

Testimony of Craig Pirrong, PhD
Professor of Finance
Director, Global Energy Management Institute
Bauer College of Business
The University of Houston
Before the House Committee on Agriculture

6 November, 2008

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, including the BP-Amoco-ARCO merger case, where I testified for the Commission on the implications for the merger for the susceptibility of the New York Mercantile Exchange crude oil futures contract to manipulation. I have also given a two day seminar on manipulation to the staff of the Federal Energy Regulatory Commission.

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.

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 commodity futures contracts in the United States, Canada, Sweden, and Germany. A main objective of the contract designs was to reduce their susceptibility to manipulation. 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 Commission's Proposed Rule Prohibiting Petroleum Market Manipulation. I appreciate the opportunity to offer this testimony, but I must say at the outset that my judgment on the Proposed Rule is a harsh one. In particular, the Proposed Rule completely ignores the most important form of market manipulation. In its focus on fraud and deceit, the Proposed Rule overlooks the kind of manipulative conduct that has bedeviled commodity markets from time immemorial, and which is a serious concern today—the exercise of market power by traders holding positions in derivatives contracts. Indeed, in my opinion, market power manipulation is the most important form of manipulation of petroleum markets, and should be the focus of the Commission's scrutiny. Instead, it is completely absent from the Proposed Rule.

There are some forms of conduct that distort markets that (a) are properly considered “manipulation”, and (b) result from fraud or deceit. For instance, making false price reports to industry publications is fraudulent, deceitful, and manipulative, and

can distort prices and the allocation of resources. Similarly, the spreading of false rumors is manipulative conduct that relies on deceit.

But the most important form of manipulation in commodity markets in general, and petroleum markets in particular, is related to the exercise of market power intended to enhance the profitability of derivatives positions. For instance, in a classic “corner” or “squeeze” the holder of a large long derivatives² position on delivery settled contracts demands an inefficiently large number of deliveries against these contracts. Those who have entered into contracts obligating them to make delivery are forced with the choice of incurring supercompetitive costs to make the inefficiently large deliveries, or paying a supercompetitive price to the large long to buy back their contracts. Although the large long incurs a loss from taking excessive deliveries (this is referred to as the cost of “burying the corpse” of the manipulation), he profits from liquidating a sufficiently large number of contracts at the supercompetitive price.

This strategy represents an exercise of market power. The large long is not a price taker. Instead, by dint of his large derivatives position, he is a price maker who can affect prices through his delivery decisions. The large long faces a downward sloping demand curve for the derivatives positions he holds. The more contracts he liquidates, the fewer deliveries he takes, the lower the cost of making delivery, the lower the price shorts are willing to pay to exit their futures positions. Therefore, by varying the number of deliveries he takes, the large long affects the price. By taking too many deliveries, the

² These derivatives can include exchange traded futures contracts and options on futures, and forward and option contracts traded in the over-the-counter (“OTC”) market.

long can inflate the price artificially, and thereby enhance artificially the value of his derivatives position.³

The exercise of market power by the large long distorts prices, and causes welfare losses. The price of the cornered product rises absolutely, and relative to (a) the prices of related products (e.g., the price of a manipulated oil contract rises relative to the price of gasoline and heating oil); (b) the prices of similar products in other locations; and (c) the price for the same product in the same location for delivery at later dates. Moreover, these price distortions induce distortions in the allocation of real resources. The corner tends to attract excessive supplies to the delivery market, thereby distorting production, consumption, transportation, and storage of the manipulated commodity. These distortions result in welfare losses that public policy should strive to reduce.

There is a very recent example of price movements in the crude oil market that bear all the hallmarks of a squeeze. On 22 September, 2008, the expiring October 2008 NYMEX crude oil futures contract soared in value relative to the price of November crude, and the prices of gasoline and heating oil. Indeed, the “crack spread”—a measure of the refining margin—turned negative. In the 1990s and early-2000s, events of this sort were quite common in the Brent crude oil market.⁴ BP entered into a deferred prosecution agreement with the United States Department of Justice relating to an alleged market power manipulation of TET propane in February, 2004.

Although the exercise of market power by a large buyer of futures contracts is the most well-known and common form of manipulation, large short sellers can sometimes

³ See Stephen Craig Pirrong, *Manipulation of the Commodity Futures Delivery Process*, 66 *J. of Business* (1993) for a detailed model of a market power manipulation. See also Stephen Craig Pirrong, *The Law, Economics, and Public Policy of Market Power Manipulation* (1996).

⁴ In 2003, the Senate Permanent Subcommittee on Investigations released a report that discussed the vulnerability of the Brent market to squeezes, and discussed in some detail a specific alleged squeeze.

manipulate as well by making excessive deliveries to drive down prices during the delivery period.

Although some market power manipulations exploit the delivery mechanism of derivative contracts, large traders can exercise market power in physical markets by buying or selling excessive quantities of the commodity in order to distort prices that are used to determine the settlement values of cash settled derivatives contracts.⁵ These strategies can affect the value of these derivative contracts, thereby profiting a party that exercises market power while holding a position in these contracts.

The complete absence of any recognition of the centrality of market power to the most common and distorting forms of commodity market manipulation is a serious deficiency in the Proposed Rule. Any reasonable rule on market manipulation should proscribe the exercise of market power for the purpose of enhancing the value of derivatives positions. The Proposed Rule does not even discuss market power, let alone include language proscribing its exercise for the purpose of inflating the value of derivatives positions in petroleum markets. As a result, it completely misses the point.

I therefore recommend that the Proposed Rule be rewritten to include language to the effect that “it is unlawful to exercise market power in any petroleum market for the purpose of affecting the value of any position in petroleum contracts (including derivatives contracts).” Moreover, I recommend that this provision precede that relating to fraud and deceit, to reflect the relative importance of market power and fraud-based manipulations in petroleum markets.

Of course, in the real world the severity of market power lies along a continuum. The perfectly competitive transaction is found in textbooks, rather than real markets.

⁵ See Craig Pirrong, *Manipulation of Cash-Settled Futures Contracts*, 74 *J. of Business* (2001).

Since eliminating all market power is impossible, and since attempts to do so would almost certainly demoralize legitimate market conduct and burden both the Commission and market participants with excessive compliance and enforcement costs, a prudent rule should be calibrated to deter the most egregious and inefficient market power manipulations.

As a rule of thumb, the deadweight losses that arise from the exercise of market power rise with the square of the price distortion. Also, legitimate conduct can be discouraged by fears of a prosecution for manipulation. Therefore, public policy should endeavor to eliminate the more severe manipulations that lead to price distortions that are highly unlikely to have occurred in a reasonably competitive market.

This objective can be achieved by requiring the Commission to demonstrate that a party accused of manipulation: (a) engaged in conduct that had the reasonably foreseeable effect of causing prices to deviate from those that would have prevailed but for this conduct, and (b) intended to cause these price distortions. Moreover, the Commission should require a showing that the prices observed during a period of alleged manipulation were highly unlikely to have occurred in a reasonably competitive market.

The type of conduct that has the reasonably foreseeable effect of distorting prices includes: (a) the purchase (sale) of excessive quantities of a petroleum product by a firm with a large long (short) derivatives position in that product; and (b) taking (making) excessive deliveries by a firm with a large long (short) derivatives position. Taking excessive deliveries also means that the firm liquidates an insufficient portion of its derivatives contracts.

In my view, it is appropriate to require a fairly high burden of proof to sustain a manipulation conviction. The most egregious manipulations that are most beneficial to deter can be prosecuted effectively even if the burden of proof is fairly demanding. Moreover, a high burden of proof reduces the likelihood of “false positives”—convictions when the accused actually did not engage in manipulative conduct. The potential for false positives is an undue burden on legitimate market activities.

At first blush, it may seem very difficult to establish that prices were distorted, that a particular party’s conduct caused that distortion, and that that party intended to cause that distortion. In my extensive academic writings and testimony in litigation on the subject I have shown, however, that economic and statistical analyses predicated on a firm understanding of the economics of manipulation can reliably detect manipulative conduct and manipulative intent, and distinguish prices that are distorted by manipulation from those that are the result of the competitive forces of supply and demand.⁶ These methods employ standard econometric tools that have been utilized extensively in litigation in the United States, including securities and anti-trust litigation in addition to manipulation litigation.

Proof of intent is often considered particularly problematic, but my academic work and testimony demonstrates that those who intend to distort prices to enhance the value of a derivatives position behave differently from those acting without such intent. For instance, in my analysis of a manipulation of the soybean market in 1989, I showed that the alleged manipulator took delivery at prices that ensured he would incur a loss upon re-selling the commodity either for export or domestic processing. But for the

⁶ I describe these methods in Craig Pirrong, *Detecting Manipulation in Futures Markets: The Ferruzzi Soybean Episode*, 6 *American Law and Economics Review* (2004).

intent to enhance artificially the profitability of its soybean futures position, the firm NEVER would have taken delivery at these prices. Economic analysis of this sort can reliably distinguish those who act with the intent to distort prices from those who do not.

Similar analysis can be utilized to determine whether a firm makes or takes “excessive” deliveries, or purchases or sells “excessive” quantities on the physical market.

Thus, all aspects of the Rule I suggest can be operationalized based on an understanding of the economics of manipulation and the use of standard economic and statistical tools. I would be willing to assist the Commission and Commission staff in the task of formulating the Rule and making it operational.

In sum, in my opinion, the Commission should radically revise its order to give priority to the deterrence of market power in petroleum markets. As written, the Rule’s focus on “deceit” and “fraud” and “artifices” is completely inadequate to address the most important, real manipulative threat to petroleum markets—the exercise of market power.

It has been objected that the Commission’s rule is superfluous because manipulative conduct is proscribed by the Commodity Exchange Act (“CEA”), and that FTC actions against manipulation will interfere with the Commodity Futures Trading Commission’s jurisdiction over commodity market manipulation. In some respects, these objections are moot, because Congress has decided otherwise. I would also note that, as I have shown in my academic research, the quality of manipulation jurisprudence under the

CEA is extremely poor.⁷ Many decisions by the CFTC in manipulation cases betray a dim understanding of the economics of manipulation, and have created precedents that make it unnecessarily difficult for the CFTC to prosecute manipulations—even rather egregious ones—successfully. In light of these failures, a new start is to be welcomed. The FTC has the opportunity to craft a good manipulation rule based on a solid understanding of the economics of market power manipulation that (unlike the CEA) defines the objectionable conduct precisely and sets out the standards of proof required to achieve convictions when manipulative conduct is manifest, but which will not unduly burden legitimate conduct. The Rule on offer does not do that, but I hope that the Commission will revise it in a way that does.

The subject of market power is already central to the Commission’s mission. After all, the control of market power is the primary goal of anti-trust policy, and the FTC has broad anti-trust authority. It would be well advised to draw upon its extensive anti-trust experience and knowledge to inform its anti-manipulation rule, and the enforcement thereof. As currently drafted, however, the Proposed Rule is more closely related to the Commission’s measures to address consumer fraud, and the rules of the Securities and Exchange Commission (“SEC”). These regulatory activities and rules are appropriate for information-based manipulations. Although such manipulations can occur in petroleum markets, in my view they are a second order concern. Market power manipulations are the first order concern in these markets. The Commission should draw on its anti-trust expertise to craft and enforce a Rule that addresses these concerns.

⁷ Stephen Craig Pirrong, *Commodity Market Manipulation Law: A (Very) Critical Appraisal and a Proposed Alternative*, 51 *Washington and Lee Law Review* (1994). I am not alone in my appraisal. See Jerry Markham, *Manipulation: The Unprosecutable Crime*, 8 *Yale Journal on Regulation* (1991).

In closing, I note that once upon a time, the Commission understood what manipulation was, and how it worked. In its authoritative *Report on the Grain Trade*, published in 1920-1921, and especially in Volumes V and VI of that Report, the Commission carried out extensive and thoughtful analyses of manipulation in grain markets.⁸ It had the economics right. If you put together those insights with the much superior analytical, economic, and econometric resources available to the Commission today, it will be possible to create and enforce an anti-manipulation rule that will improve the efficiency of the operation of our petroleum markets, reduce the deadweight losses that arise from the manipulative exercise of market power, increase the informativeness of petroleum prices, and thereby improve public confidence in these markets. I strongly encourage the Commission to revise its Proposed Rule accordingly.

⁸ United States Federal Trade Commission, *Report on the Grain Trade* (1921).