Testimony of
Mr. Gene Guilford
On Behalf of
The Commodity Market Oversight Coalition

Before the
United States House of Representatives
Committee on Agriculture,
Subcommittee on General Farm Commodities and Risk Management
Washington, DC
July 24, 2013

Honorable Chairman Conaway, Ranking Member Scott and distinguished members of the committee, on behalf of the Commodity Market Oversight Coalition [CMOC] we wish to thank you for the opportunity to appear before you today on the matter of the future of the Commodity Futures Trading Commission [CFTC] and to address matters relating to the CFTC's authorities regulating the activities in the commodity markets and the perspectives of end-users.

About CMOC

The Commodity Markets Oversight Coalition (CMOC) is a non-partisan alliance of organizations that represent commodity-dependent American industries, businesses, end-users and consumers. We are the farmers, truckers, heating oil retailers, mom and pop gasoline station operators, airlines and others who rely on transparent, functional and stable commodity markets in which to hedge our operations for the mutual benefit of those who deliver tangible goods to markets and from which we take delivery of tangible goods, as well as for the benefit of the millions of consumers we serve. Our members rely on functional, transparent and competitive commodity derivatives markets as a hedging and price discovery tool. As a coalition, we favor government policies that promote stability and confidence in the commodities markets; seek to

prevent fraud, manipulation and excessive speculation; and preserve the interests of *bona fide* hedgers, commodity-dependent industries and ordinary American consumers. Since its inception in August of 2007, our coalition and its member organizations have delivered testimony and written Congressional leaders in support of these reforms. While the Dodd-Frank Act was indeed historic legislation, it was not perfect legislation and Title VII reforms are no exception.

We continue to remind the Congress to be mindful of the need for stable, transparent and accountable futures, options and swaps markets and the effect on the confidence of consumers, commodity end-users, *bona fide* hedgers and other stakeholders.

Why is an active, adequately funded and fully authorized CFTC necessary?

At the urging of our coalition and in response to dramatic changes in the marketplace, Congress expanded CFTC authority over the futures, options and swaps markets during its 2008 reauthorization. This included language from the bipartisan "Close the Enron Loophole Act" expanding oversight to "price discovery contracts" on previously unregulated electronic trading platforms. **[1]/** The 2008 bill also strengthened antifraud provisions and increased civil monetary penalties for manipulation and attempted manipulation from $500,000 to $1 million per violation.

However, much of the deregulation of the derivatives markets under the Commodity Futures Modernization Act of 2000 (Pub.L.106-554) remained unaddressed until the enactment of the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010, **[2]/** simply referred to as the "Dodd-Frank Act." Building on the reforms included in the 2008 Farm Bill, Congress used the Dodd-Frank Act as a means to further address the

[1] The Close the Enron Loophole Act was introduced in the Senate (S.2058) by Sen. Carl Levin (D-MI) on September 17, 2007 and in the House (H.R.4066) by Rep. Peter Welch D-VT). The House bill had three Republican co-sponsors, including Reps. Chris Shays of Connecticut, Jeff Fortenberry of Nebraska and Todd Platts of Pennsylvania.

[2] Pub.L.111-203

crisis of opacity, instability and diminished confidence in the derivatives markets and to address factors that lead to the 2007-2008 bubble in commodity prices.

Even with its imperfections, one cannot say that Dodd-Frank was unnecessary or that the new authorities granted to the CFTC under the Act were inappropriate.

In the mid-1990s the over-the-counter derivatives market had a notional value of between $20-$25 trillion. Today the derivatives market's notional value exceeds $600 trillion. Even then, there had been episodes of fraud. Bankers Trust was a large over-the-counter derivatives dealer, and it became clear, through suits brought by some of its customers—primarily Procter & Gamble and Gibson Greeting Cards—that Bankers Trust had defrauded some of its derivatives customers. Second, there was evidence of manipulation in the markets. Sumitomo Corporation had managed to manipulate the world market in copper, in part using over-the-counter derivatives to disguise its operations and fund them. Later, and after the fact, there were other incidents of market manipulation discovered involving Enron and electricity markets, Amaranth and natural gas markets [3]/, BP/Propane and the propane markets [4]/, as well as crude oil [5]/.

Just last week it was reported that the Federal Energy Regulatory Commission is in discussions with JP Morgan Chase regarding an alleged manipulation of electricity markets that could cost the bank $500 million. [6]/

We can never forget that concerns were raised about these unregulated, rapidly growing markets that were characterized by a lack of transparency, unlimited leverage, and interconnections between large institutions through counterparty credit risk. Those

[3] http://www.hsgac.senate.gov//imo/media/doc/REPORTExcessiveSpeculationintheNaturalGasMarket.pdf?attempt=2

[4] http://www.cftc.gov/PressRoom/PressReleases/pr5405-07

[5] http://www.crai.com/uploadedFiles/Publications/FM-Insights-Commodity-Price-Manipulation.pdf

[6] http://dealbook.nytimes.com/2013/07/17/jpmorgan-in-talks-to-settle-energy-manipulation-case-for-500-million/

features of the market appeared to create the potential of systemic risk, as was later confirmed in the financial crisis of 2008.

However, much of the deregulation of the derivatives markets under the Commodity Futures Modernization Act of 2000 (Pub.L.106-554) remained unaddressed until the enactment of the Dodd- Frank Wall Street Reform and Consumer Protection Act of 2010, simply referred to as the "Dodd-Frank Act." Building on the reforms included in the 2008 Farm Bill, Congress used the Dodd-Frank Act as a means to further address the crisis of opacity, instability and diminished confidence in the derivatives markets and to address factors that led to the 2007-2008 bubble in commodity prices.

The financial crisis that began with the fall of Lehman and a cascade of other powerful financial institutions, leading ultimately to the loss of more than $12 trillion of national wealth, the loss of millions of American jobs, the loss of value of millions of American homes, 401-k plans and pensions is why we need the Commodity Futures Trading Commission. The nation needs commodity markets that are fully transparent and free of manipulation, excessive speculation and other disruptive trading activity. We need markets with participants that are accountable for their actions and properly overseen for the benefit and protection of consumers and taxpayers. Hopefully, we have not forgotten what the absence of effective oversight and regulation has wrought upon the nation as we continue to struggle to recover from the greatest threat to the nation's economy since the Great Depression.

When accepting the John F. Kennedy Profiles in Courage Award in 2009, former CFTC Chair Brooksley Born stated, ***"Special interests in the financial services industry are beginning to advocate a return to 'business as usual' and to argue against the need for any serious reform. We have to muster the political will to overcome these special interests. If we fail now to take the remedial steps to close the regulatory gap, we will be haunted by our failure for years to come."***

Manipulation and Excessive Speculation

Speculative position limits are important in preserving the integrity of the commodity markets and the needs of *bona fide* hedgers. Such limits serve to prevent market manipulation (such as corners and squeezes) and unwarranted price swings associated with excessive speculation. Therefore, our coalition strongly supports the decision of Congress to mandate speculative position limits under Section 737 of the Dodd-Frank Act.

Excessive Speculation is defined as that which drives prices higher in apparent defiance of supply and demand fundamentals. We contend that recent events point to just such a dislocation in the energy commodity markets, as follows:

	2007	**2012**
Unemployment	4.6%	7.6%
US crude oil consumption	20mmbls@day	18.5mmbls@ day
US domestic crude production	5mmbls@day	6.5mmbls@day
US WTI crude oil price	$72 @ bbl	$94 @ bbl
US gasoline consumption	9.3mmbls@day	8.7mmbls@day
US gasoline prices [ave]	$2.84@gal	$3.68@gal

In just the last four weeks we have seen US WTI prices increase from $94@bbl on the NYMEX [August contract] to over $108@bbl - adding $14@bbl. At the same time, we have seen U.S. RBOB gasoline on the NYMEX [August 2013 contract] increase from $2.67@gal to $3.13@gal, adding 46c @ gallon.

As America consumes 360 million gallons of gasoline a day, NYMEX driven RBOB contract increases of 46c @ gallon will cost Americans an additional $165 million per day, $1.1 billion per week, $4.6 billion per month.

These market activities are occurring while, according to our Department of Energy's Energy Information Agency, WTI crude stocks at Cushing, Oklahoma have been at their highest levels ever recorded. In addition, in 2012 the US saw the largest increase in daily crude oil production since commercial production began in 1859. Between 2007 and 2012 we saw not only the extraordinary demand destruction of 1.5mmbbls of daily crude oil demand, but at the same time saw a 1.5mmbls@day of increased domestic crude oil production - a swing of 3mmbls. Yet, WTI crude prices increased more than 30%.

Further, in 2011 the US became a net exporter of refined distillates for the first time since 1948 and in 2012 became a net exporter of gasoline for the first time since 1960. RBOB gasoline contract increases of 46c@gal are with the backdrop of having seen a domestic demand destruction of 600,000bbls@day.

October 2011 Position Limits Rule

The CFTC approved a final rule establishing mandatory position limits on October 18, 2011. This rule was to go into effect on October 12, 2012. However, the rule was vacated by a District Court Judge on September 28, 2012 and the decision is currently under appeal. Our coalition strongly supports the immediate implementation of mandatory position limits and believes that the intent of the Congress was clear and unambiguous in this regard. On April 22, 2013, we filed an amicus curiae brief with the Court of Appeals and we are confident that the District Court’s decision to vacate the position limits rule will be swiftly reversed.

Still, **the committee should examine the efficacy of the October 18, 2011 position limits rule, as well as the underlying statutory authorities of the CFTC, in preventing market manipulation and the harmful effects of excessive speculation**. [7]/ Specifically, members of our coalition have expressed concerns to regulators that individual position limits set forth by the rule are too high, and that the rule only requires periodic review of established limits (annually for agricultural contracts and biennially for energy contracts).

In addition to individual speculative position limits as set forth by the rule, an effective way to prevent excessive speculation from distorting commodity prices and to restore the balance between commercial hedgers and financial investors is to require aggregate limits on all speculation as a class of trader. In the forthcoming CFTC Reauthorization Act, **the committee should expand upon the existing Dodd-Frank Act position limits mandate to require the CFTC to establish class specific limits on speculation. [8]/ We attach as Appendix "A" the list of more than 100 independent studies that point to the role excessive speculation plays in the artificial inflation of commodity prices that is the focus of the position limits rule.**

The U.S. Tax Code and Energy Market Speculation

Futures contracts, as prescribed by **26 USC §1256** of the tax code, are taxed with a blended rate of long and short-term gains: 60% long-term capital gains and 40% short-term. Whether one agrees or disagrees with speculation being a factor in commodity markets, most should agree that we should examine why this activity is subsidized by the tax code. The tax code incentivizes speculation in commodities over speculation in any other market. Even more, speculation in commodities is a great way to guarantee a

[7] 7 U.S.C Section 6(a)(1)

[8] See comments by Delta Airlines, the Air Transport Association (now Airlines for America) and the Petroleum Marketers Association of America and New England Fuel Institute Comment letters on the Position Limits for Derivatives," 76 FR 4752 (Jan. 26, 2011), submitted to the CFTC on March 28, 2011.

lower tax rate than the general income tax, when compared to any other profession in America.

In essence, ***the tax code promotes speculation in commodities markets, and it does so in several ways***. People who are speculating in commodity future markets are inherently short-run, and care far more about the discount on the short term capital gains tax rate than they do the increased cost of long-term commodity ownership. Whereas a short-term equity speculator is taxed at the general income rate, a commodities/futures speculator is taxed at 23%. The consequences of this are two-fold: first, there is an economic incentive for speculators to ply their craft in commodities markets as opposed to equity markets, and second, speculators desire volatility in the short-run in order to maximize their capacity to make money, such that there is a serious misalignment of incentives between speculative market participants and the purpose of commodity markets. [commercial/bona fide hedgers versus non-commercial financial speculators]

Meanwhile, short-term transactions that result in realized gains in commodity markets are not done with the intention ever taking or giving delivery of the underlying goods themselves. Rather, these transactions are done for the purpose of realizing a gain off of changes in price. These transactions require inefficiencies between supplier and buyer PLUS volatility in order to generate a profit. In seeking volatility, such transactions promote yet further volatility. Because of this fact, volatility and market dislocations lead directly to more opportunities for speculative gains. Pushing such actors into commodity markets creates a situation where volatility becomes a self-fulfilling prophecy for the benefit of a significant portion of market participants, but a detriment to society at large.

In examining the authorities of the CFTC one might examine why one body of federal law seems to encourage energy market speculation [the tax code] while another body of federal law seems to discourage energy market speculation [Dodd-Frank].

Index Funds

Congress and the CFTC have yet to adequately address the well-documented harm caused by index fund speculation in the commodity markets. In June of 2009, the Senate Permanent Subcommittee for Investigation (PSI) published a bipartisan report by Chairman Carl Levin of Michigan and ranking Member Tom Coburn of Oklahoma entitled *Excessive Speculation in the Wheat Market.* [9]**/**

The report concludes that the "activities of commodity index traders, in the aggregate, constituted 'excessive speculation,'" and that index funds have caused "unwarranted price changes" and constitute an "unwarranted burden on commerce." The PSI report urged legislative and regulatory measures to limit the impact of index fund investments in commodities.

These recommendations include the phasing-out of CFTC no-action letters that essentially classified index funds as *bona fide* hedgers and exempted them from speculative position limits. The report also urges the CFTC to collect more data and evaluate the extent to which index funds affect prices for non-agricultural commodities including crude oil. While the CFTC has made considerable effort to improve data collection, regulators have not yet published any sort of comprehensive evaluation on the role index funds as recommended by the bipartisan PSI report. **The committee should inquire with the CFTC on its progress in implementing the recommendations of the bipartisan PSI staff report and addressing end-user concerns over index fund speculation.**

Of note, our coalition has supported legislation in Congress that would limit the ability of index funds to speculate in commodities. In the House of Representatives, then Congressman Ed Markey of Massachusetts introduced the Halt Index Trading of Energy

[9] Link to the Senate PSI Wheat Report: http://bit.ly/WheatRpt (Accessed May 1, 2013)

Commodities (HITEC) Act (H.R.785) on March 13, 2013. It currently enjoys 21 cosponsors. The bill would prohibit new investments in commodities by index funds and give existing index funds two years to wind down their positions.

The Congress has to look no further than the way Wall Street markets participation in index funds for the reason why and how index funds adversely affect the orderly operation of these markets and artificially inflate commodity prices, as follows;

> ***"How do I sell something that I don't own, or why would I buy something I don't need".*** The answer is simple. When trading futures, you never actually buy or sell anything tangible; you are just contracting to do so at a future date. You are merely taking a buying or selling position as a speculator, expecting to profit from rising or falling prices. You have no intention of making or taking delivery of the commodity you are trading, your only goal is to buy low and sell high, or vice-versa. Before the contract expires you will need to relieve your contractual obligation to take or make delivery by **offsetting** (also known as unwind, or liquidate) your initial position. Therefore, if you originally entered a short position, to exit you would buy, and if you had originally entered a long position, to exit you would sell." **[10]/**

Had it not been for the unfortunate 2003 decision of the Federal Reserve that allowed regulated banks to trade in physical commodity markets, much of the artificial inflation of commodity prices we have seen since would not have occurred. Last week the Federal Reserve announced its intention to "review" its 2003 decision **[11]/** and we encourage the Congress to make it known to the Fed that reversing that decision should be a priority at the earliest possible opportunity.

[10] http://www.altavest.com/education/default.aspx
[11] http://www.federalreserve.gov/boarddocs/press/orders/2003/20031002/attachment.pdf

Figure One on the next page graphically illustrates the recent history of the energy commodity markets, deregulation, Federal Reserve decisions and then the results for energy prices when the investment banking community began to play a disproportionate role in those markets.

The committee should consider proposals to limit the role of index funds in commodities.

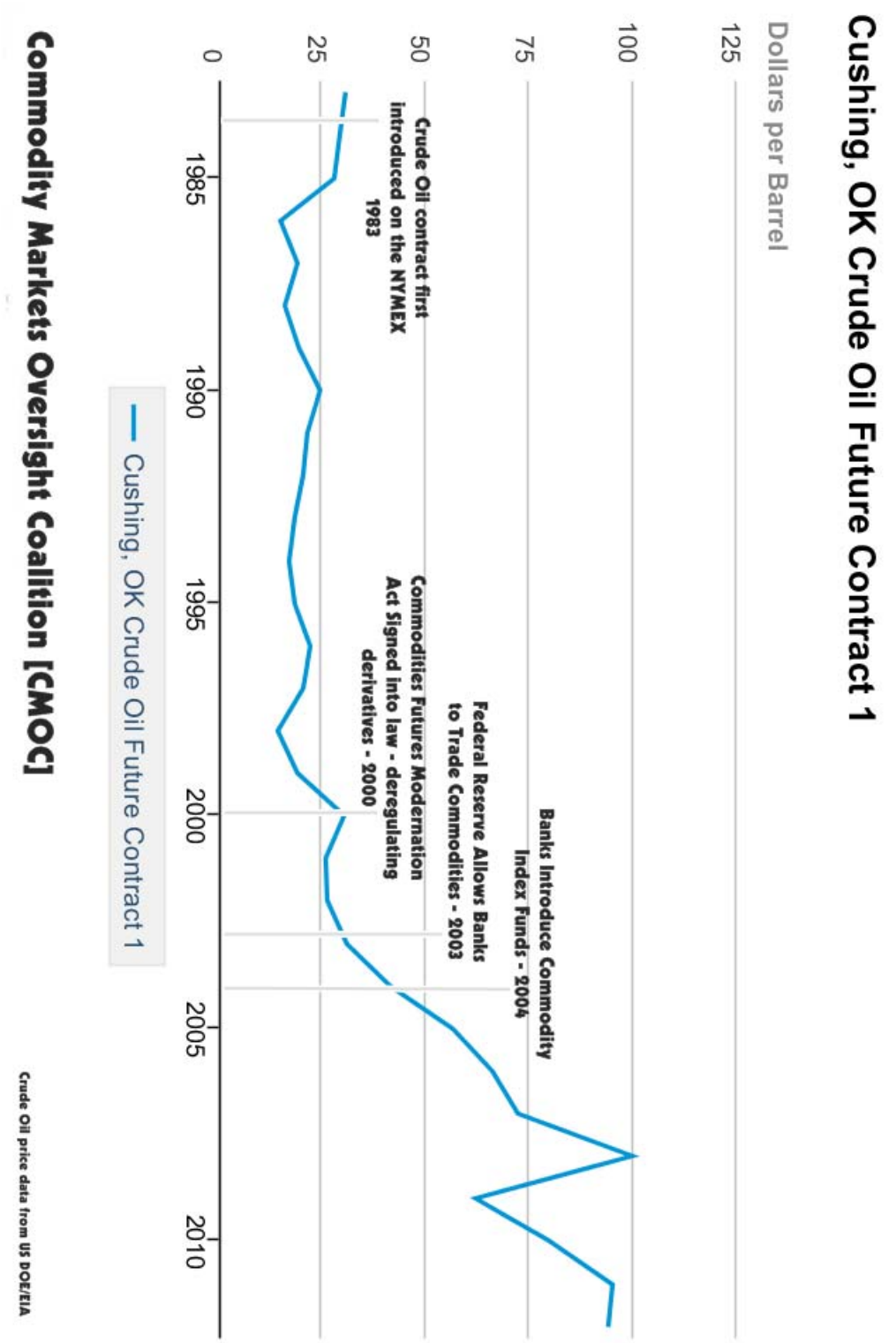

Figure One.

High Frequency Trading

In order for commodity prices to accurately reflect real-world supply and demand, futures, options and swaps markets must be driven by educated traders that are responding objectively to market fundamentals. Our coalition grows increasingly concerned over the impact of high-speed automated trading by means of computer algorithms - also known as algo-trading or High-frequency Trading (HFT) - on the commodities markets. HFT has already become a dominant force in the securities markets and many allege it has been responsible for a series of disruptive market events, including the flash-crash that caused the Dow Jones Industrial Average to plunge 1,000 points (9 percent) on May 6, 2010.

In response to the 2010 "flash crash," on November 2, 2011, Sen. Tom Harkin (D-IA) and Rep. Peter DeFazio (D-OR) introduced the Wall Street Trading and Speculators Tax Act, which would impose a .03 percent excise tax on all trades of securities. Sen. Harkin and Rep. DeFazio said an analysis by the Joint Committee on Taxation estimated the tax would generate $352 billion in revenue from January 2013 through 2021, if enacted. The tax was designed to disproportionately affect HFTs, who place thousands of trades in a matter of minutes. While this effort failed in 2011, on February 28, 2013, Sen. Harkin and Rep. DeFazio reintroduced a financial transaction tax bill, which was then referred again to the House Ways and Means and Senate Finance committees. CMOC looks forward to working with the Congress as it considers these important measures.

More recently, some have accused algo-trading as responsible for a 145-point market drop in response to a false tweet about a terrorist attack on the White House that was posted on a hacked Associated Press Twitter feed on April 23, 2013.

A May 1, 2013 *Wall Street Journal* exposé further charges that “High-speed traders are using a hidden facet of the Chicago Mercantile Exchange’s computer system to trade on the direction of the futures market before other investors get the same information.” According to the *Journal,* such trades are conducted by computers that have an

advantage of just “one to 10 milliseconds” and allow the structure of orders “so that the confirmations tip which direction prices for crude oil, corn or other commodities are moving.” The influence of HFT in commodities continues to grow. The article cites a Tabb Group estimate that HFT now comprises “about 61 percent of all futures market volume, up from 47 percent in 2008.” Some market experts told the *Journal* that a failure to address this issue could result in market distortions, increased risks and the loss of liquidity. [12]/ Thankfully, the CFTC has announced that it will investigate the role of High-Frequency trading in the commodity markets and evaluate the need for new regulations to protect market participants and preserve market integrity. [13]/ They are not alone. Lawmakers in Europe have become so concerned about this issue they have even proposed limiting or banning HFT in commodities markets altogether. [14]/

As a corollary to these concerns is the practice of market information gathering organizations to release data to certain paying customers minutes prior to the same information being release to the general public. A June 12, 2013 CNBC report cites that "contract signed by Thomson Reuters, the news agency and data provider, and the University of Michigan, which produces the widely cited economic statistic, stipulates that the data will be posted on the web for the general public at 10 a.m. on the days it is released. Five minutes before that, at 9:55 a.m., the data is distributed on a conference call for Thomson Reuters' paying clients, who are given certain headline numbers. But the contract carves out an even more elite group of clients, who subscribe to the "ultra-low latency distribution platform," or high-speed data feed, offered by Thomson Reuters. Those most elite clients receive the information in a specialized format tailor-made for computer-driven algorithmic trading at 9:54:58.000, according to the terms of the contract. On occasion, they could get the data even earlier—the contract allows for a plus or minus 500 milliseconds margin of error.

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[12] “High-speed Traders Exploit Loophole,” *The Wall Street Journal*, May 1, 2003. Link: http://on.wsj.com/15a3uVS (Accessed May 1, 2013)

[13] “Statement of Chairman Gary Gensler before the CFTC Technology Advisory Committee,” April 30, 2013.

[14] “Europe to ban high-frequency trading in commodities,” BullionStreet (blog), October 29, 2012. Link: http://bit.ly/15a3mG7 (Accessed May 1, 2013)

"In the ultra-fast world of high-speed computerized markets, 500 milliseconds is more than enough time to execute trades in stocks and futures that would be affected by the soon-to-be-public news. Two seconds, the amount promised to "low latency" customers, is an eternity.

For exclusive access to the data, Thomson Reuters pays the University of Michigan $1 million per year, according to the contract, in addition to a "contingent fee" based on the revenue generated by Thomson Reuters. The contract reviewed by CNBC was signed in September 2009. It expired a year later. Thomson Reuters and the University Michigan confirmed that the relationship still exists." [15]/

We urge the committee to investigate the role of HFT and other potentially harmful or disruptive new trends in the commodity markets and determine whether or not additional CFTC authority is required to address these concerns. We attached as Appendix "B" the listing of independent studies showing the harmful effects of high speed trading on the orderly operation of commodity markets.

Penalties

Current law allows fines of up to $1 million per violation for manipulation or attempted manipulation and $140,000 for other violations of the CEA. [16]/ In practice, while the amount of these fines vary, they are often insignificant when compared to the overall profits of many market participants such as financial institutions and may be doing little to deter violations of the law. In effect, for many large firms, these relatively miniscule fines just become part of the cost of doing business. Given this, **the committee should increase fines and penalties as appropriate in order to more effectively deter manipulation and other unlawful behavior.**

[15] June 12, 2013 http://www.cnbc.com/id/100809395
[16] 7 U.S.C. §13

Additionally, the CFTC is restrained by the blanket five-year Statute of Limitations. This restricts the ability of Commissioners to prosecute violations of the CEA, including cases of fraud and manipulation. The existing five-year Statute of Limitations challenges the CFTC to prosecute cases despite a limited budget and personnel, the increasing complexity of the markets it regulates and the volume of data that must be collected and analyzed. **Therefore, the committee should extend the Statute of Limitations for the CFTC to a minimum of 10 years.**

Bankruptcy Protections

Following a series of brokerage-house bankruptcies in the late 1960s, Congress enacted the Securities Investor Protection Act (SIPA) of 1970 in order to extend FDIC-like protections to brokerage clients and to restore investor confidence. [17]/ The Act established the Securities Investor Protection Corporation (SIPC) to oversee the protection of customer funds and investments in the event of a broker-dealer failure and provide insurance coverage of up to $500,000 for the value of a customer's net equity, including up to $250,000 for cash accounts.

Unfortunately, Congress failed to extend SIPA protections to commodity brokerage clients, including commodity hedgers. It is likely that lawmakers simply did not foresee that commodity hedging would become such a widespread and vital component of the American economy as it is today. As a result, when the brokerage firm MF Global filed for bankruptcy over 18 months ago, its clients lacked adequate federal protections for their funds, accounts and positions. They were thrown into the chaos and uncertainty of recovering their funds, a problem that could have been alleviated if SIPA-style protections existed for these customers.

[17] Pub.L.91-598

Therefore, we believe **the committee should enhance protections for commodity brokerage clients**, including:

- The prioritization of commodity brokerage clients' claims filed with bankruptcy Trustees;
- The creation of a new insurance fund for the protection of commodity brokerage clients that would provide similar protections as the SIPA-created securities investor insurance fund;
- The creation of a non-profit Commodity Futures Protection Corporation (CFPC) that will be separate from the Securities Investor Protection Corporation and oversee the remediation of customer funds in the event of a commodity broker-dealer failure and to manage the insurance fund associated with the new law; and
- A requirement that in the event of a bankruptcy, the CFPC work with the CFTC, self regulatory organizations and the courts in carrying out its mission, especially the restoration of client funds and the liquidation or transference of commodity positions.

When combined with enhanced customer protections currently being considered by the Commodity Futures Trading Commission, self-regulatory organizations, futures exchanges and brokerage firms, we believe that a futures insurance program will go a long way to restoring confidence in these markets. This is especially true for Main Street businesses, farmers and ranchers, and other industries that utilize futures, options and swaps to mitigate price risks and to help insulate their companies and their consumers from volatility and uncertainty.

Trade Options Exemption

The Dodd-Frank Act made it unlawful for anyone that is not an Eligible Contract Participant (ECP) to enter into an over-the-counter or off-exchange swap. In order to qualify as an ECP, an entity has to meet a $10 million net worth requirement, with a separate $1 million net worth requirement for *bona fide* hedgers. Although many small businesses, farmers and other end-users may qualify as an ECP, their net worth can often fluctuate, causing them to be unsure from time-to-time whether they satisfy the $1 million net worth requirement for hedgers. Moreover, an entity's net worth may have an inverse relationship with its liabilities; that is, as liabilities increase and the business finds itself with an urgent need to hedge, its net worth may decrease.

For businesses that do not qualify as ECPs and that hedge commodity prices through physically settled bilateral options, the CFTC has proposed a "trade options exemption" in order to extend measured regulatory relief. However, some CMOC members have recommended that the CFTC extend the trade options exemption to small hedgers that engage in "financially-settled," not just physically-settled, options. Financially-settled options allow some third-party hedging firms serving small businesses to aggregate a collection of less-than-standard contract volumes into a single financially-settled option. The CFTC has not yet finalized the Trade Options rule. **We encourage the committee to consult with the CFTC on the status of the trade options exemption and, if necessary, take action to codify regulatory relief for small hedgers.**

Energy & Environmental Markets Advisory Committee

In response to unprecedented volatility in the energy markets and at the urging of members of this coalition, the CFTC established the Energy Markets Advisory Committee in June of 2008. The purpose of this advisory committee, according to then-Acting CFTC Chairman Walt Lukken, was to assemble representatives from the energy industry, end-user groups and other market stakeholders to "ensur[e] that the Commission is fully

informed of industry developments and innovations so that the Commission can rapidly respond to changing market conditions and ensure that these markets are not subject to foul play." In 2009 the committee's charter was revised to include emerging environmental markets such as carbon trading markets and renamed the "Energy & Environmental Markets Advisory Committee" (EEMAC).

Congress clearly felt the EEMAC was important enough to make it permanent under Section 751 of the Dodd-Frank Act. Despite this, the advisory committee has only met three times since it was formed in 2008. Not a single meeting has been held since the EEMAC was made permanent in 2010. Meanwhile, the CFTC's Agriculture Advisory Committee, Global Markets Advisory Committee and the Technology Advisory Committee have met over 20 times. **The committee should require the CFTC to establish a charter for the EEMAC by a date certain and require at least annual meetings to receive input from energy market stakeholders.**

CFTC Resources

In retrospect, not to criticize but to make an observation with the benefit of hindsight, in establishing deadlines for the completion of regulatory proceedings within 365 days of the enactment of Dodd-Frank was an error. The hundreds of complex issues that needed to be addressed, most with the coordination of other agencies, was a recipe for putting the CFTC severely behind in meeting their statutory deadlines.

Today CFTC staff is at 689 people, only 9 percent bigger than 20 years ago. At minimum CFTC needs 1,015 people in addition to new technology investments. CFTC collected 2 billion in fines last year (benefitting the Treasury, not CFTC budget) – that is CFTC appropriations funding for 22 prior fiscal years. This year the size of the CFTC actually contracted because of sequestration and cut 20-30 people from the staff. The CFTC hasn't been able to hire experts on swaps markets, which is needed. The CFTC needs

new technology in order to even try to keep up with the $600 trillion derivatives market and the private sector technology advancements that the agency is responsible for overseeing. If flat funding is provided, CFTC would have to cut another 50 people (about 8 or 9 percent) despite the responsibility to cover the swaps market. Therefore, we continue to urge Congress to fully fund the CFTC at the levels requested by the administration.

CONCLUSION

In this reauthorization effort we need to not only examine the necessary corrections for the imperfections in Dodd-Frank that we have cited, but also the magnitude of the new authorities the CFTC was given to protect the sanctity of the commodity markets and the pocketbooks of American taxpayers and the diminished resources with which this agency has had to operate under extraordinarily difficult circumstances.

Thank you for the opportunity to appear with you today and I would be happy to answer any questions you may have.

Appendix A

Independent Studies on the Negative Effects of Commodity Speculation

Evidence on the Negative Impact of Commodity Speculation by Academics, Analysts and Public Institutions

21 May 2013

Note: This list is constantly being updated and revised. It only collects evidence that supports a critical view of commodity speculation in general or certain elements of it.

Compiled by Markus Henn, WEED, markus.henn@weed-online.org, www.weed-online.org

A) Academic peer reviewed journal articles

1) Baffes, John (The World Bank) (2011): The long-term implications of the 2007–08 commodity-price boom. Development in Practice, Vol. 21, Issue 4-5, pages 517-525: „Demand by emerging economies is unlikely to put additional pressure on the prices of food commodities, although it may create such pressure indirectly through energy prices. The effect of biofuels on food prices has not been as great as originally thought, but the use of commodities by investment funds may have been partly responsible for the 2007–08 spike.“

2) Belke, Ansgar (IZA/University Duisburg-Essen) / Bordon, Ingo G. (University Duisburg-Essen) / Volz, Ulrich (German Development Insitute) (2012): Effects of Global Liquidity on Commodity and Food Prices. World Development, in press: "Over the period that we observed, 1980–2011, food and commodity price inflation were apparently driven by monetary expansion in the world's major economies. By examining the pertinence of monetary liquidity, our results add to the discussion on a financialization of commodities, that stresses the aspect of financial liquidity, where food and commodity prices are driven to a large extent by flows of portfolio investment seeking return in commodity markets and not merely by demand from the real economy. Policymakers should care about the negative side-effects of loose monetary policy and consider stricter regulation of food and commodity markets – such asthe imposition of tighter limits on speculative positions in food commodities – to prevent a further flow of liquidity into these markets."

3) Chevallier, Julien (University of Paris) (2012): Price relationships in crude oil futures: new evidence from CFTC disaggregated data. Environmental Economics and Policy Studies, August 2012: „we are able to highlight the influence of the CFTC ''Money Managers'' net position category (as a proxy of speculative trading) on the oil price at reasonable statistical confidence levels. (…) The policies being considered by the CFTC to put aggregate position limits on futures contracts and to increase the transparency of futures markets are moves in the right direction."

4) Cifarelli, Giulio (University of Florenz) / Paladino, Giovanna (LUISS University / BIS) (2010): Oil price dynamics and speculation: A multivariate financial approach. Energy Economics, Vol. 32, Issue 2, March 2010, pages 363–372: "Despite the difficulties, we identify a significant role played by speculation in the oil market, which is consistent with the observed large daily upward and downward shifts in prices — a clear evidence that it is not a fundamental-driven market."

5) Czudaj, Robert / Beckmann, Joscha (Duisburg University) (2012): Spot and futures commodity markets and the unbiasedness hypothesis - evidence from a novel panel unit root test. Economics Bulletin, 2012, vol. 32, issue 2, pages 1695-1707: "Our findings show that most spot and futures markets for commodities were efficient until the turn of the millennium, but appear to be inefficient thereafter owing to an increase in volatility, which might be attributed to the intense engagement of speculation in commodity markets."

6) Du, Xiaodong / Yu, Cindy L. / Hayes, Dermott J. (Iowa State University) (2011): Speculation and Volatility Spillover in the Crude Oil and Agricultural Commodity Markets : A Bayesian Analysis. Energy Economics, Vol. 33, Issue 3, May 2011, pages 497–503: "Speculation, scalping, and petroleum inventories are found to be important in explaining oil price variation."

7) Fan, Ying (Chinese Academy of Sciences) / Xu, Jin-Hua (Hefei University) (2011): What has driven oil prices since 2000? A structural change perspective: "Through establishing a comparative model, we quantitatively measure the effects of speculation and episodic events such as wars on oil price changes. We find that the explanatory power of the models is obviously improved after allowing for the two factors. In particular, during the "Relatively calm market" period (January, 2000 to March, 2004) and "Bubble accumulation" period (March, 2004, to June, 2008), when the speculation variables are considered, not only they are significant, but also the explanatory ability greatly rises and various diagnostic tests are improved, indicating that speculation is a highly influential factor on oil price changes in these periods."

8) Gilbert, Christopher (Trento University) (2010): How to understand high food prices. Journal of Agricultural Economics. Vol. 61, Issue 2, pages 398–425: "By investing across the entire range of commodity futures, index-based investors appear to have inflated food commodity prices."

9) Gutierrez, Luciano (University of Sassari) (2012): Speculative bubbles in agricultural commodity markets. European Review of Agricultural Economics, 2012, pages 1-22: "We investigate whether commodity prices during the spike of 2007–2008 might have deviated from their intrinsic values based on market fundamentals. To do this, we use a bootstrap methodology to compute the finite sample distributions of recently proposed tests. Monte-Carlo simulations show that the bootstrap methodology works well, and allows us to identify explosive processes and collapsing bubbles for wheat, corn and rough rice. There was less evidence of exuberance in soya bean prices."

10) Hache, Emmanuel / Lantz, Fréderic (IFP Énergies Nouvelles, Paris) (2012): Speculative Trading & Oil Price Dynamic: A study of the WTI market, Energy Economics (Accepted Manuscript, 3 September 2012): "We conclude that the hypothesis of an influence of noncommercial players on the probability for being in the crisis state cannot be rejected. In addition, we show that the rise in liquidity of the first financial contracts, as measured by the volume of open interest, is a key element to understand the dynamics in market prices."

11) Kaufmann, Robert K. / Ullman, Ben (Boston University) (2009): Oil prices, speculation, and fundamentals: Interpreting causal relations among spot and futures prices:

"Together, these results suggest that market fundamentals initiated a long-term increase in oil prices that was exacerbated by speculators, who recognized an increase in the probability that oil prices would rise over time."

12) Kaufmann, Robert K. (Boston University) (2011): The role of market fundamentals and speculation in recent price changes for crude oil. Energy Policy, Volume 39, Issue 1, January 2011, Pages 105-115: „Although difficult to measure directly, I argue for the role of speculation based on the following: (1) a significant increase in private US crude oil inventories since 2004; (2) repeated and extended break-downs (starting in 2004) in the cointegrating relationship between spot and far month future prices that are inconsistent with the law of one price and arbitrage opportunities; and (3) statistical and predictive failures by an econometric model of oil prices that is based on market fundamentals. These changes are related to the behavior and impact of noise traders on asset prices to sketch mechanisms by which speculative expectations can affect crude oil prices."

13) Mayer, Jörg (UNCTAD) (2012): The Growing Financialisation of Commodity Markets: Divergences between Index Investors and Money Managers. Journal of Development Studies, Vol. 48, Issue 6, pages 751-767: "During 2006–2009, index trader positions had a price impact for some agricultural commodities, as well as oil. During 2007–2008, money managers impacted prices for non-agricultural commodities, especially copper and oil."

14) Newman, Susan A. (University of the Witwatersand) (2009): Financialization and Changes in the Social Relations along Commodity Chains: The Case of Coffee. Review of Radical Political Economics. Vol. 41, No. 4, pages 539-559: "It is argued that increased financial investment on international commodity exchanges, together with market liberalization, have given rise to opportunities and challenges for actors in the coffee industry. Given the heterogeneity of market actors, these tend to exacerbate inequalities already present in the structure of production and marketing of coffee."

15) Nissanke, Machiko (University of London) (2012): Commodity Market Linkages in the Global Financial Crisis: Excess Volatility and Development Impacts. Journal of Development Studies, Vol. 48, Issue 6, pages 732-750: "This article (…) suggests that a significant portion of the closely synchronised price dynamics in commodity and financial markets is explained by market liquidity cycles in global finance, as financial investors manage their portfolio at ease through 'virtual' stock holdings of commodities in derivatives dealings and markets."

16) Morana, Claudio (University of Milano, Bicocca) (2012): Oil price dynamics, macro-finance interactions and the role of financial speculation. Journal of Banking & Finance, in press: "While we then find support to the demand side view of real oil price determination, we however also find a much larger role for financial shocks than previously noted in the literature."

17) Sigl-Grüb, Christoph / Schiereck, Dirk (Technical University Darmstadt) (2010): Speculation and nonlinear price dynamics in commodity futures markets. Investment Management and Financial Innovations, Vol. 7, Issue 1, pages 59-73: "In this article we present theoratical considerations and empirical evidence that the short-run autoregressive behavior of commodity markets is not only driven by market fundamentals but also by the trading of speculators."

18) Silvennoinen Annastiina (Queensland University) / Thorp, Susan (Sydney University) (2013): Financialization, crisis and commodity correlation dynamics. Journal of International Financial Markets, Institutions and Money, Vol. 24, April 2013, Pages 42–65: „Stronger investor interest in commodities may create closer integration with conventional asset markets. We estimate sudden and gradual changes in correlation between stocks, bonds and commodity futures returns driven by observable financial variables and time (...). Most correlations begin the 1990s near zero but closer integration emerges around the early 2000s and reaches peaks during the recent crisis. (…) Increases in VIX and financial traders' short open interest raise futures returns volatility for many commodities. Higher VIX also increases commodity returns correlation with equity returns for about half the pairs, indicating closer integration."

19) Tang, Ke (Princeton University) / Xiong, Wei (Renmin University) (2012): Index Investment and the Financialization of Commodities. Financial Analyst Journal, Vol 68,Number 6, pages 54-74: "concurrent with the rapid growth of index investment in commodity markets, prices of non-energy commodities have become increasingly correlated with oil prices. This trend is significantly more pronounced for commodities in two popular indices: the S&P GSCI and the DJ-UBSCI. Our findings reflect a fundamental process of financialization among commodity markets, through which commodity prices have become more correlated with each other. As a result of the financialization process, the price of an individual commodity is no longer determined solely by its supply and demand. Instead, prices are also determined by tbe aggregate risk appetite for financial assets and the investment bebavior of diversified commodity index investors."

20) Tokis, Damir (ESC Rennes) (2011): Rational destabilizing speculation, positive feedback trading, and the oil bubble of 2008. Energy Economics, Vol. 39, Issue 4, April 2011, pages 2051–2061: „institutional investors that invest in crude oil to diversify their portfolios and/or hedge inflation can destabilize the interaction among commercial participants and liquidity-providing speculators."

B) Research papers published by universities and public institutions

1) Adämmer, Philipp / Bohl, Martin T. / Stephan, Patrick M. (University of Münster) (2011): Speculative Bubbles in Agricultural Prices: „The empirical evidence is favorable for speculative bubbles in the corn and wheat price over the last decade."

2) Algieri, Bernardina (Bonn University) (2012): Price Volatility, Speculation and Excessive Speculation in Commodity Markets: Sheep or Shepherd Behaviour?: „...this study shows that excessive speculation drives price volatility, and that often bilateral relationships exist between price volatility and speculation. (...) excessive speculation has driven price volatility for maize, rice, soybeans, and wheat in particular time frames, but the relationships are not always overlapping for all the considered commodities."

3) Algieri, Bernardina (Bonn University) (2013): A Roller Coaster Ride: an empirical investigation of the main drivvers of wheat price: "The variables with the largest effects on price movements over the period 1995-2012 are the global demand, speculation, and the real effective exchange rate. This testifies that the financial 25 and wheat markets have become more and more interwoven, and "speculation" based on investing in futures contract s on commodity markets, to profit from price fluctuations, is an important determinant of price dynamics."

4) Anderson, David et al. (Texas University) (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."

5) Baffes, John (The World Bank) / Haniotis, Tassos (European Commission) (2010): Placing the 2006/08 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."

6) Baldi, Lucia / Peri, Massimo, Vandone, Daniela (Universita degli Studi di Milano) (2011): Price discovery in agricultural commodities: the shifting relationship between spot and futures prices: "Last but not least, financial speculation, which caused considerable price volatility and prevented the planning of supply in many countries, contributed to creaing a situation of market instability."

7) Bass, Hans H. (University of Bremen) (2011): Finanzmärkte als Hungerverursacher? Studie für Welthungerhilfe e.V.: „Das Engagement der Kapitalanleger auf den Getreidemärkten führte nach unseren Berechnungen in den Jahren 2007 bis 2009 im Jahresdurchschnitt zu einem Spielraum für Preisniveauerhöhungen von bis zu 15 Prozent."

8) Basak, Suleyman / Pavlova, Anna (London Business School / Centre for Economic Policy Research) (2013): We find that in the presence of institutions the prices of all commodity futures go up. The price rise is higher for futures belonging to the index than for nonindex ones. If a commodity futures is included in the index, supply and demand shocks specific to that commodity spill over to all other commodity futures markets. In contrast, supply and demand shocks to a nonindex commodity affect just that commodity market alone. In the presence of institutions the volatilities of both index and nonindex futures go up, but those of index futures increase by more. Furthermore, financialization leads to an increase in the correlations amongst commodity futures as well as in equity-commodity correlations. Increases in the correlations between index commodities exceed those for nonindex ones. We model explicitly demand shocks which allows us to disentangle the effects of financialization from the effects of rising demand for commodities, and find that in the presence of demand shocks the impact of institutions on futures prices becomes considerably stronger."

9) Basu, Parantap / Gavin, William T. (Federal Reserve Bank of St. Loius) (2011): What explains the Growth in Commodity Derivatives?: "Banks argue that they need to use commodity derivatives to help customers manage risks. This may be true, but the recent experience in commodity futures did not reduce risks but exacerbated them just at the wrong time."

10) Bicchetti, David / Maystre, Nicolas (UNCTAD) (2012): The synchronized and long-lasting structural change on commodity markets: evidence from high frequency data: „we document a synchronized structural break, characterized by a departure from zero, which starts in the course of 2008 and continues thereafter. This is consistent with the idea that recent financial innovations on commodity futures exchanges, in particular the high frequency trading activities and algorithm strategies have an impact on these correlations."

11) Boos, Jaap W.B. (Universität Maastricht, School of Business and Economics) / van der Moolen, Maarten (Rabobank) (2012): A Bitter Brew? Futures Speculation and Commodity Prices: "speculation is an important part of the coffee price generation process."

12) Borin, Alessandro / Di Nino, Virginia (Bank of Italy) (2012): The role of financial investments in agricultural commodity derivatives markets: „this result gives some support to the idea that swap dealers, whose growing weight in the regulated exchanges tends to reflect the large exposures of "commodity index investors" in the OTC markets, may have a destabilizing impact on futures prices, at least in the short run. On the contrary, the activity of more traditional speculators seems to favour price stability, probably enhancing market liquidity."

13) Büyüksahin, Bahattin (International Energy Agency) / Robe, Michel A (American University) (2010): Speculators, Commodities and Cross-Market Linkages: "We then show that the correlations between the returns on investable commodity and equity indices increase amid greater participation by speculators generally and hedge funds especially."

14) Cheng, Ing-Haw (University of Michigan) / Kirilenko, Andrei (CFTC) / Xiong, Wei (Princeton University) (2012): Convective Risk Flows in Commodity Futures Markets: „We find that CITs and hedge fund positions reacted negatively to the VIX during the recent financial crisis... Consistent with theories suggesting this is related to the distress of financial institutions, we find that CITs with high CDS spreads are more sensitive to movements in the VIX. Contrary to the hedging pressure hypothesis, we do not find that hedgers increased their hedges as the VIX rose. Finally, the findings show that the reactions of all trader groups were persistent over time. This evidence suggests that during times of distress, there was a flow of risk away from financial institutions back towards commercial hedgers."

15) Coleman, Les / Dark, Jonathan (University of Melbourne) (2012): Economic Significance of Non-Hedger Investment in Commodity Markets: "We find a cointegrating relationship in larger markets between scaled open interest and real spot price, where it is usually the price that adjusts to deviations from long run equilibrium."

16) Cooke, Bryce / Robles, Miguel (IFPRI) (2009): Recent Food Prices Movements. A Time Series Analysis: "Overall, our empirical analysis mainly provides evidence that financial activity in futures markets and proxies for speculation can help explain the observed change in food prices; any other explanation is not well supported by our time series analysis."

17) Creti, Anna / Joëts, Marc / Mignon, Valérie (CEPII, Paris) (2012): On the links between stock and commodity markets' volatility: "Our results show that correlations between commodity and stock markets are time-varying and highly volatile. The impact of the 2007-2008 financial crisis is noticeable, emphasizing the links between commodity and stock markets, and highlighting the financialization of commodity markets. We also show that, while sharing some common features, commodities cannot be considered a homogeneous asset class: a speculation phenomenon is for instance highlighted for oil, coffee and cocoa, while the safe-haven role of gold is evidenced."

18) Dicembrino, Claudio / Scandizzo, Pasquale L. (University of Rome) (2012): The Fundamental and Speculative Components of the Oil Spot Price: "Our results show that speculative components, measured according to mathematical option theory, may be at the origin of significant and sizable effects on oil prices, specially for what concerns the episodes of extreme variations. The

speculation issue, however, suggests that further investigation may be conducted in order to identify the factors affecting the speculation itself."

19) Dorfman, Jeffrey H. / Karali, Berna (University of Georgia) (2012): Have Commodity Index Funds Increased Price linkages between Commodities?: "In combination with our results on correlation coefficients and non-stationarity, these empirical results are indicative, but not fully convincing, of the growth of commodity index funds impacting commodity futures market linkages over the last eight years."

20) Doroudian, Ali / Vercammen, James (University of British Columbia) (2012): First and Second Order Impacts of Speculation and Commodity Price Volatility: „Both of these results are consistent with the theoretical arguments that speculation which involves large-scale institutional investment can have first and second order impacts on commodity price volatility."

21) 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."

22) Einloth, James T. (FDIC) (2009): Speculation and Recent Volatility in the Price of Oil: "The paper finds the evidence inconsistent with speculation having played a major role in the rise of price to $100 per barrel in March 2008. However, the evidence suggests that speculation did play a role in its subsequent rise to $140."

23) Frankel, Jeffrey (Harvard Kennedy School) / Rose, Andrew K. (Haas School of Business, UC Berkeley) (2010): Determinants of Agricultural and Mineral Commodity Prices: "Our annual empirical results show support for the influence of economic activity, inventories, uncertaintym the spread and recent spot price changes."

24) Gilbert, Christopher (Trento University) (2010): Speculative Influences on Commodity Futures Prices: "The results ... indicate that index-based investment in commodity futures may have been responsible for a significant and bubble-like increase of energy and non-ferrous metals prices, although the estimated impact on agricultural prices is smaller."

25) Gilbert, Christopher / Pfuderer, Simone (University of Trento) (2012): Index Funds Do Impact Agricultural Prices: „We use Granger-causality methods to re-examine the data analyzed in Sanders and Irwin (2011a). Our analysis supports their conclusion that mo impacts are discernible for the four grains markets they consider. However, Granger-causality is established in the less liquid soybean oil and livestock markets. We conjecture that index investment does also have price impact in liquid markets but that market efficiency prevents the detection of this impact using Granger-causality tests."

26) Girardi, Daniele (University of Siena) (2011): Do financial investors affect commodity prices? The case of Hard Red Winter Wheat: "Our empirical analysis suggests that financial investors played an important role in affecting wheat price fluctuations in recent years. In particular they seem to have linked wheat price dynamics to US equity market returns and to oil price movements."

27) Ghosh, Jayati (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. Far from being 'efficient markets' in the sense hoped for by mainstream theory, they allowed for inherently 'wrong' signalling devices to become very effective in determining and manipulating market behaviour. The result was the excessive price volatility that has been displayed by important commodities over the recent period – not only the food grains and crops mentioned here, but also minerals and oil."

28) Goyal, Ashima / Tripathi, Shruti (Indira Gandhi Institute of Development Research) (2012): Regulations and price discovery: oil spot and futures markets: „The results show expectations mediated through financial markets did not lead to persistent deviations from fundamentals. (…) But there is stronger evidence of short-term or collapsing bubbles in mature market futures compared to Indian, although mature markets have a higher share of hedging. Indian regulations such as position limits may have mitigated short duration bubbles. It follows leverage due to lax regulation may be responsible for excess volatility."

29) Greenberger, Michael (University of Maryland) (2010): The Relationship of Unregulated Excessive Speculation to Oil Market Price Volatility: "When speculators make up too large a share of the futures market, they have the potential to upset the healthy tension between consumers and producers and resulting adherence of prices to market fundamentals. The resulting volatility makes it more difficult for commercial consumers and producers to successfully hedge risk, because prices do not reflect market fundamentals, and so they abandon the futures market and risk shifting—thereby further destabilizing the price discovery influence of these markets."

30) Halova, Marketa W. (Washington State University) (2012): The Intraday Volatility-Volume Relationship in Oil and Gas Futures: "For the nearby contract, Granger-causality tests show that past values of volume help explain volatility which agrees with the Sequential Information Arrival Hypothesis. Past values of volatility have explanatory power for volume only when absolute return is used as the volatility measure; when the conditional variance from GARCH models is used as the volatility measure, the causality in this direction disappears. These results change when low-frequency daily data is applied. (…) if past volume can be used to forecast volatility, markets are not efficient. Therefore, the lagged volume having explanatory power for volatility indicates some market inefficiency, at least at the 10-minute interval frequency."

31) Hamilton, James (University of California) (2009): Causes and Consequences of the Oil Shock of 2007-08: „With hindsight, it is hard to deny that the price rose too high in July 2008, and that this miscalculation was influenced in part by the flow of investment dollars into commodity futures contracts."

32) Hamilton, James D. (University of California) / Wu, Cynthia (University of Chicago) (2011): Risk Premia in Crude Oil Futures Prices: "We document significant changes in oil futures risk premia since 2005, with the compensation to the long position smaller on average but more volatile in more recent data. This observation is consistent with the claim that index-fund investing has become more important relative to commercial hedging in determining the structure of crude oil futures risk premia over time."

33) Henderson, Brian J. (George Washington University) / Pearson, Neil D. / Wang, Li (University of Illinois at Urbana-Champaign) (2012): New Evidence on the Financialization of Commodity Markets: "Commodity-Linked Notes (CLNs) ... issuers hedge their liabilities by taking long positions in the underlying commodity futures on the pricing dates. These hedging trades are plausibly exogenous to the contemporaneous and subsequent price movements,

allowing us to identify the price impact of the hedging trades. We find that these hedging trades cause significant price changes in the underlying futures markets, and therefore provide direct evidence of the impact of "financial" trades on commodity futures prices."

34) Hong, Harrison (Princeton University) / Yogo, Motohiro (University of Pennsylvania) (2009): Digging into Commodities: „Since 2004 … commodity prices have appreciated considerably, and aggregate basis has fallen (if anything), suggesting that futures prices have responded at least (if not more than) one-for-one with spot-price shocks. This could reflect the belief among investors that these price shocks are permanent or highly persistent. This is however unprecedented since even during the energy crisis of the seventies, one did not see such a striking movement in futures prices. This finding could instead reflect the conventional wisdom that lots of new indexed money flowed into commodity futures (as opposed to the spot market), chasing returns during this period."

35) Inamura, Yasunari / Kimata, Tomonori / Takeshi, Kimura / Muto, Takashi (Bank of Japan) (2011): Recent Surge in Global Commodity Prices – Impact of financialization of commodities and globally accommodative monetary conditions: „While the strong increase in commodity prices has been driven by global economic growth propelled by emerging economies, speculative investment flows into commodity markets have amplified the intensity of the price surge. (…) global commodity markets have become more sensitive to portfolio rebalancing by financial investors, which has made commodity markets more correlated with other asset markets, including major equity markets."

36) Jickling, Mark / Austin, Andrew D. (Congressional Research Service) (2011): Hedge Funds Speculation and Oil Prices: "A statistically significant correlation is evident between changes in positions held by "money managers" (a category of speculators that includes hedge funds) and the price of oil. In other words, during weeks when money managers have been net buyers of oil futures and options (or increased the size of their long positions), the price has tended to rise. Price falls, conversely, have tended to coincide with reductions in money managers' long positions."

37) Juvenal, Luciana / Ivan, Petrella (Federal Reserve Bank of St. Louis) (2011): „Speculation in the Oil Market: „We find that the increase in oil prices in the last decade is mainly due to the strength of global demand, consistent with previous studies. However, financial speculation significantly contributed to the oil price increase between 2004 and 2008."

38) Kawamoto, Takuji / Kimura, Takeshi / Morishita, Kentaro / Higashi, Masato (Bank of Japan) (2011): What has caused the surge in global commodity prices and strengthened cross-market linkage?: "Moreover, we find quantitative evidence that an increase in cross-market linkage between commodity and stock markets was caused by the markets' increased comovements due to large fluctuations in the global economy during the financial crisis as well as by the "financialization of commodities," that is, financial investors are increasingly treating commodities as an investment asset class."

39) Khan, Mohsin 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."

40) Lagi, Marco / Bar-Yam, Yavni / Bertrand, Karla Z. / Bar-Yam, Yaneer (New England Complex Systems Insitute, Cambridge MA) (2011): The Food Crises A Quantitative Model of Food Prices Including Speculators and Ethanol Conversion: "The two sharp peaks in 2007/2008 and 2010/2011are specifically due to investor speculation, while an underlying upward trend is due to increasing demand from ethanol conversion. The model includes investor trend following as well as shifting between commodities, equities and bonds to take advantage of increased expected returns. Claims that speculators cannot influence grain prices are shown to be invalid by direct analysis of price setting practices of granaries." UPDATE (2012): "we extend the food prices model to January 2012, without modifying the model but simply continuing its dynamics. The agreement is still precise, validating both the descriptive and predictive abilities of the analysis."

41) Lammerding, Marc / Stephan, Patrick / Trede, Mark / Wilfling, Bernd (University of Münster): Speculative bubbles in recent oil price dynamics: Evidence from a Bayesian Markov-switching state-space approach: "we find robust evidence for the existence of speculative bubbles in recent oil price dynamics."

42) Le Pen, Yannick (Université Paris-Dauphine) / Sévi, Benoît (Aix-Marseille University) (2012): Futures Trading and the Excess Comovement of Commodity Prices: „Our estimates provide evidence of a time-varying excess comovement which is only occasionally significant, even after controlling for heteroscedasticity. Interestingly, excess comovement is mostly significant in recent years when a large increase in the trading of commodities is observed. However, we show that this increase in trading activity alone has no explanatory power for the excess comovement. Conversely, measures of hedging and speculative pressure explain around 60% of the estimated excess comovement thereby showing the strong impact of the financialization on the price of commodities and the fact that demand and supply variables are not the sole factors in determining equilibrium prices."

43) Liu, Peng (Cornell University) / Zhigang, Qui / Tang, Ke (Renmin University of China) (2011) Financial-Demand Based Commodity Pricing: A Theoretical Model for Financialization of Commodities: "In this paper, we develop an equilibrium model that shows that financial investment does influence commodity prices and volatilities. Furthermore, financial investments dilute the relationship between convenience yields (a proxy for the fundamentals) and commodity prices."

44) Lombardi, Marco J. / Van Robays, Ine (European Central Bank) (2011): Do financial investors destablize the oil price?: "We find that financial investors in the futures market can destabilize oil spot prices, although only in the short run. Moreover, financial activity appears to have exacerbated the volatility in the oil market over the past decade, particularly in 2007-2008. However, shocks to oil demand and supply. remain the main drivers of oil price swings."

45) Luciani, Giacomo (Gulf Research Center Foundation) (2009): From Price Taker to Price Maker? Saudi Arabia and the World Oil Market: "The inflow of liquidity, the increasing role played by the futures market (paper barrels) over the spot (wet barrels), and the proliferation of derivatives which encourage betting on price changes rather than on the absolute level of prices all contribute to worsen the situation, amplifying price oscillations."

46) Mayer, Jörg (UNCTAD) (2009): The Growing Interdependence between Financial and Commodity Markets: "The increasing importance of financial investment

in commodity trading appears to have caused commodity futures exchanges to function in such a way that prices may deviate, at least in the short run, quite far from levels that would reliably reflect fundamental supply and demand factors. Financial investment weakens the traditional mechanisms that would prevent prices from moving away from levels determined by fundamental supply and demand factors – efficient absorption of information and physical adjustment of markets. This weakening increases the proneness of commodity prices to overshooting and heightens the risk of speculative bubbles occurring."

47) Medlock, Kenneth B. / Jaffe, Amy M. (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 0.08 between 1986 and 2000."

48) Mou, Yiqun (Columbia University) (2010): Limits to Arbitrage and Commodity Index Investment: Frontrunning the Goldman Roll: "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."

49) Naylor, Rosamund L. / Falcon, Walter P. (Stanford University) (2010): Food Security in an Era of Economic Volatility: „Uncertainty surrounding exchange rates and macro policies added to price misperceptions, as did flurries of speculative activity in organized futures markets. Events since 2005 – including the most recent period of price variability in 2010 – underscore the point that uncertainty and expectations can be as important as or even more important than actual changes in grain demand and supply in driving price variability."

50) Nissanke, Machiko (University of London) (2011): Commodity Markets and Excess Volatility. Sources and Strategies to Reduce Adverse Development Impacts: "Thus, commodity prices, as prices of any assets traded globally, can be largely influenced by market liquidity cycles in global finance. From this particular perspective, we can have a plausible narrative of the recent episode of commodity price cycle. (…) Clearly, trading activities in world commodity markets have undergone some fundamental change, as the links between activities in commodity and financial markets has further intensified."

51) Peri, Massimo / Vandone, Daniela / Baldi, Luca (Università degli studi di Milano) (2012): Internet, Noise Trading and Commodity Prices: "Moreover, results show that variations in information demand have a significant effect on corn futures volatility, and this effect is robust even when controlling for variations in the supply of information. This result is relevant since it can be interpreted in light of behavioural finance, where studies consider information demand as an expression of noise trading: the search of information on commodity prices through internet by noise traders can amplify volatility especially in case of negative shock, when investment decisions are more easily influenced by panic or irrational behavior."

52) Phillips, Peter C. B. (Yale University) / Yu, Jun (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."

53) Pollin, Robert / Heintz, James (University of Massachusetts) (2011): How Wall Street Speculation is Driving Up Gasoline Prices Today: "A major additional factor is the rapid growth in large-scale speculative trading around oil prices through the oil commodities futures market. Indeed, we estimate that, without the influence of large-scale speculative trading on oil in the commodities futures market, the average price of gasoline at the pump in May would have been $3.13 rather than $3.96."

54) Ray, Darryl E. / Schaffer, Harwood 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 rein 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."

55) Robles, Miguel / Torero, Maximo / Braun, Joachim von (IFPRI) (2009): When speculation matters: „Changes in supply and demand fundamentals cannot fully explain the recent drastic increase in food prices. Rising expectations, speculation, hoarding, and hysteria also played a role in the increasing level and volatility of food prices."

56) Schulmeister, Stephan (Vienna University) (2009): Trading Practices and Price Dynamics in Commodity Markets: "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."

57) Schulmeister, Stephan (Vienna University) (2012): Technical Trading and Commodity Price Fluctuations: "If one aggregates over the transactions and open positions of the 1,092 technical models, it turns out that technical commodity futures trading exerts an excessive demand (supply) pressure on commodity markets."

58) Singleton, Kenneth 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."

59) Singleton, Kenneth J. (Stanford University) (2011): Investor Flows And The 2008 Boom/Bust in Oil Prices: "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."

60) Sockin, Michael / Xiong, Wei (Princeton University) (2012): Feedback Effects of Commodity Futures Prices: "A s a result of information frictions and production complementarity, increases in the futures prices, even if driven by non-fundamental reasons, can lead to increased, rather than decreased, commodity demand and thus spot prices. This outcome contradicts two widely held arguments that speculators who trade only in futures markets cannot a¤ect spot prices and that commodity price increases driven by non-fundamental reasons must be accompanied by inventory spikes."

61) Timmer, C. Peter (Center for Global Development, Washington) (2009): Peter Timmer: Peter Timmer: Did Speculation Affect World Rice Prices?: „Speculative money seems to surge in and out of commodity markets, strongly linking financial variables with commodity prices during some time periods. But these periods are often short and the relationships disappear entirely for long periods of time."

62) Tse, Yiuman / Williams, Michael (University of Texas at San Antonio) (2011): Does Index Speculation Impact Commodity Prices?: "We conclude that speculative pressures exerted by commodity index investors can impact non-index commodities. These results are likely not due to speculative pressure itself, but rather the subsequent price destabilizing trades of uninformed, positive feedback traders."

63) Tse, Yiuman (University of Texas at San Antonio) (2012): The Relationship Among Agricultural Futures, ETFs, and the US Stock Market: "I find that Granger-causality in returns primarily runs from individual futures to the agriculture ETFs. However, DBA and RJA returns are also significantly caused by S&P500 index returns, showing that stock market sentiment influences pricing behavior. The results are also consistent with the impact of financialization of commodities on agriculture prices."

64) Van der Molen, Maarten (University of Utrecht) (2009): Speculators invading the commodity markets: a case study of coffee: „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."

65) Vansteenkiste, Isabel (European Central Bank) (2011): What is driving oil price futures? Fundamentals versus Speculation: "We find that for the earlier part of our sample (up to 2004) that fundamentals have been the key driving force behind oil price movements. Thereafter, trend chasing patterns appear to be better in capturing the developments in oil futures markets."

66) Varadi, Vijay Kumar (ICRIER) (2012): An evidence of speculation in Indian commodity markets: "results exhibit that speculation has played decisive role in the commodity price bubble during the global crisis in India."

67) Von Braun, Joachim (Bonn University), Tadesse, Getaw (IFPRI) (2012): Global Food Price Volatility and Spikes: An Overview of Costs, Causes and Solutions: "The general conclusion on price spikes is that they were driven by excessive volumes of futures trading more than by demand side (oil price) and supply side shocks."

68) Windawi, A. Jason (Columbia University) (2012): Speculation, Embedding, and Food Prices. A Cointegration Analysis: „The Wheat Granger test results show a clustering of speculative financial influences on wheat prices in the period from early 2006 through June of 2010, with a particularly strong increase in the four subperiods beginning with the first drop in prices. (…) Like the wheat tests, the Granger results for Corn … were clustered around the first wave of the food crisis..."

69) Wray, Randall L. (University of Missouri-Kansas City) (2008): The Commodities Market Bubble – Money Manager Capitalism and the Financialization of Commodities "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."

C) Research papers and testimonies by analysts and traders

1) Berg, Ann (former CBoT trader and director, now FAO advisor) (2011): The rise of commodity speculation: from villainous to venerable: "Structural changes in global commodity markets have greatly contributed to rising prices and increased price variability. These fundamental trends toward higher prices have been a key lure for increased speculative activity on the major futures exchanges."

2) Bukold, Steffen (2010) (Energycomment): Ölpreisspekulation und Benzinpreise in Deutschland: "Traditionelle Erklärungen, die nur auf den physischen Ölmarkt schauen, sind nicht hilfreich: Ein Überangebot an Rohöl, schwache Nachfrage und überquellende Lager hätten zu sinkenden, bestenfalls stagnierenden Rohölpreisen führen müssen. Die Erklärung liegt im starken Engagement von Finanzinvestoren, die Öl (genauer: Öllieferkontrakte) aus spekulativen Gründen kaufen, d.h. auf höhere Ölpreise wetten. Der Rohölmarkt ist dadurch noch stärker als bisher zu einem Hybridmarkt geworden, also einer Mischung aus Rohstoffmarkt und Finanzmarkt."

3) Cooper, Marc (Consumer Federation of America) (2011): Excessive Speculation and Oil Price Shock Recessions: A Case of Wall Street "Déjà vu all over again": "the paper shows that excessive speculation, not market fundamentals caused the spike in oil prices. The movement of trading and prices in the three years since the speculative bubble in oil burst in 2008 provides even stronger evidence that excessive speculation is a major problem that afflicts the oil market and the economy."

4) Deutsche Bank Research (2009): Do speculators drive crude oil prices? Dispersion in beliefs as price determinants: "The econometric estimates can reject the null hypotheses that the dispersion in beliefs of speculators has no influence on the crude oil price and its volatility. Both the Granger causality tests and the distributed lag models, which also include lagged regressors that measure the dispersion in beliefs of speculators, confirm moreover the role of speculation as a precursor to price movements.."

5) Dicker, Dan (former NYMEX trader) (2011): "I wrote Oil's Endless Bid to show how the treatment of oil as a stock by investors, far more than any number of globally significant competing factors, causes the dramatically higher prices that we've seen in recent years. I've witnessed seismic changes to the oil markets during my many years as a trader, and it's the everyday consumer who shoulders the burden."

6) Goldman Sachs (2011): Global Energy Weekly March 2011: "We estimate that each million barrels of net speculative length tends to add 8-10 cents to the price of a barrel of oil."

7) Evans, Tim (Citigroup energy analyst) (2008): The Official Demise of the Oil Bubble (Wall Street Journal article): "This is a market that is basically returning to the price level of a year ago which it arguably should never have left. (…) We pumped up a big bubble, expanded it to an impressive dimension, and now it is popped and we have bubble gum in our hair."

8) Frenk, David (Better Markets) (2010): Review of Irwin and Sanders 2010 OECD report: "1) The statistical methods applied are completely inappropriate for the data used. 2) The study is contradicted by the findings of other studies that apply more appropriate statistical methods to the same data. 3) The overall analysis is superficial and easily refuted by looking at some basic facts."

9) Frenk, David / Turbeville, Wallace C. (Better Markets) (2011): Commodity Index Traders and the Boom/Bust Cycle in Commodities Prices: "We find strong evidence that the CIT Roll Cycle systematically distorts forward commodities futures price curves towards a contango state, which is likely to contribute to speculative "boom/bust" cycles by changing the incentives of producers and consumers of storable commodities, and also by sending misleading and non-fundamental, price signals to the market."

10) Gheit, Fadel / Katzenberg, Daniel (2008) (Oppenheimer & Co.): Surviving lower oil prices: "The investment banks that hyped oil prices using voodoo economics have suddenly reversed their position and now expect much lower oil prices. They helped cause excessive speculation, create the oil bubble, and contributed to the global financial crisis. They have changed their tune in exchange for a government bailout, not because of changes in market fundamentals."

11) Hunt, Simon (Simon Hunt Strategic Services) (2011): "Slowly, the truth on whether the global copper market is really tight is coming out. It illustrates just how large an involvement the financial institutions have become to the copper industry. It shows, too, that by throwing money at a market, prices can be driven higher. In the process, however, the delicate balance between supply and the industry's requirements for a basic material used to produce a range of essential products is destroyed. In short, copper is becoming a financial asset in place of its historic role as an industrial metal."

12) Kemp, John (Reuters) (2008): Crisis remakes the commodity business: "It does not alter the fact most of the upsurge in futures and options turnover on commodity exchanges and in OTC markets over the last five years has come from investment-related rather than trade-related business."

13) Korzenik, Jeffrey (CIO, Caturano Wealth Management) (2009): Fundamental Misconceptions in the Speculation Debate: "'Overspeculation' or 'excessive speculation' exists when speculators become primary drivers of price. When this happens, commodities are no longer efficiently allocated – if prices are driven below the point where commercial supply and demand meet, shortages result."

14) Lake Hill Capital Management (2013): Investable indices are distorting commodities and futures: "...it is important to recognize that institutional and retail indexing demand can create price distortions that cloud the fundamental picture. Increased indexing leads to steeper futures term structures, and this results in more costly exposure."

15) Lines, Thomas (commodity consultant) (2010): Speculation in food commodity markets: "These are the main problems that are caused by long-only index trading: It pushes prices up, irrespective of the market situation. It disrupts the rolling over of futures contracts when the nearest month expires."

16) Masters, Michael W. (Masters Capital) / White, Adam K. (White Knight Research) (2008): The Accidental Hunt Brothers: "Index Speculators have bought more commodities futures contracts in the last five years than any other group of market participant. They are now the single most dominant force in the commodities futures markets. And most importantly, their buying and trading has nothing to do with the supply and demand fundamentals of any single commodity. They pour money into commodities futures to diversify their portfolios, hedge against inflation or bet against the dollar."

17) Morse, E. (former Lehman Brothers chief energy economist) (2008): Oil Dotcom, Research Note: "Fundamental changes cannot explain sudden, severe price or curve movements. (…) Our conclusion from this study is that we are seeing the classic ingredients of an asset bubble."

18) 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."

19) Petzel, Todd E. (Offit Capital Advisors) (2009): Testimony before the CFTC: „I believe these investors in aggregate have had a material impact on price levels, price spreads and the level of inventories being held."

20) Soros, George (2008): Interview with Stern: "Speculators create the bubble that lies above everything. Their expectations, their gambling on futures help drive up prices, and their business distorts prices, which is especially true for commodities. It is like hoarding food in the midst of a famine, only to make profits on rising prices. That should not be possible."

21) Tudor Jones, Paul (Tudor Investment Corporation) (2010): Price Limits: A Return to Patience and Rationality in U.S. Markets. Speech to the CME Global Financial Leadership: "Every exchange traded instrument including all securities, futures, options and any other form of derivatives should have some form of a price limit. And this is all the more urgently needed now that electronic execution dominates trading."

22) Urbanchuk, John M. (Cardno ENTRIX) (2011): Speculation and the Commodity Markets: "A careful examination of activity by non-commercial and index traders (i.e. speculators) in the corn futures market in the context of supply and demand fundamentals strongly suggests that speculation is a major factor behind the sharp increase in both the level and volatility of corn prices this year."

23) Woolley, Paul (former fund manager, York University / London School of Economics) (2010): Why are financial markets so inefficient and exploitative – and a suggested remedy: "With the flood of passive and active investment funds going into commodities from 2005 onwards, prices have been increasingly driven by fund inflows rather than fundamental factors. Prices no longer provide a reliable signal to producers or consumers."

D) Reports by public institutions

1) Chevalier, Jean-Marie (ed.) (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..."

2) House of Commons Select Committee on Science & Technology of the United Kingdom (2011): "While the debate on the relative importance of the multiple factors influencing commodities prices is still open, it is clear that price movements across different commodity markets have become more closely related and that commodities markets have become more closely linked to financial markets."

3) Jouyet, Jean-Pierre (President de l'Autorite des marches financiers) / de Boissieu, Christian (President du Conseil d'analyse economique) / Guillon, Serge (Controleur general economique et financier) (2010): Rapport d'étape – Prévenir et gérer l'instabilité des marchés agricoles: **"**Les marchés agricoles sont confrontes a une mondialisation et a une financiarisation qui influencent leur fonctionnement. La volatilité naturelles des prix qui caractérise ces marches est amplifiée par de nouveaux facteurs et notamment par une speculation excessive."

4) Schutter, Olivier de (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 … 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."

5) Tanaka, Nobuo (head 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."

6) 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."

7) 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."

8) United Nations Conference on Trade and Development (UNCTAD) (2011): Price Formation in Financialized Commodity Markets: the Role of Information: "Due to the increased participation of financial players in those markets, the nature of information that drives commodity price formation has changed. Contrary to the assumptions of the efficient market hypothesis (EMH), the majority of market participants do not base their trading decisions purely on the fundamentals of supply and demand; they also consider aspects which are related to other markets or to portfolio diversification. This introduces spurious price signals to the market."

9) 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."

10) 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."

11) United Nations Food and Agricultural Organisation (FAO) (2010). Price Volatility in Agricultural Markets. Economic and Social Perspectives Policy Brief 12: "Financial firms are progressively investing in commodity derivatives as a portfolio hedge since returns in the commodity sector seem uncorrelated with returns to other assets. While this 'financialisation of commodities' is generally not viewed as the source of price turbulence, evidence suggests that trading in futures markets may have amplified volatility in the short term."

12) United Nations Food and Agricultural Organisation (FAO), IFAD, IMF,OECD, UNCTAD, WFP,The World Bank, The WTO, IFPRI, UN HLTF (2011): Price Volatility in Food and Agricultural Markets: Policy Responses: "While analysts argue about whether financial speculation has been a major factor, most agree that increased participation by non-commercial actors such as index funds, swap dealers and money managers in financial markets probably acted to amplify short term price swings and could have contributed to the formation of price bubbles in some situations."

13) United States Senate, Permanent Subcommittee on Investigations (2007): Excessive Speculation in the Natural Gas Market: "Amaranth's 2006 positions in the natural gas market constituted excessive speculation. (…) Purchasers of natural gas during the summer of 2006 for delivery in the following winter months paid inflated prices due to Amaranth's speculative trading."

14) 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."

15) United States Senate, Permanent Subcommittee on Investigations (2006): The Role of Market Speculation in Rising Oil and Gas Prices: "The large purchases of crude oil futures contracts by speculators have, in effect, created an additional demand for oil, driving up the price of oil to be delivered in the future in the same manner that additional demand for the immediate delivery of a physical barrel of oil drives up the price on the spot market."

Appendix B

38 Independent Studies on the Negative Effects of High Speed Trading on Commodity Markets

38 Studies on the Harm Caused By High Frequency Trading

Author(s), Title, Year	Data	Relevant findings
Anand, Tanggaard, Weaver, "Paying for Market Quality" (2009)	Swedish equities, 2002-2004	Designated market makers with affirmative obligations improve market quality, increase market valuation.
Bank for International Settlements, "High frequency trading in the foreign exchange market" (2011)	Foreign exchange, 2010 and 2011	"HFT has had a marked impact on the functioning of the FX market in ways that could be seen as beneficial in normal times, but also in ways that may be harmful to market functioning, particularly in times of market stress."
Bichetti, Maystre, "The synchronized and long-lasting structural change on commodity markets: evidence from high frequency data" (2012) (Added 3/2012)	U.S. futures and equities, 1997-2011	"This paper documented striking similarities in the evolution of the rolling correlations between the returns on several commodity futures and the ones on the US stock market, computed at high frequencies...we think that HFT strategies, in particular the trend-following ones, are playing a key role...commodity markets are more and more prone to events in global financial markets and likely to deviate from their fundamentals."
Boehmer, Fong, Wu, "International Evidence on Algorithmic Trading" (2012) (Added 3/2012)	Equities in 37 countries (excluding U.S.), 2001-2009	"Overall, our results show that algorithmic trading often improves liquidity, but this effect is smaller when market making is difficult and for low-priced or high-volatility stocks. It reverses for small cap stocks, where AT is associated with a decrease in liquidity. AT usually improves efficiency. The main costs associated with AT appear to be elevated levels of volatility. This effect prevails even for large market cap, high price, or low volatility stocks, but it is more pronounced in smaller, low price, or high volatility stocks."
Chae, Wang, "Determinants of Trading Profits: The Liquidity Provision Decision" (2009)	Taiwanese equities, 1997-2002	Absent mandatory obligations, market maker privileges don't induce market makers to provide liquidity; privileged but unconstrained market makers make profits when demanding liquidity in their own informed trades; unconstrained market makers are informed traders rather than liquidity providers in most scenarios.
Easley, Lopez del Prado, O'Hara, "The Microstructure of the Flash Crash" (2011)	U.S. futures, 2010	Unregulated or unconstrained HFT market makers can exacerbate price volatility when they dump inventory and withdraw, flash crashes will recur because of structural issues.
Egginton, Van Ness, Van Ness, "Quote Stuffing" (2012) (Added 3/2012)	U.S. equities, 2010	"We find that quote stuffing is pervasive with several hundred events occurring each trading day and that quote stuffing impacts over 74% of US listed equities during our sample period. Our results show that, in periods of intense quoting activity, stocks

		experience decreased liquidity, higher trading costs, and increased short-term volatility. Our results suggest that the HFT strategy of quote stuffing may exhibit some features that are criticized in the media."
Ferguson, Mann, "Execution Costs and Their Intraday Variation in Futures Markets" (2001)	U.S. futures, 1992	Unregulated or unconstrained market makers in the futures market have much more rapid inventory cycles than (regulated) equity market makers, are active rather than passive traders, and "actively trade for their own accounts, profiting from their privileged access..."
Frino, Forrest, Duffy, "Life in the pits: competitive market making and inventory control-further Australian evidence" (1999)	Australian futures, 1997	Unregulated or unconstrained market makers are not passive liquidity providers, they behave aggressively like informed traders.
Frino, Jarnecic, "An empirical analysis of the supply of liquidity by locals in futures markets: Evidence from the Sydney Futures Exchange" (2000)	Australian futures, 1997	Unregulated or unconstrained market makers demand liquidity to profit from information advantages of privileged access, less likely to supply liquidity in volatile markets, almost as likely to demand as to supply liquidity.
Frino, Jarnecic, Feletto, "Local Trader Profitability in Futures Markets: Liquidity and Position Taking Profits" (2009)	Australian futures, 1997	Unregulated or unconstrained market makers are active and informed traders.
Golub, Keane, "Mini Flash Crashes" (2011) (Added 3/2012)	U.S. equities, 2006-2010	"As soon as the [HFT] market maker's risk management limits are breached...the market maker has to stop providing liquidity and start to aggressively take liquidity, by selling back the shares bought moments earlier. This way they push the price further down and thus exaggerate the downward movement."
Hautsch, Huang, "On the Dark Side of the Market: Identifying and Analyzing Hidden Order Placements" (2012) (Added 3/2012)	U.S. equities, 2010	"Using data from the NASDAQ TotalView message stream allows us to retrieve information on hidden depth from one of the largest equity markets in the world."
Hirschey, "Do High-Frequency Traders Anticipate Buying and Selling Pressure?" (2011) (Added 3/2012)	U.S. equities, 2009	"HFTs' aggressive purchases predict future aggressive buying by non-HFTs, and their aggressive sales predict future aggressive selling by non-HFTs"; "These findings suggest HFTs trade on forecasted price changes caused by buying and selling pressure from traditional asset managers." The author writes that "On net, it is probable

		HFTs have a positive impact on market quality" because of tighter spreads; investment managers might disagree.
Johnson, Zhao, Hunsader, Meng, Ravindar, Carran, Tivnan, "Financial black swans driven by ultrafast machine ecology" (2012) (Added 3/2012)	U.S. equities, 2006-2011	The authors study "18,520 ultrafast black swan events that we have uncovered in stock-price movements between 2006 and 2011" and find "an abrupt system-wide transition from a mixed human-machine phase to a new all-machine phase characterized by frequent black swan events with ultrafast durations."
Joint CFTC-SEC Advisory Committee on Emerging Regulatory Issues, "Recommendations Regarding Regulatory Responses to the Market Events of May 6, 2010" (2011)	U.S. futures and equities, 2010	"In the present environment, where high frequency and algorithmic trading predominate and where exchange competition has essentially eliminated rule-based market maker obligations, liquidity problems are an inherent difficulty that must be addressed. Indeed, even in the absence of extraordinary market events, limit order books can quickly empty and prices can crash simply due to the speed and numbers of orders flowing into the market and due to the ability to instantly cancel orders."
Kim, Murphy, "The Impact of High-Frequency Trading on Stock Market Liquidity Measures" (2011) (Added 3/2012)	U.S. equities, 1997-2009	Traditional market microstructure models have significantly underestimated market spreads in recent years. This is because of how trade sizes have decreased with the recent dominance of high frequency trading. When the authors correct for this they find that spreads have not decreased as much as HFT proponents believe.
Kirilenko, Samadi, Kyle, Tuzun, "The Flash Crash: The Impact of High Frequency Trading on an Electronic Market" (2010)	U.S. futures, 2010	Unregulated or unconstrained HFT market makers exacerbated price volatility in the Flash Crash, hot potato trading, two minute market maker inventory half-life; "...High Frequency Traders exhibit trading patterns inconsistent with the traditional definition of market making. Specifically, High Frequency Traders aggressively trade in the direction of price changes...when rebalancing their positions, High Frequency Traders may compete for liquidity and amplify price volatility."
Kurov, Lasser, "Price Dynamics in the Regular and E-Mini Futures Markets" (2004)	U.S. futures, 2001	Unregulated or unconstrained market makers demand liquidity to profit from information advantages of privileged access.
Linton, O'Hara, "The impact of computer trading on liquidity, price efficiency/ discovery and transaction costs" (2011)	Literature review and survey	"The nature of market making has changed, shifting from designated providers to opportunistic traders. High frequency traders now provide the bulk of liquidity, but their use of limited capital combined with ultra-fast speed creates the potential for periodic illiquidity"; in "regular market conditions,"

		liquidity has improved and transaction costs are lower.
Locke, Sarajoti, "Interdealer Trading in Futures Markets" (2004)	U.S. futures, 1995	Unregulated or unconstrained market makers demand liquidity to manage inventories.
Lyons, "A Simultaneous Trade Model of the Foreign Exchange Hot Potato" (1997)	Model derived from empirical studies of 1992 U.S. foreign exchange market.	Demonstrates hot potato trading among unregulated or unconstrained market makers. "Hot potato trading" means cascading inventory imbalances from market maker to market maker in response to a large order. Hot potato trading explains most of the volume in foreign exchange markets. Hot potato trading is not innocuous - it makes prices less informative.
Lyons, "Foreign exchange volume: Sound and fury signifying nothing?" (1996)	U.S. foreign exchange, 1992	Unregulated or unconstrained market makers cascade inventory imbalances from one to another, as "...trading begets trading. The trading begotten is relatively uninformative, arising from repeated passage of inventory imbalances among dealers...this could not arise under a specialist microstructure."
Manaster, Mann, "Life in the pits: competitive market making and inventory control" (1996)	U.S. futures, 1992	Unregulated or unconstrained market makers aggressively manage inventory, are "active profit-seeking," have much shorter inventory cycles than equities market makers.
Manaster, Mann, "Sources of Market Making Profits: Man Does Not Live by Spread Alone" (1999)	U.S. futures, 1992	Unregulated or unconstrained market makers demand liquidity to profit from information advantages of privileged access, are "predominant" informed traders.
McInish, Upson "Strategic Liquidity Supply in a Market with Fast and Slow Traders" (2012) (Added 3/2012)	U.S. equities, 2008	“We model and show empirically that latency differences allow fast liquidity suppliers to pick off slow liquidity demanders at prices inferior to the NBBO. This trading strategy is highly profitable for the fast traders.”; ”[O]ur research focuses on the ability of fast liquidity suppliers to use their speed advantage to the detriment of slow liquidity demanders, which we believe unambiguously lowers market quality. The ability of fast traders to take advantage of slow traders is exacerbated in the U.S. by the regulatory and market environment that we describe below.”
Panayides, "Affirmative obligations and market making with inventory" (2007)	U.S. equities, 1991 and 2001	Mandatory market maker obligations reduce volatility.
Silber, "Marketmaker Behavior in an Auction Market: An Analysis of Scalpers in Futures Markets", (1984)	U.S. futures, 1982-1983	Unregulated or unconstrained market makers profit from the information advantages of privileged access, two minute inventory cycles.

Smidt, "Trading Floor Practices on Futures and Securities Exchanges: Economics, Regulation, and Policy Issues" (1985)	Literature review and survey	On futures exchanges, inventory imbalances among unregulated or unconstrained market makers create "potentially unstable" markets and price overreactions during "scalper inventory liquidation."
United States Commodity Futures Trading Commission and Securities and Exchange Commission, "Findings Regarding the Market Events of May 6, 2010" (2010)	U.S. futures and equities, 2010	Unregulated or unconstrained HFT market makers exacerbated price volatility in the Flash Crash, hot potato trading.
United States Federal Trade Commission, "Report of the Federal Trade Commission on the Grain Trade," Volume 7 (1926)	U.S. futures, 1915-1922	Unregulated or unconstrained market makers both cause and exacerbate price volatility; “The scalpers who operate with reference to fractional changes within the day may have a stabilizing effect on prices so far as such changes with the day are concerned, but when the market turns they run with it, and they may accentuate an upward or downward movement that is already considerable.”
Van der Wel, Menkveld, Sarkar, "Are Market Makers Uninformed and Passive? Signing Trades in the Absence of Quotes" (2009)	U.S. futures, 1994-1997	Unregulated or unconstrained market makers demand liquidity for a substantial part of the day and are active and informed speculators.
Van Kervel, "Liquidity: What You See is What You Get?" (2012) (Added 3/2012)	U.K. equities, 2009	“We show that a specific type of high-frequency traders, those who operate like modern day market makers, might in fact cause a strong overestimation of liquidity aggregated across trading venues. The reason is that these market makers place duplicate limit orders on several venues, and after execution of one limit order they quickly cancel their outstanding limit orders on competing venues. As a result, a single trade on one venue is followed by reductions in liquidity on all other venues.”
Venkataraman, Waisburd, "The Value of the Designated Market Maker" (2006)	French equities, 1995-1998	Designated market makers with affirmative obligations improve market quality, increase market valuation.
Wang, Chae, "Who Makes Markets? Do Dealers Provide or Take Liquidity?" (2003)	Taiwanese equities, 1997-2002	Absent mandatory obligations, market maker privileges don’t induce market makers to provide liquidity; they derive profits from their own informed trades; “While dealers may be meant to perform the socially beneficial function of liquidity provision, the institutional advantages granted to them also give the ability to act as super-efficient proprietary traders if they choose to.”

Working, "Tests of a Theory Concerning Floor Trading on Commodity Exchanges" (1967)	U.S. futures, 1952	Unregulated or unconstrained market makers are also trend traders, profiting from the information advantages of privileged access; they can trade aggressively, especially when the market goes against the firm; inventory cycles of "minutes"; trend trading accelerates price changes (but may moderate extremes).
Zhang, "High-Frequency Trading, Stock Volatility, and Price Discovery" (2010) (Added 3/2012)	U.S. equities, 1985-2009	"[H]igh-frequency trading may potentially have some harmful effects" because "high-frequency trading is positively correlated with stock price volatility."
Zigrand, Cliff, Hendershott, "Financial stability and computer based trading" (2011)	Literature review and survey	Self-reinforcing feedback loops in computer-based trading can lead to significant instability in financial markets; market participants become inured to excessive volatility in a cultural "normalization of deviance" until a large-scale failure occurs; research to date has not shown a persistent increase in market volatility, but HFT research is nascent.