



The Levy Economics Institute of Bard College

Public Policy Brief

No. 96, 2008

THE COMMODITIES MARKET BUBBLE

Money Manager Capitalism and the
Financialization of Commodities

L. RANDALL WRAY

**THE COMMODITIES
MARKET BUBBLE**

Money Manager Capitalism and the
Financialization of Commodities

L. RANDALL WRAY

The Levy Economics Institute of Bard College, founded in 1986, is an autonomous research organization. It is nonpartisan, open to the examination of diverse points of view, and dedicated to public service.

The Institute is publishing this research with the conviction that it is a constructive and positive contribution to discussions and debates on relevant policy issues. Neither the Institute's Board of Governors nor its advisers necessarily endorse any proposal made by the authors.

The Institute believes in the potential for the study of economics to improve the human condition. Through scholarship and research it generates viable, effective public policy responses to important economic problems that profoundly affect the quality of life in the United States and abroad.

The present research agenda includes such issues as financial instability, poverty, employment, gender, problems associated with the distribution of income and wealth, and international trade and competitiveness. In all its endeavors, the Institute places heavy emphasis on the values of personal freedom and justice.

Editor: W. Ray Towle

Text Editor: Barbara Ross

The Public Policy Brief Series is a publication of The Levy Economics Institute of Bard College, Blithewood, PO Box 5000, Annandale-on-Hudson, NY 12504-5000. For information about the Levy Institute, call 845-758-7700 or 202-887-8464 (in Washington, D.C.), e-mail info@levy.org or visit the Levy Institute website at www.levy.org.

The Public Policy Brief Series is produced by the Bard Publications Office.

Copyright © 2008 by The Levy Economics Institute. All rights reserved. No part of this publication may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopying, recording, or any information-retrieval system, without permission in writing from the publisher.

ISSN 1063-5297

ISBN 978-1-931493-80-2

Contents

Preface	5
Dimitri B. Papadimitriou	
The Commodities Market Bubble	7
L. Randall Wray	
About the Author	54

Preface

Money manager capitalism has resulted in a series of boom-and-bust cycles in equities, real estate, and commodities. Because subsequent cycles have been increasingly damaging to the U.S. economy, we are now at the point where we are experiencing the most severe financial crisis since the Great Depression. Hasty interventions (bailouts) by Congress, the Treasury, and the Federal Reserve are attempting to keep the financial industry solvent, in the belief that government inaction would result in a prolonged recession.

Levy Institute scholars have recognized the problems confronting the U.S. economy for some time, and we have warned about severe disruptions in the marketplace in the absence of public policy reform. In this topical brief by Senior Scholar L. Randall Wray, he concludes that policymakers must fundamentally change the structure of our economic system, break the cycle of booms and busts, and reduce the influence of managed money, as well as prevent the next speculative boom in yet another asset class.

Wray analyzes various explanations for the recent explosion in commodity prices: supply and demand, market manipulation, and financial speculation. He finds that the rise of investments in the commodity futures markets (“index speculation”) has contributed the most to higher commodity prices. He criticizes the Commodity Futures Trading Commission (CFTC), which actively promoted the notion that commodity futures are an asset class while ignoring the price effects from speculative inflows of managed money along with its congressional mandate to ensure that commodities prices reflect the laws of supply and demand.

Traditionally, futures markets have been used to hedge price risk and for “price discovery.” However, in opposition to traditional economic theory, price changes in the commodity markets originate in the futures markets and are transmitted directly to the spot markets. And, in contrast to prior commodity booms, futures prices have been above spot prices. When spot

prices are set in reference to futures prices, a speculative boom is triggered, because rising spot prices validate expectations and fuel greater demand for futures contracts. This response suggests a market that is dominated by speculative demand (i.e., managed money from index speculators).

The commodity markets deviate from the perfectly competitive models of economic theory and generate perverse incentives to incur excess risk. There is substantial evidence that prices are administered rather than set by the fundamental forces of supply and demand. Many reinforcing factors have created a perfect storm in which all participant interests are in continued price gains.

Wray determines that speculation, rather than fundamentals, dominates the boom in the commodity futures markets (contrary to the notions of both NYMEX and the CFTC). Supply is largely controlled to set the price, while demand from end users is supplemented by the demand from arbitragers, manipulators, hedgers, speculators, and index “investors.” Furthermore, CFTC regulations have allowed pension and other passive investment funds to surge into the commodity markets. The end users of commodities cannot win by hedging because they continue to pay progressively higher prices. Moreover, the dominant players in the futures markets have no interest in taking possession of the underlying physical commodities.

Policymakers should not allow money managers to drive commodity prices beyond the reaches of consumers, says Wray. He recommends an increase in the CFTC budget so that the agency can broaden its mission, provide greater transparency, and limit the effects of speculation on commodity prices. He also recommends that Congress begin considering its response to the inevitable collapse of commodity prices.

Wray believes that bailouts will be needed, but with strings attached in the form of regulatory constraints. The proposed Commodity Speculation Reform Act (July 2008) to amend the Commodity Exchange Act of 1936 would accomplish several of the objectives outlined in this brief. However, the proposed act does not address the bigger problem: the propensity of managed money to destabilize one market after another.

As always, I welcome your comments.

Dimitri B. Papadimitriou, *President*

October 2008

The Commodities Market Bubble

We do live in interesting times. Over the past decade, we've seen what are arguably the biggest equity, housing, and commodities booms in U.S. history. Could it be a coincidence? I've previously argued that the U.S. real estate bubble was not an isolated event that resulted from spontaneous mass delusion or excessive monetary ease, and, indeed, that the financial crisis spawned by problems in subprime mortgages would spread far beyond housing debt (Wray 2008). Following Hyman P. Minsky, I blamed money manager capitalism—the current economic system that dominates the global economy, characterized by highly leveraged funds seeking maximum returns in an environment that systematically underprices risk. In this paper, I will argue that the commodities boom is no different. Soaring energy and commodity prices are the direct product of a boom-bust cycle that is getting progressively more damaging to the economy.

With little regulation or supervision of financial institutions, money managers have concocted increasingly esoteric and complex instruments and practices that spread as quickly as a deadly virus in a sci-fi flick. Contrary to what is taught in economics and business courses, markets generate perverse incentives for excess risk, punishing those who are reluctant to join the bandwagon with relatively low returns. Those who do play along are rewarded, because highly leveraged funding drives up prices for the underlying assets—whether they are dot-com stocks or Las Vegas homes—until the inevitable collapse. But memories are short, dumb money is ample, and bailouts are frequent. Since each bust wipes out only a portion of the managed money, a new boom inevitably rises like Phoenix out of the ashes. Commodities are simply its latest reincarnation.

To make matters worse, the consequence of each boom (and bust) is more severe than the previous one. It is fairly easy to look back with some amusement at the fate of *pets.com*. Do we really care that a handful of

geeky Internet gazillionaires made and lost fortunes based on business models fabricated to burn through foolish people's money? We might even be able to overlook the recession that followed the NASDAQ crash in April 2000. However, it is not so easy to ignore the real suffering of homeowners across the nation as they face foreclosure and eviction. The "financialization" of America's residential real estate, which turned homes over to a giant international casino, will undoubtedly impose large economic and social costs for many years to come. Worse still is the financialization of food and energy. Many Americans are being forced to cut back on driving, heating their homes, or even buying groceries at the supermarket. The world's poor, meanwhile, are starving, as managed money puts the price of food out of reach (Pimentel 2008, Steinberg 2008).

To be sure, it is very difficult to determine how much fault should be placed in the laps of money managers, because there are a number of forces coming together in a "perfect storm" to drive up commodity prices. Still, 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. Further, there is every reason to believe that this boom is going to crash in a particularly ugly way, so it is not too early to begin formulating the proper policy response to the coming collapse. Finally, if history is any guide (as former Federal Reserve Chairman Alan Greenspan was fond of putting it), we can expect the managed money that survives the coming crash to search for yet another asset class. Hence, policy ought to be reformulated to try to prevent the next speculative boom.

We will begin with an analysis of three explanations for the explosion of commodity prices in recent years. While these are sometimes presented as rivals, I will argue that simply because one explanation is valid, the others are not necessarily incorrect. Indeed, there are synergies at work, such that the forces driving prices higher reinforce one another. We will first look at the typical explanation provided by economists: it is all a simple matter of supply and demand. Supplies are naturally constrained, while demand has been climbing rapidly. A nod is usually given in the direction of the booming economies of India and China, along with the warning that any attempt to regulate or supervise financial and commodity markets will just make things worse. All that can be done is to encourage the supply side

by, for example, opening up the Arctic to more resource exploitation. The market will then efficiently allocate resources among competing wants.

The second story involves market manipulation by commodity producers and traders. Indeed, in recent weeks the Justice Department has hinted at wide-ranging investigations, and the Commodity Futures Trading Commission (CFTC) has announced actions taken against traders who conspired to raise oil prices. As we know, there is a long history of price manipulation in the metals market (readers will recall the Hunt brothers' attempt to corner the silver market), and the volumes on these markets are small enough that it is possible to hide an inventory sufficient to force prices up (a point even financial columnist Paul Krugman admits, although he prefers the supply and demand story).

Finally, the most popular explanation in the nation's capital today is that financial speculation in commodity futures markets is the real culprit. Both the Senate and the House have held hearings into this issue, with impassioned testimony presented on both sides. So far, most of the discussion has centered around oil prices, with airlines, truckers, and other users of fuel blaming speculators, while financial market representatives (as well as most economists) reject these claims as naïve. However, the boom in commodity prices is broad-based, so any analysis must go beyond oil.

I will argue that all three explanations are plausible, and the identified mechanisms, mutually reinforcing. However, it appears quite likely that the rise of investments in commodity indexes—a particular kind of speculation that has been called “index speculation”—is the most important cause. Further, commodities merely represent the latest asset class identified by money manager capitalism as ripe for financialization. On the one hand, this means that the problem is mostly human made. Rising energy and food prices do not result, for the most part, from any “natural” shortages. It would thus appear relatively easy to reverse price trends. On the other hand, it means that the problem is systemic—it results from the operation of the type of capitalism we have inherited. Only fundamental changes to the structure of our economic system can break the cycle of boom and bust, and halt the continual search for new asset classes. It won't be easy, but it isn't impossible.

A final note: as this brief is being prepared for publication, commodity prices appear to have reversed course. While this provides welcome

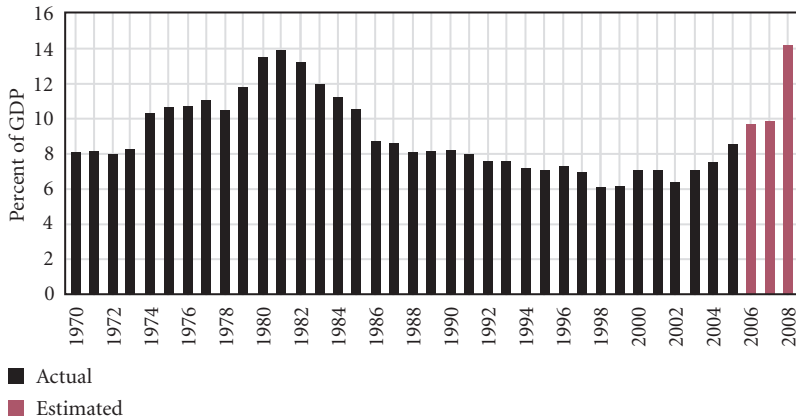
relief, it does not mean we are out of the woods yet. Falling commodity prices will generate problems; production decisions as well as portfolio allocations have been made on the expectation of rising prices. A lot of leveraged money has gone into commodity markets (including physicals as well as futures), so just as falling real estate prices are devastating for households, for the real estate sector generally, and for financial markets, there will be significant fallout from the slump in commodity prices. Further, without fundamental reform, we can expect managed money to begin its search for yet another asset class to financialize. Just as managed money moved from equities, to real estate, and, finally, to commodities, a collapse of this market will push funds into yet another. Thus, a policy response is still necessary.

Supply and Demand

Food riots. Grounded jets. Plummeting SUV sales. Pictures of starving children around the world. Rising prices at the pump and in the grocery aisles. The return of stagflation and the misery index (the sum of inflation and unemployment). We all see the consequences of rising commodity prices. Figure 1 shows that spending on energy in the United States has risen to an estimated 14 percent of GDP in 2008—even more than during the last energy crisis. This time around, that is supplemented by unprecedented across-the-board inflation of commodity prices. Even as the economy slips deeper into recession, policy is hamstrung by memories of the last bout of double-digit inflation almost 30 years ago.

We “know” from our “principles of economics” textbook that the cause must lie somewhere between the “scissors” of supply and demand. Excess demand drives prices higher; fortunately, the process is self-correcting, as higher prices depress demand and call forth more supply. This could take some time to return to equilibrium, especially if government policies artificially inflate demand or restrict supply. For example, in a “misguided” attempt to help poor families buy food, many governments around the world have subsidized purchases—providing extra income that only helps to drive prices even higher. Or, government restricts the supply response by prohibiting oil exploration and drilling in protected wildernesses. Some governments have engaged in “beggar thy neighbor” policy by restricting

Figure 1 Energy Consumption in the United States



Sources: Energy Information Administration and calculatedrisk.blogspot.com

food exports to preserve domestic production for their own citizens, thereby worsening food shortages (and driving up prices) elsewhere. The solution is to allow rising prices to diminish quantity demand, to encourage substitution into commodities that are more abundant, and to increase supply. In short, let the market work its wonders. Krugman (2008) has been one of the most prominent proponents of this view.

We will look in some detail at commodity indexes that include prices of about two dozen basic commodities. For the moment, I just want to provide some data on the dizzying acceleration of price increases. Most of the press has focused on rising oil, corn, and gold prices. But, in fact, the boom has taken place across a wide range of commodities, and, indeed, is unprecedented in scope and size. According to an analysis by market strategist Frank Veneroso (2008d), over the course of the 20th century, there were only 13 instances in which the price of a single commodity rose by 500 percent or more. For example, the price of sugar rose 641 percent in 1920, and in the same year, the price of cotton rose 538 percent. In 1947, there was a commodities boom across three commodities: pork bellies (1,053 percent), soybean oil (797 percent), and soybeans (558 percent). During the Hunt brothers episode, in 1980, silver prices were driven up by 3,813 percent. Now, if we look at the current commodities boom, there are already eight commodities whose price

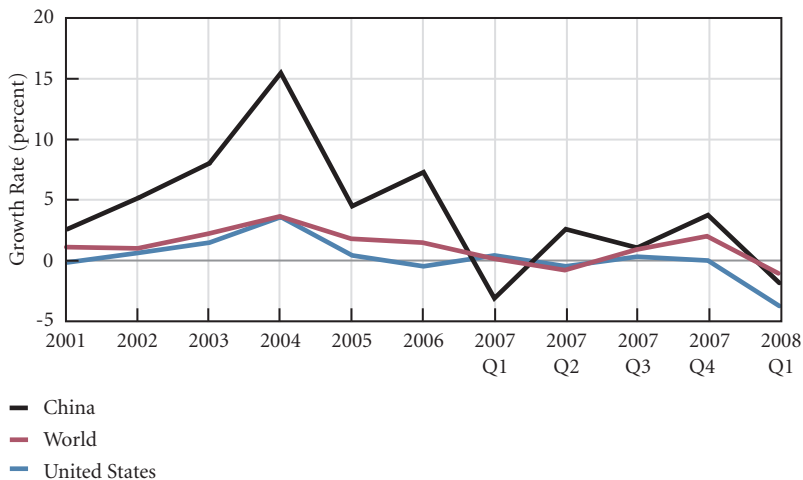
rise had reached 500 percent or more by the end of June: heating oil (1,313 percent), nickel (1,273 percent), crude oil (1,205 percent), lead (870 percent), copper (606 percent), zinc (616 percent), tin (510 percent), and wheat (500 percent). Many other agricultural, energy, and metals commodities have also had large price hikes, albeit below that threshold (for the 25 commodities typically included in the indexes, the average price rise since 2003 has been 203 percent) (Masters and White 2008). There is no evidence of any other commodities price boom to match the current one in terms of scope.

It is true that there have been recent supply problems associated with some of these commodities. For example, there were labor disputes in Chilean copper mines that interrupted supply. An unusual number of oil refineries have been temporarily shut down, and there has been a longer-term trend of permanent closures and consolidation in the refinery industry. There are also all of the “peak oil” arguments (e.g., global production will begin to fall due to resource constraints), although if it is true that production is nearing its technical maximum, the price rise should be gradual rather than abrupt. Still, economists argue that if demand is extremely price inelastic (consumers of the commodities do not reduce purchases even as prices rise), then prices could rise sharply whenever demand exceeds supply.

Most of those favoring the supply and demand story look to the demand side. In particular, this camp maintains that the rapid development of China and India is driving demand to increase in the face of a fairly inelastic supply, thereby boosting prices (Gros 2008). Add supply constraints to the mix, and prices could rise quickly. While this story is appealing, it is also flawed. World growth has not been unusually high—rapid expansion in parts of Asia is offset by sluggish economies in Africa and Europe. According to the World Bank’s estimates of inflation-adjusted GDP growth, there appears to be nothing unusual in the current growth cycle, which started from very low growth in 2001 (below 2 percent) and has climbed to nearly 4 percent at its peak (Veneroso 2008a). While that might be considered respectable, peaks in the 1980s were considerably higher, while those achieved in the 1960s were almost twice as high.

Of course, not all growth is the same, and it is conceivable that the development path chosen by China, in particular, generates high consumption of oil and other commodities. However, the United States is also profligate in its

Figure 2 Growth in Oil Demand—United States, China, and World



Source: Energy Information Administration

consumption of some of these commodities—it is quite energy inefficient (using more oil per unit of GDP than other developed nations), and also inefficient in its use of some agricultural commodities (its grain and soybeans run through cows—losing 90 percent of the food value—or, increasingly, through its cars, rather than more efficiently through its people). But even as the U.S. economy slowed considerably over the past year, prices remained firm. Americans *have* responded to rising gasoline prices in the manner economists expect, with consumption falling sufficiently to offset China’s increased use of crude oil—yet crude prices barely responded.¹ Figure 2 shows U.S., Chinese, and global oil consumption since 2001. While it is true that China’s demand was growing very rapidly early in this decade, the growth rate fell off as oil prices rose. U.S. consumption stabilized by mid-decade, long before oil prices peaked.

Further, if the underlying cause had been “peak oil” and the *fear* of falling supply that drove prices, that should have been relieved to some extent by new discoveries of oil (e.g., in Brazil and Greenland; indeed, proven oil reserves have been increasing at a rate of 2.5 percent per year since 2004, faster than consumption has grown) or expanded exploitation of substitutes (oil shales in the United States, and oil sands in Venezuela and Canada;

together, these exceed the total proven global oil reserves, and the cost of production is as low as \$14.50 per barrel equivalent) (Eckaus 2008). Moreover, even if oil is running out, according to Hotelling's rule (commonly applied to depletable resources), oil prices should rise at the rate of interest if production costs remain constant. Obviously, prices have been rising very much faster than that. Finally, it has long been understood that the long-run price of a commodity produced under competitive conditions should approach the marginal cost of production; for many commodities, those costs actually fall in real terms due to innovations to the production process—so that market prices rise more slowly than overall inflation (Masters and White 2008). This is why investors have long shunned commodities as an inflation hedge. To the degree that oil markets as well as the markets for many other commodities are not competitive, these constraints on price rises may not apply. Still, there is little reason to attribute the tremendous price hikes experienced in the past few years to “peak oil” fears.

MIT's Richard Eckaus (2008) also dispenses with the argument that the oil price boom is due to political instability in the Middle East. Nothing significant has happened in the region; indeed, tensions between Israel and Syria have cooled a bit. While Iran has made the news, it has never threatened to cut off supplies, and has even announced plans to increase production by a billion barrels daily. Dollar depreciation is often tagged as a contributing cause to price hikes, as producers try to maintain purchasing power of their dollar revenues. Yet the dollar fell by only 10 percent against the euro between 2004 and mid-2008, even as oil prices quadrupled over the same period.

In any case, it is a bit too facile to resort to “supply and demand” explanations. Many who have used this argument graphed crude oil supplies with a demand curve and showed that they more or less match. Since supply just barely kept pace with demand, higher prices were needed to meet the demand. But it is always true that for every seller there must have been a buyer, or the transaction would not have occurred—something that holds no matter what the price is. Simply because supply and demand must be equal at the market price tells us little about the determination of that price.

If markets are perfectly competitive (i.e., they contain so many buyers and sellers that none can influence the price), then the story provided by economists makes some sense—demand might have grown faster than supply. Under idealized conditions, markets will then adjust quantity demanded

and quantity supplied, with sellers and buyers reacting to price. Trouble is, commodity markets—especially oil—are far from perfectly competitive. Many are produced in conditions of oligopoly (a few producers—OPEC and Russia in the case of oil) and/or are sold to oligopsonists (a few buyers—ADM and Cargill in the case of grains), who mediate between oil producers and consumers. In addition, many commodities are targeted by government policy. As crude oil prices rose, the U.S. Congress decided to subsidize biofuels production on a massive scale, boosting corn and soybean prices even as biofuels production increased the use of oil (given U.S. agricultural practices, production of the crops is energy-intensive) (Mufson 2008). And, as mentioned above, when food shortages appeared, nations began to prohibit food exports—driving global prices higher. Attributing these price pressures to “supply and demand” is misleading.

Further, economists’ arguments ignore impacts of expected future prices on production today. Even if prices are rising, producers might not increase production if they believe it is best to wait until prices climb even higher. Indeed, the Saudis have made precisely that argument: if all of the peak-oil arguments are correct, then prices in the future will be very much higher than they are today; hence, it is best to leave the oil in the ground now, so that Saudis in the future can enjoy higher prices and living standards.² Economists also ignore the possibility that an intermediary (we could use a neutral term like “arbitrager,” or one with a negative connotation: “speculator”) might take the supply off the market to wait for higher prices tomorrow. If enough of the supply is removed, of course, this will actually *accelerate* price hikes (we would use the nasty term “manipulator” here). Yet none of these factors is considered in the simple models taught in economics textbooks. An effective framework must go beyond the conventional wisdom and consider these possibilities. In other words, we should be skeptical of the simplistic application of inappropriate models to real-world phenomena.

Veneroso’s study of copper markets is particularly intriguing. Historically, copper use and price has been a very good predictor of recession, because copper feeds directly into residential construction, which itself is very procyclical. (Indeed, UCLA economist Edward E. Leamer [2007] has provided an exhaustive demonstration of this correlation, and has gone so far as to claim that the “business cycle” is really a residential real estate

construction cycle.) However, in the current cycle, copper has defied the usual trend. As the U.S. housing boom turned to bust, copper prices continued to rise. As Veneroso argues, data on consumption of many commodities are not good, and there is no direct measure of the global demand for copper. Estimates of the flow of new production exist, and currently total 17 to 18 million tons per year. To obtain a measure of demand, statisticians take total supply and then deduct estimates of the change to inventories. The result is called “apparent demand,” and it is subject to mismeasurement of both supply and inventory changes. For most countries, there is little information on changes to inventory, so the estimates of apparent demand are usually suspect.

Critical to the supply and demand argument is the growing demand in China that might have offset the collapse of U.S. demand. Veneroso reports that, for 2007, China’s domestic production of copper increased by 20 percent and its net imports doubled, so that the total supply of copper to China was up by almost 40 percent—twice as high as in any previous year. If China had actually used this amount of copper last year, it could explain why prices continued to rise even as U.S. consumption fell. However, Veneroso claims that China’s government actually keeps fairly good records on copper use, with estimates showing growth of demand somewhere on the order of 8–19 percent over the course of the year. In other words, the growth of supply seems to have been at least twice as great as the growth of demand. If so, then roughly one million tons of copper have flowed into unrecorded inventories in China—a huge proportion of the world’s supply. Veneroso believes there is perhaps another million tons of copper worldwide that is “missing,” presumably held in unreported inventories. If true, a lot of copper is being held off the market, and thus helping to fuel rising prices (Veneroso 2007, 2008b, 2008c). In the next section, I will examine the possibility that prices are being manipulated in this manner. Again, a simple textbook “supply and demand” story sheds little light by itself—given that these markets do not operate anything like the perfectly competitive markets shown in the textbooks. What we really need to know is where the demand comes from, and who controls the supply.

Manipulation of Supplies and Prices

In recent years, there have been several well-publicized cases of commodity price manipulation. For example, in winter 2004, British Petroleum monopolized 90 percent of all TET propane supplies (propane transported via the east Texas pipeline system, the primary means by which deliveries are made to the Northeast and Midwest), and withheld enough from the market to drive prices up. In 2007, it reached a court settlement, agreeing to pay \$303 million in penalties and restitution (Stupak 2007). Amaranth manipulated natural gas spot prices by driving down futures contract prices in the last 30 minutes of trading for the March, April, and May 2006 contracts. It made profits by shorting positions in the InterContinental Exchange (ICE) market before collapsing in September 2006. Other well-known cases include the Hunt brothers' manipulation of silver prices, Marc Rich and Manny Weiss's squeeze on aluminum, the Sumitomo copper affair, and Tiger Management's "adjustment" of the palladium market (Veneroso 2008d). More recently, on July 22, SemGroup filed for bankruptcy after it suffered \$3.2 billion in losses on oil futures and derivatives, allegedly due to unauthorized speculation by its cofounder and former CEO (Campbell 2008). It is not clear at this point whether the speculation consisted of outright manipulation or was simply a series of ill-advised bets. In any case, there is little doubt that manipulation played *some* role in the commodities price rise—at least for some commodities.

Acting Chairman Walter L. Lukken (2008b) has argued the primary mission of the CFTC is "detecting and rooting out illegal and intentional manipulation of the markets." (See also, Lukken 2008a.) After crude oil prices exploded, the CFTC put together a Nationwide Crude Oil Investigation that culminated in charges levied in July 2008 against Optiver for price manipulation back in March 2007 (Henriques 2008). The CFTC found that its traders had successfully moved prices by small amounts to their benefit. Since 2002, the CFTC has filed 42 enforcement actions charging 72 defendants with manipulation; in addition, the Department of Justice has filed more than 47 criminal complaints. Still, in an interim report issued July 22, 2008, the CFTC concluded that, although there were these isolated instances of manipulation, "rising oil prices are largely due to fundamental supply and demand factors." This is not altogether comforting given the CFTC's bias against intervention, as we will see.

In the next section, I will discuss the possibility that financial markets have driven prices higher through the use of index funds that allocate a portion of assets to commodities. It is interesting that the CFTC not only rejects this interpretation but also implicitly denies that such activity is within its “core mission,” which is narrowly construed to detect the “illegal and intentional manipulation” of prices. This statement even seems to reject CFTC responsibility for regulating *legal* speculation—something that was clearly part of its original mission. One might argue that the CFTC misses the forest for the trees as it focuses on individual traders who *illegally* move prices by a few basis points to make small profits, while pension funds and hedge funds might be increasing prices fivefold through legal buy-and-hold strategies. In other words, by limiting its concern to illegal manipulation, the CFTC ignores the much larger impacts on prices that result from speculative inflows of managed money.

Indeed, it is difficult to avoid the conclusion that the CFTC bears some responsibility for encouraging the massive flow of managed money into the commodity futures market in the first place when it actively promoted the notion that commodity futures should be seen as an asset class. Even as late as December 19, 2007—that is, long after it was obvious that a commodities price boom was under way—the CFTC released a study purporting to show that the returns on benchmark commodities remained uncorrelated with returns on equity investments. Thus, “commodity markets seem to have retained their role as a portfolio diversification tool” (CFTC 2007). In the next section, we will show how this contrasts with the well-accepted understanding of the primary role that commodity futures markets should play. However, diversification provides the main justification for managed flows into commodity markets. Rather than showing concern, the CFTC was encouraging even greater flows. In addition, the commission has steadfastly denied that the flow of managed money impacted commodity prices. For example, in its interim report issued last July, the CFTC clung to the argument that “fundamentals” remain the principal cause of rising prices (CFTC 2008a). Only after determined prodding by elected representatives in Washington did CFTC officials admit that their conclusions were not justified by their analyses, promising to collect more data before releasing their final report, which was issued on September 11.³ The inspector general for the CFTC recently began an investigation to determine whether the

CFTC's interim report had intentionally misled Congress in order to help defeat antispeculation legislation⁴ (Talley 2008).

These actions seem to have followed a long-term hands-off approach to commodity markets by the executive branch. When the House considered legislation that would direct the CFTC to set and administer position limits across a range of commodity futures, the Bush administration signaled that it “strongly opposed” the bill and that the president would veto it. The CFTC has instituted position limits in the past, but it has also authorized a loophole that, beginning in 1991, allows exemptions for swap dealers⁵; similarly, the New York Mercantile Exchange (NYMEX) has granted a large number of exemptions from position limits, the majority of which were for speculative rather than hedging purposes (Dingell and Stupak 2008). Just as the Fed under Greenspan's leadership refused to impose margin limits during the NASDAQ boom, the CFTC has failed to exercise its mandate to constrain leveraged positions in commodity futures. Those familiar with the 1980s savings-and-loan fiasco will recall a similar hands-off treatment by many regulators, who saw their role as something akin to “cheerleading”—best represented by William Seidman, who, while chairman of the Federal Deposit Insurance Corporation, announced to his staff: “Bankers are our friends; the FDIC should be a friend of the industry”—like a “trade association” for the industry (Mayer 1990). Cheerleaders do not make good regulators. Unfortunately, at least some of the CFTC's actions appear to border on just this sort of boosterism.⁶

As an example, so-called “black pools” were first encouraged in 1993 by Wendy Lee Gramm, then chair of the CFTC, who exempted from regulation customized energy derivatives that did not trade on registered exchanges. Congress extended this in 2000's Commodity Futures Modernization Act by including the “Enron loophole,” so that unregulated over-the-counter electronic exchanges would not be required to keep records or to file reports with the CFTC (Davis 2008b, Engdahl 2008). The Enron fiasco that resulted did not deter the CFTC from granting further exemptions from oversight. In January 2006, the commission allowed ICE (the leader in electronic energy exchanges) to provide trading terminals in the United States for the trading of U.S. oil futures on the ICE futures exchange in London—promoting an escape route around the CFTC-regulated NYMEX. Thus, U.S. traders using terminals in the United States to trade

U.S. commodity futures were exempt from U.S. regulatory oversight. ICE accounts for more than a third of trading, on average, and total unregulated over-the-counter commodity trades are now estimated at \$9 trillion, versus \$5 trillion on regulated exchanges. Hence, the CFTC actually encouraged development of a largely unregulated competitor to the lightly regulated U.S. exchanges.

In any case, the CFTC is woefully understaffed, raising questions about its ability to oversee even the regulated part of the market. As of last year, it had only 437 employees, 12 percent fewer than it had in 1976, while the size of the market it supervises has grown more than a thousandfold over that span (Davis 2008a). Although in recent months the CFTC has indicated greater interest in expanding its reach (indeed, the commission has lately gained some authority over formerly exempt commercial markets such as ICE), its chief enforcement officer at the time, Gregory Mocek,⁷ worried that extending surveillance to the huge “swap market” would cost too much (Davis 2008a). Unless Congress and the president are willing to allocate a much larger budget to the CFTC, it is unlikely that oversight will significantly improve.

The point of all of this is, so long as the term “manipulation” is limited to the actions of individual traders, it cannot play a significant role in the current commodities price boom, since the most important markets—oil, soybeans, corn, wheat—are too big to be influenced for anything but the shortest time period. There are stories of oil tankers sent on roundabout routes to try to keep oil off the market for a few days. There are a handful of rogue traders who try to move prices for a few minutes in order to complete trades. There might be a conspiracy to time maintenance shutdowns at oil refineries around the world, thereby constraining production. Still, the oil market is too big and there are too many players and too much incentive to take advantage of current high prices for narrowly defined “manipulation” to explain the historic run-up of crude oil prices over the past few years. In the case of agricultural commodities like corn and soybeans, markets are again too big to be manipulable across growing seasons. However, as Veneroso has argued, metals markets are small, and we *know* they have been manipulated in the past. So it is far more plausible that narrowly defined manipulation has affected prices of the smaller commodity markets. Note also how the manipulation of supplies complements the

supply and demand story from the previous section. So, in conclusion, the manipulation of commodity markets by a few handfuls of suppliers and intermediaries probably goes some way toward explaining the temporary price increases in at least a portion of the commodities market, but it is not likely to explain the broad-based commodities boom over the extended run-up in prices that has been taking place for several years.

What is potentially far more important is the impact of large pools of managed money following similar strategies, without any necessity for explicit collusion. In the case of the subprime boom, we now know that the underlying mortgages were packaged into securities, blessed by ratings agencies, and marketed by Wall Street using similar statistical methods to assess risk. Regulators and supervisors responsible for protecting homeowners, financial institutions, and pension funds turned a blind eye to the systemic risk created (and in notable cases even led the cheers for the new instruments and practices; recall that Greenspan promoted the highly toxic option ARMS for subprime borrowers) (Wray 2008). It appears that the CFTC is now doing the same, focusing on individual price manipulators while ignoring its Congressional mandate to ensure that commodity prices reflect the laws of supply and demand. The U.S. Commodity Exchange Act states, “Excessive speculation in any commodity under contracts of sale of such commodity for future delivery . . . causing sudden or unreasonable fluctuations or unwarranted changes in the price of such commodity . . . is an undue and unnecessary burden on interstate commerce in such commodity,” and directs the CFTC to establish trading limits “as the Commission finds are necessary to diminish, eliminate, or prevent such burden” (Engdahl 2008). Unfortunately, the CFTC has instead allowed, and even encouraged, expansion of the portion of the market that is unregulated—the “black pools” of futures trading that are hidden from view—as it trains its sights on illegal manipulation.

As I will discuss in the next section, it is possible that commodity prices have been pushed by massive inflows of managed money following a “buy and hold” strategy that is self-reinforcing precisely because it will be successful so long as the flows are large enough. This could have been curtailed if the CFTC had assumed a broader mandate.

Index Speculation in Commodity Futures Markets

In late 2005, a friend working in financial markets told me that the Alaska Permanent Fund was considering allocating a portion of its portfolio to oil futures indexes. Recall that the purpose of this fund is to reduce Alaska's dependence on revenues from its major, nonrenewable resource: oil. The idea was that a portion of oil revenues would be invested in a diversified portfolio, with some of the returns paid to residents in the form of an annual dividend. At that time, the fund was considering a move to put a portion of the state's oil revenues into oil futures (and other commodity futures), essentially a "doubling down" of its bet on oil. To be sure, it was doing nothing unusual—pension fund managers, university endowments, and hedge funds were all doing the same thing: investing in commodities, including oil.

To understand why, one needs to know that a number of researchers had demonstrated that commodity prices are not correlated with returns from fixed-income instruments (e.g., bonds) and equities (stocks). Thus, holding commodities would reduce volatility in portfolio returns. Further, commodities tend to do fairly well in an inflationary environment, so adding commodities to the portfolio provides an inflation hedge.⁸ However, holding commodities is expensive—there are substantial storage costs in addition to the usual financing or "opportunity" costs involved. Hence, money managers looked to the commodity futures market: paper claims to commodities could be held rather than the commodities themselves. Because a futures contract would expire on a specified date, the holder of the paper would then be in a position to receive the commodities. Of course, these money managers do not want to *ever* take shipment, so the contracts are "rolled" on the scheduled date—into another futures contract, one with a farther-off delivery date.⁹

There are three main types of participants in commodity futures markets: hedgers, traditional speculators, and index speculators. Table 1 offers a useful classification of each by function. The allocation of a portion of the portfolio to commodity futures in order to diversify risks is undertaken by the index speculator. These are typically hedge funds, pension funds, university endowments, life insurance companies, sovereign wealth funds, and banks. Most importantly, index speculators only take long positions—it is a buy-and-hold strategy. To simplify allocation, managed money typically buys one of the commodity futures indexes—hence the term "index

Table 1 Types of Futures Market Participants

Hedger	Index Speculator	Traditional Speculator
Sheds Price Risk	Takes on Price Risk	Takes on Price Risk
Hedges Underlying Position	Profits from Price Moves	Profits from Price Moves
Consumes Liquidity	Consumes Liquidity	Provides Liquidity
Price-sensitive	Insensitive to Price	Price-sensitive
Takes Long and Short Positions	Takes Long Positions Only	Takes Long and Short Positions

Source: Masters 2008a

speculator.”¹⁰ The biggest are Standard & Poor’s (S&P) GSCI and the Dow Jones–AIG Commodity Index (DJ-AIGCI). If index prices rise, they earn returns. Indeed, because commodity futures contracts do not pay any yield, the only possible source of return is an increase in the price of the contracts. For this reason, the purchase of a commodity futures index is fundamentally a speculative activity. Prior to the 1990s, the “prudent investor” rule prohibited pension plans from buying commodity futures contracts (Masters and White 2008). It was the collapse of the equities market in 2000 and the discovery that the performance of commodities was not correlated with equities performance that led to a belief that futures contracts could be used to reduce portfolio risk. This is what allowed Goldman Sachs as well as other indexers to successfully push commodity futures as a new asset class for prudent investors.

“Hedgers” are those with a direct interest in the physical commodities themselves. They use futures markets to reduce or eliminate losses due to unforeseen movements in commodity prices. Sellers of commodities take short positions (agreeing to deliver the commodities on the future date); buyers take long positions (agreeing to take physical delivery on the contract expiration date). The CFTC includes hedgers in its “commercial” category. However, as discussed below, the CFTC also includes swap dealers in the commercial category, on the argument that at least some of these swaps are directly related to hedging commodity price risk. The traditional speculator

Table 2 Index Component Weights as of July 1, 2008

Sector	Commodity	S&P GSCI (percent)	DJ-AIGCI (percent)	Weighted Average (percent)
Agriculture	Cocoa	0.2	0.0	0.2
	Coffee	0.5	2.7	2.1
	Corn	3.6	6.9	5.2
	Cotton	0.7	2.2	1.6
	Soybean Oil	0.0	2.9	2.9
	Soybeans	0.9	7.4	5.1
	Sugar	2.1	2.8	2.6
	Wheat	3.0	3.4	3.1
	Wheat KC	0.7	0.0	0.7
Livestock	Feed Cattle	0.3	0.0	0.3
	Lean Hogs	0.8	2.5	1.8
	Live Cattle	1.6	4.1	3.0
Energy	Brent Crude Oil	14.8	0.0	14.8
	WTI Crude Oil	40.6	15.0	36.6
	Gasoil	5.4	0.0	5.4
	Heating Oil	5.3	4.5	5.1
	Gasoline	4.5	4.1	4.4
	Natural Gas	7.6	16.0	11.9
Base Metals	Aluminum	2.1	6.9	5.1
	Lead	0.2	0.0	0.2
	Nickel	0.5	1.7	1.2
	Zinc	0.4	1.8	1.4
	Copper	2.6	6.7	4.9
Precious Metals	Gold	1.5	6.1	4.6
	Silver	0.2	2.4	2.1

Sources: Standard & Poor's; Dow Jones

facilitates hedging by taking the other side of the trade with hedgers; in other words, by taking the price risk that hedgers do not want. Traditional speculators are said to provide liquidity by increasing the volume of transactions. The CFTC classifies such speculators as “noncommercial,” since they have no direct interest in the physical commodities. Finally, index speculators pursue a buy-and-hold strategy, using futures contracts as a portfolio diversification tool. These are said to “consume liquidity” because they take only long positions (acting solely as buyers of contracts). Further,

these are the only market players that are insensitive to price—they allocate a percentage of their portfolios to each commodity regardless of price. Index speculators can be included in the commercial category (even though they never take physical delivery) because they operate in the swaps market—which, as mentioned above, is counted as commercial activity. Masters and White (2008) argue that the commodity futures market is the single market that brings together participants in the physicals market and speculators in financial derivatives tied to the physicals.

Table 2 shows the dollar weights in the S&P GSCI and DJ-AIGCI indexes. Energy commodities dominate, with crude oil making up 51.4 percent of the index, and all energy-related products accounting for 78.2 percent. The biggest agricultural commodities weightings are given to corn, soybeans, and wheat; the largest shares for metals are in aluminum, copper, and gold. It must be emphasized that, while a 4 percent share assigned to a commodity might appear small, the size of managed money funds is gargantuan relative to the size of commodity futures markets. Table 3 shows estimates provided in Congressional testimony by portfolio manager Michael W. Masters (2008a) of the quantities of commodities underlying the contracts held by managed money. For comparison purposes, Masters pointed out that between 2003 and mid-2008, the total increase in Chinese oil consumption was 920 million barrels, while he calculated that index speculators increased their contract holdings by 848 million barrels over the same period. In other words, the increased demand by managed money for oil futures nearly matched the increase in China's demand for actual oil. As another example, index speculators hold contracts for over 1.3 million tons of copper, out of a total annual production of less than 18 million tons. Between 2002 and 2007, China's reported increase in demand for copper was about 2 million tons (note the caveat above: Veneroso believes that much of this flowed into hidden inventories); by comparison, the demand for copper futures contracts by index speculators was just under 1.2 million tons (Masters and White 2008). Indeed, index speculators now hold contracts that exceed the annual production of all U.S. copper mines (the United States is the world's number two producer), wheat futures that are sufficient to meet America's demand for wheat for two years, and contracts on enough corn to supply the U.S. ethanol industry for one year.

Table 3 Commodity Purchases by Index Speculators, January 1, 2003 – March 12, 2008

Sector	Commodity	Units	Previous Futures Market Stockpile (January 1, 2003)	Net Purchases (January 1, 2003–March 12, 2008)	Current Futures Market Stockpile (March 12, 2008)	Open Interest, 2002 (Billions of Dollars)	Open Interest, 2008 (Billions of Dollars)
Agriculture	Cocoa	Metric Tons	18,828	303,352	322,180	1.8	4.1
	Coffee	Pounds	195,716,944	2,238,858,056	2,434,575,000	1.4	8.4
	Corn	Bushels	242,561,708	2,138,383,292	2,380,945,000	5.4	41.9
	Cotton	Pounds	544,934,999	5,548,915,001	6,093,850,000	1.6	11.1
	Soybean Oil	Pounds	163,135,678	4,312,624,322	4,475,760,000	1.4	8.7
	Soybeans	Bushels	81,028,272	890,616,728	971,645,000	4.9	34.6
	Sugar	Pounds	2,291,358,746	46,094,097,254	48,385,456,000	1.5	13.9
	Wheat	Bushels	166,738,225	967,351,775	1,134,090,000	1.8	17.2
	Wheat KC	Bushels	54,746,014	102,618,986	157,365,000	1.3	5.3
	Livestock	Feed Cattle	Pounds	104,446,612	365,453,388	469,900,000	0.5
Lean Hogs		Pounds	517,414,747	3,827,425,253	4,344,840,000	0.6	5.2
Live Cattle		Pounds	669,766,732	5,099,033,268	5,768,800,000	2.7	9.7
Energy	Brent Crude Oil	Barrels	47,075,357	144,524,265	191,599,621	6.6	61.8
	WTI Crude Oil	Barrels	99,880,741	538,499,579	638,380,320	16.1	295.7
	Gasoil	Metric Tons	1,682,662	6,027,680	7,710,342	4.0	27.7
	Heating Oil	Gallons	1,067,859,608	2,568,925,661	3,636,785,269	4.4	28.3
	Gasoline	Gallons	1,102,184,401	2,488,458,616	3,590,643,018	3.7	29.3
	Natural Gas	Million BTUs	330,652,415	1,932,356,225	2,263,008,640	23.6	87.3
	Base Metals	Aluminum	Metric Tons	344,246	3,232,406	3,576,652	0.0
Lead		Metric Tons	82,019	158,726	240,745	0.0	2.0
Nickel		Metric Tons	20,147	101,988	122,135	0.0	6.7
Zinc		Metric Tons	133,381	1,182,091	1,315,472	0.0	6.3
Copper		Metric Tons	220,096	1,144,538	1,364,634	0.0	41.8
Precious Metals	Gold	Troy Ounces	979,863	8,742,401	9,722,264	5.6	40.1
	Silver	Troy Ounces	11,126,862	152,866,187	163,993,049	2.0	11.8
Total						90.9	835.5

Sources: Masters 2008a; calculations based on CFTC Commitments of Traders Commodity Index Trader Supplement

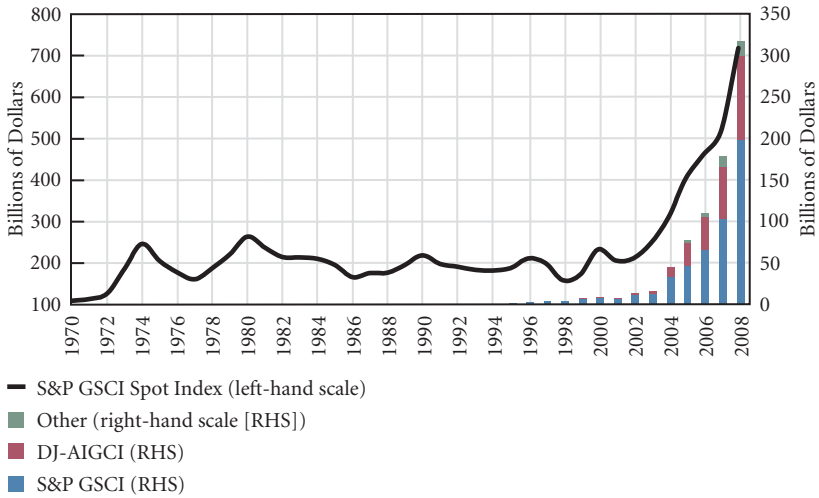
A useful way of assessing the impact of index speculation on commodity markets is to examine “open interest.” This is a measure of the dollar value of positions in commodity futures contracts that are held overnight, excluding the ebbs and flows of intraday price moves (Masters and White 2008). The final two columns of Table 3 show open interest for 2002 and 2008. Over that period, the dollar value of contracts swelled by a factor of more than nine—obviously, many orders of magnitude greater than the growth in demand for the underlying commodities. In a separate calculation, Masters and White (2008) estimate that the total volume of futures contracts purchased between January 1, 2003, and mid-March 2008 has increased by about five million, of which index speculators bought 2.7 million—or just over half. By contrast, physical hedgers purchased one-fifth. It is hard to avoid the conclusion that the index-speculator tail is wagging the physical-hedger dog when it comes to commodity futures contracts.

However, comparing the volume and price of futures contracts purchased and the available supply of the physical commodities might appear to be a comparison of apples and oranges. After all, the pension fund that buys futures contracts is not actually going to take delivery of the oil. What is important is that once a fund has decided to allocate, say, 5 percent of its investments to commodity futures, it stays in the commodities. As the total portfolio grows, the fund continues to increase its holdings of commodity futures indexes in order to hit its allocation target.

As this strategy caught on, huge volumes of money flowed into the indexes, and thus into the commodity futures markets. In 2004, there was a total of about \$50 billion in the indexes, growing to above \$100 billion in 2006 and to above \$300 billion in July 2008. In the first 52 trading days of 2008, \$55 billion of managed money from pension funds, university endowments, banks, and sovereign wealth funds poured into commodity futures markets pursuing the buy-and-hold strategy (Masters 2008a).

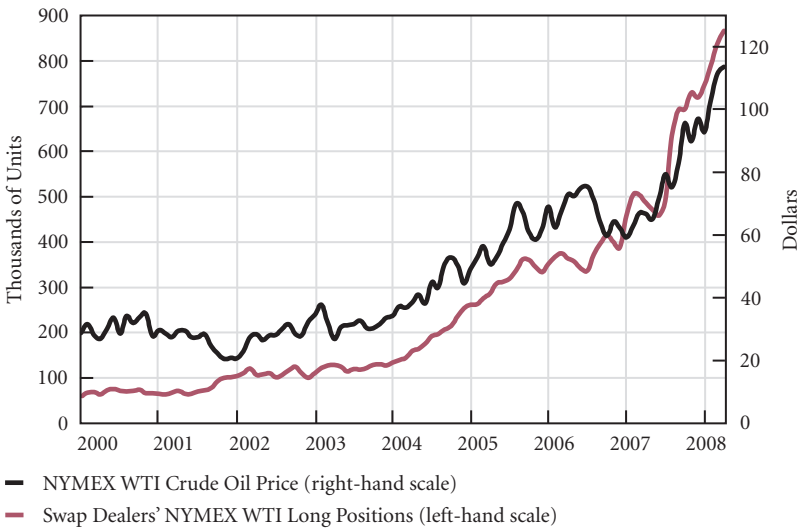
Making the case that these inflows of funds have driven the price of commodity futures ever higher seems easy enough. Most expositions begin with a figure plotting commodity prices against commodity futures investments—for example, Figure 3. Note that here I have plotted the spot price of the S&P GSCI index—an index that reflects the current market price of 25 basic commodities.¹¹ This is because the concern is whether activity in futures markets is impacting today’s commodity prices. (Further, as shown

Figure 3 S&P GSCI Spot Price Index vs. Index Speculator Assets



Source: Masters and White 2008

Figure 4 Swap Dealers' Long Positions in NYMEX WTI Crude Oil Futures vs. WTI Price



Source: CFTC via the House Energy Committee, Bloomberg

in Figure 5, spot and futures prices closely track one another; see p. 33.) Figure 4 plots swap dealers' long positions in NYMEX crude oil futures against the price of crude. Recall that most index speculators use swap dealers to replicate one of the commodity indexes, and as the quantity of managed money allocated to commodities increases, the number of contracts bought by swap dealers grows. Again, the correlation is strong: as swap dealers purchase more contracts, the price of oil rises.

The picture seems clear: the match between the flow of managed money into futures markets and the spot price of commodities is remarkable—higher money inflows lead to higher prices. However, as any economist would warn, correlation never proves causation. And, indeed, the causation must go at least both ways: rising prices encourage more inflows, and more inflows generate higher prices. But even with that caveat, the evidence appears at least superficially quite strong, and worthy of a call on Washington to do something about this speculatively driven run-up in commodity prices.

Again, the economist would urge caution. Futures markets play two essential roles. The first is to enable buyers and sellers to hedge price risk. A farmer can contract to deliver wheat at harvest at a locked-in price, secure in the knowledge that, should prices fall before that date, the farmer will receive the contracted price. At the same time, a commercial bakery that wants to buy wheat at harvest can use a futures contract to hedge against the possibility that prices will rise. The problem is that the number of offers by farmers to sell at harvest will tend to exceed the number of bids by those who want to contract for delivery at harvest, for a variety of reasons. This results in a “bid-ask spread,” the difference between the price buyers are willing to pay for future wheat and the price at which sellers are willing to sell future wheat. An intermediary—or, a traditional speculator—can step in to lower the spread, essentially making a bet on whether prices are likely to rise (closer to the ask price) or to fall (toward the bid price). This role can be played by local traders and day traders, who go “long” by agreeing to take delivery of wheat on the contracted date (on the expectation of selling the physical-delivery contracts to the end users of the grain at a higher price than they paid for the contracts). In this manner, speculators lower the spread, and are said to “provide liquidity” to the market since they reduce costs. Such behavior is a common and necessary feature of all markets that have forward-looking contracts. The fear is that, if government

intervenes to constrain such speculation, it will reduce the “liquidity” that makes futures markets operate more efficiently: bid-ask spreads will widen, market costs will be higher and fewer futures contracts will be completed, and buyers and sellers of commodities will not be able to hedge price risk as desired. Thus, government should not constrain speculation.

The second role played by futures markets is said to be “price discovery.” Commodities production is often local, while final consumption is more geographically dispersed. For example, wheat is farmed in several distinct rural regions in the United States, with the ultimate consumers of wheat more than a thousand miles away. Farmers might sell to local grain elevator owners, who act as intermediaries. Neither the farmer nor the grain elevator owner has a lot of information about the price that the grain might ultimately fetch when sold to the food processing industry. However, unlike the local market for the physical commodity, the commodity futures market is national, and even international. Futures prices are readily available and reflect real-time supply and demand. Thus, local physical commodity markets have come to rely on futures markets as the primary source of price information on the national and international markets. There is then an adjustment that is made to reflect local conditions—much as the Kelly Blue Book adjusts used car values to reflect local market conditions by zip code.

The use of commodity futures markets has eliminated the sometimes large differences between prices in various regional spot markets that existed prior to the 1980s (Masters 2008b). Now, as the CFTC describes it, “In many physical commodities (especially agricultural commodities), cash market participants base spot and forward prices on the futures prices that are ‘discovered’ in the competitive, open auction market of a futures exchange”¹² (quoted in Masters 2008b). Describing oil pricing, Platts (the biggest pricing service for the energy industry) writes, “In the spot market, therefore, negotiations for physical oils will typically use NYMEX as a reference point, with bids/offers and deals expressed as a differential to the futures price. Using these differentials, Platts makes daily and in some cases intraday assessments of the price for various physical grades of crude oil, which may be referenced in other spot, term or derivatives deals” (Platts 2007). Ironically, even the S&P GSCI and the DJ-AIGCI “spot” price commodity indexes are actually “based predominantly upon the prices of the nearest-to-expiration futures contracts for their respective set of commodities” (Masters and White

2008). Finally, Masters (2008b) emphasizes the point: “*In the present system, price changes for key agricultural and energy commodities originate in the futures markets and then are transmitted directly to the spot markets.*”

This is not what is usually taught in economics textbooks. According to traditional theory, “fundamentals” determine spot prices through the forces of supply and demand (as discussed above). Futures prices are then equal to spot prices plus the costs of carry, less convenience yield. The costs of carry include warehousing fees and forgone interest on money that is tied up in the contract; the convenience yield includes income that could be earned by using the commodity until the contract date. Normally, if supply and demand for future delivery are in balance, then the futures price should exceed the spot price because carrying costs are greater than convenience yields. A *contango* exists in this case: the futures price is higher than the spot price, with contracts priced higher the farther out the expiration date. However, following John Maynard Keynes’s seminal contributions to our textbook understanding of finance, this is not the case in most commodity markets, since commodity producers seeking to secure the price at which they will be able to sell their output tend to outnumber buyers seeking to lock in the future price at which they will purchase. Thus, the supply of futures contracts offered by commercial hedgers will exceed the demand, leading to futures prices that are below cash prices—what Keynes called the “natural backwardation” of commodity futures markets.

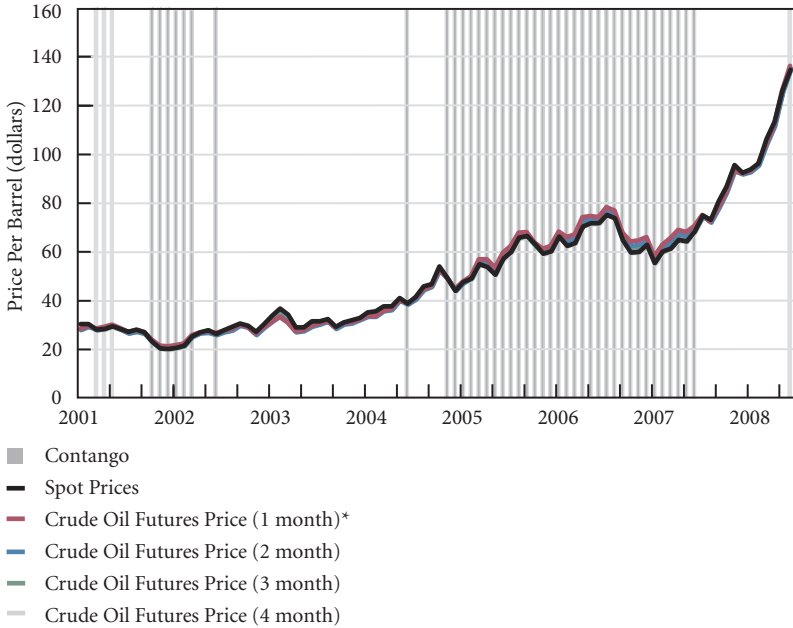
It is usually the case that, when there is a shortage in supply or an excess speculative demand, this is first evidenced in the spot market, driving cash prices above futures prices. This can occur if there has been an attempt to “corner” the market by buying up the physical supplies, so that those who have sold futures must purchase at an excessive price to obtain the physical commodity (this is what happened in the Hunt brothers’ attempt to corner silver); it can also occur if there is a belief that there will be supply shortages and users seek to hoard supplies (as occurs in most famines). Here, the increasing spot price creates a backwardation that feeds into the futures price. Indeed, virtually all the prior experiences of commodity booms have been characterized by this configuration. However, in the current price run-up, the opposite has been the case, as futures typically have traded above spot, suggesting dominance of the market by speculative demand.

For anyone seeking to buy the physical commodity, there is always the choice between buying in the spot cash market and buying a future that is at maturity and taking delivery. This means that no one would ever pay more than the current spot price for a maturing futures contract, since they both provide the same thing: spot delivery of the physical commodity. This is called the “convergence” of futures to spot prices. This “no arbitrage” condition has been used by many to claim that it is the spot price that determines the futures price, since the latter converges to the former. But it is easy to see that this conclusion is unwarranted, as the futures price converges to the spot price only upon maturity of the contract. During the three-month life of the contract, the futures price is free to vary with market conditions, as does the spot price. At maturity, it may be higher or lower than at the origination of the contract, yet still satisfy convergence.

Further, each month, there will be a new futures contract, and many speculators make spread trades that involve selling a nearer-term futures contract and buying one for a longer term. In addition, as discussed above, index funds that do not want to take delivery of their maturing contracts will roll over their positions, selling the near-maturity contract and buying (usually a larger amount of) the next maturity, or a longer one. This will mean that, as older contracts mature, younger futures contracts will have come into existence with higher prices, and those who have sold contracts will see that they could have waited to sell at a higher price. The expectation of continually rising futures prices thus creates an incentive to hold physical supplies off the spot market. Those who are receiving physical supplies have an incentive to roll them over into futures contracts with a later maturity date, both acting to drive up spot prices in the wake of rising futures prices.

This tends to create a price series for forward futures contracts that resembles the yield curve on bonds, and with rising futures prices, this curve has a positive slope associated with a contango. Thus, one test of the impact of futures speculation on current prices has been the existence of a positively sloped futures curve. Results of statistical tests have been inconclusive, but this is not surprising given the fact that the available data consists only of the reports provided to the CFTC—which, as noted above, does not include trading on either ICE or proprietary (over-the-counter) electronic systems. Nonetheless, most prior commodity price booms have been characterized by backwardation, while the present boom has been dominated

Figure 5 Crude Oil Spot Prices vs. Futures Prices



*All Prices for Light-Sweet, Cushing, Oklahoma

Source: Energy Information Administration

by contango. This is not proof of speculation, but it is certainly consistent with the result that would be expected in a market dominated by flows of managed money from index speculators.

Krugman and others like the supply and demand story, but it doesn't work that way in many commodity markets. As previously discussed, many commodity prices have always been administered—by oligopolists or oligopsonists—rather than set by the impersonal forces of supply and demand in perfectly competitive markets. Further, as market participants and those who operate and regulate futures exchanges describe, spot prices are set with reference to futures prices. This means that market fundamentals and the forces of supply and demand *cannot* be the sole determinants of the spot price. If spot prices are set through reference to futures prices, then *anything* that affects futures can directly impact the spot market. Indeed, as Figure 5 shows, there is very little divergence between crude oil

spot prices and futures prices (more discussion of the figure follows). While the traditional story that spot and futures prices must converge upon expiration of the contract is correct, this does not necessarily mean that it is future prices that must do the converging—spot prices can rise (or fall) to meet futures prices, and they can do so immediately (Masters 2008b). Finally, while finance theory teaches that contango is the “natural” relation (future prices are greater than spot prices in order to cover carrying costs), the discussion above led to the conclusion that backwardation is normal for many commodities because producers who want to sell dominate the market. So the future price should be below the spot price, rising over the life of the contract to converge with the spot price. This creates an incentive for speculators to buy the futures contracts (taking long positions), promising later delivery from producers (Kregel 2008).

Predominance of a contango can indicate a speculative market—the demand for futures contracts is spurred by a belief that spot prices will rise. If spot prices are set in reference to futures, a speculative boom is triggered, because the rising spot market validates the expectations and thereby fuels greater demand for futures contracts. Figure 5 is shaded to indicate periods of contango in crude oil prices. From late 2004 through mid-2007, oil was in contango, possibly indicating a speculative boom. It is also possible evidence of an expected future oil shortage—which could be the cause of the speculation in futures contracts. Or, it could be due to a flow of managed money into futures markets, as discussed above. The timing does appear to be about correct: the flow of managed money into commodity futures indexes grew from 2004 through 2007, coinciding with the contango in oil (the commodity that has the largest weighting in the indexes). This is also the period in which the price of oil futures began to grow very quickly.

Let us review the claim that index speculators have driven the spot price of commodities to historic levels. Commodities markets deviate substantially from the perfectly competitive model, with substantial evidence that prices are administered rather than set by fundamental forces of supply and demand. In many cases, spot prices are determined directly by the price of futures; in others, they are determined by expectations for future spot prices, which are generated by commodity futures prices (with an adjustment to reflect local market conditions—a markup or markdown over the prices quoted on near-date futures contracts). Futures prices, in

turn, are influenced by a variety of forces, including attempts by buyers and sellers to hedge price risk, by traditional speculators to go short or long as they make guesses about price movements, and by index speculators diversifying portfolios into a new asset class: commodities. It is no coincidence that futures prices soared over the past four years, as huge sums of managed money—from pension funds, sovereign wealth funds, hedge funds, university endowments, and banks (mostly European)—flowed into futures markets. This reinforced other factors that had been driving up prices, including rapid growth in China and India as well as some supply constraints and inventory manipulation. Government policies, including export restrictions and U.S. biofuel incentives, also played a role. These policy choices were themselves prodded by rising commodity prices, even as they contributed to rising prices. A perfect storm was created, one in which almost every participant's interest lay in continued price gains.

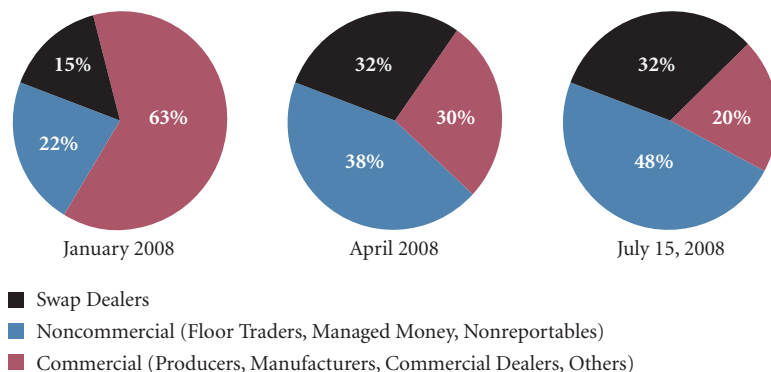
Many participants in and observers of commodity futures markets have argued that index speculation has contributed significantly to rising spot prices. Douglas Steenland (2008), president and CEO of Northwest Airlines, provided testimony before the House of Representatives that reflected the beliefs of many in the airlines industry (see also, Fornaro et al. 2008). The total annual cost of jet fuel for the industry is projected to increase by 50 percent over 2007, to \$60 billion. The industry believes that the Enron and London “loopholes” that exempted a huge swath of the futures markets from CFTC regulation allowed a surge of pension and other passive investment funds into commodity markets.¹³ Steenland pointed out that in March 2008, 1.2 billion barrels of oil were traded every day on NYMEX and the London InterContinental Exchange, with world consumption of oil at only 87 million barrels a day. Speculators hold about two-thirds of the oil contracts, up from about a fifth 20 years ago. A barrel of oil might be traded 20 times before it is delivered to the end user. The airlines believe that speculation adds \$30 to \$60 to the per-barrel price. Tyson Foods (2008) has also been vocal in its belief that speculators are driving up the price of agricultural commodities (hence, increasing the cost of producing poultry). Long-only indexers hold contracts equal to 33–65 percent of the corn, soybean, and wheat crops. Greenwich Associates (2008) concludes that “the entry of new financial or speculative investors into global commodities markets is fueling the dramatic run-up in prices.” These include pension funds that

use commodities to diversify portfolios, European banks that use commodity derivatives to structure retail products sold to customers, and hedge funds that use commodities as a source of alpha.

Mike Masters, in testimony before Senate and House committees, has made the most convincing case for a large impact coming from index speculation. A number of rebuttals to his remarks have been attempted. Perhaps the strongest counterattack was launched by NYMEX staff. First, they argued that Masters overstates the importance of speculators in commodity futures markets (NYMEX 2008). Without going deeply into details, the data provided by the CFTC does not make it possible to clearly distinguish among types of market participants. The CFTC uses only three categories: commercial (historically about 50 percent), noncommercial (35–40 percent), and unreported (5–10 percent). Commercial participants are supposed to be those that have an association with the physicals market—for example, the price-hedging producers and buyers. This category is supposed to exclude speculators. However, the CFTC includes in the commercial category swap dealers, which are banks that provide over-the-counter derivatives. The reasoning is that bank customers with direct links to risks in the physicals markets can use these derivatives for hedging. However, there is nothing to prevent the banks from providing these services to those with no links to physicals; indeed, index speculators also use the swap dealers that are counted as commercial participants. Hence, many “commercial” purchasers are speculators of one type or another. The noncommercial category is supposed to comprise the speculators—those with no direct interest in the physical commodities—but that number is undercounted because swap dealers are excluded.

Figure 6 allocates “nonreportables” to the noncommercial category, and separates swap dealers from the commercial category. Note that at the time NYMEX offered its rebuttal, the discussion centered on the April 2008 graphic. If swap dealers are largely speculators, then they could be added to noncommercial, bringing the April total to about 80 percent of the commodity futures markets. That is one basis for the claim that speculation dominates. However, according to NYMEX, that number is far too high—because there is no basis for assuming that a large percentage of the nonreportables and swap dealers are speculating. Further, NYMEX (2008) testified that the CFTC was undertaking a revision of its data that would rebut the

Figure 6 Evolution of Speculative Trading: WTI Average Open Interest on NYMEX (Long and Short Positions)



Source: Office of the Chief Economist, CFTC

claim that speculators dominate by reclassifying market participants. Ironically, on August 5, the CFTC did release revised data that boosted the proportion of contracts held by the noncommercial sector on July 15 by an astounding 25 percent, to 48 percent of the market, as shown above. In other words, the CFTC revision accomplished precisely the opposite of what was expected by NYMEX. Since this still excludes the swap dealers, there is now little question that a large majority of positions are held by speculators. What was more shocking, this adjustment resulted from reclassifying just one trader, Vitol—which controls 10 percent of the entire oil futures market (Davis 2008b). This jolted markets, because not only did it reveal that speculators dominate, but it also opened the possibility that positions held by just one trader could move the market. This particular trader appears to be a traditional speculator—one who holds shorts and longs—not an index speculator holding long-only positions. However, that is not a great comfort, because with positions so large, market manipulation looks like a possibility.

NYMEX also attempted to argue that price determination runs from fundamentals to futures prices, with the latter converging toward spot prices determined by the laws of supply and demand. We dealt with this argument above. There is no dispute that, over time, prices must converge, but this does not tell us anything about price determination. When NYMEX (2008) claims that “the futures market is a derivative of the physical market, not the

reverse,” it is speaking of some idealized market that might have existed in the distant past, but not of today’s financialized commodities market. It is certainly true that oil cannot be sold at \$125 a barrel unless someone is willing to pay that price, but that tells us nothing about the price that would be obtained in a perfectly competitive market by the forces of supply and demand—with supply coming from many producers, and demand, directly from users. In reality, supply is largely controlled to hit price, and the demand from end users is supplemented by the demand from arbitrageurs, manipulators, hedgers, speculators, and index “investors” with much more money to put into play. Even the major oil pricing service, Platts, argues that spot prices are set with reference to NYMEX futures prices—a point also made by the CFTC when it argues that one of the two essential services played by futures markets is price discovery!

Finally, Philip McBride Johnson, former chairman of the CFTC under President Reagan, flatly rejects the current chairman’s claim that fundamentals are driving the boom: “The fact that prices have been relentlessly trending up suggests a new type of market participant [with] a mentality that is traditionally more in line with investing in securities than trading in commodities. If enough of these wealthy people, or funds, or other entities with a lot of capital decide to flip out of securities for a little while and go into commodities, and they’re all looking for something that is going up, and you get enough billions of dollars thinking that way, then their wish comes true” (quoted in Bario 2008). Eckaus (2008) says flatly: “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.” This suspicion seems to be validated by the falling oil prices that followed Congressional hearings into speculation—which may have slowed the flow of managed money into futures contracts since July 2008.

Policy Response

Let us assume for the moment that index speculators have helped to fuel the apparently unprecedented broad-based commodities price boom. Should policy react? If so, how?

The two purposes of futures markets are risk reduction through hedging and price discovery. If we look at the second function, index speculators

do not play a useful role because theirs is an allocative, buy-and-hold strategy. They are relatively impervious to price or to bid-ask spreads. They buy commodity futures (usually indexes of futures) to achieve a diversified portfolio. Further, commodities are seen as an inflation hedge. However, to the extent that index speculators help to drive up commodity spot prices that then increase pressures on producer and consumer prices, the collective attempt to hedge against inflation actually *accelerates* inflation. But this hedges a different kind of risk than the risk for which these markets were initially designed: price risk for commodity producers and users. It is true that as managed money flows into futures markets, it does increase the demand for contracts offered by producers who want to hedge price risk—thus, the inflow is a source of market liquidity to the sale side. Against that benefit must be weighed the cost to users of the commodities—who face rising futures prices as they compete with index speculators to hedge against the risk of rising spot prices.¹⁴ And, of course, to the extent that index speculators cause commodity prices to rise ever upward, users of commodities cannot really win by hedging. At best, those users who do hedge are relatively better off than those who do not (Southwest Airlines is currently doing better than the carriers that did not hedge enough jet fuel). But they, too, continue to pay ever-higher prices.

Also worth contemplating is the end of the speculative boom. Once all managed money has achieved the desired allocation of commodities, the large volumes of inflows subside. Further purchases of futures contracts will be undertaken merely to maintain an allocation. Suddenly, the liquidity to which commodity producers had become accustomed begins to dry up. Traditional speculators revise their expectations for the course of prices; some might begin to short commodities. A strong price reversal can take place, as the market reverts to backwardation. This is what happened between mid-July, when the price of oil brushed up against \$150 a barrel, and mid-August, when the per-barrel price dropped below \$115. As sands shift, producers who had made business plans based on price increases find that they cannot succeed in an environment of falling commodity prices. We have seen the result of a precipitous drop in agricultural commodity prices several times in the past 100 years. Of course, the most significant was during the period described in *The Grapes of Wrath*. The consequences for rural America and its banks can be severe.

The 1935 Congressional report that introduced the Commodity Exchange Act to the House of Representatives quotes President Roosevelt regarding the necessity of restricting speculation in commodity markets:

It is my belief that exchanges for dealing in securities and commodities are necessary and of definite value to our commercial and agricultural life. Nevertheless, it should be our national policy to restrict, as far as possible, the use of these exchanges for purely speculative operations.

I therefore recommend to the Congress the enactment of legislation providing for the regulation by the Federal Government of the operations of exchanges dealing in securities and commodities for the protection of investors, for the safeguarding of values, and, so far as it may be possible, for the elimination of unnecessary, unwise, and destructive speculation.

The Act calls for controlling speculation and ensuring that the exchanges function to provide a market for the *physical* commodities:

The fundamental purpose of the measure is to insure fair practice and honest dealing on the commodity exchanges and to provide a measure of control over those forms of speculative activity which too often demoralize the markets to the injury of producers and consumers and the exchanges themselves. The bill has as another objective: the restoration of the primary function of the exchanges, which is to furnish a market for the commodities themselves.

The legislation also specifically exempts legitimate hedging from such restrictions:

Transactions which are shown to be bona fide hedging transactions in a commodity by holders of that commodity or of products or byproducts thereof, or by growers of that commodity, are exempt from the limits, and brokers and commission merchants

are subject to the limits fixed only to the extent that they deal for their own account.

Clearly, we have moved far—too far—from the intentions of Congress, financializing commodity markets with the dominant players in futures markets having no interest in the underlying physicals. The majority of the participants, by volume, are traditional and index speculators. While the participation of traditional speculators offers clear benefits, position limits must be carefully administered to ensure that their activities do not “demoralize” markets. It is, however, difficult to find any strong justification for permitting entry into these markets by index speculators operating with buy-and-hold strategies merely to diversify portfolios. It is worth recalling Keynes’s famous warning: “Speculators may do no harm as bubbles on a steady stream of enterprise. But the position is serious when enterprise becomes the bubble on a whirlpool of speculation” (Keynes 1964).

In his Congressional testimony, Masters provided a useful analogy. Suppose there were some technological breakthroughs that led to the creation of new medical devices and drugs that could cure cancer. Further presume that the financial wizards on Wall Street created a pharmaceutical index to provide an opportunity for investors to both diversify their portfolios (suppose health deteriorates cyclically so that pharma spending is countercyclical) and beat inflation (pharmaceutical prices rise faster than inflation). As investors pour their money into the index fund, futures prices rise quickly—drawing in speculators (traditional and index varieties) making bets that prices will continue to climb. At some point, as the market moves into a strong contango, the drugs and devices will be purchased for inventory—to hold on the expectation of rapid price increases. With much of the supply taken off the market, and with demand soaring (both for use and for inventory accumulation), the costs of a possible cancer cure are driven out of the reach of patients. At the same time, rising prices would induce indexes to raise their allocation targets—generating accelerating price hikes even as the funds held claims to the total supply (and more) of cancer-curing devices and drugs. While this might sound far-fetched, it is quite close to what happened in commodity markets recently, as the price of grains rose beyond the reach of the world’s poor, as ranchers slaughtered animals they could not afford

to feed, and as index funds bought contracts on larger and larger portions of the total crop supply.

If all of this isn't scary enough, imagine a scenario in which speculators were allowed to hold futures in commodified and financialized human organs on the argument that this enhances price discovery and provides needed liquidity to the market.

While it is certainly true that the rising prices of the commodified pharmaceuticals would encourage more production, the question is whether supply could grow fast enough to more than satisfy the demand of money managers able to leverage by a factor of 30 or more—in a world in which literally trillions of dollars are seeking diversification and inflation hedges. Further, just as demand for biofuels is encouraging nations to destroy rain forests and to plow the world's grasslands to satisfy the current insatiable demand of hedge funds for an inflation hedge, do we really want to divert resources to produce pharmaceuticals (or organs) for storage rather than to cure disease?

The notion that “supply and demand” efficiently allocates resources through the price system is quaint, and has little application to today's money manager capitalism, in which assets are purchased with leveraged money and with a view to price appreciation rather than to meeting consumption demands. No rational policymaker would allow speculators to purchase the cure to cancer only for storage in warehouses, nor should policymakers allow, much less encourage, money managers to fuel inflation, currency depreciation, hunger, and unemployment by driving commodity prices beyond the reach of consumers.

The first order of business is to direct the CFTC to broaden its mission so that it can accomplish the overarching objective of the original Commodity Exchange Act: to limit the effects of speculation on commodity prices. This should include bringing more of the market under regulation—by eliminating the various loopholes, including the Enron, London, and swaps loopholes. Similar rules, regulations, and oversight should be applied to all players. It is sometimes argued that this will merely force exchanges to move outside the United States, but others have pointed out that that is an empty threat. As Masters testified, any futures contract that calls for physical delivery within the United States is subject to U.S. regulation; and no person in the United States can lawfully trade in contracts that

are evading U.S. regulations without specific exemptions. Further, market participants prefer liquid, high-volume futures markets. Given that the United States is the largest consumer of energy and the largest producer of food commodities, its futures markets will surely remain in demand. And no Iowa farmer is going to turn to London to hedge corn prices in an attempt to evade regulations.

The CFTC must reestablish and enforce position limits.¹⁵ In emergencies (such as a euphoric boom), margin requirements for purchases should be raised. The CFTC should be directed to gather and to publish data on participants in futures markets to help distinguish among hedgers, traditional speculators, and index speculators. When the CFTC reclassified Vitol as a noncommercial participant, it withheld the firm's name. It is difficult to see why the identity of a speculator with positions equal to 10 percent of a futures market should be withheld from public view. Greater transparency will not only permit better policy formation but also help to protect markets from manipulation. The CFTC must also work more closely with regulators in other countries to promote greater uniformity of practices and to avoid the tendency to rush to the lowest common denominator. To accomplish all of this, the CFTC's budget must be increased, and future funding needs to keep pace with growth of the markets.

If, as this brief concludes, speculators dominate futures markets, Congress should consider the costs and benefits of allowing index speculators to pursue buy-and-hold strategies. Much of the managed money engaged in index speculation benefits from explicit or implicit government guarantees (such as the insurance that stands behind pensions) and from tax benefits (i.e., tax-advantaged savings). As expected, managed money is already lobbying to protect its turf, arguing that fiduciary responsibility dictates that it should assimilate diversified portfolios that are insulated from business cycles and inflation. Thus, they argue they should be permitted to retain commodities as an asset class. However, these funds must operate within constraints established by Congress to promote the public interest. If Congress should find that public interest is threatened by index speculation, then it is appropriate to prohibit commodity index replication strategies. Masters and White (2008) have argued for revision of the prudent investor rule to explicitly prohibit pension investment in commodities. Alternatively, they note that if all profits from speculation in commodities were subject to

tax, it would severely reduce the attractiveness of these markets for tax-advantaged savings. Finally, to avoid a rapid sell-off of commodity futures contracts, they would impose “liquidation-only” rules on index speculators so that further purchases of commodity futures contracts would be prohibited, as the funds would gradually sell out positions.

More generally, the commodities market bubble (and coming crash) is the third such episode in recent years that resulted from the unfettered, lemminglike herding of money seeking the highest returns, leading managed money over the cliff. To be sure, there have been many earlier examples—municipal bonds in the 1960s, commercial paper in the late 1960s, real estate investment trusts in the early 1970s, commercial real estate and leveraged buyouts in the 1980s, and so on. The problem is that managed money has grown tremendously and leverage ratios have risen, as the taste for risk grew even as the ability to perceive risk became ever scarcer. (Minsky used to attribute this in part to fading memories of the Great Depression; many of today’s money managers cannot even remember the 1980s, much less the 1930s.) As a result, we have, as they say, command over too much money chasing too few good asset classes with what are perceived to be acceptable returns. This is why everything is becoming financialized—from credit card debt to subprime mortgages and from student loans to pork belly futures. Perhaps managed money went too far when it turned America’s homes, energy, and food into asset classes ripe for gambling. We should not wait for it to find the next asset class (human organs?).

Assuming that the commodities market boom is coming to what might be an ugly end, Congress also needs to consider what can be done to cushion the collapse. It is all too easy to say that government ought to stay away and let the market punish foolish speculators. Recent experience with the yearlong credit crisis suggests this will not happen, and it probably should not be allowed to happen. Those holding futures contracts that cannot be rolled over except at catastrophic loss include our pension funds, banks (admittedly, mostly foreign), and hedge funds. Further, to the extent that futures prices affect spot prices, producers of agricultural commodities will be devastated when they find that market prices won’t cover the costs incurred. Tight global food supplies will be restricted further if farmers react the way they usually do to falling prices: by destroying crops and slaughtering animals. Alternative energy suppliers will be hurt by falling

crude oil prices; it is already unlikely that the United States will reach its biofuels production goals even with the subsidies granted by Congress because of the high price of corn and policy-induced shortages. To help relieve distress, Congress needs to consider ramped-up global food aid this year, purchasing agricultural output to help U.S. farmers facing falling prices, to be distributed to the world's hungry. American consumers need help in the form of energy relief; this can be accomplished through checks that can be called a tax rebate or a fiscal stimulus—whichever is more politically palatable. This will help to recharge the U.S. economy. American producers—especially of alternative energy—also need to be protected (temporarily) from falling commodity prices. More subsidies for wind, solar, and geothermal energy will be needed.

The U.S. (and global) financial sector will continue to reel from the crisis that began with subprime mortgages; falling commodity prices will only make that very much worse. Pension funds will be threatened, perhaps depleting the already shaky Pension Benefit Guaranty Corporation. The FDIC's "insurance" fund is facing a payout equal to nearly one-fifth of its total reserves due to the failure of just one bank (IndyMac); it is likely that many more medium-size banks and some big ones will fail—the total could be more than a hundred and will threaten the FDIC's solvency. Congress will have to walk a fine line between allowing the truly deserving to bear pain, and a pragmatic bailout to keep the social costs of failures from hindering recovery. The credit crunch has already dried-up lending; it could get considerably worse. Still, if a lot of wealth is not wiped out, there will be tremendous pressure on money managers to find yet another asset class ripe with possibilities for lofty returns. Without greater oversight, the "cure" could be worse than the disease. So bailouts will be needed, but strings must be attached in the form of regulatory constraint.

It is interesting that Credit Suisse (2008) has been pushing fixed-rate swaps linked to commodities such as iron. This would put managed money into direct competition with users of natural resource commodities—skipping the intermediate step of going through futures markets. Wall Street banks have also been promoting exchange-traded funds in order to sell commodity indexes to retail investors (Masters and White 2008). No matter what anyone believes about the relationship between spot and futures prices, this development makes it clear that policymakers must take the initiative to

determine what should be financialized to serve as appropriate asset classes for our protected funds.

Senators Joseph I. Lieberman, Susan Collins, and Maria Cantwell introduced the bipartisan Commodity Speculation Reform Act of 2008 on July 10 to amend the Commodity Exchange Act. It would accomplish several of the objectives outlined above: it would direct the CFTC to restrict the ability of traders to escape U.S. oversight by moving to foreign exchanges, and apply position limits to all food- and energy-related futures and derivatives contracts (whether on exchanges or over-the-counter)—exempting only bona fide hedging (Lieberman 2008). It would also prevent the CFTC from delegating responsibility for setting position limits to the exchanges, and from substituting reporting for actual speculative position limits (forcing the commission to act more like a regulator than a cheerleader). All of this would move policy in the right direction. Unfortunately, the legislation faces a long haul through Congress (and a probable veto by President Bush) (OMB 2008). Further, it does not address the bigger problem of the propensity of managed money to destabilize one market after another. The wisdom of guaranteeing and promoting the growth of managed money is an issue that needs to be addressed, but it is one that will almost certainly have to await a new administration and a new Congress.

Acknowledgments

I thank Yeva Nersisyan for data manipulation and presentation. Completion of this brief would not have been possible without the assistance of Michael W. Masters and Adam K. White; in addition, Ryan McCormick, Richard Miller, Frank Veneroso, Robert W. Parenteau, William K. Black, and the Air Transport Association of America provided useful data, advice, and comments. Jan Kregel and Pedro Nicolaci da Costa helped to whip an earlier draft into shape.

Notes

1. With, of course, the caveat that, as of mid-August 2008, it looks like commodity prices might have finally started coming down.
2. Note that several economists have denied that oil prices have been driven up by speculators because inventories have remained relatively constant for the past couple of years. However, the best place to store oil is in the ground!
3. In its final report, the CFTC recommends preliminary actions to increase transparency and improve controls in the marketplace, along with the creation of a new “swap dealer” classification for reporting purposes. Lukken states that the new recommendations “represent steps in modernizing the agency’s approach to oversight, while ensuring that the markets remain competitive, open, and on U.S. soil” (quoted in CFTC 2008b). However, the report also states that, while there was an increase in the net notional value of commodity index business in crude oil futures, it appears to be due to an appreciation of the value of existing investments caused by the rise in crude oil prices, and not the result of more money flowing into commodity index trading.
4. As discussed below, concerns that the CFTC was intentionally misleading Congress were heightened when it became known that the commission had reclassified one very large trader as “noncommercial” (a category comprising speculators) just before it released its interim report in July. The reclassification had been withheld from the report and from testimony presented to Congress even though it tipped the balance toward speculator dominance of futures markets.
5. Most institutional investors that want to take positions in commodities go through Wall Street banks that arrange over-the-counter commodity index swaps.
6. Interestingly, Gregory Mocek, who had been director of enforcement at the CFTC since 2002, left the agency in early July to join the law firm of McDermott Will & Emory, which represents the International Swaps and Derivatives Association on federal antimanipulation efforts (Lobsenz 2008). Students of the 1980s savings-and-loan crisis will recall a similar “revolving door” in which regulators were offered lucrative positions in those institutions they were supposed to oversee. It was reported that Mocek’s new firm said he “would be invaluable in helping their clients

fend off government energy manipulation investigations—an area that Mocek helped pioneer at the CFTC.” Apparently, Mocek had been a feared enforcement officer, helping to lead cases against Enron, Amaranth, Dynegy, and other large energy companies. Perhaps energy price manipulators can sleep better now.

7. Stephen J. Obie, regional counsel for the agency’s New York office, was named acting director of the division.
8. For example, the California Public Employees’ Retirement System (CalPERS) Statement of Investment Policy issued on February 19, 2008, includes commodities as a major part of its inflation-linked asset class, which comprises 5 percent of its total portfolio. The allocation within the inflation-linked asset class is as follows: commodities, 1.5 percent; inflation-linked bonds, 1 percent; infrastructure, 1.5 percent; and forestland, 1 percent. It obtains its positions in commodities through commodity futures that try to match the S&P GSCI Total Return Index. Note that the correlations that encouraged managed money to move into commodities could well break down by the flood of money, since those correlations are obtained from a period in which such flows were insignificant. Further, if a crisis follows the current boom, it is unlikely that past correlations will persist.
9. Index speculators do not want to receive physical commodities, so they “enter into a prepackaged trade called a ‘calendar spread.’ In a calendar spread, a trader simultaneously buys a more distant future and sells their closer-to-expiration future” (Masters and White 2008). Because many index speculators will be doing a “Goldman roll” at about the same time, the prices of expiring contracts are depressed, while those of the more distant future contracts are pushed up due to “index roll congestion.” This generates profits for speculators on spread trades, much of which are reaped by the Wall Street banks that provide swap services. According to John Dizard (2007), this cost index speculators about 150 basis points of return in 2007, and generated approximately \$60 billion for the firms that manage the index funds.
10. Strictly speaking, index speculators do not “buy” the index but rather outsource management of their futures trading to one of the Wall Street banks, which tries to replicate one of the indexes by purchasing a basket of commodity futures contracts with the same weighting scheme as the

index (Masters and White 2008). It is reported that 85–90 percent of institutional investors enter into over-the-counter commodity index swaps with Wall Street banks. Approximately 70 percent of this business is handled by just four banks: Goldman Sachs, Morgan Stanley, JPMorgan Chase, and Barclays. These four account for about a quarter of all contracts on the commodity futures exchanges (Greenwich Associates 2008, Masters and White 2008).

11. As we will see, the “spot” price reflected in the index is actually based on the futures contract price for the commodities included in the index.
12. Not all commodities are priced this way; this description applies to wheat, corn, and soybeans in agriculture, and to WTI crude oil, heating oil, gasoline, and natural gas in the energy sector. However, other commodities are priced relative to these. For example, coal is priced relative to oil. For this reason, prices in futures markets tend to affect spot prices across a range of commodities. See Masters 2008b, pp. 3–4.
13. The so-called “London loophole” refers to the CFTC’s decision in 1999 to allow traders using the London exchanges to avoid position limits to which U.S. exchanges were subject. ICE has taken advantage of this. The Enron loophole, which dates to 2000, exempts electronic trading from U.S. regulation. Its namesake used the exemption to corner the market for California’s supply of electricity.
14. This is why Masters and White (2008) insist that index speculators “suck” liquidity from markets, as they take only one side of the trades.
15. Shockingly, the CFTC has taken the opposite view: “In general, position limits are not needed for markets where the threat of market manipulation is non-existent or very low” (www.cftc.gov/industry-oversight/marketsurveillance/speculativelimits.html#P8_883). This reflects the commission’s erroneous interpretation that manipulation alone—not speculation—poses a threat worthy of oversight.

References

- Bario, D. 2008. "Skadden Lawyer Delves Into the 'Dark Pools' of the Oil Boom." *Law*, June 19. www.law.com/jsp/LawArticleFriendly.jsp?id=1202422384461.
- CalPERS. 2008. "California Public Employees' Retirement System Statement of Investment Policy for the Inflation-linked Asset Class." February 19.
- Campbell, R. 2008. "SemGroup's Failure Shocks Backers." Reuters, July 25.
- CFTC. 2007. "CFTC Study Finds Independent-moving Commodity and Equity Markets." December 19.
- . 2008a. "Interagency Task Force on Commodity Markets Releases Interim Report on Crude Oil." July 22.
- . 2008b. "CFTC Releases Staff Report on Swap Dealers and Index Traders." Press Release No. 5542-08. September 11.
- Credit Suisse International. 2008. "Trade Idea: Fixed Rate Swap Linked to Iron Ore." May 23.
- Davis, A. 2008a. "Commodities Regulator Under Fire: CFTC Scrutinized as Congress Looks Into Oil-price Jump." *The Wall Street Journal*, July 7.
- . 2008b. "'Speculator' in Oil Market Is Key Player in Real Sector." *The Wall Street Journal*, August 20.
- Dingell, J. D., and B. Stupak. 2008. Letter to Mr. Walter Lukken, Acting Chair, Commodity Futures Trading Commission, June 17.
- Dizard, J. 2007. "Goldman Sachs and Its Magic Commodities Box." *Financial Times*, February 6.
- Eckaus, R. S. 2008. "The Oil Price Really Is a Speculative Bubble." Manuscript 08-007. Cambridge, Mass.: Center for Energy and Environmental Policy Research, Massachusetts Institute of Technology. June.
- Engdahl, F. W. 2008. "Perhaps 60% of Today's Oil Price Is Pure Speculation." Centre for Research on Globalization. May 2. www.globalresearch.ca/index.php?context=va&aid=8878.
- Fornaro R., et al. 2008. "An Open Letter to All Airline Customers." Coalition to Stop Oil Speculation Now. July 10.

- Greenwich Associates. 2008. "Global Commodities Boom: Companies Turn to Top Derivatives Dealers for Help in Hedging." May 13. www.greenwich.com/.
- Gros, D. 2008. "The China Bubble Fuelling Record Oil Prices." *Financial Times*, July 9.
- Henriques, D. B. 2008. "Regulators Say Company Manipulated Oil Market." *The New York Times*, July 25.
- Keynes, J. K. 1964. *The General Theory of Employment, Interest, and Money*. New York and London: Harcourt Brace Jovanovich.
- Kregel, J. 2008. Background paper, "Temas sistemicos, consulta regional preparatoria de la conferencia internacional de seguimiento sobre la financiación para el desarrollo encargada de examina la aplicación del consenso de Monterrey." Conference of the Economic Commission for Latin America and the Caribbean, Santo Domingo, Dominican Republic, June 12.
- Krugman, P. 2008. "Fuels on the Hill." *The New York Times*, June 27.
- Leamer, E. E. 2007. "Housing Is the Business Cycle." Working Paper No. 13428. Washington, D.C.: National Bureau of Economic Research. September.
- Lieberman, J. I. 2008. "Stop Excessive Energy Speculation Act: Floor Statement of Senator Joseph I. Lieberman." *Congressional Record*, July 23.
- Lobsenz, G. 2008. "Chief CFTC Enforcer Jumps to Law Firm Representing Swaps Group." *The Energy Daily*, July 10.
- Lukken, W. L. 2008a. "Summary of Major Points in Written Testimony of Acting Chairman Walter Lukken Before the House Committee on Energy and Commerce, Subcommittee on Oversight and Investigations." 110th Cong., 2nd sess., June 23.
- . 2008b. "Statement of Acting Chairman Walter L. Lukken." U.S. Commodity Futures Trading Commission. July 24.
- Masters, M. W. 2008a. "Testimony of Michael W. Masters, Managing Member/Portfolio Manager Masters Capital Management, LLC, before the Permanent Committee on Homeland Security and Governmental Affairs, United States Senate." 110th Cong., 2nd sess., May 20.

- . 2008b. “Testimony of Michael W. Masters, Managing Member/Portfolio Manager, Masters Capital Management, LLC, before the Committee on Homeland Security and Governmental Affairs, United States Senate.” 110th Cong., 2nd sess., June 24.
- Masters, M. W., and A. K. White. 2008. “The Accidental Hunt Brothers: How Institutional Investors Are Driving Up Food and Energy Prices.” The Accidental Hunt Brothers Blog, special report posted July 31.
- Mayer, M. 1990. *The Greatest-Ever Bank Robbery: The Collapse of the Savings and Loan Industry*. New York: Charles Scribner’s Sons.
- Mufson, S. 2008. “Siphoning Off Corn to Fuel Our Cars.” *The Washington Post*, April 30.
- NYMEX. 2008. “NYMEX Staff Responses to Recent Assertions about Energy Derivatives Markets: Testimony Before Subcommittee on Oversight and Investigations, Committee on Energy and Commerce, U.S. House of Representatives.” 110th Cong., 2nd sess., June 23.
- Office of Management and Budget (OMB). 2008. “Statement of Administration Policy: H.R. 6604—Commodity Markets Transparency and Accountability Act of 2008.” Executive Office of the President. July 30.
- Pimentel, D. 2008. “Corn Can’t Save Us.” *The St. Louis Post-Dispatch*, March 18.
- Platts. 2007. “Backgrounder: Platts Oil Pricing and Market-on-close Methodology Explained.” The McGraw-Hill Companies. www.platts.com/oil/Resources/whitepapers/moc.pdf?a=i.
- Roosevelt, F. D. 1934. Letter to the U.S. Congress, February 9. Reprinted in H.R. Report No. 73-1383 (1934) and S. Rep. No. 73-792 (1934). Washington, D.C.: Government Printing Office.
- Steenland, D. M. 2008. “Statement of Douglas M. Steenland, President and CEO, Northwest Airlines, on Energy Speculation: Is Greater Regulation Necessary to Stop Price Manipulation[?] Subcommittee on Oversight and Investigations, Committee on Energy and Commerce, U.S. House of Representatives.” 110th Cong., 2nd sess., June 23.
- Steinberg, S. 2008. “Financial Speculators Reap Profits from Global Hunger.” Centre for Research on Globalization. www.globalresearch.ca/printarticle.php?articleId=8794.

- Stupak, B. 2007. "Statement of Chairman Bart Stupak, Subcommittee on Oversight and Investigations, Energy Speculation: Is Greater Regulation Necessary to Stop Price Manipulation?" Committee on Energy and Commerce, U.S. House of Representatives. 110th Cong., 1st sess., December 12.
- Talley, I. 2008. "Inspector General Probing CFTC-led Task Force Report—Source." Dow Jones Newswires, August 27.
- Tyson Foods. 2008. "Impacts of Speculative Trading." July.
- U.S. Congress. House. Committee on Agriculture. 1935. "Commodity Exchange Act." H.R. Report No. 421. 74th Cong., 1st sess., March 18.
- Veneroso, F. 2007. "U.S. Economy. Financial Crisis: on the Prospect of a Second Wave; The Greatest Commodity Bubble of Them All, Born of the Leverage from Derivatives; Its Bursting Will Add to Financial Crisis." *Veneroso's View*, December 11.
- . 2008a. "Global Strategic Outlook: Commodity Comment." *Veneroso's View*, April 1.
- . 2008b. "Financial Crisis: On the Prospect of a Second Wave of Copper: A Commodity Calamity to Come; Speculation to the Point of Manipulation in Base Metals." *Veneroso's View*, April 28.
- . 2008c. "Commodities: The Manipulation—Not Speculation—Debate: Has Justice Provided the Answer?" *Veneroso's View*, May 12.
- . 2008d. "Commodities: The Energy Manipulation Issue Heating Up." *Veneroso's View*, June 10.
- Wray, L. R. 2008. *Financial Markets Meltdown: What Can We Learn from Minsky?* Public Policy Brief No. 94. Annandale-on-Hudson, N.Y.: The Levy Economics Institute. April.

About the Author

Senior Scholar L. Randall Wray is a professor at the University of Missouri–Kansas City and director of research at the Center for Full Employment and Price Stability. He is currently working in the areas of monetary policy, employment, and social security. Wray has published widely in journals and is the author of *Money and Credit in Capitalist Economies: The Endogenous Money Approach* (Edward Elgar, 1990) and *Understanding Modern Money: The Key to Full Employment and Price Stability* (Edward Elgar, 1998). He is also the editor of *Credit and State Theories of Money: The Contributions of A. Mitchell Innes* (Edward Elgar, 2004) and coeditor of *The Continuing Relevance of The General Theory: Keynes for the 21st Century* (Palgrave Macmillan, 2008). Wray received a B.A. from the University of the Pacific and an M.A. and a Ph.D. from Washington University in St. Louis.

Public Policy Brief Series

The entire Public Policy Brief series, along with Highlights of each title in the series, is available for download at www.levy.org.

The Commodities Market Bubble

Money Manager Capitalism and the Financialization of Commodities

L. RANDALL WRAY

No. 96, 2008 (Highlights, No. 96A)

Shaky Foundations

Policy Lessons from America's Historic Housing Crash

PEDRO NICOLACI DA COSTA

No. 95, 2008 (Highlights, No. 95A)

Financial Markets Meltdown

What Can We Learn from Minsky?

L. RANDALL WRAY

No. 94, 2008 (Highlights, No. 94A)

Minsky's Cushions of Safety

Systemic Risk and the Crisis in the U.S. Subprime Mortgage Market

JAN KREGEL

No. 93, 2008 (Highlights, No. 93A)

The U.S. Credit Crunch of 2007

A Minsky Moment

CHARLES J. WHALEN

No. 92, 2007 (Highlights, No. 92A)

Globalization and the Changing Trade Debate

Suggestions for a New Agenda

THOMAS I. PALLEY

No. 91, 2007 (Highlights, No. 91A)

Cracks in the Foundations of Growth

What Will the Housing Debacle Mean for the U.S. Economy?

DIMITRI B. PAPADIMITRIOU, GREG HANNSGEN, and GENNARO ZEZZA

No. 90, 2007 (Highlights, No. 90A)

The Economics of Outsourcing

How Should Policy Respond?

THOMAS I. PALLEY

No. 89, 2007 (Highlights, No. 89A)

U.S. Household Deficit Spending

A Rendezvous with Reality

ROBERT W. PARENTEAU

No. 88, 2006 (Highlights, No. 88A)

Maastricht 2042 and the Fate of Europe

Toward Convergence and Full Employment

JAMES K. GALBRAITH

No. 87, 2006 (Highlights, No. 87A)

Rethinking Trade and Trade Policy

Gomory, Baumol, and Samuelson on Comparative Advantage

THOMAS I. PALLEY

No. 86, 2006 (Highlights, No. 86A)

The Fallacy of the Revised Bretton Woods Hypothesis

Why Today's International Financial System Is Unsustainable

THOMAS I. PALLEY

No. 85, 2006 (Highlights, No. 85A)

Can Basel II Enhance Financial Stability?

A Pessimistic View

L. RANDALL WRAY

No. 84, 2006 (Highlights, No. 84A)

Reforming Deposit Insurance

The Case to Replace FDIC Protection with Self-Insurance

PANOS KONSTAS

No. 83, 2006 (Highlights, No. 83A)

The Ownership Society

Social Security Is Only the Beginning . . .

L. RANDALL WRAY

No. 82, 2005 (Highlights, No. 82A)

Breaking Out of the Deficit Trap

The Case Against the Fiscal Hawks

JAMES K. GALBRAITH

No. 81, 2005 (Highlights, No. 81A)

The Fed and the New Monetary Consensus

The Case for Rate Hikes, Part Two

L. RANDALL WRAY

No. 80, 2004 (Highlights, No. 80A)

The Case for Rate Hikes

Did the Fed Prematurely Raise Rates?

L. RANDALL WRAY

No. 79, 2004 (Highlights, No. 79A)

The War on Poverty after 40 Years

A Minskyan Assessment

STEPHANIE A. BELL and L. RANDALL WRAY

No. 78, 2004 (Highlights, No. 78A)