by commodity index funds, on commodity prices. We have pointed out the specific adverse impact that excessive speculation has on price discovery. We have documented the relationship of commodity index fund speculation on market liquidity. And we have laid out a regime for setting and enforcing limits on excessive speculation.

In summary we have proposed the following:

- Elimination of the “look-through” provision in the Proposed Rules.
- Quarterly calculation of concentration limit amounts.
- Adoption of a market-based approach to determining referenced paired contracts.
- Limiting commodity index funds to 10% of the open interest in individual markets.
- Setting speculative position limits at 30% of the open interest in individual markets.
- Establishing a flexible regime for reducing speculation when excess speculative conditions exist in the markets.
- Immediate implementation of concentration and excessive speculation position limits to the futures markets and subsequent extension to swaps markets when data become available,

We hope that this comment letter aids the CFTC in its effort to address this important, complex and controversial rule making.

Sincerely,



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Appendix A

Review of Academic Literature

Appendix A: Review of Academic Literature

As discussed on page 36 *Supra*, there is an ongoing and lively academic debate surrounding the impact of speculation on commodity prices. Various interested parties, including Terrence Duffy of CME, cited above, have repeatedly claimed that the debate is overwhelmingly one-sided, with an absolute dearth of evidence that speculation impacts prices. Surprisingly, this assertion has been echoed by several academics.

A review of the thirty studies cited below clearly demonstrates the absurdity of these claims. Moreover, a closer reading of the available literature uncovers an interesting fact. Many of the studies arguing that speculation is not a causal factor with respect to commodity prices are effectively the same study in different clothes. That is, they merely present the same findings as other papers, occasionally with some minor tweaks, and often with none at all.

On the other hand, the studies that argue speculation *is* a causal factor display a wider range of approaches, ranging from theoretical and empirical treatments of actual market structure, to direct and indirect statistical tests.

In fact, those who negate the impact of speculation on commodity prices enjoy much less support, both quantitatively and qualitatively than those with a vested interest would have the regulators and the public believe. Indeed, once it is realized that the studies arguing speculation is not a causal factor are generally variations on a few highly flawed approaches, it appears that the most reasonable conclusion to reach is that speculation *is* a causal factor, consistent with all the evidence presented in the accompanying comment letter.

Speculation is not a causal factor

A number of economists, e.g. Irwin and Sanders (2010), Krugman (2008), Pirrong (2009)⁷⁶ are skeptical that non-commercial speculation in general, or index fund participation in particular, is capable of affecting prices over the long-run. These economists present clear, simple, yet erroneous arguments to support the view that the elevated price levels and volatility of the last several years have been fully attributable to supply and demand explanations.

Some, including Irwin and Sanders (2010), argue that there is a “logical inconsistency”⁷⁷ in the thesis that a large inflow of commodity index fund money can distort prices. They note that, unlike in the stock market, there is an indefinite supply of futures contracts. The

⁷⁶ Irwin and Sanders (2010) available at: www.oecd.org/dataoecd/16/59/45534528.pdf Krugman (2008) available at <http://krugman.blogs.nytimes.com/2008/06/25/confusions-about-speculation/>

⁷⁷ *Op. Cit.* p3

implication is that the usual laws of supply and demand do not apply to futures markets: increased demand for long futures contracts needn't push up prices. This argument holds no merit, however, because demand for long futures contracts from a "buyer" must be met with demand for short futures contracts from a "seller" willing to take the opposite short position; otherwise, a transaction cannot occur. If new buyers enter the market, they must therefore bid prices higher in order to attract new sellers. The laws of supply and demand are therefore no different in futures markets than they are in any other market, contrary to what Irwin and Sanders argue.

Others, like Krugman (2008) argue that speculation in futures markets can only affect physical prices by changing physical inventories through altering the incentive structure of physical owners. They then point out that inventories have not risen sufficiently to indicate a speculative impact. This argument ignores the fact that physical prices are not just affected by futures prices via inventory effects. They are also directly influenced by futures prices via futures-linked physical contracts in grain and energy markets, and also by their role in setting benchmarks for physical auctions in all commodity markets. It also ignores the fact that both supply of and demand for essential commodities are hugely inelastic; meaning a speculation-driven run-up in prices needn't lead to a significant rise in inventories. Any generic rise in inventory levels due to speculation-driven price inflation is therefore likely to be completely outweighed by seasonal fluctuations and other short-term factors.

Some academics, e.g. Pirrong (2009)⁷⁸, have tried to prove that commodity prices are fully explained by supply and demand fundamentals, so no speculative impact is present. The most popular candidates for supply-and demand explanations are emerging market demand and biofuels. To date, no rigorous model of this relationship has emerged. However, this is perhaps inevitable, given the vague nature of such claims. While nobody denies that demand increases or supply constraints should, *ceteris paribus*, lead to price increases, there is no generally accepted model for estimating the real-world elasticities of demand and supply that would allow for calculation of the appropriate *size* of such increases. Insofar as models of real-world elasticities have been developed, they have given widely divergent results, and not even a basic degree of consensus has been reached.

Moreover, while the fundamentals might explain at least part of the general *rise* in prices, there is no obvious reason why a long-term structural demand surplus should explain the rising *volatility* of prices. It also fails to explain the rapidly rising correlations between the prices of very different commodities, from perishables to storable food commodities, to energies and metals – correlations that have outlasted the financial crisis that some observers originally proposed as an explanation. Nor does it explain the breakdown in traditional inventory relationships, which held steady for decades before breaking down during the index fund era.

⁷⁸ Pirrong (2009) available at
http://www.bauer.uh.edu/downloads/Pirrong_WTI_Report_091116_Final.pdf

A final reason for the lack of a definitive study on the link between fundamentals and prices is the lack of definitive data on the fundamentals. While we know that emerging market demand is growing, it is hard to know just how quickly it is doing so. Even our best estimates, therefore, contain too many degrees of freedom to facilitate a fully rigorous analysis of the strength of the link between fundamentals and prices. Consequently, it is often simply taken as an article of faith. For an issue of such immediate and practical importance, however, faith is surely not the appropriate arbiter.

Beyond these theoretical claims, the economists who claim speculation is not a relevant factor in the current price turmoil tend to make the following evidence-based claims:

- (i) Granger Causality tests and other similar approaches display no statistically significant relationship between speculative behavior and price moves.
- (ii) The amount of speculation present in today's commodity markets is within historical norms, so the clear changes in commodity price behavior cannot be attributed to an increase in speculation.

Both of these lines of argument are deeply flawed, to the point of outright falsehood. The first type of argument suffers from two main deficiencies. First, the statistical techniques applied are unsuitable for commodity price data, which is non-stationary (highly volatile). Linear regression models and similar approaches rely upon data smoothing techniques that cannot be expected to give reliable conclusions. See Frenk (2010)⁷⁹ for further discussion of these points.

Second, leaving aside the issue of whether the tools themselves are appropriate, the actual execution of such studies e.g., Irwin and Sanders (2010), Harris and Bhukusyyn (2009) is *clearly inappropriate*. Those who believe speculation impacts prices believe it does so in a way that generates observable relationships over periods of months. Over a few days or a week there are too many other independent variables to expect any single factor to show a consistent degree of impact on prices exclusively. The thesis is not, therefore, that an increase in speculation or an increase in index fund positions one week will always lead to higher prices or higher volatility the following week. The Granger Causality tests applied by Irwin and Sanders (2010), by Harris and Bhukusayin (2009), and by their many emulators therefore address a straw man. Testing a more appropriate time frame, Professor Kenneth Singleton at Stanford University has found that “[W] investor flows are measured over periods of weeks, rather than days as in much of the literature, they have sizable correlations with excess returns.”⁸⁰

⁷⁹ Frenk (2010) available at <http://stopgamblingonhunger.com/wp-content/uploads/2010/07/Response-to-OECD-study.pdf>

⁸⁰ Singleton, K. “Investor Flows And The 2008 Boom/Bust In Oil Prices” (2011)

The claim that “levels of speculation...are within historical norms,” also offered by Irwin and Sanders (2010) and by Harris and Bhukusayin (2009), and additionally made by Stoll and Whaley (2009) is even more flawed. In wheat, for example, the T-Index hovers at around 100% excess speculation for most of 2007, 2008 and 2009.⁸¹ This is unprecedented, and constitutes a level of excess speculation three times greater than the historical norm, which tends to be in the region of 30%-40%.⁸² The diagrams starting on page 26 of the accompanying comment letter show this graphically for a range of commodities, and one set of charts is reproduced below:

Finally, the introduction of commodity index funds as a major component open interest since around 2004 throws off Working’s Speculative T-Index, since these participants cannot be classified as traditional speculators (because they are liquidity takers rather than liquidity providers), yet nor are they bona-fide hedgers, as their underlying business has nothing to do with commodities [for more on this, see p59 *supra*].

Speculation is a causal factor

In contrast to the view that speculation does not impact prices, other economists have produced significant amounts of theoretical and empirical evidence that speculation is a causal factor. Indeed, this is a logical consequence of the fundamental principle that markets are made of participants, and it is therefore the buying and selling behavior of those participants that moves prices.⁸³ Therefore, if the participants’ behavior is driven by fundamentals, then prices will reflect fundamentals. To the degree that factors come to dominate participants’ behavior, prices will become divorced from other fundamental supply and demand factors.

These economists recognize that the structure of commodity markets today is one in which a significant proportion of market participants do not trade on fundamentals, and that the size and power of this group is sufficiently large that rational arbitrageurs cannot eliminate divergences from fundamental value, as to attempt to do so would be too risky.⁸⁴ Additionally, a lack of transparency as to how various types of participant are classified may prevent arbitrageurs from identifying divergences from fundamental value in the first place.

Thus, this group of economists recognizes the theoretical possibility that non-commercial speculators as a group, index funds as a group, or both groups in combination, can cause

⁸¹ i.e. a T-Index value of around 2.0. Source: author calculations.

⁸² See e.g. Working (1960), Peck (1982), both available at http://www.farmdoc.illinois.edu/irwin/links_archive_papers1.asp

⁸³ See e.g. Vayanos and Woolley (2010) and Vayanos and Woolley (2011) both available here: <http://www.lse.ac.uk/collections/paulWoolleyCentre/WorkingPapers/Default.htm>

⁸⁴ See e.g. Schleifer (1995) and Schleifer and Vishny (1997) both available here: www.nber.org/papers/w5167

significant and “unwarranted” changes in commodity futures prices. They further recognize that this impacts physical prices via (1) anchoring expectations through the “price discovery” role of futures markets, which then influences physical auctions; (2) physical term contracts that are directly indexed to near month futures prices; (3) physical term contracts that are indirectly indexed to futures prices via benchmarks such as the “Platts price,” which is itself determined by an algorithmic function involving a combination of physical auction prices and futures prices.⁸⁵

This latter group of economists has gathered substantial empirical data to show that, in addition to being logically possible, this phenomenon is, in fact, occurring.⁸⁶ These data tend to take one of the following forms:

- (i) Increased correlations between financial asset prices and commodity prices, interpreted as evidence that the increased financial participation in commodities is now a primary driver of prices, e.g., Masters and White (2008), Singleton (2011). Also, increased correlations between prices of different commodities, interpreted as evidence that index fund buying has distorted prices e.g. Tang and Xiong (2010);
- (ii) Changes in the term structure of commodity prices. Structurally, if index fund activity is influencing prices, one would expect a greater prevalence of contango, because index funds put a continual bid on further out months. Contango has indeed become considerably more prominent in the index fund era.
- (iii) Changes in the pattern of commodity prices. Some economists have attempted to model the defining characteristics of a price bubble, measured purely formally e.g. Phillips and Yu (2009). They have then applied these metrics to commodity prices, and found that the 2007-8 price run-up displayed bubble-like behavior. This is interpreted as implying that excessive speculation was a driving factor, as bubbles are, according to these studies, associated with capital markets rather than traditional commodity markets.

In addition to these studies, Mou (2010)⁸⁷ has demonstrated convincingly that the effect of the commodity index fund roll is real and large. He characterizes it as “a significant and persistent market anomaly in the commodity futures markets”.⁸⁸ By comparing excess returns around the dates of the rolls of futures in the GSCI (the most popular benchmark for commodity index funds) with those of futures not included in the GSCI, he shows that huge arbitrage opportunities (inefficiencies) have been generated by the “Goldman Roll”.

⁸⁵ See p. 54 *supra*

⁸⁶ A representative sample of such studies is included below.

⁸⁷ Mou, Y. *Limits to Arbitrage and Commodity Index Investment: Front-Running the Goldman Roll* (Columbia University 2010)

http://www.nhh.no/Files/Filer/institutter/for/seminars/finance/2011_spring/180211.pdf

⁸⁸ *Ibid.*

They did not exist before the GSCI launched, but they have since existed consistently. Over the same time period, these opportunities simply *did not arise* in commodities not included in the GSCI. Moreover, Mou finds that the more index fund money flows into commodities markets, the greater these inefficiencies become. Finally, he finds that when other speculators' positions increase, the inefficiencies tend to be arbitrated away to a greater degree.

This important study therefore provides overwhelming evidence that the actions of speculators have a significant impact on commodities prices.

The balance of academic discussion therefore provides yet more evidence, in addition to that presented in the accompanying letter, that speculation impacts prices, and that U.S. commodity markets today are in a state of excessive speculation that the CFTC is statutorily required to address through a meaningful and targeted position limits regime.

Partial List of Studies Arguing Speculation Is A Causal Factor⁸⁹

Agriculture and Food Policy Centre (University of Texas) (2008): The effects of ethanol on Texas food and feed: "Speculative fund activities in futures markets have led to more money in the markets and more volatility. Increased price volatility has encouraged wider trading limits. The end result has been the loss of the ability to use futures markets for price risk management due to the inability to finance margin requirements."

Baffes, J. (World Bank) and Haniotis, T. (European Commission) (2010): Putting the 2006/2008 Commodities Boom into Perspective. World Bank Research Working Paper 5371: "We conjecture that index fund activity (one type of "speculative" activity among the many that the literature refers to) played a key role during the 2008 price spike. Biofuels played some role too, but much less than initially thought. And we find no evidence that alleged stronger demand by emerging economies had any effect on world prices. "

Chevalier, J., Baule, F., Lasserre, F., Odonnat, I., Viellefond, E., Laffitte, M. and Chevalier J. (Ministère de l'Economie, de l'Industrie et de l'Emploi) (2010): Rapport du groupe de travail sur la volatilité des prix du pétrole: "on peut raisonnablement avancer en conclusion que le jeu de certains acteurs financiers a pu amplifier les mouvements à la hausse ou à la baisse des cours, augmentant la volatilité naturelle des prix du pétrole..."

Eckaus, R.S. (MIT) (2008): The Oil Price Really Is A Speculative Bubble: "Since there is no reason based on current and expected supply and demand that justifies the current price of oil, what is left? The oil price is a speculative bubble."

⁸⁹ For a list of studies arguing that speculation is not a causal factor, see Irwin and Sanders (2010) at footnote 67 *Supra*.

Gilbert, C. (Trento University) (2010): How to understand high food prices. Journal of Agricultural Economics: “By investing across the entire range of commodity futures, index-based investors appear to have inflated food commodity prices.”

Gosh, J. (Jawaharlal Nehru University) (2010): Commodity speculation and the food crisis: “Thus international commodity markets increasingly began to develop many of the features of financial markets, in that they became prone to information asymmetries and associated tendencies to be led by a small number of large players.

Hernandez, A. and Torero, M. (2010): Examining the Dynamic Relation between Spot and Future Prices of Agricultural Commodities. In: FAO Commodity Market Review 2009-2010: “The causality tests performed indicate that the futures markets analyzed generally dominate the spot markets. Price changes in futures markets lead price changes in spot markets more often than the reverse, especially when examining returns.”

International Monetary Fund (2008): Regional Economic Outlook: Middle East and Central Asia: “In summary, it appears that speculation has played a significant role in the run-up in oil prices as the U.S. dollar has weakened and investors have looked for a hedge in oil futures (and gold).”

Jouyet, J.P. (President de l’Autorite des marches financiers), de Boissieu, C. (President du Conseil d’analyse economique), Guillon, S. (Controleur general economique et financier) (2010) : Rapport d’etape – Prévenir et gérer l’instabilité des marchés agricoles: “Les marchés agricoles sont confrontés à une mondialisation et à une financiarisation qui influencent leur fonctionnement. La volatilité naturelle des prix qui caractérise ces marchés est amplifiée par de nouveaux facteurs et notamment par une spéculation excessive.”

Khan, M.S. (Petersen Institute) (2009): The 2008 Oil Price “Bubble”: “While market fundamentals obviously played a role in the general run-up in the oil prices from 2003 on, it is fair to conclude by looking at a variety of indicators that speculation drove an oil price bubble in the first half of 2008. Absent speculative activities, the oil price would probably have been in the \$80 to \$90 a barrel range.”

Krugman, P. (Columbia University) (2009): Oil speculation: “Last year I was skeptical about claims that speculation was central to the price rise, because what I considered the essential signature of a speculative price rise ... just wasn’t showing. This time, however, oil inventories are bulging, with huge amounts held in offshore tankers as well as in conventional storage. So this time there’s no question: speculation has been driving prices up.”

Medlock, K. and Myers Jaffe, A. (Rice University) (2009): Who is in the Oil Futures Market and How Has It Changed?: “...trading strategies of some financial players in oil appears to be influencing the correlation between the value of the U.S. dollar and the price of oil. (...) We also find that the correlation between movements in oil prices and the value of the dollar against the trade-weighted index of the currencies of foreign countries has

increased to 0.82 (a significant measure) for the period between 2001 and the present day, compared to a previously insignificant correlation of only 0.03 between 1986 and 2000."

Van der Molen, M. (University of Utrecht) (2009): Speculators invading the commodity markets: a case study of coffee: "Various analyses were performed to investigate these effects [i.e. effects that index speculators have on the futures market]. The results indicate that index speculators frustrated the futures market in the period between 2005 and 2008. This conclusion is based on the following indications: fundamentals have a lower impact on the price, the volume of index speculators has increased and their ability to influence the futures market has increased."

Mou, Y., "Limits to Arbitrage and Commodity Index Investment: Frontrunning the Goldman Roll," Columbia University (2010): "This paper focuses on the unique rolling activity of commodity index investors in the commodity futures markets and shows that the price impact due to this rolling activity is both statistically and economically significant."

Newell, J. (Probability Analytics Research) (2008): Commodity Speculation's "Smoking Gun": "Real market forces in these diverse markets are largely independent of one another, and therefore price changes should be essentially uncorrelated. This was clearly true historically; from 1984 through 1999 average correlation between all commodities was only 7%. In the last 12 months this average rose to 64%. Correlation with the GSCI was 23% historically, and rose to 76% in the last year. Index speculation has swamped real market forces."

Philips, P. (Yale University) and Yu, J. (Singapore University) (2010): Dating the Timeline of Financial Bubbles During the Subprime Crisis: "a bubble first emerged in the equity market during mid-1995 lasting to the end of 2000, followed by a bubble in the real estate market between September 2000 and June 2007 and in the mortgage market between August 2005 and July 2007. After the subprime crisis erupted, the phenomenon migrated selectively into the commodity market and the foreign exchange market, creating bubbles which subsequently burst at the end of 2008, just as the effects on the real economy and economic growth became manifest."

Randall Wray, L. (University of Missouri-Kansas City) (2008) The Commodities Market Bubble - Money Manager Capitalism and the Financialization of Commodities. Public Policy Brief No 96, The Levy Economics Institute of Bard College: "There is adequate evidence that financialization is a big part of the problem, and there is sufficient cause for policymakers to intervene with sensible constraints and oversight to reduce the influence of managed money in these markets."

Ray, D.E. and Schaffer, H.D. (University of Tennessee) (2010): Index funds and the 2006-2008 run-up in agricultural commodity prices: "the fundamentals and/or expectations in the energy and mineral markets reign supreme—grains are along for the ride with little-to-no regard to what is happening in the grain sector. Worries during the

period about the availability of oil drove up the price of crude, which caused index funds to rebalance their portfolios by making additional purchases of the other commodities to maintain the specified balance. Since the resulting price increases in agricultural commodities had virtually nothing to do with their market conditions, the record level of activity in the futures market by index funds would seem to make index funds a logical source of possible price overshooting."

Schulmeister, S. (Vienna University) (2009): Trading Practices and Price Dynamics in Commodity Markets. Study commissioned by the Austrian Federal Ministry of Finance and the Austrian Federal Ministry of Economics and Labour: "Based on the "bullishness" in commodity derivatives markets, short-term oriented speculators reacted much stronger to news in line with the expectation of rising prices than to news which contradicted the "market mood". Hence, they put more money into long positions than into short positions and held long positions longer than short positions. Due to this trading behavior, upward commodity price runs lasted longer in recent years than downward runs causing prices to rise in a stepwise process. Commodity price runs were lengthened by the use of trend-following trading systems of technical analysis. These systems try to exploit price runs by producing buy (sell) signals in the early stage of an upward (downward) run. The aggregate trading signals then feed back upon commodity prices."

de Schutter, O. (UN Special Rapporteur on the Right to Food) (2010): Food commodities speculation and food price crises: Regulation to reduce the risks of financial volatility: "The global food price crisis that occurred between 2007 and 2008, and which affects many developing countries to this day, had a number of causes. The initial causes related to market fundamentals, including the supply and demand for food commodities, transportation and storage costs, and an increase in the price of agricultural inputs. However, a significant portion of the increases in price and volatility of essential food commodities can only be explained by the emergence of a speculative bubble."

Silvennoinen A. (Queensland University) and Thorp S. (Sydney University) (2010): Financialization, crisis and commodity correlation dynamics: "We observe higher and more variable correlations between commodity futures and stock returns from mid-sample, with many series showing a structural break in the conditional correlation processes from the late 1990s."

Singleton, K.J. (Stanford University) (2010): The 2008 Boom/Bust in Oil Prices: "In my view, while spot-market supply and demand pressures were influential factors in the behavior of oil prices, so were participation in oil futures markets by hedge funds, long-term passive investors, and other traders in energy derivatives."

Singleton, K.J. (Stanford University) (2011): Investor Flows And The 2008 Boom/Bust in Oil Prices: "I present new evidence that there was an economically and statistically significant effect of investor flows on futures prices...The intermediate-term growth rates of index positions and managed-money spread positions had the largest impacts on futures prices."

Tanaka, N. (head of International Energy Agency) (2009): IEA says speculation amplifying oil prices moves (Reuters article): “Our analysis shows that the fundamentals are deciding the direction of the price while these funds or speculations ... are amplifying the movement.”

Tang, K. (Princeton University) and Xiong, W. (Renmin University) (2010): Index Investment and The Financialization of Commodities: “This paper finds that concurrent with the rapid growing index investment in commodities markets since early 2000s, futures prices of different commodities in the US became increasingly correlated with each other and this trend was significantly more pronounced for commodities in the two popular GSCI and DJUBS commodity indices. This finding reflects a financialization process of commodities markets and helps explain the synchronized price boom and bust of a broad set of seemingly unrelated commodities in the U.S. in 2006-2008. In contrast, such commodity price co-movements were absent in China, which refutes growing commodity demands from emerging economies as the driver.”

Trostle, R. (2008): Global Agricultural Supply and Demand: Factors Contributing to the Recent Increase in Food Commodity Prices. USDA Economic Research Service: “It is unclear to what extent the effect these new investor interests had on prices and the underlying supply and demand relationships for agricultural products. However, computerized trend-following trading practices employed by many of these funds may have increased the short-term volatility of agricultural prices.”

United Nations Conference on Trade and Development (UNCTAD) (2009): Trade and Development Report, Chapter II – The Financialization of Commodity Markets: “The financialization of commodity futures trading has made commodity markets even more prone to behavioural overshooting. There are an increasing number of market participants, sometimes with very large positions, that do not trade based on fundamental supply and demand relationships in commodity markets, but, who nonetheless, influence commodity price developments.”

United Nations Conference on Trade and Development (UNCTAD) (2009): The global economic crisis: Systemic failures and multilateral remedies: “The evidence to support the view that the recent wide fluctuations of commodity prices have been driven by the financialization of commodity markets far beyond the equilibrium prices is credible. Various studies find that financial investors have accelerated and amplified price movements at least for some commodities and some periods of time. (...) The strongest evidence is found in the high correlation between commodity prices and the prices on other markets that are clearly dominated by speculative activity.”

United Nations Commission of Experts on Reforms of the International and Monetary System (2009): Report: “In the period before the outbreak of the crisis, inflation spread from financial asset prices to petroleum, food, and other commodities, partly as a result of their becoming financial asset classes subject to financial investment and speculation.”

United Nations Food and Agricultural Organisation (FAO) (2010): Final report of the committee on commodity problems: Extraordinary joint intersessional meeting of the intergovernmental group (IGG) on grains and the intergovernmental group on rice: “Unexpected crop failure in some major exporting countries followed by national responses and speculative behaviour rather than global market fundamentals, have been amongst the main factors behind the recent escalation of world prices and the prevailing high price volatility.”

United States Senate, Permanent Subcommittee on Investigations (2009): Excessive Speculation in the Wheat Market: “This Report concludes there is significant and persuasive evidence that one of the major reasons for the recent market problems is the unusually high level of speculation in the Chicago wheat futures market due to purchases of futures contracts by index traders offsetting sales of commodity index instruments.”