



Who Sank The Boat?

Hilary Till, Research Associate at EDHEC Risk Institute,
Co founder, Premia Risk Consultancy, Inc.

Challenges to Popular Narratives on Commodity Futures Speculation

1.1. The Economic Role of Commodity Futures Markets

We will start by noting that the terms, “hedging” and “speculation” are not precise. For example, a grain merchant who hedges wheat inventories creates a “basis” position and is then subject to the volatility of the relationship between the spot price and the futures price of the commodity. The grain merchant is, in effect, speculating on the “basis.” The basis relationship tends to be more stable and predictable than the outright price of the commodity, which means that the merchant can confidently hold more commodity inventories than otherwise would be the case. What futures markets make possible is the specialization of risk-taking rather than the elimination of risk.

Who would take the other side of a commercial hedger’s position? Answer: A speculator who specializes in that risk bearing. The speculator may be an expert in the term structure of a futures curve and would spread the position taken on from the commercial hedger against a futures contract in another maturity of the futures curve or the speculator may spread the position against a related commodity. Till and Eagleeye (2004, 2006) provide examples of both intra-market spreading and inter-market spreading, which arise from such risk-bearing.

Alternatively, the speculator may detect

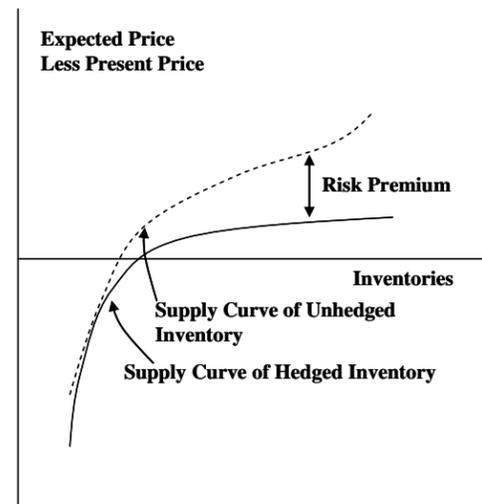
trends resulting from the impact of a commercial’s hedging activity, and be able to manage taking on an outright position from a commercial because the speculator has created a large portfolio of unrelated trades. Presumably, the speculator will be able to dampen the risk of an outright commodity position because of the diversification provided by other unrelated trades in the speculator’s portfolio. In this example, the speculator’s risk-bearing specialization comes from the astute application of portfolio theory.

What then is the economic role of commodity speculation and its “value to society”? Ultimately, successful commodity speculation results from becoming an expert in risk bearing. This profession enables commercial entities to privately finance and hold more commodity inventories than otherwise would be the case because they can lay off the dangerously volatile commodity price risk to price-risk specialists. Those commercial entities can then focus on their area of specialty: the physical creation, handling, transformation, and transportation of the physical commodity.

Cootner (1961) wrote that in the absence of being able to hedge inventories, a commercial participant would not rationally hold “large inventories ... unless the expected price increase is greater than that which would be required to cover cash storage costs by an amount large enough to offset the additional risk involved...The overall shape of the supply curve of storage for

a wide range of commodities (based on empirical studies) has fallen into the pattern shown in ...” Exhibit 1, according to Cootner (1961). This graph illustrates that greater inventories can be held, when hedged, without requiring expected future price increases.

Exhibit 1: Supply Curve of Storage



Source: Cootner (1961), Figure 1b.

The 1996 book, *The Great Wave: Price Revolutions and the Rhythm of History*, discusses European history since the 1200s. Broadly speaking, past eras of grain price inflations, whatever the cause, resulted in devastating consequences for civilizational advancement. Over the centuries, two innovations have lessened these tragic episodes: international trade and the increase in inventory holdings. Commodity futures markets are a trial-and-error development that serves the latter civilizational advancement.

If the existence of price-risk-bearing specialists ultimately enables more inventories to be created and held than otherwise would be the case, we would expect their existence to lead to the lessening of price volatility. To be clear, why would this be the case?

The more speculators there are, the more opportunity there is for commercial hedgers to find a natural other side for hedging prohibitively expensive inventories. This in turn means that more inventories can be economically held. Then with more inventories, if there is unexpected demand, one can draw from inventories to meet demand, rather than have prices spike higher to ration demand.

There is some empirical evidence to support the theory that speculative involvement actually reduces price volatility. Brunetti et al. (2011) examined five markets, including corn, over the period 2005 to 2009 and found that: "... speculative trading activity largely reacts to market conditions and reduces volatility levels, consistent with the hypothesis that speculators provide valuable liquidity to the market."

In addition, Professor David Jacks examined what happened to commodity-price volatility, across countries and commodities, before and after specific commodity-contract trading has been prohibited in the past. Jacks (2007) also examined commodity-price volatility before and after the establishment of futures markets, across

time and across countries. Jacks' study included data from 1854 through 1990. He generally, but not always, found that commodity-price volatility was greater when there were not futures markets than when they existed, over 1-year, 3-year, and 5-year timeframes.

More recently, Irwin and Sanders (2011) note that "[commodity] index positions [have] led to lower volatility in a statistical sense," when examining 12 agriculture markets and 2 energy futures markets from June 2006 to December 2009. Specifically: "... there is mild evidence of a negative relationship between index fund positions and the volatility of commodity futures prices, consistent with the traditional view that speculators reduce risk in the futures markets and therefore lower the cost of hedging." (p. 24)

1.2. Brian Wright and "Who Sank the Boat?"

1.2.1. Grains

Professor Brian Wright has discussed the difficulty of understanding intuitively how to apportion causality when analyzing commodity price spikes. Wright (2011b) uses a delightful example from the popular Australian (and New Zealander) children's story, "Who Sank the Boat?" to illustrate how a non-linear function can make it difficult to apportion blame amongst various contributing factors.

The Story of "Who Sank the Boat?"

"Imagine a pig carrying an umbrella, a sheep doing knitting, and a cow and a donkey and a mouse, all walking along on their back legs in single file.

What else is there to do on a fine sunny morning but to go for a row in the boat?

But there is one big question. 'Who sank the boat?'

We are told the outcome right up front, but who was the culprit? The tension and suspense is fantastic as each creature in turn gets aboard. The donkey is a smart critter since he knew how to balance the weight of the cow. The sheep was just as smart since he got on the opposite side to the pig. We are now very low in the water now, but still afloat.

The smallest and the lightest of the friends (a naughty little mouse) now gets on board. ... 'You DO know who sank the boat' - don't you?"

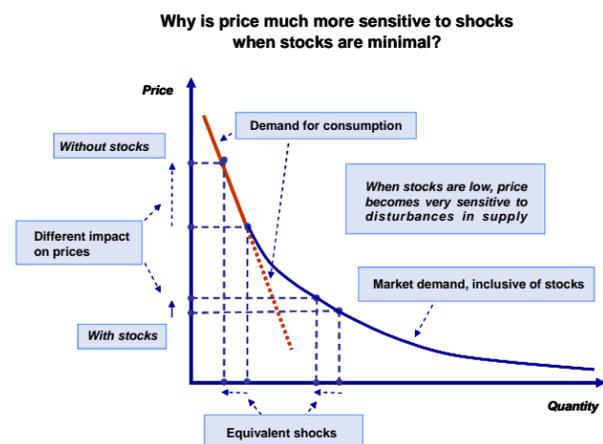
The relevance of this story to commodity price spikes is as follows. Professor Christopher Gilbert has explained why temporarily large price rises in commodity markets can occur (in Gilbert 2007): "Commodity markets are characterized by very low short-run elasticities of both production and consumption, although long-run supply elasticities are probably high. ... [I]n a tight market in which only minimum stocks are held, the long-run price becomes irrelevant. With inelastic short-run supply and demand curves, the market clearing price ceases to be well defined, not in the sense that the market does not clear, but in the sense that it will be very difficult to assess in advance at what price, market clearing will result. Fundamentals-based analysis may show where the price will finish, but this will provide very little guide as to where it will go in the meantime." (p. 23) Gilbert (2007) further explains that "when markets become tight, inelastic supply and demand make prices somewhat arbitrary, at least in the short term. There will always be a market clearing price, but its level may depend on incidental ... features of the market."

In Wright’s retelling of the children’s story, the incidental factor was the naughty little mouse jumping into the boat. Wright (2011b) also provides a technical chart to show how a supply disturbance has a dramatically different impact on price, depending on whether one is in a period of low- stocks-relative-to-consumption or not. Please see Exhibit 2. Wright (2011a) discusses how the empirical evidence shows that “[price] spikes occur when discretionary stocks are negligible.”

In the recent past, have we been in a period where one had to be concerned about grain inventories? Exhibit 3 illustrates corn’s inventory-to-use situation from 1965 through 2011. Lewis (2011) explained the significance of Exhibit 3 as follows: “[T]he world would exhaust global corn inventories in just 47 days on current consumption patterns. This is the most precarious level of corn inventories since 1974.”

Professor Scott Irwin explained the situation with corn prices at the time to White (2011): “We are in the part of the [corn] price curve that, in ‘economist-speak,’ is highly non-linear.” The current “bull market rally, following so soon after the 2007-08 rally, seems similar to the early-mid 1970s series of rallies,” recorded White (2011) in his interview with Irwin. This comparison is apparent from Exhibit 3’s price series. Continues Irwin in White (2011): “... the true spike or boom phase will probably last longer in this episode because of the biofuel mandates and high fuel prices working together.” Because of governmental policies mandating ethanol use, price may not function effectively to ration corn demand in the future, a constraint that did not exist in the 1970s.

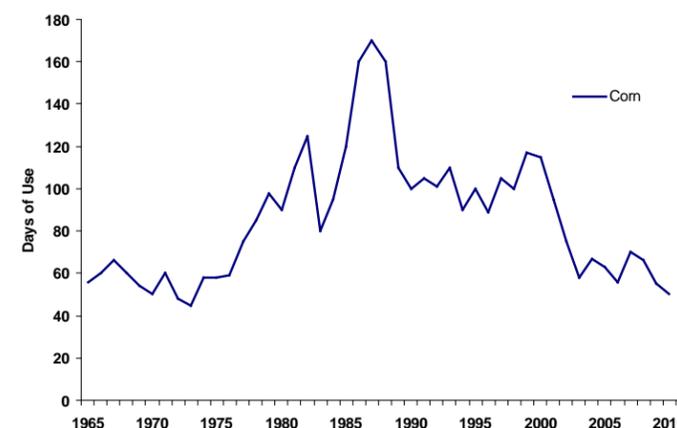
Exhibit 2: Impact of Supply Shocks



Source: Wright (2011b), Slide 39.

During the U.S. Commodity Futures Trading Commission’s (CFTC’s) “Conference on Commodity Markets” in August 2011, Professor Wright discussed the consequences for grain prices when inventories get quite low (Wright, 2011c): “[With a] non-linear function, ... you can’t say 10% is [due to] this; and 20% is [due to] that, because it is the last 5 or 10% that causes all the chaos. You drive ... [grain] stocks down to a very low level [as in 2008] and suddenly you get this very inelastic demand, making even tiny little pipsqueak countries like, for example, just to pick one at random, (Australia, have large market impact) Australia’s drought will cause havoc in the markets when you have no stocks because once you ...[have] no stocks you’re naked before this and every price movement ... has to be met by someone not consuming and that’s very hard[.] What would the price have to be to stop you from having your muffins in the morning?”

**Exhibit 3: Inventory-to-Use Ratio for Corn
Total Available Stocks Divided by Daily Consumption**



Source: Lewis (2011), Figure 1.

In Wright (2011a), the commodity economist provides a more formal explanation: “Wheat, rice, and corn are highly substitutable in the global markets for calories ..., and when aggregate stocks decline to minimal feasible levels, prices become highly sensitive to small shocks, consistent with the economics of storage behavior. In this decade, aggregate stocks of grain calories available to participants in the global grain market ... declined, due to the imposition of new and substantial biofuel mandates on markets subject to otherwise fairly normal ranges of shifts in yields and demands, making markets unusually sensitive to all short-run disturbances including the Australian drought and other regional grain production problems, as well as biofuel demands in excess of mandates induced by spikes in petroleum prices. To protect their own vulnerable ... consumers, key exporters restricted supplies in 2007, exacerbating the price rise. ... If [biofuel] mandates are kept at current levels, and petroleum prices do not rise higher, then it is likely that over time the market will adjust to a less volatile equilibrium, on a higher price path than without biofuels ... [I]t is possible that mandates could expand to outrun yield increases for many years, and keep grain prices high and volatile as they are today ...” (p. 33)

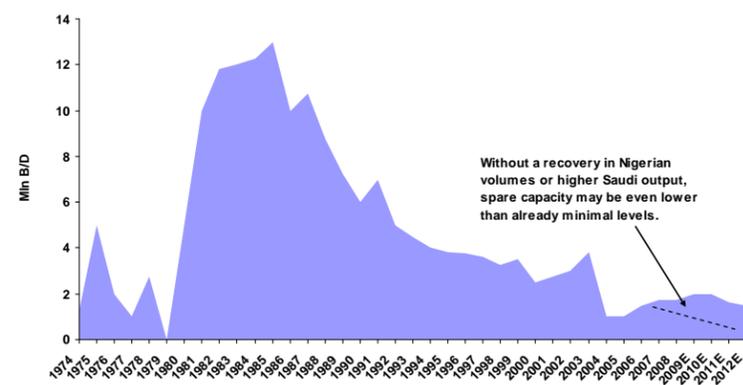
Agreeing with the concerns of both Irwin and Wright, Richard Gower, who is a policy advisor for Oxfam UK, has noted that developed countries should consider introducing “a price trigger so that when food prices are high, you divert those stocks of grains from fuel to food.” (Gower, 2011)

1.2.2. Crude Oil

Effective spare capacity in OPEC was only 1.5-million barrels per day in July 2008, according to IEA (2008b). Exhibit 4 puts this excess-capacity cushion in historical context. One-and-a-half-million-barrels-per-day was an exceptionally small safety cushion, given how finely balanced global oil supply-and-demand was. Given the risk of supply disruptions due to naturally occurring weather events as well as due to well telegraphed and perhaps well rehearsed geopolitical confrontations, one would have preferred at the time for this spare capacity cushion to have been much higher.

In Till (2008b), we discussed what may have caused the oil price rally that culminated in the July 2008 price spike. There were a number of plausible fundamental explanations that arose from any number of incidental factors that came into play when supply-and-demand was balanced so tightly, as was the case with light sweet crude oil.

Exhibit 4: Annual OPEC Immediately Deliverable Spare Capacity 1974 - 2012E



Source: Murti et al. (2008), Exhibit 3.

In 2008, these incidental factors included a temporary spike in diesel imports by China in advance of the Beijing Olympics, purchases of light sweet crude by the U.S. Department of Energy for the Strategic Petroleum Reserve, instability in Nigeria, and tightening environmental requirements in Europe. One should add that this is not an exhaustive list.

The natural conclusion to observing that many seemingly inconsequential factors, in combination, could lead to such a large rise in the price of crude oil during the first seven months of 2008, is that the market was signaling a pressing need for an increase in spare capacity in light sweet crude oil, however achieved.

Once we understand that 1.5 million barrels of OPEC spare capacity is quite tight, one can understand the importance of stability in North Africa in preventing the potential for further oil price spikes. Exhibit 5 shows the components of OPEC spare capacity as of 2011.

1.3. Evidence on the Impact of Commodity Index Funds

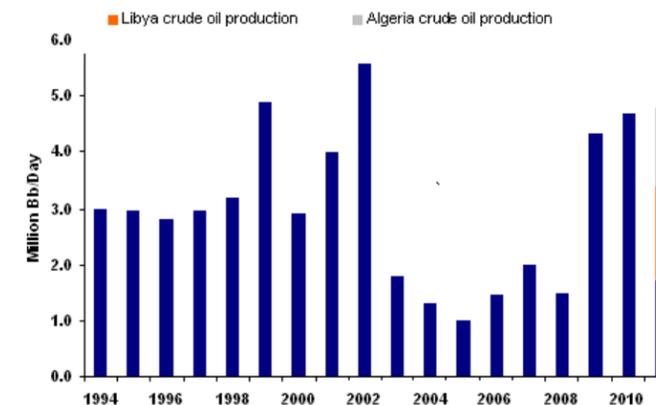
Did commodity index investments in 2008 cause the 7-month oil-price rally that culminated in July of 2008? According to data released by the CFTC on September 11, 2008, this is an unlikely cause, given that total over-the-counter (OTC) and on-exchange commodity index investment activity in oil-futures-contract-equivalents actually declined from December 31, 2007 through June 30, 2008. Please see Exhibit 6.

Partly because of results such as in Exhibit 6, a futures exchange spokesman stated in early 2010 that the U.S. regulatory attention on oil markets had shifted to a focus on "market concentration and not about speculation" because the evidence on excessive speculation did not bear out. "There was no smoking gun," reported Collins (2010).

According to Irwin and Sanders (2010): "[A set of] causality regressions provide no convincing evidence that positions held by index traders or swap dealers impact market returns. ... [Our] results tilt the weight of evidence ... in favor of the argument that index funds did not cause a bubble in commodity futures prices."

The policy implication of the available evidence on the market impact of commodity index funds is straightforward: ... regulatory proposals to limit speculation – especially on the part of index funds – are not justified and likely will do more harm than good. In particular, limiting the participation of index fund investors would rob the

Exhibit 5: OPEC Spare Capacity Scenarios



Source: Lewis et al. (2011), figure on p.1.

Exhibit 6: Commodity Index Activity

Total OTC and On-Exchange Commodity Index Investment Activity

	<u>12/31/07</u>	<u>3/31/08</u>	<u>6/30/08</u>
Crude Oil Index Values Measured in Futures [Contract] Equivalents	408,000	398,000	363,000

Source: CFTC (2008). Staff Report on Commodity Swap Dealers & Index Traders With Commission Recommendations

commodity futures markets of an important source of liquidity and risk-absorption capacity at a time when both are in high demand." (pp. 2-3)

1.4. There is an Increase in the Co-Movements Between Commodity Prices and Financial Asset Prices, But What is the Implication for "Social Welfare"?

This is the question posed by Fattouh et al. (2012). These researchers note that in the case of oil: "[G]reater financial market integration may reduce the market price of risk and increase the level of inventories by reducing the cost of hedging. While this mechanism induces an increase in the spot price, the higher level of inventories reduces the chances of future price hikes." (p. 8.). Fattouh et al. (2012) continue: "[E]vidence of increased co-movement between the spot price of oil, oil futures, and other asset prices does not imply that the [past] surge in the spot price was caused by financial speculators. ... To the extent that global macroeconomic fundamentals have changed in recent years, ... that fact could provide an alternative explanation for the observed co-movement ..." (p. 8.)

Kawamoto et al. (2011) note that: "With regard to the cross-market linkage between commodity and stock

markets, the correlation coefficient of the return between the markets has risen rapidly since the second half of 2008." (p. 4)

Market practitioners are well aware of the increase in correlations across all asset classes, including commodities, since the onset of the Global Financial Crisis. In April 2012, Williams et al. (2012) explained that: "In a world where disparate assets move in lockstep, their individual identities become lost. Assets now behave as either risky assets or safe havens ... Synchronized markets provide little diversification ..." (p. 1) Williams et al. (2012) refer to this new market behavior as "Risk On – Risk Off (RORO)." RORO may be a "consequence of a new systemic risk factor. We have seen global intervention, QE [Quantitative Easing] and policy response of an unprecedented scale across many countries – and markets are pricing in the bimodal nature of their consequences. Ultimately, either policy response works and there is indeed a global recovery, or they fail and the sovereign debt issues across the developed world lead to new and even more serious [financial] crises. Individual assets (including commodities), while still influenced by their fundamentals, are dominated by the changing likelihood of such a recovery. Disparate markets now have an ascendant common price component and correlations surge whenever an unsettling event increases the degree of uncertainty." (p. 4)

Cheng et al. (2012) provide convincing evidence of one aspect of the "RORO" environment, which began after the 2008 Lehman crisis. "... [W]hile financial traders accommodate the needs of commercial hedgers in normal times, in times of financial distress, financial traders reduce their net long positions (in commodities) in response to an increase in the VIX[,] causing the risk to flow to commercial hedgers." The VIX is an index of equity option implied volatilities, calculated by the Chicago Board Options Exchange, and is frequently seen as an "investor fear gauge." The researchers state that: "Our analysis shows that while the positions of CITs (Commodity Index Traders) and hedge funds complement the hedging needs of commercial hedgers in normal times, their own financial distress rendered them liquidity consumers rather than providers during the financial crisis." (p. 6) Cheng et al. (2012) also show how sensitive the returns of all individual commodities have become to changes in the VIX.

The G20 Study Group on Commodities (2011) acknowledged this new state-of-the-world: "The expansion of market participants in commodity markets increases market liquidity (including in longer term contracts), thereby accommodating the hedging needs of producers and consumers. ... On the other hand ... (the) increased correlation of commodity derivatives markets and other financial markets suggests a higher risk of spillovers." (p. 43)

The post-2008 risk environment may predominate for at least a decade. Ward (2012) quotes Ray Dalio of Bridgewater Associates as explaining: "Deleveragings go on for about 15 years. The process of raising debt relative to incomes goes on for 30 or 40 years, typically. There's a last big surge, which we had in the two years from 2005 to 2007 and from 1927 to 1929, and in Japan from 1988 to 1990, when the pace becomes manic. That's the classic bubble. And then it takes about 15 years to adjust."

What this means for commodity market participants, whether they are hedgers or speculators, is that results such as those in the Cheng et al. (2012) study will have to be considered in managing commodity risk. This is similar to the advice provided by Williams et al. (2012) in advising asset managers to rethink portfolio construction in an era of assets losing their "individual identities."

Regarding the Cheng et al. (2012) study, one should add that it is not a new phenomenon for commercial market participants to have to step in when risk-bearing-specialists become in distress. As discussed in Till (2008a), the hedge fund, Amaranth, took on price risk from physical natural gas participants, who had wanted to hedge

their forward production. When the hedge fund became in distress in 2006, it is likely that these commercial hedgers were then the ultimate risk takers on the other side of Amaranth's distressed trades, and so benefited from the temporary dislocations that ensued from the fund's collapse. In other words, it does not appear that the commercial natural-gas industry was damaged by the crisis caused by Amaranth; in fact, commercial-market participants likely benefited. Natural gas commercial hedgers would have earned substantial profits had they elected to realize their hedging windfall during the three months that followed the Amaranth debacle.

That said, what is new about the current risk environment is that a price-risk-bearing specialist may not be able to assume diversification across individual commodities (and other financial instruments) when using portfolio theory to manage commodity risk. As a result, this type of risk specialist must reduce leverage in this activity. Assuming this conclusion is embraced in a widespread manner, the "higher risk of spillovers" resulting from the "financialisation of commodities" may lessen.

2. Response to Popular Narratives on Commodity Price Spikes

2.1. Placeboes

The main problem with proposals to restrict speculative participation, so as to avoid future price spikes, is that this solution may actually be a placebo.

Former U.S. CFTC Commissioner Michael Dunn noted in an article by Loder and Brush (2011): "My fear is that, at best, position limits are a cure for a disease that does not exist. Or at worst, a placebo for one that does." According to Lynch (2010), a U.S. CFTC economist memorandum from the previous year stated that: "In our analysis of the impact of position limits, we find little evidence to suggest that changes from a position limit regime to an accountability level regime or changes in the levels of position limits impact price volatility in either energy or agricultural markets. Our results are consistent with those found in the existing literature on position limits."

2.1.1. Agriculture

One should acknowledge that some U.S. agricultural futures markets currently do operate under a position-limit regime defined by the CFTC, so one does have to be careful in arguing that position limits are necessarily a particularly onerous constraint on market participants.

2.1.2. Oil

Consistent with Dunn's view, IEA (2008a) warned, "Blaming speculation is an easy solution[,] which avoids taking the necessary steps to improve the supply-side access and investment or to implement measures to improve energy efficiency."

A 2010 policy brief from the Food and Agriculture Organization (FAO) of the United Nations provides a useful note of caution, regarding making position limits too onerous:

"Efforts to reduce speculation in futures markets might ... have unintended consequences. Mechanisms to intervene in futures markets, if the futures price diverges from an equilibrium level determined by market fundamentals (a level which in itself will be difficult to determine), might divert speculators from trading and thus lower the liquidity in the market available for hedging purposes." The FAO policy brief also reinforces the importance of appropriate regulatory measures, including "increasing transparency and the amount of available information on futures trading."

2.2. Transparency of Position-Taking

One can easily endorse proposals for transparency in position-taking in all financial centers. This endorsement is the result of hard-won lessons from U.S. history. Essentially, the historical lessons from past challenges to futures trading in the U.S. are as follows:

- a. Constantly revisit the economic usefulness of commodity futures trading;
- b. Insist upon transparency in market-participation and position data in a sufficiently disaggregated fashion as to be useful, but also in a sufficiently aggregated fashion as to not violate individual privacy.
- c. Carry out empirical studies to confirm or challenge the benefits and/or burdens of futures trading.

2.3. Commodity Index Products

Regarding any proposals to ban commodity index products, one would think this would be an unfortunate precedent without solid evidence of these products being a "detriment to society."

2.4. Final Note: "Speculative" Regulatory Proposals

Modern commodity futures markets have been the product of 160 years of trial-and-error efforts. One result has been the creation of an effective price discovery process, which in turn enables the coordination of individual efforts globally in dynamically matching current production decisions with future consumption needs in commodities. The price risk management benefits of these markets are also particularly emphasized in this article.

Before performing surgery on these institutions, international policymakers may want to tread carefully and not adopt "speculative" regulatory proposals whose ultimate effects are unknown.

3. Conclusion

The present concern with recent food and oil price spikes is fully justified. One can be concerned, though, that proposals to restrict speculation may actually be placebos that distract from addressing the real causes of these price spikes. One hopes that advisers to influential policymakers will do careful research on the economic theory and practice of commodity futures markets. They would then understand why a large body of academics and practitioners desire to protect these vital institutions.

Endnotes

This article is excerpted from Till (2012).

The information contained in this article has been assembled from sources believed to be reliable, but is not guaranteed by the author.

The ideas and opinions expressed in this article are the sole responsibility of the author. As such, the views expressed in this paper do not necessarily reflect those of organizations with which the author is affiliated.

References

Allen, P., 1996, *Who Sank the Boat?* New York: The Putnam and Grosset Group. [The children's story is reviewed and summarized at Amazon.com.

Retrieved from:

http://www.amazon.com/review/R1KQXHE1FIBKKL/ref=cm_cr_pr_viewpnt#R1KQXHE1FIBKKL on 21 May 2011.]

Brunetti, C., Büyükşahin, B., and J. Harris, 2011, "Speculators, Prices and Market Volatility," Johns Hopkins University, International Energy Agency, and University of Delaware Working Paper, 6 January.

Available at SSRN: <http://ssrn.com/abstract=1736737>.

[CFTC] Commodity Futures Trading Commission, 2008, "Staff Report on Commodity Swap Dealers & Index Traders with Commission Recommendations," 11 September.

CFTC, 2009, "Impact of Position Limits on Volatility in Energy Futures Markets," Staff Memorandum of 21 August, which was released to the Wall Street Journal through a Freedom of Information Act request, according to Lynch (2010).

Cheng, I.H., Kirilenko, A., and W. Xiong, 2012, "Convective Risk Flows in Commodity Futures Markets," University of Michigan, Commodity Futures Trading Commission, and Princeton University Working Paper, February.

Collins, D., 2010, "How Hard Will Hard Limits Be?," *Futures Magazine*, January, pp. 56-58.

Cootner, P., 1961, "Common Elements in Futures Markets for Commodities and Bonds," *The American Economic Review*, Vol. 51, No. 2, Papers and Proceedings of the Seventy-Third Annual Meeting of the American Economic Association, May, pp. 173-183.

[FAO] Food and Agriculture Organization of the United Nations, 2010, "Price Surges in Food Markets," *Economics and Social Perspectives*, June.

Fattouh, B., L. Kilian, and L. Mahadeva, 2012, "The Role of Speculation in Oil Markets: What Have We Learned So Far?," Oxford Institute for Energy Studies and University of Michigan Working Paper, 18 March.

Fischer, D., 1996, *The Great Wave: Price Revolutions and the Rhythm of History*, New York: Oxford University Press.

G20 Study Group on Commodities, 2011, "Report of the G20 Study Group on Commodities under the chairmanship of Mr. Hiroshi NAKASO [of the Bank of Japan]," November.

Gilbert, C., 2007, "Commodity Speculation and Commodity Investments," University of Trento (Italy) and Birkbeck College (London), Paper for Presentation at "The Globalization of Primary Commodity Markets," Stockholm, 22-23 October.

Gower, R., 2011, "Commodity Price Volatility: Can Free Markets Still Feed and Power the World?," Conference organized by the French Embassy in London, in partnership with the Financial Times, the London School of Economics and Political Science, Chatham House, the Franco-British Council, and the Institut français, Transcription of Remarks, 1 June.

Retrieved from: <http://www.youtube.com/watch?v=iCYM2vxxang> on 16 July 2011.

[IEA] International Energy Agency, 2008a, "Oil Market Report," 10 July.

IEA, 2008b, "Oil Market Report," 12 August.

Irwin, S. and D. Sanders, 2010, "The Impact of Index and Swap Funds in Commodity Futures Markets," A Technical Report Prepared for the Organization on Economic Co-Operation and Development (OECD), June.

Irwin, S. and D. Sanders, 2011, "Index Funds, Financialization, and Commodity Futures Markets," *Applied Economic Perspectives and Policy*, Spring, pp. 1-31.

Jacks, D., 2007, "Populists Versus Theorists: Futures Markets and the Volatility of Prices," *Explorations in Economic History*, Elsevier, April, pp. 342-362.

Kawamoto, T., Kimura, T., Morishita K., and M. Higashi, 2011, "What Has Caused the Surge in Global Commodity Prices and Strengthened Cross-Market Linkages?," Bank of Japan Working Paper Series, No. 11-E-3, May.

Khan, M., 2008, "Oil Prices and the GCC: Could the Region Be Stoking Oil Prices?," *Citi Economic and Market Analysis*, 4 July.

Lewis, M., Brebner, D., Hsueh, M., Fu, X., Sieminski, A., Choi, S., Lewis, M.-C., and I. Curien, 2011, "Commodities Weekly," *Deutsche Bank Global Markets Research*, 25 February.

Lewis, M., 2011, "Commodities Quarterly," *Deutsche Bank Global Markets Research*, 5 July, p. 55.

Loder, A. and S. Brush, 2011, "Energy Futures: The Risk in Speculation," *Bloomberg BusinessWeek*, 20 January. [The article cites (now retired) CFTC Commission M. Dunn.]

Lynch, S., 2010, "CFTC Documents Reveal Internal Debate on Position Limits," *Wall Street Journal*, 14 May.

Murti, A., Singer, B., Koh, K., and M. della Vigna, 2008, "\$100 Oil Reality, Part 2: Has the Super-Spike End Game Begun?," *Goldman Sachs, Global: Energy: Oil*, 5 May.

Till, H. 2008a, "Amaranth Lessons Thus Far," *Journal of Alternative Investments*, Spring, pp. 82-98.

Till, H., 2008b, "The Oil Markets: Let the Data Speak for Itself," *EDHEC-Risk Publication*, October.

Till, H., 2012, "'Who Sank the Boat?' Alternative Explanations to Popular Narratives Regarding Recent Commodity Price Spikes and the Implications This Has for European Derivatives Regulation," *EDHEC-Risk Publication*, http://www.edhec-risk.com/edhec_publications/all_publications/RISKReview.2012-06-08.1744/attachments/EDHEC_Position_Paper_Who_Sank_the_Boat_F.pdf, June.

Till, H. and J. Eagleeye, 2004, "How to Design a Commodity Futures Trading Program," in Greg Gregoriou, Vassilios Karavas, François-Serge Lhabitant, and Fabrice Rouah (eds), *Commodity Trading Advisors: Risk, Performance Analysis, and Selection*, Hoboken, NJ: Wiley, pp. 277-93.

Till, H. and J. Eagleeye, 2006, "Commodities – Active Strategies for Enhanced Return," in Robert Greer (ed), *The Handbook of Inflation Hedging Investments*, New York: McGraw Hill; also in *Journal of Wealth Management*, Fall 2005, pp. 42-61.

Ward, S., 2012, "Dalio's World," *Barron's*, 19 May.

White, E., 2011, "Dwindling Corn Stocks Put Market on Edge," *Western Producer* (a publication serving Western Canadian farm families), 17 February.

Williams, S., Fenn, D., and M. McDonald, 2012, "Risk On – Risk Off," *HSBC Global Research*, April.

Wright, B., 2011a, "The Economics of Grain Price Volatility," *Applied Economic Perspectives and Policy*, Spring, pp. 32-58.

Wright, B., 2011b, "The Economics of Grain Price Volatility," *Plenary Address at 14th Annual Conference on Global Economic Analysis*, Slides, Venice, 16 June.

Wright, B., 2011c, "On the Economics of Grain Price Volatility," *CFTC Conference on Commodity Markets*, Washington, D.C., Transcription of Remarks, 26 August.

Author Bio

Hilary Till is a Research Associate at EDHEC Risk Institute (www.edhec-risk.com). She is also the co-founder of a proprietary trading and research firm as well as being a principal of Premia Risk Consultancy, Inc. In addition, Ms. Till is the co-editor of the Risk Books bestseller, *Intelligent Commodity Investing* (www.riskbooks.com/intelligentcommodity-investing). Previously, Ms. Till was the Chief of Derivatives Strategies at Putnam Investments, and prior to this position was a quantitative analyst at Harvard Management Company. Ms. Till serves on the North American Advisory Board of the London School of Economics and Political Science (LSE); is a member of the Federal Reserve Bank of Chicago's Working Group on Financial Markets; and is a Fellow at the Arditti Center for Risk Management in DePaul University's Finance Department in Chicago. She has a B.A. with General Honors in Statistics from the University of Chicago and an M.Sc. degree in Statistics from LSE.

Additional reading on Commodities and Commodity Investment can be found in the newly updated CAIA Level II book

K. Black, D. Chambers, and H. Kazemi., Editors, *CAIA Level II: Advanced Core Topics in Alternative Investments*, 2nd ed. CAIA Knowledge Series. Hoboken, NJ: Wiley, 2012

Find on [Amazon](#) or [Barnes and Noble](#)

Additional Reading on Commodity Speculation

Defining Speculation: The First Step toward a Rational Dialogue

Edward Szado

The Journal of Alternative Investments, Summer 2011, Vol. 14, No. 1: pp. 75-82

The meaning attributed to a particular financial term can have a significant impact on the way one considers issues in the marketplace. The purpose of this article is to offer one perspective on how to properly define speculation and to offer a broad view of how and why different understandings of the term have led to the debate as to how, and to what degree, to control the activities of speculators. For instance, the view of what constitutes speculation and its impact on market processes varies widely among academics, politicians, the media, and the general public.

Academics generally view speculators as a group of individuals who trade primarily based on an individual asset's stand alone, expected risk-reward trade-off. In contrast, in the public, the mass media, and the political arena, speculators are often considered less important or less noble than other market participants who trade financial futures or commodities only as an indirect (e.g., hedging) part of their ordinary business activities. Whatever the separation between hedging and speculation, the primary concern is the degree to which either hedgers or speculators have direct influence on market prices above and beyond their primary market functions.

<http://www.ijournals.com/doi/abs/10.3905/jai.2011.14.1.075>

The Role of Speculators During Times of Financial Distress

Naomi E. Boyd, Jeffrey H. Harris, and Arkadiusz Nowak
The Journal of Alternative Investments, Summer 2011,
 Vol. 14, No. 1: pp. 10-25

One of the best-known and largest hedge fund failures was the 2006 failure of Amaranth Advisors, LLC. The authors use detailed, trader-level data to examine the role of speculators during times of financial distress—in this case, the failure of Amaranth. They find that speculators served as a stabilizing force during the period by maintaining or increasing long positions, even while prices fell. The authors develop

two testable propositions regarding liquidation versus transfer of positions and conclude that the probability of transfer was more likely for distant contract expirations and for contracts more dominantly held by the distressed trader. The article also examines the role of speculators in providing liquidity and mitigating the effects of liquidity risk by evaluating the change in the number of traders, the size and time between trades, and a Herfindahl measure of speculative trader concentration during the crisis period.

<http://www.ijournals.com/doi/abs/10.3905/jai.2011.14.1.010>

Squeeze Play: The Dynamics of the Manipulation End Game

The Journal of Alternative Investments, Summer 2011,
 Vol. 14, No. 1: pp. 26-39

Craig Pirrong

This article considers one of the most significant regulatory concerns facing derivatives markets: the case of market manipulation by means of a corner, or “squeeze.” There are many famous examples of squeezes dating back to the very origins of derivatives trading and extending to the present day. These manipulations distort prices by moving them away from the supply- and demand-driven equilibrium, which limits the effectiveness of the market as a venue for

price discovery and effective hedging. Unfortunately, the dynamics of trading as a contract nears expiration have not been modeled extensively. As a result, the existing literature cannot capture many of the interesting actions and interactions observed during actual squeezes. This article fills that void by examining the effects of asymmetrical information on the trading strategies of large longs and shorts as a contract approaches expiration. It provides insight into the mechanism of real-world corners and squeezes and the associated price movements around expiration that are not driven by supply and demand.

<http://www.ijournals.com/doi/abs/10.3905/jai.2011.14.1.026>

Examining the Role of Financial Investors and Speculation in Oil Markets

Denis Babusiaux, Axel Pierru, and Frédéric Lasserre
The Journal of Alternative Investments, Summer 2011,
 Vol. 14, No. 1: pp. 61-74

Repeated oil-price spikes have generated a great deal of controversy about the role played by speculation in derivatives markets. A number of analysts have suggested that the speculative positions of financial investors played a major part in the 2008 oil-price hike. In contrast, some economists claim that oil inventories did not increase sufficiently for speculation to be the

cause of the run up in oil prices. This article presents these two apparently contradictory arguments and attempts to reconcile them by emphasizing the inertia of the world oil-demand response to price variations. The authors present a number of factors that help reconcile these beliefs, including incomplete oil inventory statistics, increased ground storage, the use of inventories for current production, and the impact of a “focal price” that is inconsistent with the immediate market fundamentals.

<http://www.ijournals.com/doi/abs/10.3905/jai.2011.14.1.061>

The Impact of Index Funds in Commodity Futures Markets: A Systems Approach

Dwight R. Sanders and Scott H. Irwin

The Journal of Alternative Investments, Summer 2011,
 Vol. 14, No. 1: pp. 40-49

This article addresses the debate regarding the role of index funds in commodity futures markets. Many have argued that index funds are speculators that are responsible for bubbles in commodity futures prices. The argument is based on the premise that the sheer size of index investment can overwhelm the normal functioning of these markets. Importantly, an empirical linkage must be made between commodity

index fund positions and prices, or there is no obvious mechanism by which a bubble can form. The authors’ empirical analysis uses new data from the U.S. Commodity Futures Trading Commission contained in the “Disaggregated Commitments of Traders” report. Grangerstyle causality regressions provide no convincing evidence that positions held by swap dealers impact market returns. Surprisingly, the results do suggest that larger commodity index positions are associated with declining market volatility, although these results may be market specific.

<http://www.ijournals.com/doi/abs/10.3905/jai.2011.14.1.040>

Commodity Index Investing: Speculation or Diversification?

Hans R. Stoll and Robert E. Whaley

The Journal of Alternative Investments, Summer 2011,
 Vol. 14, No. 1: pp. 50-60

A number of seemingly unrelated commodities experienced simultaneous price spikes in 2007 and 2008. Congress investigated the increase in prices and concluded that the price increases were attributable not to supply and demand fundamentals but rather excessive speculation from commodity index investing. In this article, the authors evaluate whether commodity index investing is a disruptive force in

commodity futures markets. Using the U.S. Commodity Futures Trading Commission’s Commitments of Traders reports, the authors conclude that because of its passive, long-only nature, commodity index investing is not speculation. In addition, the authors conclude that commodity index flows, whether due to rolling over existing futures positions or establishing new ones, have little impact on futures prices.

<http://www.ijournals.com/doi/abs/10.3905/jai.2011.14.1.050>