How Agricultural Economics Saved Futures Markets: An Untold Story of Leadership

Scott H. Irwin
“The task of a leader is to get his people from where they are...to where they have not been.”
---Henry Kissinger

“Innovation distinguishes between a leader and a follower.”
---Steven Jobs
1. Show how three relatively obscure agricultural economists played a leading role in changing the perception of futures markets from mere gambling dens to invaluable market institutions.

2. Draw parallels to the current debate about the role of speculation in commodity markets.
Buyer or “Long”  
Seller or “Short”
June 1st

Buyer or “Long” - $2

Seller or “Short” + $2
Buyer or “Long”

$2

Seller or “Short”
Return to Record Growth

Global futures and options trading from 2004 to 2010

<table>
<thead>
<tr>
<th>Year</th>
<th>Contracts Traded (in billions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2004</td>
<td>8.86</td>
</tr>
<tr>
<td>2005</td>
<td>9.97</td>
</tr>
<tr>
<td>2006</td>
<td>11.87</td>
</tr>
<tr>
<td>2007</td>
<td>15.53</td>
</tr>
<tr>
<td>2008</td>
<td>17.68</td>
</tr>
<tr>
<td>2009</td>
<td>17.74</td>
</tr>
<tr>
<td>2010</td>
<td>22.30</td>
</tr>
</tbody>
</table>

Source: Futures Industry Association
<table>
<thead>
<tr>
<th>Category</th>
<th>Jan-Dec 2009</th>
<th>Jan-Dec 2010</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Equity Indices</td>
<td>6,382,027,655</td>
<td>7,413,788,422</td>
<td>16.2%</td>
</tr>
<tr>
<td>Individual Equities</td>
<td>5,588,884,611</td>
<td>6,285,494,200</td>
<td>12.5%</td>
</tr>
<tr>
<td>Interest Rate</td>
<td>2,467,763,942</td>
<td>3,208,813,688</td>
<td>30.0%</td>
</tr>
<tr>
<td>Foreign Currency</td>
<td>992,397,372</td>
<td>2,401,872,381</td>
<td>142.0%</td>
</tr>
<tr>
<td>Ag Commodities</td>
<td>927,693,001</td>
<td>1,305,384,722</td>
<td>40.7%</td>
</tr>
<tr>
<td>Energy Products</td>
<td>657,025,702</td>
<td>723,590,380</td>
<td>10.1%</td>
</tr>
<tr>
<td>Non-Precious Metals</td>
<td>462,823,715</td>
<td>643,645,225</td>
<td>39.1%</td>
</tr>
<tr>
<td>Precious Metals</td>
<td>151,512,950</td>
<td>175,002,550</td>
<td>15.5%</td>
</tr>
<tr>
<td>Other</td>
<td>114,475,070</td>
<td>137,655,881</td>
<td>20.2%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>17,744,604,018</strong></td>
<td><strong>22,295,247,449</strong></td>
<td><strong>25.6%</strong></td>
</tr>
</tbody>
</table>

Source: Futures Industry Association
Breakdown by Region

*Jan-Dec 2010*

- North America: 32.2%
- Asia Pacific: 39.8%
- Europe: 19.8%
- Latin America: 6.8%
- Other: 1.4%

Source: Futures Industry Association
The Populist Era: 1885 - 1915
**Populist Era Views on Futures Markets**

- “a den of speculators whose operations [were]... pernicious” (Hume, 1888)
- “an engine of wrong and oppression” (Committee on Agriculture, 1892)
- capable of introducing “gradual misery and ruin... upon all classes” (Smith, 1893)
- “wind wheat” and “wind dealing” “enabled people to sell what they did not possess” (Hooker 1901)
- moneyed interests “juggl[ing] quotations” and creating and “tak[ing] advantage of fluctuations” (Buck, 1913)

*as quoted in Jacks (2007)*
Fig. 3. Wheat futures prices, 4-week horizon and at expiration, 1880–1890

Source: Santos (2011)
Well, if you can't pay more, eat less!

Wickersham unable to find remedy in statutes, Chairman Scott for the House Agricultural Committee introduces measure to make selling option in food a crime.
Well, if you can’t pay more, EAT LESS!

Wickersham unable to find remedy in statutes. Chairman Scott for the House Agricultural Committee introduces measure to make selling option on food a crime.

The Pit
A Story of Chicago

Frank Norris
### Major 19th and 20th Century Episodes of Attacks on Commodity Futures Markets

<table>
<thead>
<tr>
<th>Episode</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Grange lobbies for a bill defining all futures trading as gambling</td>
<td>1874</td>
</tr>
<tr>
<td>Washburn bill introduced into U.S. Congress to levy 10% tax on futures</td>
<td>1892</td>
</tr>
<tr>
<td>trades</td>
<td></td>
</tr>
<tr>
<td>Futures trading banned in Germany</td>
<td>1897</td>
</tr>
<tr>
<td>Trading in options on commodity futures banned in U.S.</td>
<td>1936</td>
</tr>
<tr>
<td>Bills introduced into U.S. Congress banning onion and potato futures</td>
<td>1955</td>
</tr>
<tr>
<td>trading</td>
<td></td>
</tr>
<tr>
<td>Onion futures trading banned in U.S.</td>
<td>1958</td>
</tr>
</tbody>
</table>
Meet Our Three Heroes
Holbrook Working (1895-1985)

- Born in Colorado in 1895
- PhD from Wisconsin in 1921
- Joined faculty of Food Research Institute at Stanford in 1925
- Retired in 1960
THE price spread between July and September wheat is determined primarily by current domestic supplies of all wheat in the United States, conveniently measurable in terms of July 1 carryover. Early in the season the spread may show little relation to the statistical supply position, but by June the relation normally becomes very close. Given an accurate appraisal of the domestic supply position, the price spread in June may usually be predicted with great accuracy.

**Chart 7.** Relation between Chicago July-September Spread in June and Total United States Wheat Stocks, July 1*  
(Cents per bushel; million bushels)
PRICE RELATIONS BETWEEN JULY AND SEPTEMBER WHEAT FUTURES AT CHICAGO SINCE 1885

THE price spread between July and September wheat is determined primarily by current domestic supplies of all wheat in the United States, conveniently measurable in terms of July 1 carryover. Early in the season the spread may show little relation to the statistical supply position, but by June the relation normally becomes very close. Given an accurate appraisal of the domestic supply position, the price spread in June may usually be predicted with great accuracy.

WHEAT STUDIES OF THE FOOD RESEARCH INSTITUTE

VOL. IX, NO. 6 (Price $1.00) MARCH 1933

CHART 7.—RELATION BETWEEN CHICAGO JULY–SEPTEMBER SPREAD IN JUNE AND TOTAL UNITED STATES WHEAT STOCKS, JULY 1*

(Cents per bushel; million bushels)

“The Working Curve”
SPELULATION ON HEDGING MARKETS

Though statistical evidence, accumulated first by the Grain Futures Administration, predecessor of the present Commodity Exchange Authority, long ago afforded proof to the contrary, it is still rather generally believed that futures markets are primarily speculative markets. They appear so on superficial observation, as the earth appears, from such observation, to be flat.

*Data from [48, p. 208] and like data for month-ends. Unbalanced short hedging is the total of open short-hedging contracts, less an appropriate fraction of open long-hedging contracts.
“Futures prices tend to be highly reliable estimates of what should be expected on the basis of *contemporarily available information* concerning present and probable future demand and supply; price changes are mainly appropriate market responses to changes in information on supply and demand prospects.”
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contemporarily available information concerning present and probable future demand and supply; 
price changes are mainly appropriate market responses to changes in information on supply and demand prospects.”
**Roger W. Gray (1921-1996)**

- Born in Illinois
- PhD from Minnesota in 1953
- Joined faculty of Food Research Institute at Stanford in 1954
- Retired in 1985
The Onion Futures Controversy

TIME Magazine

COMMODITIES: Odorous Onions

July 2, 1956
“Speculative activity in the futures markets causes such **severe** and **unwarranted fluctuations** in the price of cash onions as to require **complete prohibition** of onion futures trading in order to assure the orderly flow of onions in interstate commerce.”

---U.S. Senate Report No. 1631, May 6, 1958
§ 13–1. Violations, prohibition against dealings in onion futures; punishment

(a) No contract for the sale of onions for future delivery shall be made on or subject to the rules of any board of trade in the United States.
The Onion Futures Act
August 28, 1958
The Onion Futures Act
August 28, 1958
ONIONS REVISITED

ROGER W. GRAY
Stanford University

Introduction

THE DEATH SENTENCE meted out to the onion futures market in 1958 (Public Law 85-839) was almost inevitably destined to provide further evidence regarding the truth of the charges made against it.
July 8, 2008

The Onion Ringer

Congress is back in session and oil prices are still through the roof, so pointless or destructive energy legislation is all but guaranteed. Most likely is stiffer regulation of the futures market, since Democrats and even many Republicans have so much invested in blaming "speculators" for $4 gas.

As it happens, though, there's a useful case-study in the relationship between futures markets and commodity prices: onions. Congress might want to brush up on the results of its prior antispeculation mania before it causes more trouble.
Thomas A. Hieronymus
(1919-2001)

- Born in Illinois
- PhD from Illinois in 1949
- Joined faculty of University of Illinois in 1949
- Retired in 1981
Thomas A. Hieronymus

ECONOMICS OF FUTURES TRADING
For Commercial and Personal Profit

ABOUT THE AUTHOR

Dr. Thomas A. Hieronymus is among the world's leading authorities in the areas of commodity futures trading and price analysis. He has been a Professor of Agricultural Economics at the University of Illinois since 1949 and has written extensively for both academic and business consumption. His writings on commodity matters are in continuous demand by government agencies, commodity exchanges and commercial interests.

His activities, concurrent with University duties, include cooperative research and consultative work with the Economic Research Service, Commodity Stabilization Service, and the Foreign Agricultural Service of the U.S. Dept. of Agriculture. He has served as chairman of the Educational Advisory Committee of the Chicago Board of Trade and on the Education Committee of the Chicago Mercantile Exchange. He has participated in numerous seminars and symposia for these exchanges as well as for the Minneapolis Grain Exchange and the New York Coffee and Sugar Exchange.

Dr. Hieronymus's stature in the commodity world also is evidenced by his popularity as a speaker. He has made repeated appearances before the Commodity Clubs of New York and Chicago, the American Feed Manufacturers Association, American Soybean Association, National Association of Margarine Manufacturers, American Farm Bureau Federation, American Meat Institute, and numerous other national, state and regional commodity associations. Most of the papers of these presentations have been published in national publications. In addition to his courses on futures trading, marketing and prices at the University of Illinois, he has taught adult courses to groups of farmers, merchants, warehousemen, processors and bankers.

From his consulting experience with processors, merchants and commission houses, he gained the first-hand knowledge that enabled him to tell the story of the markets, as they are, wants and all, with clarity and good humor.

ABOUT THE PUBLISHERS

It is appropriate that this book by a leading authority on futures markets should be published by the widely-recognized publisher of commodity books and services. Commodity Research Bureau, Inc., has been serving the commodity trades, commission houses and their customers since 1934. Publications include the famed COMMODITY YEAR BOOK, published annually. MODERN COMMODITY FUTURES TRADING, FORECASTING COMMODITY PRICES, FASTEST GAME IN TOWN, COMMODITY CHART SERVICE, FUTURES MARKET SERVICE, DAILY COMMODITY COMPUTER TREND ANALYZER, and OTHER SPECIALIZED COMMODITY PUBLICATIONS. Complete information is available from the publishers on request.

Commodity Research Bureau, Inc.
ONE LIBERTY PLAZA, NEW YORK, N.Y. 10006
““For many years the anti-futures trading arguments tended to prevail so that speculation was treated as a necessary evil that accompanied the desirable hedging process. During the last decade the balance appears to have shifted so that a favorable view is more widely held. It is doubtful that the favorable view is yet in the majority but it is generally held by students of futures markets and increasingly held by members of Congress and the CFTC.” (pp. 298)
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**Reuters Jeffries/CRB Commodity Price Index, January 2000-February 2009**

**Investment in Commodity Index Funds, 2000-2009**

Source: Barclays
Investment in Commodity Index Funds, 2000-2009

Source: Barclays
“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
“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.”
Futures Imperfect

By DWIGHT R. SANDERS and SCOTT H. IRWIN
Published: July 20, 2008

AS costs for energy and food rise, the impact that speculators have on commodity prices is being debated by politicians and the public. The recent volatility in crude oil prices — increasing to nearly $150 per barrel and then falling to below $130 — has only heightened these concerns.
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 markets, had gone too far, too fast. This paper provides evidence that this argument is unfounded.

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. 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

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1 In reality, a variety of investment manager are lumped under the heading "commodity index fund." Individuals may move 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 index funds whose returns are tied to a commodity index. Exchange-traded funds (ETFs) and structured notes (STNs) 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 Langhak and Yavas (2008) and CFTC (2008) for further details.
CBOT Wheat Futures Prices and Index Trader Net Long Positions, January 2004-September 2009

Index Trader Open Interest
(left scale)

Nearby Contract Price
(right scale)
**Relationship between CBOT Wheat Price Changes and Index Trader Net Long Positions, June 2006-December 2009**

\[ y = -0.000005x - 0.1123 \]

\[ R^2 = 0.0011 \]
scape·goat  [skeyp-goht]  Show IPA

noun

1. a person or group made to bear the blame for others or to suffer in their place.

2. *Chiefly Biblical*. a goat let loose in the wilderness on Yom Kippur after the high priest symbolically laid the sins of the people on its head. Lev. 16:8,10,26.
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.
The Dodd-Frank Act
July 21, 2010

(4) in paragraph (9) (as redesignated by paragraph (1)), by striking “except onions” and all that follows through the period at the end and inserting the following: “except onions (as provided by the first section of Public Law 85–839 (7 U.S.C. 13–1)) and motion picture box office receipts (or any index, measure, value, or data related to such receipts), and all services, rights, and interests (except motion picture box office receipts, or any index, measure, value or data related to such receipts) in which contracts for future delivery are presently or in the future dealt in.”;
The A. Bisporigera Prize
(aka ‘The Destroying Angel’)
Thank You!!