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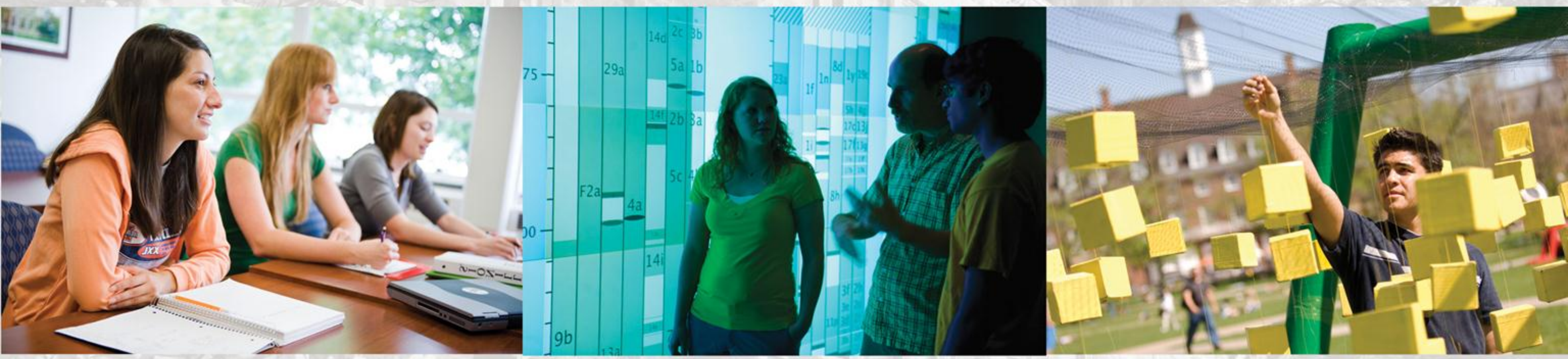
Structural Change in Agricultural Futures Markets: What Have We Wrought?

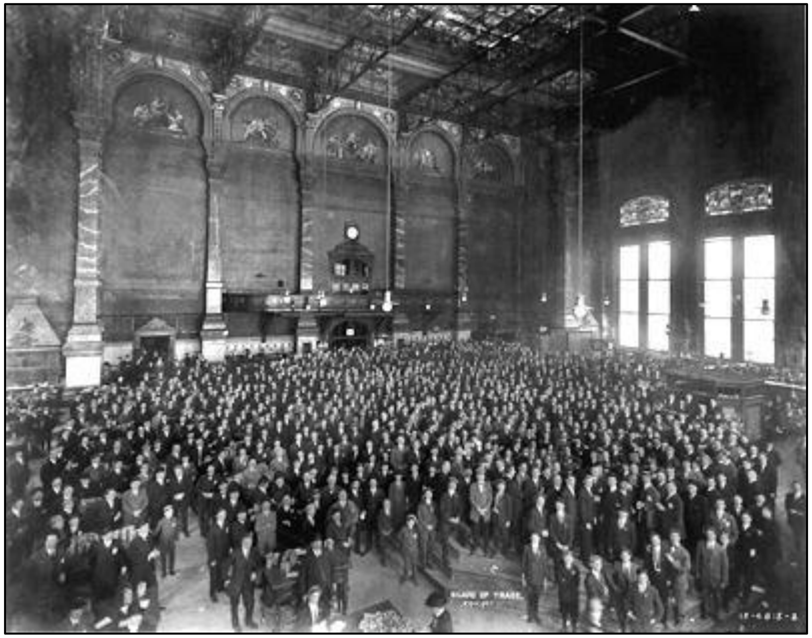
Scott H. Irwin



The Chicago Board of Trade c. 1885

Chicago, Ill. THE BOARD OF TRADE BUILDING.

http://2.bp.blogspot.com/-SppcsN29pCo/TseiE1jJoUI/AAAAAAAAAIzI/Fi9xGyo39CA/s1600/Board%2Bof%2BTrade.jpg



http://www.friedmanfineart.net/chicago-photography/chicago-financial-trading-stock-exchange/

1930s

1970s

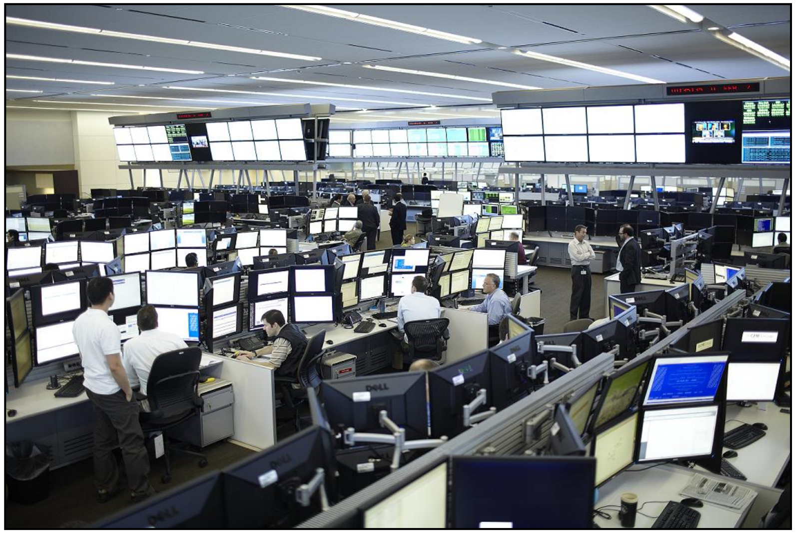
http://farm5.staticflickr.com/4080/4892565919_93987bb62c_z.jpg

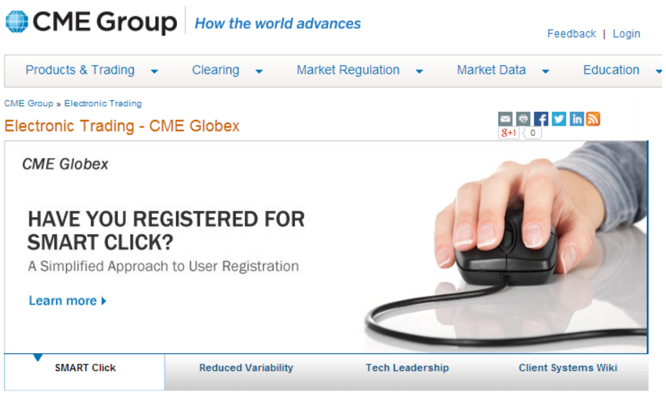
https://lh5.googleusercontent.com/-hfaqET6xZBI/Tj6jRz6HFsI/AAAAAAAAADA/2eVFVr0h8UY/s800/CBOT%252520historical.jpg

1990s

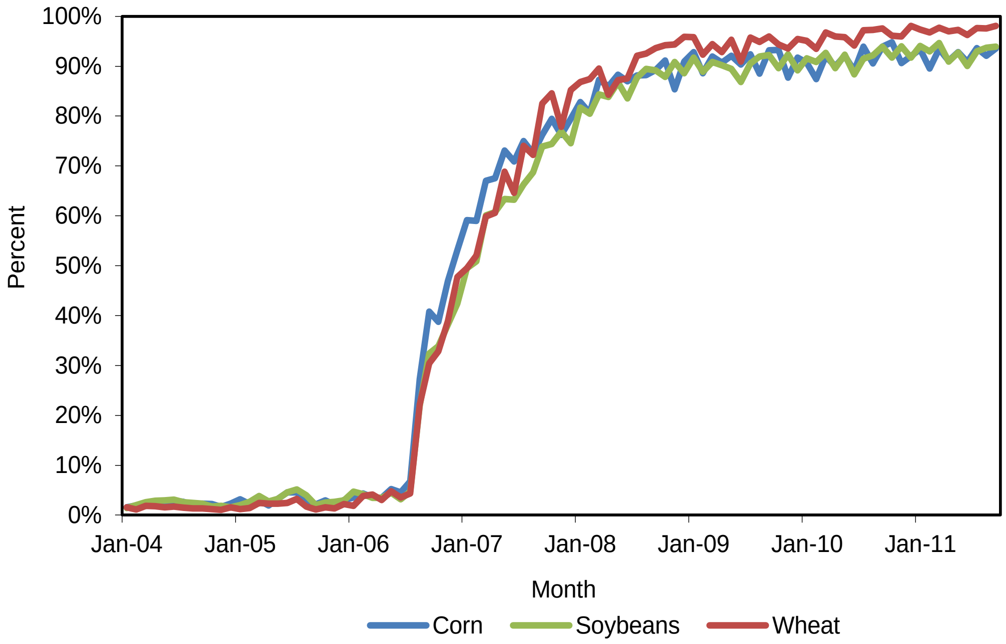
http://static.squarespace.com/static/520fd45de4b030489db95a95/t/523ae725e4b07feda73fcf86/1379591973314/Chicago-grain-2978.jpg

Structural Change #1:
The Switch to Electronic Trading





Percent of Futures Volume Transacted on Electronic Platform, 2004-2011



http://openmarkets.cmegroup.com/wp-content/uploads/Globex-Command-Center.jpg

HFT: High Frequency Trading

Home > Opinion > Economic Intelligence > *How High-Frequency Trading Is Taking Over Markets*

Economic Intelligence

Reign of the High-Frequency Trading Robots

By WALLACE TURBEVILLE

October 18, 2013 | RSS Feed | Print

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http://www.usnews.com/opinion/blogs/economic-intelligence/2013/10/18/how-high-frequency-trading-is-taking-over-markets

Richard Finger, Contributor
I expose the folly in boardrooms and capital markets.
+ Follow (94)

BUSINESS | 9/30/2013 @ 8:41AM | 11,493 views

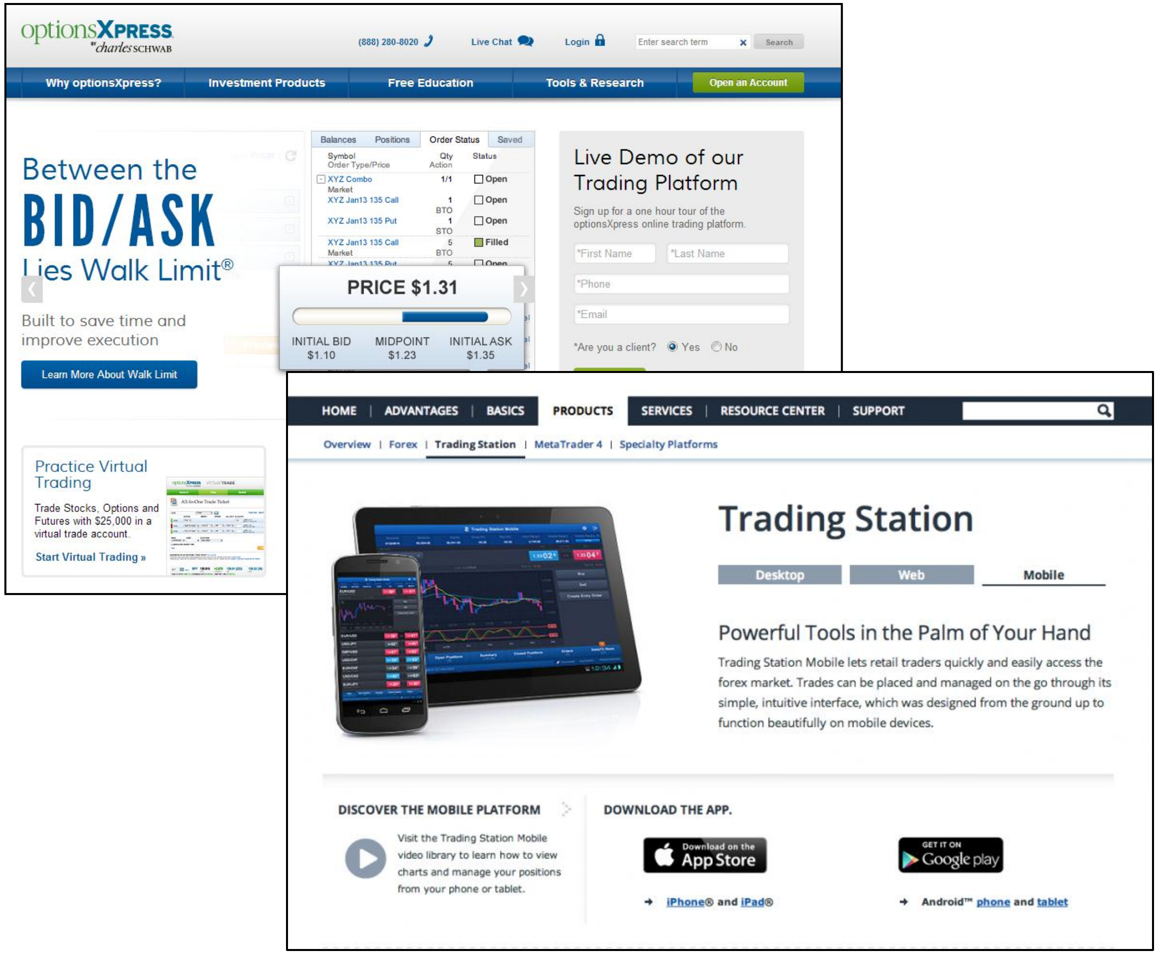
High Frequency Trading: Is It A Dark Force Against Ordinary Human Traders And Investors?

5 comments, 4 called-out + Comment Now + Follow Comments

High Frequency Trading (HFT) is the use of computer algorithms to rapidly trade stocks. Highly sophisticated proprietary strategies are programmed to move in and out of trades in timeframes as little as fractions of a second. It is a business dominated by a few giants as it is a sandbox that costs many millions to play in. There are many facets to High Frequency Trading. I knew roughly what High Frequency Trading was, but in this article I try to understand some of the nuance of a phenomenon that, as we will discover, is the dominant force on the exchanges today.

http://www.forbes.com/sites/richardfinger/2013/09/30/high-frequency-trading-is-it-a-dark-force-against-ordinary-human-traders-and-investors/

Structural Change #2:
A Revolution in Market Access



http://www.optionsxpress.com/index.aspx

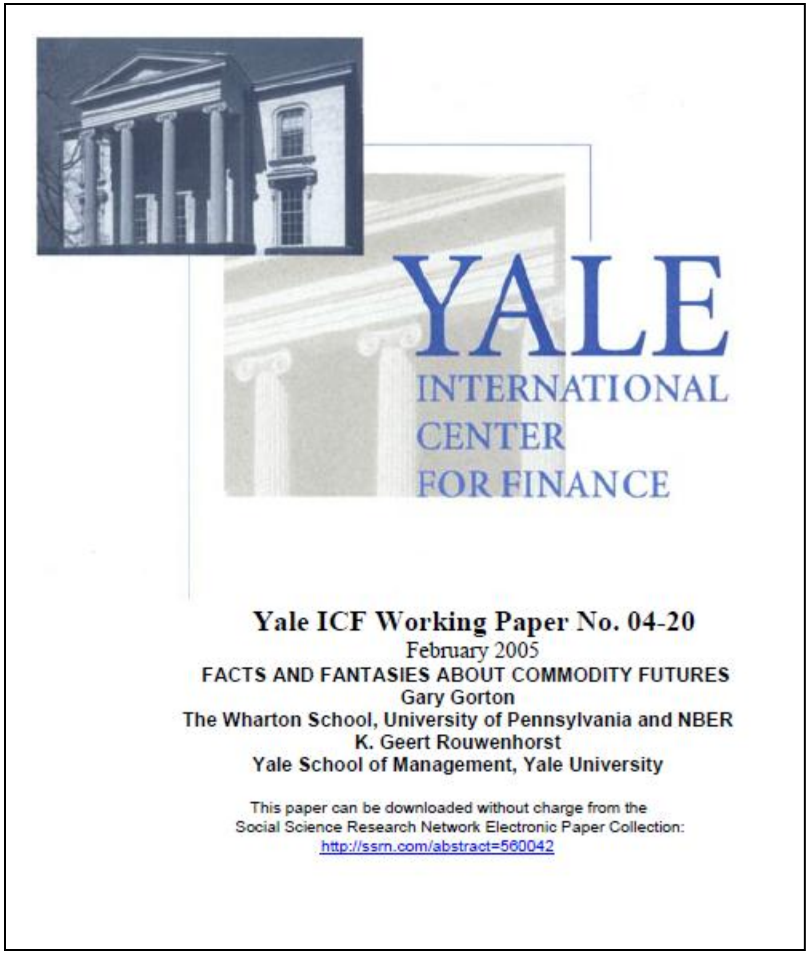
http://www.reviews.com/forex-trading/wp-content/blogs.dir/44/files/2013/10/Trading_Station_Mobile_for_Mobile_Forex_Trading_-_FXCM-900x600.png

https://www.cannontrading.com/images/iRunner-mobile-futures-bar-charts.jpg

Table 2. Exchange Traded Products Tracking Agricultural Commodities

Symbol	Name	Assets ($1,000s)	Volume (shares)
DBA	PowerShares Deutsche Bank Agriculture Fund	2,560,550	1,729,900
JJG	iPath Exchange Traded Notes Dow Jones – American International Group Grains Total Return Sub-Index Exchange Traded Note Series A	226,785	152,556
JJA	iPath Exchange Traded Notes Dow Jones – American International Group Agriculture Total Return Sub-Index Exchange Traded Note Series A	155,940	48,656
CORN	Teucrium Corn Fund	107,075	130,840

Structural Change #3:
The Rise of Passive Investment



Yale ICF Working Paper No. 04-20

February 2005

FACTS AND FANTASIES ABOUT COMMODITY FUTURES

Gary Gorton

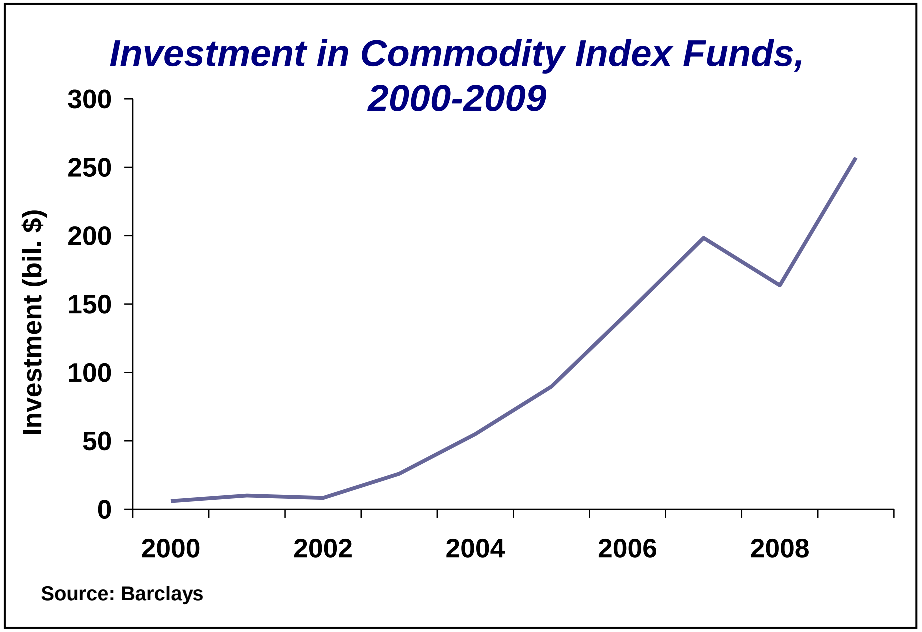
The Wharton School, University of Pennsylvania and NBER

K. Geert Rouwenhorst

Yale School of Management, Yale University

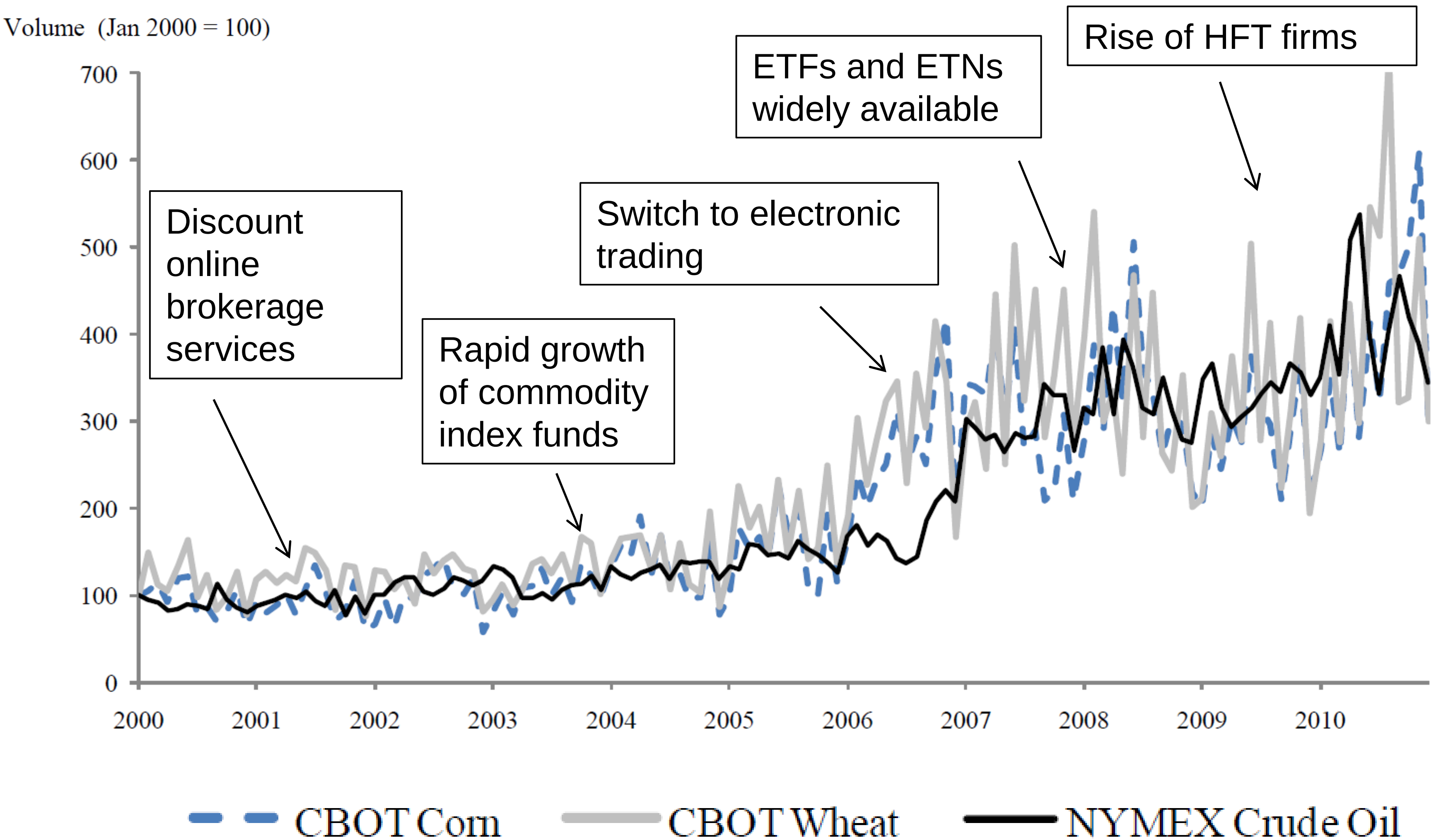
This paper can be downloaded without charge from the Social Science Research Network Electronic Paper Collection: http://ssrn.com/abstract=560042

http://papers.ssrn.com/sol3/papers.cfm?abstract_id=560042



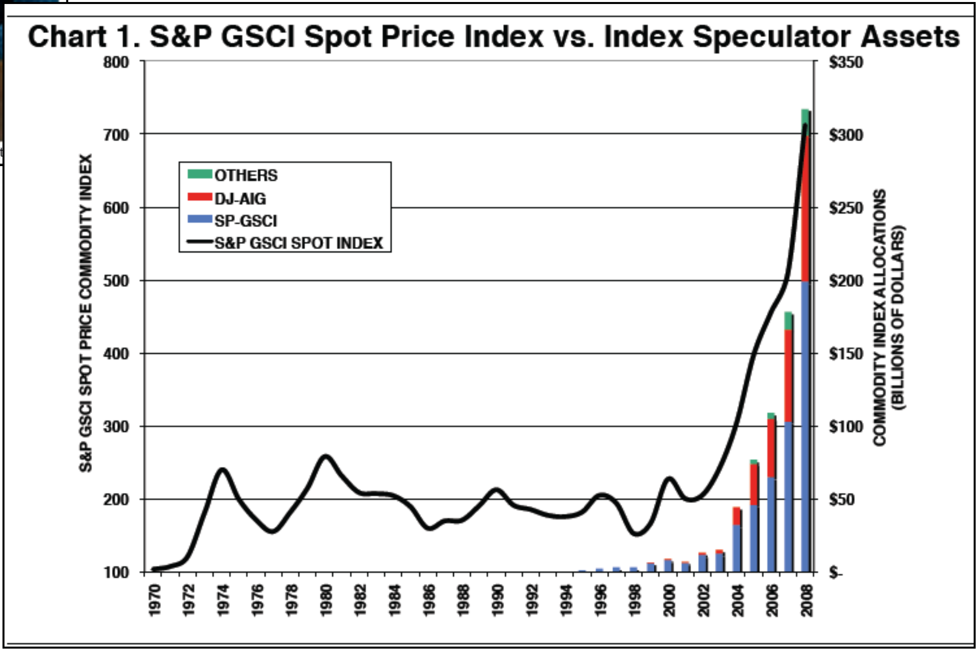
- Long-only exposure to basket of commodities
- Risk diversification objective
- GSCI most widely tracked index

Growth of Trading Volume in Commodity Futures Markets (2000-2010)



http://www.nytimes.com/2008/09/11/washington/11speculate.html

"The Masters Hypothesis"

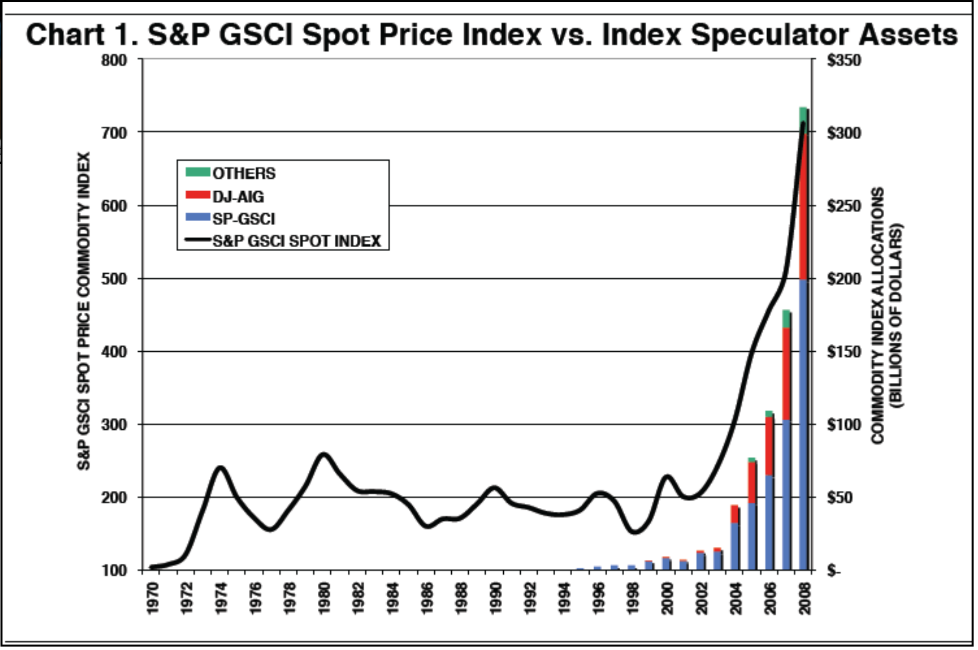


http://www.loe.org/images/content/080919/Act1.pdf

Mark Wilson/Get

http://www.nytimes.com/2008/09/11/washington/11speculate.html

"The Masters Hypothesis"



http://www.loe.org/images/content/080919/Act1.pdf

Passive index investment "too big" for commodity markets:

- Long-lived and massive bubbles
- Prices far exceed fundamental values during spikes

United States Senate
PERMANENT SUBCOMMITTEE ON INVESTIGATIONS
Committee on Homeland Security and Governmental Affairs

Carl Levin, Chairman
Tom Coburn, Acting Ranking Minority Member

EXCESSIVE SPECULATION IN THE WHEAT MARKET

MAJORITY AND MINORITY STAFF REPORT

PERMANENT SUBCOMMITTEE ON INVESTIGATIONS

UNITED STATES SENATE

June 24, 2009

http://www.hsgac.senate.gov/subcommittees/investigations/hearings/excessive-speculation-in-the-wheat-market

"This Report finds that there is significant and persuasive evidence to conclude that these **commodity index traders**, in the aggregate, were one of the major causes of **"unwarranted changes"**—here, increases—in the price of wheat futures contracts relative to the price of wheat in the cash market… Accordingly, the Report finds that the activities of commodity index traders, in the aggregate, constituted **"excessive speculation"** in the wheat market under the Commodity Exchange Act." (p. 2)

“**Passive speculators** are an **invasive species** that will continue to damage the markets until they are **eradicated**. The CFTC must address the issue of passive speculation; it will not go away on its own. When passive speculators are eliminated from the markets, then most consumable commodities derivatives markets will no longer be **excessively speculative**, and their intended **functions** will be **restored**.”

Michael W. Masters, Testimony before the Commodity Futures Trading Commission (CFTC), **March 25, 2010**

http://arcticcompass.blogspot.com/2009/06/financial-crunch-economic-collapse-part.html

October 3, 2011

Oxfam Issue Briefing

NOT A GAME: SPECULATION VS FOOD SECURITY

REGULATING FINANCIAL MARKETS TO GROW A BETTER FUTURE

www.oxfam.org/grow

GROW FOOD. LIFE. PLANET. Oxfam

Food prices are a matter of life and death to many in the developing world. Financial markets that should be helping food growers and processors to manage their risk and set prices have become a potential threat to global food security. Deregulated and secretive agricultural commodity derivatives markets have attracted huge sums of speculative money, and there is growing evidence that they deliver distorted and unpredictable food prices. Financial speculation can play an important role to help food producers and end users manage risks, but in light of the harm that excessive speculation may cause to millions, action is required now to address the problem. This briefing explains what has gone wrong with financial markets and what the United States, the European Union and other G20 members should do to fix them.

A NEW REALITY REQUIRING NEW RULES: FINANCIALIZED FOOD MARKETS

http://www.oxfam.org/en/grow/policy/not-game-speculation-vs-food-security

October 3, 2011

Oxfam Issue Briefing

NOT A GAME: SPECULATION VS FOOD SECURITY

REGULATING FINANCIAL MARKETS TO GROW A BETTER FUTURE

www.oxfam.org/grow

Financialization of Commodity Markets

… the developing world. Financial markets that … processors to manage their risk and set prices have become a … food security. Deregulated and secretive agricultural commodity derivatives … have attracted huge sums of speculative money, and there is growing evidence that they deliver distorted and unpredictable food prices. Financial speculation can play an important role to help food producers and end users manage risks, but in light of the harm that excessive speculation may cause to millions, action is required now to address the problem. This briefing explains what has gone wrong with financial markets and what the United States, the European Union and other G20 members should do to fix them.

A NEW REALITY REQUIRING NEW RULES: FINANCIALIZED FOOD MARKETS

http://www.oxfam.org/en/grow/policy/not-game-speculation-vs-food-security

October 11, 2011


The Telegraph

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Commodities

G20 urged to help end world hunger by stopping commodity speculation

More than 450 economists from 40 countries have urged G20 finance ministers to prevent financial speculation in commodity markets from driving up food prices and fuelling hunger.

http://www.telegraph.co.uk/finance/commodities/8820798/G20-urged-to-help-end-world-hunger-by-stopping-commodity-speculation.html

October 19, 2011

INVESTING | 10/19/2011 @ 1:55PM | 747 views

CFTC Position Limits Rule Divides Agency, Angers Market Participants

+ Comment now

PAGE 2 OF 2

Sterling Smith, commodity trading adviser at Country Hedging, said it's unlikely to keep people who want to speculate away from commodities. "The bottom line is, people want to be long these markets and if they can find a way to leverage themselves they're going to. If a foreign entity offers said vehicle they may go there. This doesn't address the problem of the (2008 financial) crisis, which was bad mortgages," Smith said.

http://www.forbes.com/sites/kitconews/2011/10/19/cftc-position-limits-rule-divides-agency-angers-market-participants/

Journal of Agricultural and Applied Economics, 41,2(August 2009):377–391

Devil or Angel? The Role of Speculation in the Recent Commodity Price Boom (and Bust)

Scott H. Irwin, Dwight R. Sanders, and Robert P. Merrin

It is commonly asserted that speculative buying by index funds in commodity futures and over–the–counter derivatives markets created a "bubble" in commodity prices, with the result that prices, and crude oil prices, in particular, far exceeded fundamental values at the peak. The purpose of this paper is to show that the bubble argument simply does not withstand close scrutiny. Four main points are explored. First, the arguments of bubble proponents are conceptually flawed and reflect fundamental and basic misunderstandings of how commodity futures markets actually work. Second, a number of facts about the situation in commodity markets are inconsistent with the existence of a substantial bubble in commodity prices. Third, available statistical evidence does not indicate that positions for any group in commodity futures markets, including long–only index funds, consistently lead futures price changes. Fourth, there is a historical pattern of attacks upon speculation during periods of extreme market volatility.

Key Words: commodity, futures, index fund, market, speculation

JEL Classifications: Q11, Q13

Led by crude oil, commodity prices reached dizzying heights during mid-2008 and then subsequently declined with breathtaking speed (see Figure 1). The impact of speculation, principally by long–only index funds, on the boom and bust in commodity prices has been hotly debated.[1] It is commonly asserted that speculative buying by index funds in commodity futures and over–the–counter (OTC) derivatives markets created a "bubble," with the result that commodity prices, and crude oil prices, in particular, far exceeded fundamental values at the peak (e.g., Gheit, 2008; Masters, 2008; Masters and White, 2008). The main thrust of bubble arguments is that: (1) a large

Scott H. Irwin is the Laurence J. Norton Chair of Agricultural Marketing in the Department of Agricultural and Consumer Economics at the University of Illinois at Urbana–Champaign. Dwight R. Sanders is associate professor in the Department of Agribusiness Economics at Southern Illinois University, Carbondale, Illinois. Robert P. Merrin is a PhD student in the Department of Finance at Universiteit Maastricht, The Netherlands.

Todd Petzel and seminar participants at the University of Illinois, Guelph University, and the Economic Research Service of the USDA provided valuable comments on earlier versions of the paper. Funding support from the Aurene T. Norton Trust is gratefully acknowledged.

Invited paper presented at the Southern Agricultural Economics Association Meetings, Atlanta, Georgia, January 31–February 3, 2009.

[1] In reality, a variety of investment instruments are lumped under the heading "commodity index fund." Individuals may enter directly into over–the–counter contracts with swap dealers to gain the desired exposure to returns from a particular index of commodity prices. Some firms also offer investment funds whose returns are tied to a commodity index. Exchange–traded funds (ETFs) and structured notes (ETNs) have also recently been developed to make it even easier to gain commodity exposure. ETFs and ETNs trade on securities exchanges in the same manner as stocks on individual companies. See Engelke and Yuen (2008) and CFTC (2008b) for further details.

http://ageconsearch.umn.edu/bitstream/53083/2/jaaeip3.pdf

OECD*publishing*

Please cite this paper as:

Irwin, S. H. and D. R. Sanders (2010), "The Impact of Index and Swap Funds on Commodity Futures Markets: Preliminary Results", *OECD Food, Agriculture and Fisheries Working Papers*, No. 27, OECD Publishing. doi: 10.1787/5kmd40wl1t5f-en

OECD Food, Agriculture and Fisheries Working Papers No. 27

The Impact of Index and Swap Funds on Commodity Futures Markets

PRELIMINARY RESULTS

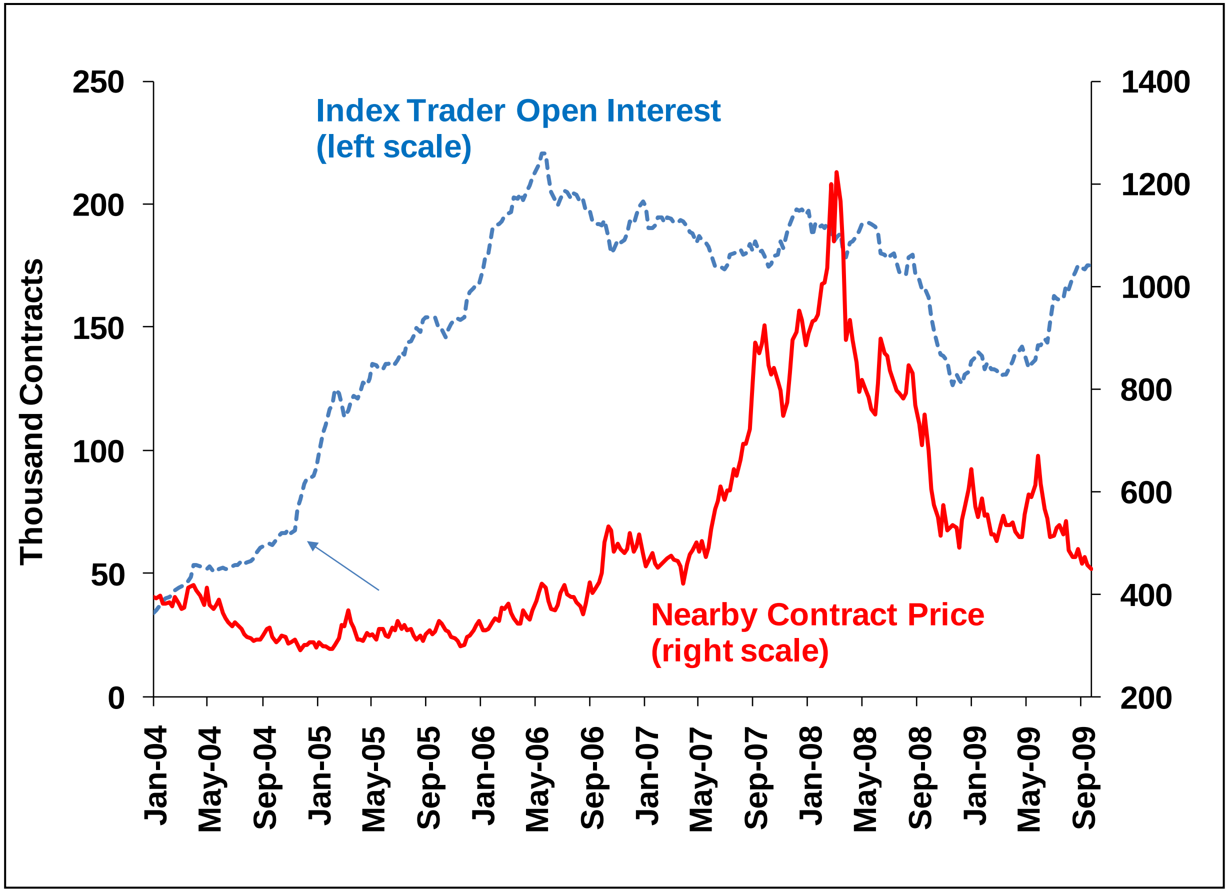
Scott H. Irwin[*], Dwight R. Sanders

[*] University of Illinois, United States

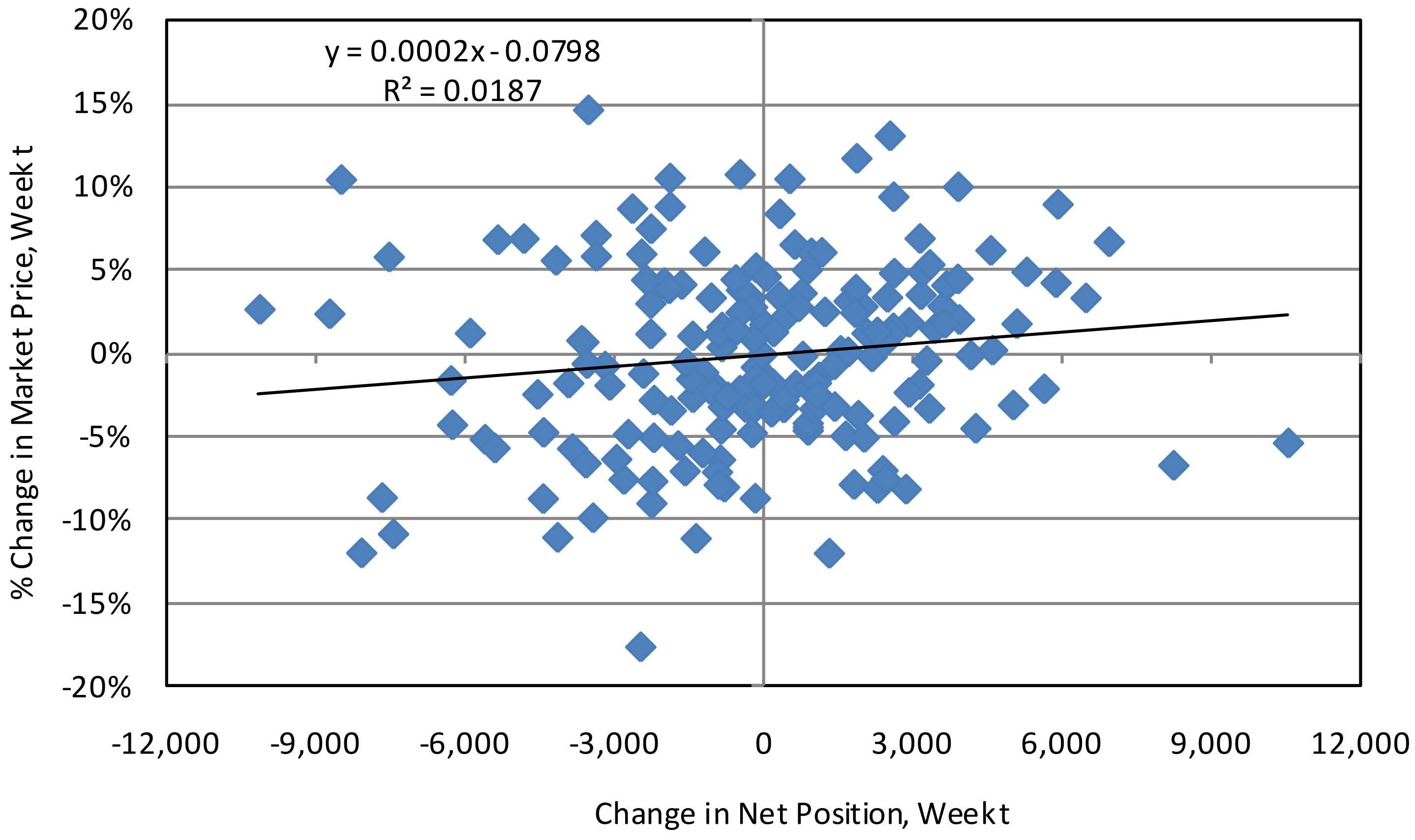
OECD

http://www.oecd.org/trade/agriculturaltrade/assessingagriculturalmarkets/45534528.pdf

CBOT Wheat Futures Prices and Index Trader Net Long Positions, January 2004-September 2009



Relationship between CBOT Wheat Returns and Index Trader Net Long Positions, June 2006-December 2009



Leibniz Institute of Agricultural Development in Central and Eastern Europe (IAMO)
www.iamo.de

IAMO
Policy Brief

Nº 9

Issue No. 9
December 2012

Alarm or rather false alarm? A literature review of empirical research studies into financial speculation with agricultural commodities

Thomas Glauben, Ingo Pies, Sören Prehn and Matthias Georg Will

An evaluation of 35 research papers into the impact of financial speculation on agricultural commodities markets has revealed: The vast majority of studies did not confirm the concerns that prevail in public discourse. The current state of knowledge indicates only a few, and weak, findings that verify the assumption that the rise in financial speculation in recent years has increased (1) the level or (2) the volatility of agricultural commodity prices. Instead, those developments have rather been caused by fundamental factors in the real economy. This is why the majority of academic studies are not in favor but against (3) enacting regulatory barriers to market entry. Transaction taxes or position limits are described as involving high risks. Various studies explicitly warn against overregulation, which would impair rather than improve the functionality of agricultural markets. Seen in this light, the alarmism about financial speculation should be classified as a false alarm: Those who desire to effectively combat hunger in the world have to take real-economy precautions to ensure that food supplies will match the envisaged increasing demands.

New players have entered the futures markets for agricultural commodities over the last ten years. Commodity Index Traders (CITs) are heavily engaged in a business model that consists of permanently covering long positions that are continually rolled forward. Without building their own inventories, CITs contribute to hedge agricultural producers against markdown risks.

This recent development has given rise to the suspicion that CITs could be causally responsible for the dramatic price events in 2007/8, 2010/11 and 2012. In view of global hunger revolts there was a great deal of conjecture among theoreticians and practitioners that CIT-conditioned financial speculation with agricultural commodities prompted rapid food price rises that notably affected people suffering from extreme poverty.

This suspicion has sparked an intense international discussion that has already entailed regulatory actions. The US, for instance, has introduced position limits, while Europe is updating the Markets in Financial Instruments Directive (MiFID). Various renowned civil society organizations (CSOs) in Germany have mounted a joint public awareness campaign in this context. The CSOs demand the introduction of a transaction tax, the subjection of futures market speculators to severe position limits, and a full ban on financial speculations by CITs.

The CSOs commissioned their own studies (Pies 2012) to increase the efficiency of their demands. These groups assert that a "scientific evaluation" of available data provides "overwhelming evidence" that financial speculation causes and exacerbates hunger in the world.

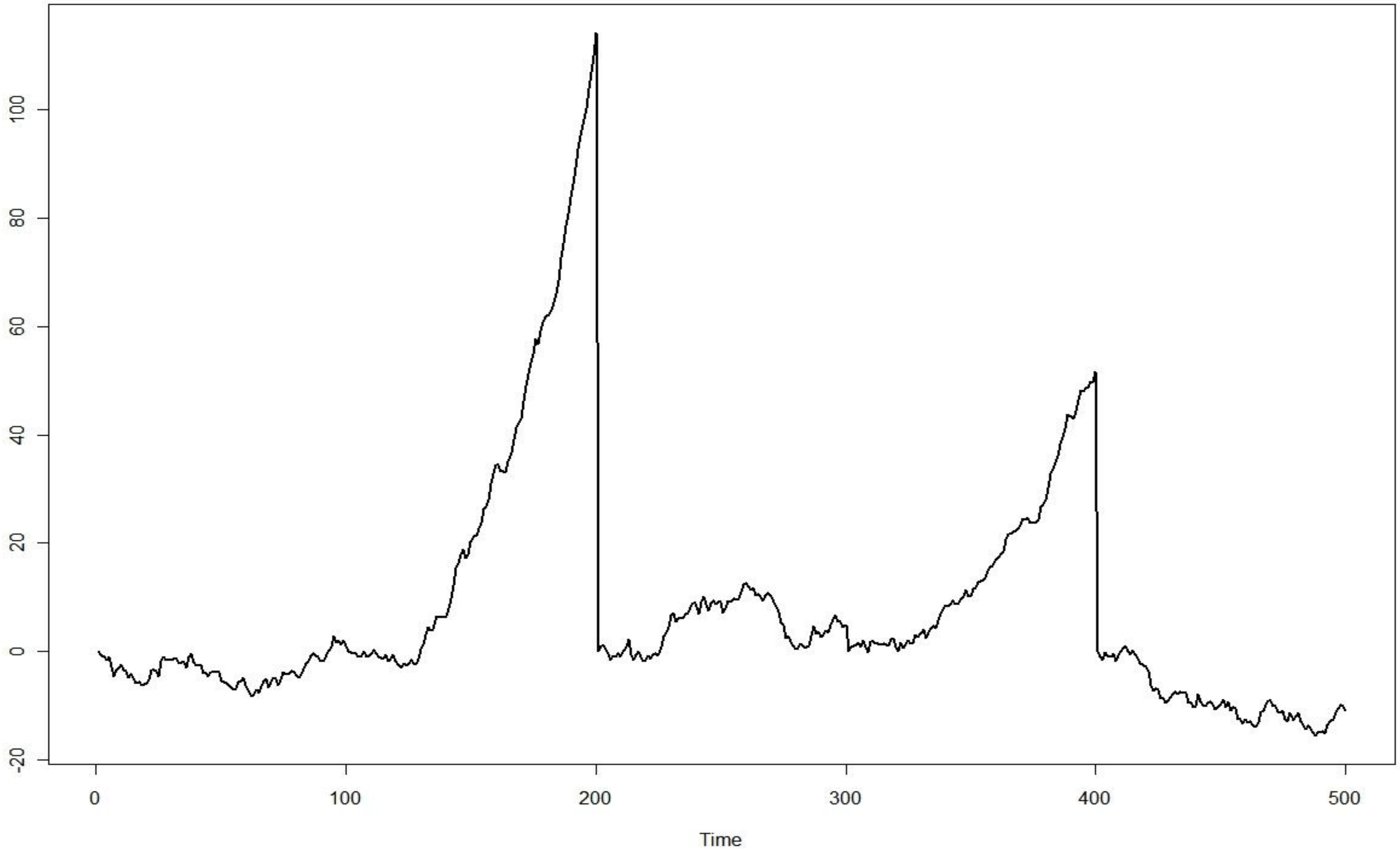
Those statements have prompted strong responses. To give but one example: Thilo Bode, executive manager of foodwatch, asserts that banks, with their speculative futures market transactions, are "hungermakers". Within a few months, Bode attended no less than three publicly-documented debates where holders of economics chairs pointed out that his claims contradicted the state of the art in research (FAZ 2012, Handelsblatt 2012, Sueddeutsche Zeitung 2012). The CSOs, however, maintain their view that scientific evidence is on their side (attac 2012).

https://www.econstor.eu/dspace/bitstream/10419/70793/1/738572845.pdf

December 2012

"The current state of knowledge indicates only a few, and weak, findings that verify the assumption that the rise in financial speculation in recent years has increased (1) the level or (2) the volatility of agricultural commodity prices……
Seen in this light, the alarmism about financial speculation should be classified as a false alarm: Those who desire to effectively combat hunger in the world have to take real-economy precautions to ensure that food supplies will match the envisaged increasing demands"

Were There Even Bubbles?



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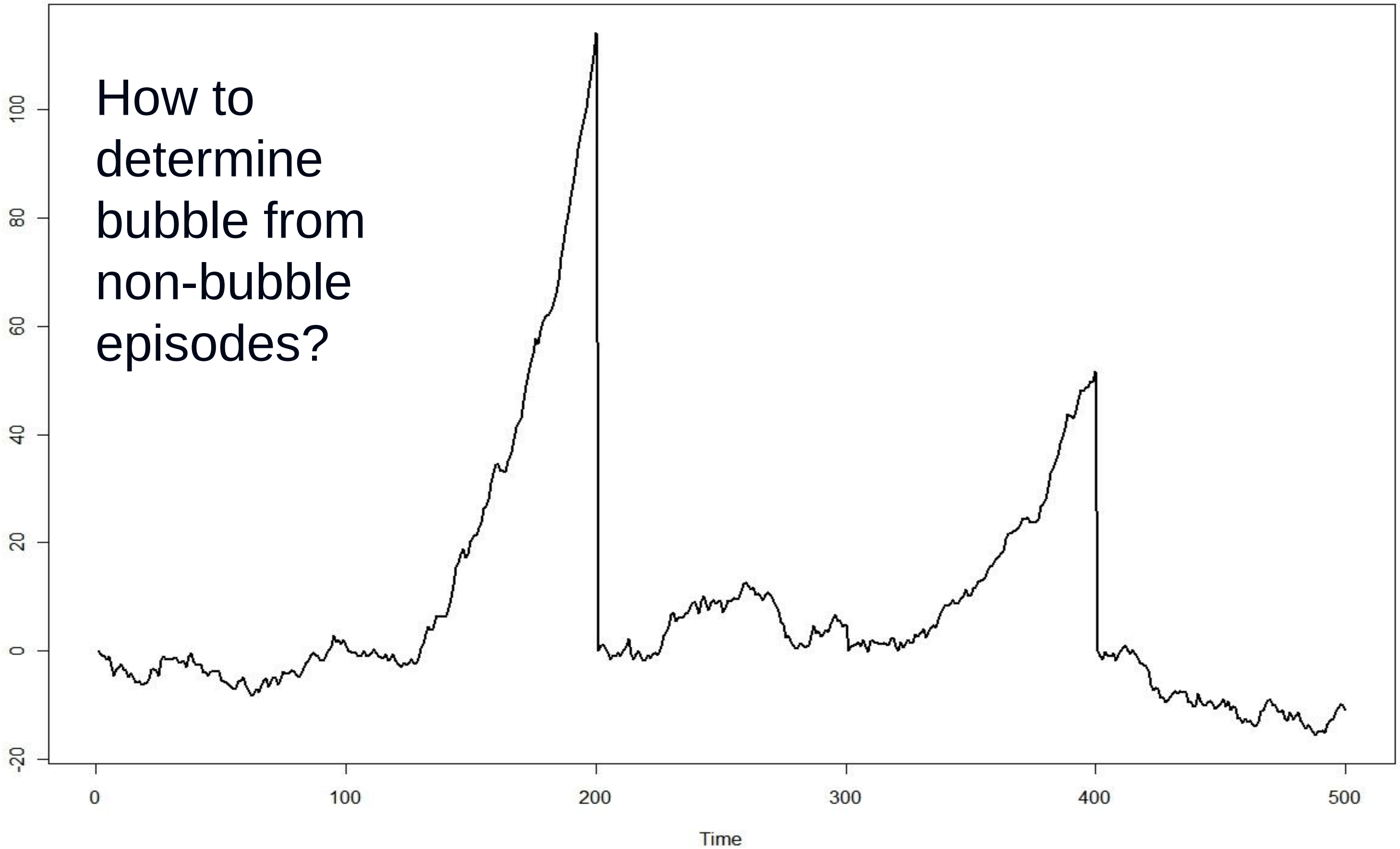

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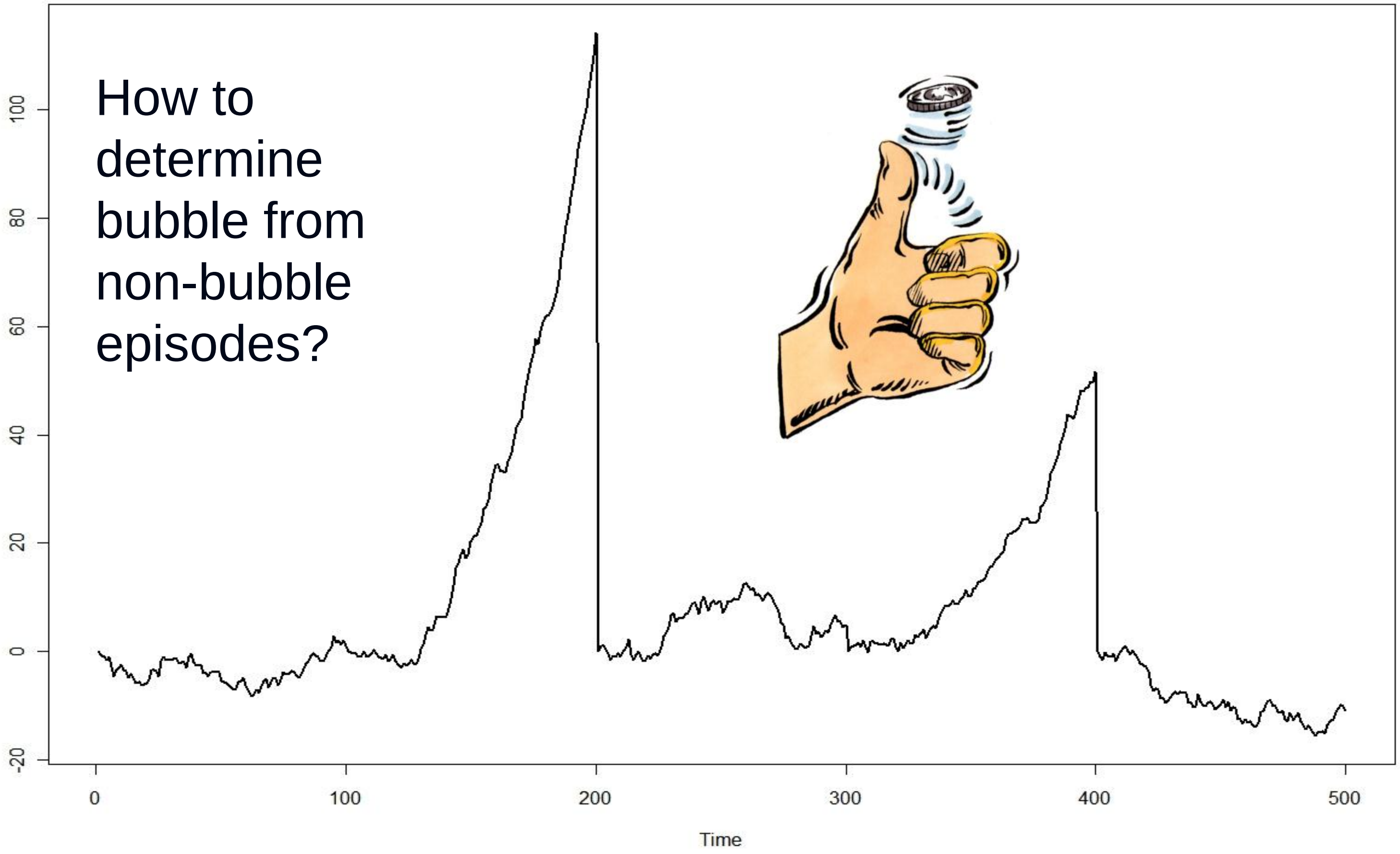
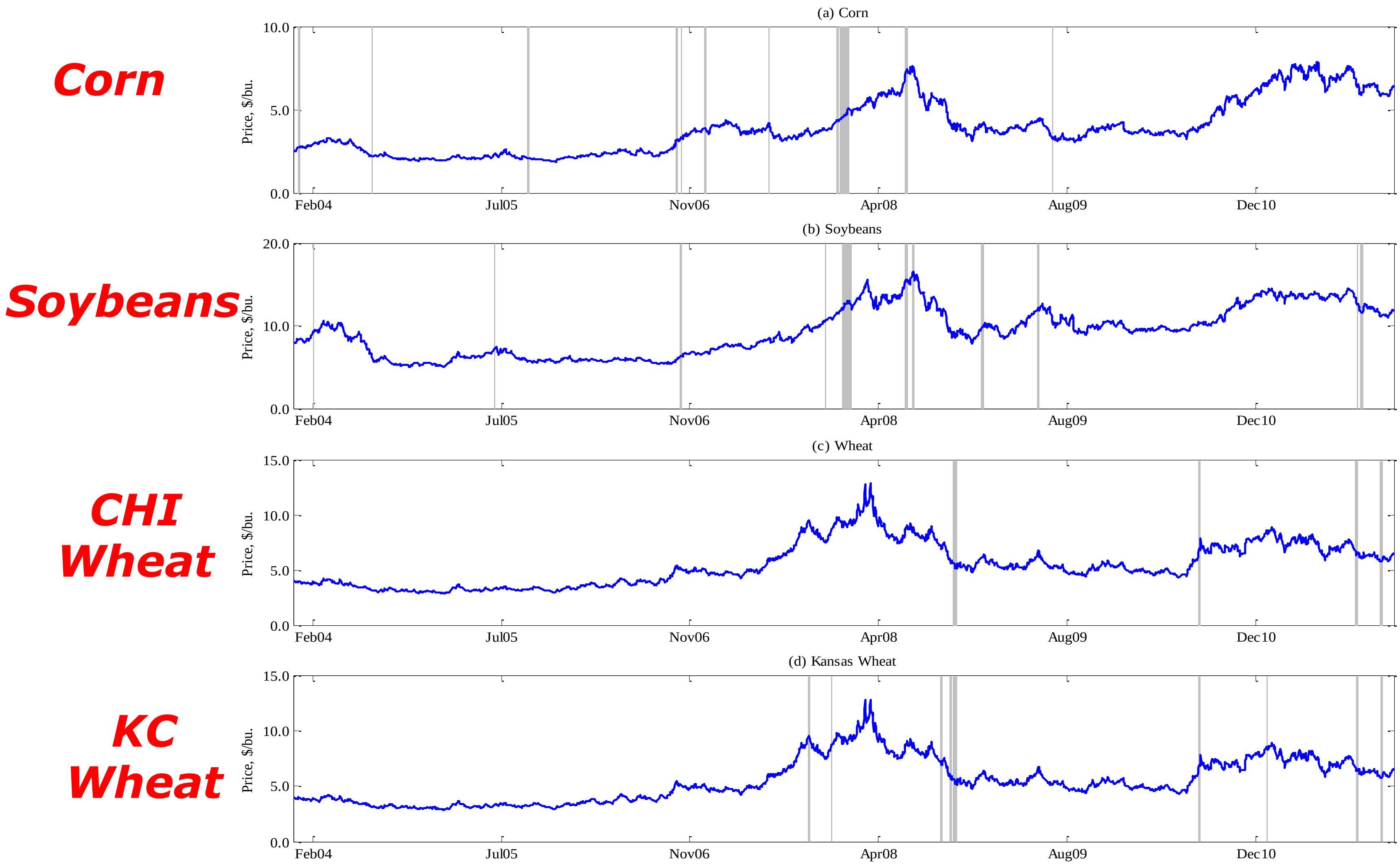


Bubble Periods in Grain Futures Prices, 2004-2012



Source: Etienne, Irwin, and Garcia. “Bubbles in Grain Futures Markets: When Are They Most Likely to Occur?” 2013.

What Have We Learned?

- Index investment did not drive agricultural price spikes
- Agricultural futures markets were not excessively speculative
- Price bubbles in agricultural futures were infrequent, small, and short-lived

What Have We Learned?

- Index investment did not drive agricultural price spikes
- Agricultural futures markets were not excessively speculative
- Price bubbles in agricultural futures were infrequent, small, and short-lived

"The Masters Hypothesis is not a valid characterization of reality"

Where to From Here?

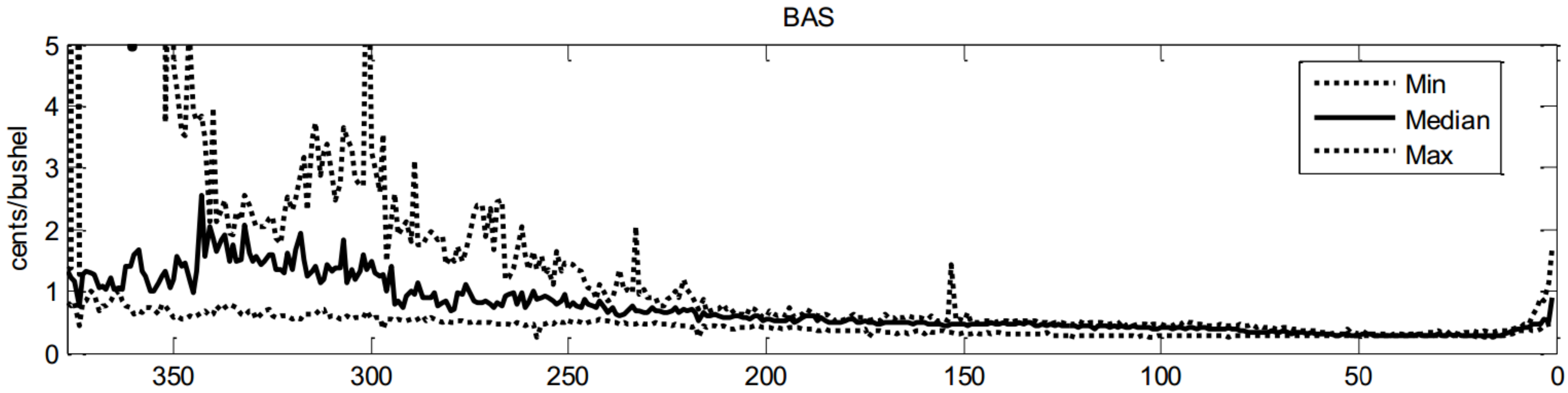
"…any effects of excessive speculation on food prices likely occur at **high frequencies**. Such effects would imply that futures markets do not function efficiently as **venues of price discovery**. For this reason, studying price discovery provides a promising path for future research on the connection between futures market trading and prices."

---Aaron Smith (2012)

http://optionalpha.com/wp-content/uploads/2011/11/High-Frequency-Trading.jpg

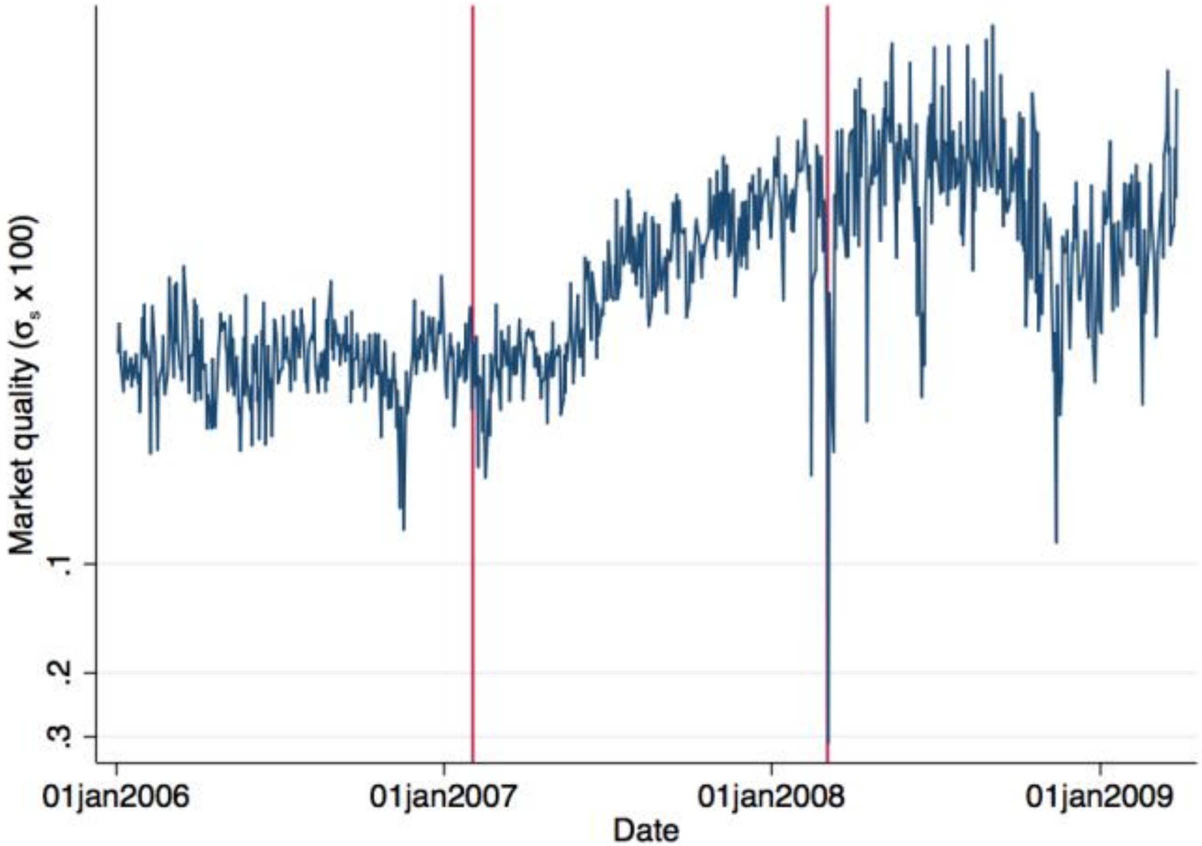
http://www.dvdbeaver.com/film2/DVDReviews33/a%20trading%20places%20blu-ray/21_TradingPlaces_BD.jpg

Bid-Ask Spreads in the Electronic Corn Futures Market, 2009 Contracts



Source: Wang, Garcia, and Irwin. “The Behavior of Bid-Ask Spreads in the Electronically Traded Corn Futures Market.” 2013.

Quality of Tick-by-Tick Price Discovery in the Cotton Futures Market, January 2006 – March 2009



Source: Janzen, Smith, and Carter. "The Quality of Price Discovery Under Electronic Trading: The Case of Cotton Futures." 2013.