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I am Professor of Finance, and Energy Markets Director of the Global Energy Management Institute at the Bauer College of Business at the University of Houston. I have been actively involved in the commodity markets for the 22 years. I have published numerous articles and two books on commodity market issues; these include several articles on energy prices and energy trading. Moreover, I have taught courses in futures markets, financial markets, and energy markets at the graduate and undergraduate level. I currently teach a course in energy derivatives for a Global Energy MBA program in both Houston and Beijing. Furthermore, I am a member of the CFTC Energy Market Advisory Committee and the CFTC Technology Advisory Committee.¹

The subject of market manipulation is a special area of expertise. I have published seven articles and a book on the subject, and have testified as an expert in several high-profile manipulation cases. I have also given a two day seminar on manipulation to the staff of the Federal Energy Regulatory Commission.

In addition to my academic research in commodity markets, I have served as a consultant to several exchanges. In this role, I have participated in the design of

¹ The opinions expressed herein are exclusively my own, and do not reflect the views of the Global Energy Management Institute, the Bauer College of Business, the University of Houston, or the CFTC.

commodity futures contracts in the United States, Canada, Sweden, and Germany. I also was the primary investigator in a study (commissioned by a major energy consumer group) of the impact of increases in speculative position limits on the volatility of natural gas prices.

Based on my extensive study of, and experience in, commodity and commodity derivatives markets and market manipulation, I offer this testimony on the role of speculation and manipulation in affecting energy markets, and the likely impact of restrictions on speculation in these markets.

High prices for petroleum products impact American consumers in every aspect of their lives. The direct consequences—higher prices at the gas pump—are readily apparent, but oil prices affect the cost of manufacturing and/or transporting virtually everything one buys, so the indirect consequences of high prices are important too.

Given the salience of this issue, it is appropriate for legislators and regulators to attempt to determine the causes of high prices for oil and other energy products, and to craft the appropriate policy responses. One factor—speculation in energy products—has received intense scrutiny as a potential cause of high prices. The widespread belief that speculation is causing oil prices to rise far above—some say as much as \$70 dollars/barrel above—the appropriate level has led to numerous proposals in both the House and the Senate to reduce speculation in energy markets.

Although I will touch on some pending and proposed legislation, I will focus my analysis on the role and impact of speculation generally. This analysis implies that anti-speculation efforts are misguided and should be avoided, rather than implemented.

In my opinion, speculation is not the cause of high prices for energy products; the arguments advanced in support of this view are logically defective and at odds with an understanding of how the markets work. Most importantly, there is no evidence to support claims that speculation – or manipulation for that matter - is responsible for high energy prices.

To the contrary, speculation plays a constructive and important role in price discovery and the efficient transfer of risk. As a result, restrictions on speculation like those proposed of late will not alleviate price pressures, but will reduce the efficiency of the energy marketing system. Such a move would set the stage for a raft of unintended consequences that may be not only damaging to consumers and businesses in the US, but to the global economy, in which oil, no longer just a “US commodity”, plays a significant role. New markets are forming across the globe² and capital will flow to where it is least constrained by counterproductive regulations. Today that is the US, but this is not guaranteed if Congress imposes unduly restrictive burdens on participants in US markets. Therefore, Congress would be well-advised to avoid implementing rash measures to reduce speculation, and to focus instead on policies that encourage increases in output and efficient uses of energy.

More specifically:

- In recent debates over energy prices, the word “manipulation” has been thrown around with abandon. There are numerous allegations that manipulation by speculators is what is causing the current high prices. Indeed, one of the bills currently under consideration is called “The Prevent Unfair Manipulation of

² As a recent example, the Hong Kong Futures Exchange just announced its plans to launch energy futures trading.

Prices Act” (“PUMP.”) However, price behavior in the oil market during the recent period of dramatic price increases is **not** consistent with manipulation.

- I base this conclusion on my extensive research on derivatives market manipulation; indeed, I have published more (numerous articles and a book) on this subject than any academic economist. Moreover, I have designed futures contracts with the specific objective of minimizing their vulnerability to manipulation, and as a result, have extensive practical experience in how manipulation works and how it can be prevented and deterred.
- In my research, I have found that the term “manipulation” is often used loosely. Indeed, this is true of discussions of the energy market today, some of which remind me of what a Texas cotton trader said during testimony before the Senate in 1923: “The word ‘manipulation’ . . . in its use is so broad as to include any operation of the cotton market that does not suit the gentleman who is speaking at the moment.”³
- Certainly there are forms of conduct—notably a “squeeze” or “corner”—that are properly considered manipulative. My research demonstrates that such manipulative acts have distinct effects on prices, price structures (e.g., the relation between nearby and deferred futures prices), and the movements of physical commodities in interstate and international trade. These effects have **not** been observed in the oil market during 2007-2008. Moreover, existing regulatory and legislative remedies, if employed vigorously and precisely, are sufficient to address potential future manipulative attempts. Policymakers would be well

³ *Cotton Prices: Hearings Before a Subcomm. of the Senate Comm. on Agriculture and Forestry, Pursuant to S. Res. 142, 70th Cong., 1st Sess. 154 (1928).*

advised to utilize existing tools to fight recognized forms of manipulation, rather than implement new policies that will not appreciably reduce the frequency and severity of real manipulations, but which will interfere with the ability of the markets to discover prices and transfer risks efficiently.

- Constraining the positions that market participants can hold can reduce the frequency of market power manipulations, but such position limits are an inefficient tool for achieving this objective. They are inefficient because they limit the ability of speculators to absorb risk from speculators and are difficult to set at a level that is sufficient to make it difficult to corner a market without unduly constraining the ability of the markets to transfer risk efficiently.
- Based on long study and involvement in the derivatives markets, I believe that corners and squeezes are a serious concern—and not just in energy markets, but in financial and other commodity markets as well. I further believe that corners and squeezes should be punished severely, either through criminal or civil penalties, or private litigation. That said, I emphasize that: (a) there is no evidence that manipulation properly understood explains the current high prices for energy products, or (b) that position limits are not the most efficient or effective means of reducing the frequency and severity of manipulation.
- Moreover, there are more efficient tools than position limits available to deter corners and squeezes. These kinds of manipulation are already illegal in both the futures and OTC markets. Moreover, these types of manipulations can be detected with a high degree of precision; as Judge Frank Easterbrook (5th Circuit Court of Appeals) has written, “an undisclosed manipulation is an unsuccessful

manipulation.”⁴ Since corners and squeezes are detectable, and those that carry them out are usually not judgment proof, it is more efficient to deter manipulation by imposing penalties after the fact on those that engage in this conduct (through criminal or civil penalties, or private litigation) rather than by constraining the activities of all market participants before the fact through position limits.

- Vigorous head-to-head competition between similar futures contracts is a distinct rarity. The ongoing battle between NYMEX and ICE WTI contracts is one of the very few examples of such competition in the global futures markets.

Competition generally redounds to the benefit of market users, and should be encouraged. Any regulatory or legislative change that would impair the direct access of US customers to ICE Futures Europe would either be ineffectual because global financial institutions would merely shift their business to London, or counterproductive because it would reduce competition in the WTI market. Though the London-based exchange has only a 15% share in the WTI crude market, it represents a tool for global energy producers and banks to manage risk using a cash-settled instrument, rather than in a physical oil contract. Moreover, such measures would not materially reduce the vulnerability of the oil market to manipulation. Such measures would, therefore, create costs without producing any corresponding benefit.

- Historically, major shocks to commodity markets have been blamed on speculators, and speculative excess. The response to the current oil price shock is no exception. Assertions that speculation by financial institutions, including investment banks, hedge funds, commodity funds, and pension funds, have

⁴ Frank Easterbrook, *Monopoly, Manipulation, and Fraud*, 59 *J. of Business* (1986), S107.

inflated oil prices by as much as \$70 dollars per barrel are logically defective and completely unsupported by any reliable evidence. Almost without exception, trading by these market participants does not contribute to the demand or supply of physical oil, and hence their trading does not distort the physical oil market. Many financial institutions trade cash-settled derivative instruments, including swaps and the ICE WTI contract, which cannot be used to take or make delivery of oil; nor can these positions result in a physical claim on oil. Those trading these instruments are by definition price takers, not price makers. Moreover, even when financial institutions trade delivery-settled instruments, such as the NYMEX WTI contract, they typically offset their positions prior to the delivery period, and hence do not contribute to the demand or supply for physical oil. Even if they purchase in large amounts, they subsequently sell in almost equal amounts as contracts reach delivery. Hence, they typically exert no upward impact on the “spot” price for oil which is crucial in determining the prices that consumers actually pay.

- It should also be noted that the oil market has not exhibited one of the necessary indicia of speculative distortion of prices—the accumulation of large and increasing inventories in the hands of speculators. Attempts to hold prices above their competitive level—such as the actions of the Hunts in the silver market in 1979-1980, or the International Tin Council, or the agricultural price support programs of the US government in years past—require the entity keeping the prices up to accumulate large inventories. This has not been observed in the oil markets of late.

- With regard to the notion that passive investors (including “long only” index funds) have dramatically impacted the price of oil, there are some key factors that prevent this from being the case. Most notably, commodity index funds buy and sell in equal amounts on a regular basis as the futures contracts expire on a monthly or quarterly basis during the “contract roll.” Because they roll, they do not take delivery, and hence do not affect the demand for physical oil. Indeed, they are *sellers* as futures contracts near delivery, and hence are not the source of any buying pressure in the physical market; if anything, the reverse is true.
- This phenomenon has been long understood. In 1901 (!) a report from the United States Industrial Commission on “The Distribution of Food Products” stated:

As we have attempted to show, it is a mistake to represent speculation in futures as an organized attempt to depress prices to the producers.

First. Because every short seller must become a buyer before he carries out his contract.

Second. Because, so far as spot prices are concerned, the short seller appears as a buyer not a seller, and therefore, against his own will is instrumental in raising prices.⁵

The concern addressed by the Industrial Commission was the mirror of today’s: in 1901, it was widely alleged that speculative short selling depressed the prices of corn, wheat and oats, whereas today it is asserted that speculative buying inflates the price of energy. The Commission’s analysis is directly on point nonetheless; speculators who offset their positions (short sellers who buy futures, or buyers who sell them) do not distort spot prices—the prices that consumers pay and producers receive.

⁵ *Report of the Industrial Commission on the distribution of farm products* 223 (1901). Many members of the House and Senate were members of the Industrial Commission.

- Of note, what many experts claim are massive inflows to commodity index funds over the decade is largely the price appreciation of the assets in the commodity index rather than “new money”. The assets attributable to commodity index funds represent a small portion of these aggregate markets. Interestingly, in the markets where index funds are most concentrated, such as the cattle futures markets, prices have been flat. Wheat futures traded on the Minneapolis Grain Exchange are **not** included in an index, but have experienced dramatic increases in price. Finally, these index funds take no supply off the market, thus do not impact the physical market where spot prices are set.
- It has been asserted that oil may be in a speculative bubble. However, speculative bubbles are less likely to occur in the market for a physical commodity, than a market for financial assets, such as growth stocks in new industries. The discipline of physical delivery that connects derivative instruments—such as futures contracts—to the market for the physical commodity makes it far more difficult for commodity prices to become untethered from fundamentals as in the case for internet stocks, to name but one example. Moreover, extant economic research suggests that goods and assets with active futures contracts are actually less susceptible to bubbles than those lacking liquid futures markets. Hence, it would be particularly misguided to attack an alleged bubble by impeding the trading of oil derivatives. Finally, economic models of speculative bubbles imply that during a bubble, futures prices should exceed spot prices by the cost of carrying inventory; this was not observed during the period of rapid oil price increases in recent months.

- Some proposed legislation is intended to constrain the ability of financial institutions such as investment banks, pension funds, and index funds, from participating in the commodity markets. Such efforts are misguided because the participation of financial institutions in the commodity markets in general, and the oil market in particular, is a laudable development. Improved integration of the financial and commodity markets facilitates the efficient allocation (and pricing) of commodity price risk. That is, it facilitates hedging by energy producers and consumers, which in turn helps consumers; pension funds and index investors can often bear risk more cheaply than others (because of their ability to diversify), and hence their participation in the market reduces the cost that hedgers incur to shed this risk. Moreover, by trading commodity derivatives, including exchange traded commodity futures, investors can improve the performance of their portfolios by reducing risk without sacrificing return – and without putting claims on physical inventories. Indeed, this very ability to improve portfolio performance is what permits these investors to take on risk from hedgers more cheaply. Therefore, impeding the ability of financial institutions and investors to utilize the futures markets would harm hedgers and investors, again without generating any benefit for American consumers of oil products in the form of lower prices.
- Moreover, some speculators devote effort and resources to researching market, geopolitical and seasonal fundamentals. Their participation in trading ensures that the information they produce is incorporated in prices. Such trading facilitates price discovery, contributes to the informational efficiency of prices,

and thereby encourages efficient use of scarce energy resources by providing producers and consumers with more accurate measures of the true value of oil.

- The role of margins in futures markets is to ensure that parties to futures contracts are willing and able to perform on their contractual commitments; in essence, margins are performance bonds (collateral). Margins have costs; they require traders to hold more in low yielding assets (such as Treasury bills and cash) than they would absent such margin requirements. Exchanges, clearinghouses, clearing members, and brokers have incentives to set margins efficiently to trade-off these benefits and costs. Exchanges and clearinghouses use sophisticated methods to set margins efficiently, and based on these methods, adjust margins to reflect changes in price volatility.
- It would be imprudent to increase margin levels dramatically by regulatory or legislative fiat to choke off speculative activity in the energy markets. There is no reliable empirical evidence that margin increases reduce price volatility, or reduce disparities between market prices and prices justified by fundamentals. Changes in margins would affect both long and short speculative activity, and hedging activity, and thus could lead to either increases or decreases in futures prices relative to expected spot prices. Moreover, raising the cost of speculation through margin changes would tend to reduce market liquidity and increase the costs of hedging. Furthermore, raising margins affects the activity of market participants based on how much cash they have—not how much information or smarts they possess. In addition, raising margins on exchange traded instruments is likely to encourage a migration of trading to off-exchange venues where parties can freely

negotiate collateral levels. Even if speculation was distorting prices—and I repeat that there are neither convincing evidence nor arguments to support this view—regulation of margins would be an extremely blunt tool to control speculation, and would likely have detrimental effects on the efficiency of the futures market as a hedging and price discovery mechanism.

- Over-the-counter (“OTC”) instruments play an important role in virtually all financial and commodity markets. Indeed, the volume and open interest of OTC contracts is typically higher than corresponding figures for their exchange traded counterparts. Like exchange traded futures, OTC swaps permit hedgers and speculators to trade risk efficiently. Revealed preference indicates that for many market participants, OTC swaps and options offer advantages over exchange traded instruments. That is, market participants can often achieve their risk management objectives more efficiently using swaps than using exchange traded instruments. OTC market participants are already proscribed from manipulating any commodity traded in interstate commerce, so it is incorrect to say that these markets are unregulated. Additional regulation, such as limiting participation in OTC energy markets to those capable of making or taking delivery of an energy commodity, or to those who produce it, would interfere with the ability of these markets to perform their essential risk transfer function without materially reducing the frequency of manipulation. OTC markets facilitate the trading of risk, and many of the most efficient bearers of risk are not the most efficient handlers of the physical commodity. Indeed, since most OTC contracts are financially settled, they cannot even be used to transfer ownership—they are used

exclusively to transfer commodity price risks. Limiting participation in these markets to those who produce, consume, or otherwise handle, the physical commodity therefore largely defeats their very purpose. By eliminating from the market those who can most efficiently bear risks, such measures would make hedgers—who do handle the physical commodity—worse off.

- In evaluating the role of energy speculation, and energy derivatives markets more generally, it is imperative to remember one crucial fact: derivatives markets are first and foremost markets for risk, rather than markets for the actual physical product. Derivatives markets effectively permit the unbundling of price risks from the actual physical commodity. It is this unbundling that makes hedging work. The derivative market for oil and the physical market for oil are of course related, and indeed, the delivery process in the futures market ensures that futures prices at maturity reflect the actual value of physical energy. As long as the integrity of the delivery process is protected against the manipulative exercise of market power, however, financial trading of energy derivatives permits efficient allocation of energy price risks, but does not impede the orderly and efficient operation of the market for physical energy. Indeed, by facilitating the efficient allocation of risk and the discovery of prices, derivatives trading—including derivatives trading by speculators, investors, and financial institutions—actually makes the physical market more efficient. It allows energy producers and consumers to shift the risks to those best suited to bear them, and to focus their efforts on producing, transporting, marketing, and using energy as efficiently as possible. This benefits energy consumers in the US.

In summary, energy derivatives markets play an important risk transfer and price discovery role. Speculation is a crucial element of an efficient derivatives market; speculators provide services that redound to the benefit of producers and consumers of energy looking to reduce risk, and hence to the customers of those producers and consumers. Assertions that manipulation, or speculation, or manipulative speculation, are causing high oil prices are not based on sound economic reasoning, and find no support in the data. Policies based on such mistaken beliefs will do nothing to alleviate energy price pressures. Indeed, such policies are likely to harm US consumers and investors by impairing the ability of the energy derivatives markets to discover prices and transfer risk.