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## ENERGY MARKET MANIPULATION: DEFINITION, DIAGNOSIS, AND DETERRENCE

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**Synopsis:** Market manipulation is a contentious topic in all commodity markets, but especially in energy markets. Especially during the period of rapidly rising energy prices in 2006-2008, accusations that manipulation contributed to these increases were widespread.

Despite the salience of the subject, it is little understood. Indeed, there is substantial confusion about what constitutes manipulation. A good deal of this confusion is attributable to the fact that although there are in fact at least two very distinct categories of manipulative acts, these different categories are too often blurred. Specifically, some manipulations (like “corners”) exploit market power, while others employ fraud and deceit. It is possible to execute a market power manipulation without engaging in deceit, and those without market power can engage in fraud-based manipulations.

Three federal statutes, the Commodity Exchange Act (CEA), the Energy Policy Act of 2005 (EPAct 2005), and the Energy Independence and Security Act of 2007 (EISA) all prohibit manipulation of various energy commodities and empower federal agencies to impose penalties on manipulators. Unlike the EPAct 2005 or the EISA, the CEA does distinguish between market power manipulations and fraud-based manipulations. However, a series of poorly-reasoned legal decisions have undermined the efficacy of the CEA as a tool for combating market power manipulation. The EPAct 2005 and EISA are both based on section 10b(5) of the Securities and Exchange Act, and focus on fraud-based manipulations. As a result, they are ill-suited to address market power manipulation, and attempts to use them to do so will inevitably lead to further legal confusions.

Market power manipulation is important, but it is necessary to revise existing laws to (a) distinguish market power manipulation from fraud-based manipulation, and (b) provide more specific guidance on what constitutes market

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power manipulation, and what types of evidence is sufficient to prove market power manipulation. In this article, I set out an economically-based approach to these issues.

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## I. INTRODUCTION

Manipulation in financial and commodity markets is a hot button issue. Recent months have seen widespread assertions that derivatives markets have been rife with manipulation.

Nowhere have these accusations been more numerous or heated than in the energy markets. As oil and natural gas prices skyrocketed in mid-2008, allegations of manipulation rose with them. Although prices have declined, the pace of allegations has not. Moreover, concerns about manipulation have led to calls in the United States and world-wide for a far more intrusive regulatory system to reduce its prevalence.

Sadly, seldom in the course of human events, have so many been so confused about so much for so long as is the case with commodity market manipulation. What's more, U.S. legislators and regulators have definitely been a part of that "so many." The current statutes that address manipulation in energy markets—the Commodity Exchange Act, the Energy Policy Act of 2005, and the Energy Independence and Security Act of 2007—and the regulations issued thereunder by the Commodity Futures Trading Commission (CFTC), the Federal Energy Regulatory Commission (FERC), and the Federal Trade Commission (FTC)—are often imprecise, and where they are precise, fundamentally wrongheaded. As interpreted by the courts and the CFTC, the CEA's anti-manipulation provisions provide large loopholes that permit those who engage in conduct an economist would consider clearly manipulative to escape unpunished. Moreover, a recent court decision challenges the very Constitutionality of these provisions in criminal manipulation prosecutions, and also raises serious questions about the efficacy of the CEA as an anti-manipulation tool. The FERC and FTC anti-manipulation rules are newer, and have not been extensively tested in litigation, but from an economist's perspective, these rules (and the statutes that authorize them) are completely misguided and hopelessly ill-suited to reach the kinds of manipulative conduct most likely to occur in energy markets. Furthermore, many of the proposals that offer to strengthen anti-manipulation measures in energy markets are similarly defective.

Manipulation is a potentially serious problem in all derivatives markets, energy included. Thus, the current state of affairs, in which stone-cold

manipulators have a chance of escaping punishment, and the innocent but aggressive face the prospect of grueling and expensive litigation to defend against mistaken manipulation charges is quite unacceptable. Manipulation law needs to be fixed, for energy particularly, but more broadly. The question is: how to fix it?

This question cannot be answered until there is an economically defensible definition of manipulation, and an understanding of how manipulation can be identified and proven. In this article, I draw on research I have performed over the last twenty years, and extensive experience in manipulation litigation, to craft such a definition and show how economically sensible manipulation charges can be proven or disproven. With this understanding in hand, it is possible to devise more precise, understandable, and pragmatic anti-manipulation laws and rules.

## II. WHAT IS MANIPULATION?

Despite all of the attention paid to the subject of manipulation, precise definitions have proved elusive. The imprecise—and promiscuous—use of the term is tellingly illustrated by the arch response of Texas cotton trader William Clayton, to an accusation by the president of the New York Cotton Exchange at a Senate hearing that Clayton was a manipulator: “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.”<sup>1</sup>

Courts have also found it a challenge to define what manipulation is. In *Cargill v. Hardin*, for instance, the Eighth Circuit declared: “The methods and techniques of manipulation are limited only by the ingenuity of man.”<sup>2</sup>

Nor has Congress been able to define it with any precision. The statement of the Chairman of the Senate Agriculture Committee George W. Norris of Nebraska during deliberations over the Futures Trading Act (a precursor of the CEA) in 1921 illustrates Congressional befuddlement perfectly: “The difficulty, as I understand it, is that [the acts that constitute manipulation] are various and perhaps impossible of direct definition. I do not know how we could draw a definition to bring it home to the individual.”<sup>3</sup>

An examination of the kinds of conduct that have resulted in accusations of manipulation, and a review of legal cases involving manipulation, suggests that a good deal of the confusion arises from the fact that there are at least two, very distinct, types of manipulative acts.

The first type is market power manipulation. The most common kind of market power manipulation is a “long” market power manipulation, executed by a trader who has purchased a large number of futures contracts. This is sometimes called a “corner” or a “squeeze.” In a long market power manipulation, the large buyer (“the large long”) accumulates a futures position allowing him to demand delivery of more of the commodity than is available in the delivery market at the competitive price. Additional supplies can be brought into the delivery market, but only by incurring an exceptional cost. For instance,

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

2. 452 F.2d 1154 (8th Cir. 1971).

3. Future Trading in Grain: Hearings on H.R. 5676, Before the Senate Comm. on Agric. and Forestry, 67th Cong., 1st Sess. 335 (1921).

a large long may own futures positions allowing him to demand 20 million bushels of soybeans in Chicago, when there are only 4 million bushels there; additional soybeans are located in Iowa, but it is costly to divert supplies from soybean processors in Iowa to move them to Chicago. The large long can exploit the cost of diverting supplies by confronting those who have sold futures contracts (the “shorts”) with a choice: either pay the exceptional cost of making delivery, or buy back their futures positions at a supercompetitive price. For instance, if the cost of diversion is \$1.00 per bushel, the large long can tell the shorts, “I’ll let you out of your obligation to deliver to me if you pay me an extra \$.99 per bushel over and above the competitive price.”<sup>4</sup>

The large futures position relative to supplies available at the competitive price, combined with the costs of increasing deliverable supply, give the large long market power. He has, in essence, a monopoly position in futures contracts.

This form of conduct is socially costly. It distorts prices, and typically leads to distortions in commodity flows. The latter result obtains because it is rational for the long to demand a price that is (a) above the competitive price, but (b) above the cost that some shorts incur to make delivery, in order to (c) extract an even higher price from other shorts that incur still higher delivery costs; the fact that the price that the cornerer demands to maximize his profits is above the cost some shorts pay to make delivery implies that the latter will do so.

The price distortions are costly because they undermine the effectiveness of the futures contract as a hedging mechanism: hedgers who have sold futures contracts to manage the risks of physical market positions outside the delivery market (“out of position” hedging, which is quite common) incur a loss on their hedges because the corner causes the price of the future to rise relative to the prices of what they are hedging. Moreover, by distorting prices, market power manipulation interferes with the price discovery of derivatives markets: rather than serving as beacons of competitive supply and demand conditions, manipulated prices reflect monopoly power.

Although a corner is the most important type of market power manipulation, short market power manipulations are possible too. In a short market power manipulation, a large short makes excessive deliveries of the commodity in order to drive down the futures’ price, thereby allowing him to repurchase his futures’ positions for less than the competitive price.

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4. There are numerous historical examples, some quite recent, of market power manipulations in soybeans, copper, propane, crude oil, and government securities. It may seem odd that the shorts would sell the long the rope by which he hangs them, and that they would sell more contracts than can be settled by delivery. In fact, however, this reflects the normal operation of the derivatives market. A single futures contract, West Texas Intermediate Oil traded on NYMEX, for example, is used by hedgers world-wide to manage their price risks, and by speculators world-wide to take a view on the direction of oil prices. Thus, total trading activity in a particular futures contract is driven by global supply and demand conditions, and the total amount of oil hedged and speculated can far exceed the quantity available for delivery against any contract. Under normal circumstances, this is not problematic, because market participants can just offset their positions rather than make or take delivery as contract expiration nears. Indeed, for most futures contracts, the number of deliveries is a very small fraction of total trading volume, or the maximum open interest in that contract. However, due to the anonymity of futures trading, sometimes, but not all the time, large traders can accumulate without being detected as positions sufficiently large enough to corner the market. Being squeezed is one of the risks of short selling. If the benefits from short selling for hedging or speculative purposes exceed the costs associated with squeezes, traders will short sell and squeezes will periodically occur.

Another type of market power manipulation exploits the imperfect liquidity of the market. At any point in time, the bids and offers present in the futures market are limited, and reflect liquidity suppliers' anticipations regarding likely order flows. Moreover, in centralized futures markets, which prioritize orders by price, the relation between bid (offer) prices and quantities is downward (upward) sloping. This means that a trader who submits a sell (buy) order for a quantity larger than the quantity of bids (offers) currently outstanding at the highest bid (lowest offer) will cause the price to move above (below) the current best bid (or offer). By submitting a very large order, a trader can cause a large price movement, especially in an illiquid market where the quantities of bids and offers is small.

But this sort of activity can cause persistent, and indeed permanent, price impacts even in heavily traded markets. Since individual traders' purchases and sales may be motivated by their private information regarding the value of a commodity, trades and order flow communicate information, and market participants draw inferences about the appropriate price of a commodity from the trades and orders that they observe. Thus, trades move prices. Since other market participants do not know the real motivation for any trade (their inferences are based on the likelihood that any trade is informed) means that a trader can manipulate the price by buying or selling large quantities, that is, by mimicking an informed trader. Furthermore, since information revelation has persistent (and indeed, permanent) effects on prices, the price responses to such a strategy persist as well.<sup>5</sup>

These sorts of manipulative strategies can be profitable especially when the trader has another derivative position with a price tied to the price in the futures market. For instance, when a trader has a swap contract with a payoff tied to the settlement price of a futures contract on the last day of trading, they can sometimes profit by submitting a large quantity of orders to move the settlement price.

The other major type of manipulation involves some sort of fraud. For instance, a trader can spread a false rumor that causes prices to move in a way that benefits his position; "pump and dump" schemes are one variety of this. As another example, a trader can misreport the prices of transactions when price reports are used to determine the settlement price of a derivatives contract. As yet another example, a trader may engage in a wash trade that gives a misleading impression of actual buying or selling interest in a market.

Market power manipulations and fraud-based manipulations are quite distinct. A large trader can corner a market without making any false or misleading statements. Moreover, a trader can spread a false rumor that moves prices even if his position is not large enough to permit him to exercise market power. Further, market power manipulations and fraud-based manipulations can have different effects on prices and quantities in a market.

Put differently, market power manipulations and fraud-based manipulations both cause prices to be different than they would be in a competitive market where market power and fraud are absent. The mechanisms by which they cause

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5. The release of value-relevant information tends to cause permanent movements in prices. Market participants have beliefs about the likelihood that an order reflects the private information of the trader submitting it. This likelihood determines the permanence of the price impact.

these price distortions are quite different, however. A corner works by exploiting frictions in the market that make it costly to enhance deliverable supplies. Only traders that are sufficiently large enough to force such costly distortions by demanding (or making) excessive deliveries—or threatening to do so—can profitably engage in such a manipulation. “Punching” the settlement price exploits the fact that markets are not perfectly liquid, and again requires trading in a quantity large relative to the amount of liquidity available at a point in time. In contrast, a fraud-based manipulation does not work directly through the size of the manipulator’s position or trades. Instead, it works by distorting information. Such manipulations are likely to be most effective for highly sensitive information instruments such as stocks.

Given that market power-based and fraud-based manipulation are quite different, utilize different actions to affect prices, and can have very different effects on prices, it can be, and will be seen as quite dangerous to use a single catch-all phrase to refer to both. Use of a common term to describe disparate conduct is a recipe for confusion, especially in a legal context where precedent and analogy exert such a decisive influence on decision making.

But such broad application of the term manipulation is extremely common, contributing to the confusion about precisely what “manipulation” means. Unfortunately, even very sophisticated commentators, such as Judge Frank Easterbrook, have contributed to the confusion. He has written that market power manipulations are “a species of fraud” because they often involve concealment and secrecy about positions and intentions.<sup>6</sup> But concealment and secrecy are different than deception, and secrecy and concealment do not imply market power. Some traders are very secretive even though they exercise no market power. Some traders exercise market power but never release false information. “Fraud” and “market power” are very different things, and it is best to distinguish between them. Unfortunately, existing statutes related to manipulation too often fail to do so, as I detail in the next section.

### III. EXISTING ANTI-MANIPULATION LAWS

Several statutes proscribe manipulation of commodity markets. These include the CEA, which has as its purpose the prevention and deterrence of price manipulation; the EAct 2005, which prohibits manipulation of natural gas and power markets; and the EISA, which proscribes manipulation of petroleum markets.

These various statutes are quite different. The CEA distinguishes between fraud and market power manipulations. Notably, it specifically proscribes corners, and makes manipulation a felony:

It shall be a felony . . . for . . . [a]ny person to manipulate or attempt to manipulate the price of any commodity in interstate commerce, or for future delivery on or subject to the rules of any registered entity, or to corner or attempt to corner any such commodity or knowingly to deliver or cause to be delivered for transmission through the mails or interstate commerce by telegraph, telephone, wireless, or other means of communication false or misleading or knowingly inaccurate reports concerning crop or market information or conditions that affect or tend to affect the price of any commodity in interstate commerce, or knowingly to violate the

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6. Frank H. Easterbrook, *Monopoly, Manipulation, and Fraud*, 59 J. BUSINESS S103 (1986).

provisions of section 6, section 6b, subsections (a) through (e) of subsection 6c, section 6h, section 6o(1), or section 23 of this title.

Note the use of the broad term “manipulation”; the explicit proscription of “corner” (i.e., market power manipulation), and the distinction between fraud (e.g., the submission of false or inaccurate crop reports) and corner. The CEA also separately bans fraud in commodity markets.<sup>8</sup>

The anti-manipulation provisions in the other statutes are based on section 10b(5) of the Securities Exchange Act. Like 10b(5), these laws emphasize fraud and deceit. For instance, the EAct 2005 states:

It shall be unlawful for any entity (including an entity described in section 201(f)), directly or indirectly, to use or employ, in connection with the purchase or sale of electric energy or the purchase or sale of transmission services subject to the jurisdiction of the Commission, any manipulative or deceptive device or contrivance (as those terms are used in section 10b of the Securities Exchange Act of 1934).<sup>9</sup>

The language in the EISA is quite similar.

As I will discuss further below, this broad, fraud and deceit emphasis of the EAct 2005 and the EISA is wholly misguided, because market power manipulation is a very serious concern in commodity markets (and arguably the most important ongoing manipulative concern), but it does not require any “deceptive device or contrivance.”<sup>10</sup>

#### IV. A BRIEF OVERVIEW OF MARKET POWER MANIPULATION CASES UNDER THE CEA

The anti-manipulation terms of the CEA are more sensible than their counterparts in the EPA or EISA because the CEA at least explicitly proscribes the most important form of manipulation (a market power manipulation or corner), and distinguishes such manipulations from others that rely on fraud or deceit. However, even under the CEA, manipulation law is confused. Extensive analyses in Pirrong<sup>11</sup> and Markham<sup>12</sup> discuss these confusions in detail, so I will only summarize them here.

Under existing precedents, to prove manipulation under the CEA it is necessary to show that:

1. The price of the manipulated contract was “artificial” (“price artificiality”).
2. The accused had the ability to cause the artificial price.
3. The accused caused the price to be artificial.
4. The accused acted with the intent to cause the price to be artificial.

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7. Commodity Exchange Act, 7 U.S.C. § 13(a) (2009).

8. *Id.* at § 6b.

9. Securities Exchange Act of 1934, P.L. 111-72, §10(b).

10. *Id.*

11. Stephen Craig Pirrong, *Commodity Market Manipulation Law: A (Very) Critical Analysis and a Proposed Alternative*, 51 WASH. & LEE L. REV. 945 (1994).

12. Jerry W. Markham, *Manipulation of Commodity Futures Prices: The Unprosecutable Crime*, 8 YALE J. ON REG. 281 (1991).

These are all sensible standards in theory, but their legal application has become hopelessly muddled.<sup>13</sup>

First consider artificiality. The *Cargill* court defined this as “a price which does not reflect basic forces of supply and demand.”<sup>14</sup> This just raises the question of how one would determine whether or not a price reflects such forces.

In the case of market power manipulation, the economic literature on manipulation provides a very clear guide as to how to make this determination. This literature demonstrates theoretically that a long market power manipulation (a corner) causes the price of the manipulated contract to rise relative to the price of deferred futures and to rise relative to the price of related futures (e.g., a manipulated soybean futures price will rise relative to the price of soybean oil futures). Moreover, the theory shows that the manipulated futures price (and the price of the physical commodity in the delivery market) will plunge at the end of the corner when the cornerer’s (artificial) demand ceases; this is the so-called “burying the corpse” effect. The theory also states that the price of the commodity in the futures delivery market will rise relative to prices in other markets. Finally, the theory implies that the price distortion will attract excessive supplies of the commodity to the delivery market, and lead to greater inventory holdings (adjusting for the profitability of holding inventory as implied by futures prices).<sup>15</sup>

The economics literature also shows how to apply event study methodologies (which are routinely utilized in securities litigation) to test whether these predictable effects of manipulation occurred during a specific episode in which a corner is alleged. For markets in which the requisite data is available, these methodologies can be quite powerful.<sup>16</sup>

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13. In addition to Markham, Pirrong, and Easterbrook, other works analyzing the CEA and decisions thereunder include: PHILIP MCBRIDE JOHNSON AND THOMAS HAZEN, *COMMODITIES REGULATION* (Aspen Law and Business 1988); Dan Fischel and David Ross, *Should the Law Prohibit “Manipulation” in Financial Markets?*, 105 HARVARD L. REV. 503 (1991); Richard Friedman, *Stalking the Squeeze: Understand Commodities Market Manipulation*, 89 MICH. L. REV. 30 (1991); Wendy Perdue, *Manipulation of Futures Markets*, 56 FORDHAM L. REV. 345 (1987); Van Smith, *Preventing the Manipulation of Commodity Futures Markets: To Deliver or Not to Deliver?*, 32 HASTINGS L. J. 1569 (1981); Robert C. Lower, *Disruptions of the Futures Market: A Comment on Dealing With Market Manipulation*, 8 YALE J. ON REG. 391 (1991); Edward T. McDermott, *Defining Manipulation in Commodity Futures Trading: The Futures “Squeeze”*, 74 NW. U. L. REV. 202 (1979).

14. *Cargill*, *supra* note 2, at 1163.

15. For a rigorous derivation of these implications, *see also* Stephen Craig Pirrong, *Manipulation of the Commodity Futures Market Delivery Process*, 66 J. OF BUSINESS 335 (1993). It should be noted that this analysis is specifically related to storable commodities, like oil or natural gas. These implications do not hold for electricity, a non-storable commodity. Detecting, and hence deterring, manipulation in electricity markets is far more difficult due to the extreme price volatility that results from non-storability. Moreover, manipulation in electricity markets can involve the exercise of market power, but in a different way than in a corner or squeeze in the market for a storable commodity. In particular, markets can be manipulated through the withholding of capacity. However, it is inherently more difficult to test for uneconomic withholding of production capacity in an electricity market, than for uneconomic delivery demands in the market for a storable commodity.

16. *See also* Craig Pirrong, *Detecting Manipulation in Futures Markets: The Ferruzzi Soybean Episode*, 6 AMERICAN L. & ECON. REV. 28 (2004). Other examples of uses of econometric analysis of prices and price relations to identify manipulations include: Scott W. Barnhart, Kandice H. Kahl, & Cora Moore Barnhart, *An Empirical Analysis Of The Alleged Manipulation Attempt And Forced Liquidation Of The July 1989 Soybean Futures Contract*, 16 J. OF FUTURES MARKETS 781 (1996); Bradford D. Jordan & Sarah D. Jordan, *Salomon Brothers and the May 1991 Treasury Auction: Analysis of a Market Corner*, 20 J. BANKING & FIN. 20 (1996);

Some courts have utilized evidence of price and quantity distortions to determine whether a price was artificial, and a market manipulated. For instance, the *Cargill* court utilized comparisons between the expiring futures price (allegedly manipulated) and the price of the next-to-expire future, and between Chicago wheat prices (the deliverable) and the prices of wheat in other markets, to infer that the price was indeed artificial. The court also derisively rejected the defendant's attempt to discredit these comparisons.<sup>17</sup>

Unfortunately, more recent decisions by the CFTC, most notably *In re Indiana Farm Bureau*, *In re Cox*, and *In re Cox & Frey*, have rejected such comparisons, or questioned their reliability. *Indiana Farm Bureau* is perhaps most egregious in this regard: the Commission argued that prices were not artificial, despite evidence of massive distortions in futures price and spatial price relationships. The Commission argued that instead of examining prices alone, it is necessary to "look at aggregate forces of supply and demand and search for those factors that are extraneous to the pricing system."<sup>18</sup> The Commission in *Cox* dismissed price comparisons by saying "the prospective behavior of a 'normal' market is not bounded by the market's historical experiences."<sup>19</sup>

These Commission rulings betray not the slightest understanding of market power manipulation, and what's more, make it very difficult to utilize the most economically grounded and effective tests to determine whether, in fact, a market has been cornered. Historical data on historical price relations, analyzed rigorously and properly, can provide extremely powerful evidence of manipulative distortions. Indeed, inasmuch as prices summarize vast amounts of dispersed information about supply and demand conditions, analyzing them is likely to be much more productive than sweeping searches for anomalous supply and demand conditions. Moreover, it is possible for those accused of manipulation to provide evidence of how non-manipulative forces caused particular, anomalous price relations. However, because the effects of market power manipulation are typically unique, using good economic analysis it is usually possible to distinguish prices driven by unusual, but competitive, market conditions from those distorted by manipulation.

Put differently, a market power manipulation causes distortions in prices (and some quantity data), and this data are readily analyzed to determine whether these distortions are in fact present in an episode of suspected manipulation. If they are not, case over. If they are, it is possible to determine whether other market factors caused the observed distortions. Given that many of the effects of manipulation, most notably the "burying the corpse" effect are distinctive to

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Bradford Cornell, *Adverse Selection, Squeezes and the Bid-Ask Spread on Treasury Securities*, 3 J. FIXED INCOME 39 (1993); Bradford Cornell & Alan C. Shapiro, *Mispricing of US Treasury Bonds: A Case Study*, 2 REV. FIN. STUD. 297 (1989); John J. Merrick, N. Y. Naik, & P. K. Yadav, *Strategic Trading Behavior and Price Distortion in a Manipulate Market: Anatomy of a Squeeze*, 77 J. FIN. ECON. 171 (2005). For an example of a very early use of price and quantity comparisons to identify manipulations, see Holbrook Working, *Price Relations Between July and September Wheat Futures at Chicago Since 1885*, 9 WHEAT STUD. 187 (1933).

17. *Cargill*, *supra* note 2, at 1174.

18. *In re Indiana Farm Bureau Cooperative Association*, [1982-1984 Transfer Binder] Commodity Futures Law Reporter (CCH) ¶ 21,796, 27,287 (CFTC 1982).

19. *In re Cox*, [1986-1987 Transfer Binder] Commodity Futures Law Reporter (CCH) ¶ 23,786, 34,064 (CFTC 1987).

manipulation, non-manipulative explanations are often readily ruled out. For instance, a corner and a drought can both cause corn prices to rise, but the effect of a corner on the spatial and temporal patterns of prices is very different from the effect of a drought on these patterns. Thus, even if a cornerer takes advantage of a shortage caused by a drought to manipulate a market, it is possible to distinguish the effects of his actions from the effects of the drought alone. By denigrating the value of price comparisons, *Indiana Farm Bureau* and *Cox* impede the use of the most valuable information.

Commission decisions on causation and intent have been similarly misguided. To corner a market, a necessary condition is that the cornerer must have a position that exceeds the amount that can be delivered at the competitive price. This means that a determination of this quantity is essential.

Such a determination should be based on a firm understanding of the economics of the market, but the Commission has often lacked such an understanding. The decision in *Cox* is most egregious in this regard. In that case, a firm allegedly tried to corner the Chicago wheat futures market, and had indeed accumulated a futures position in excess of the supplies of deliverable wheat in Chicago. But the Commission noted that there was wheat in Kansas City that *could* have been shipped to Chicago. It included this wheat in its estimate of deliverable supply, and since after this addition “deliverable supply” exceeded the respondent’s futures position, determined that he could not have cornered the market.<sup>20</sup>

In making this analysis, the Commission ignored the fact that it would have been uneconomical and inefficient to ship wheat from Kansas City to Chicago under competitive conditions. That is, if the Kansas City wheat was not available to the market at the competitive price, it would have flowed to Chicago only in response to a massive price distortion.

By including supplies that would flow to the delivery market only under conditions of extreme distortion, the Commission effectively provided would-be manipulators with a substantial power to inflate prices artificially without facing any risk of being found to have the ability to cause them.

The Commission has similarly muddled the intent standard so as to provide a manipulator with considerable leeway. The most egregious offender in this regard is *Indiana Farm Bureau*. In this decision, the Commission focused its intent analysis not at the relevant time—when the accused exercised market power as the contract neared expiration—but at the time that it acquired its futures position.<sup>21</sup> The Commission decided that the defendant entered its futures position as a legitimate hedge. Between the time that the firm bought corn futures and the expiration of its contracts, however, conditions developed that made the market susceptible to a squeeze. The Commission stated that the defendant was blameless for “[seeking] the best price from the existing situation”<sup>22</sup> and asserted that the long “has a contractual right to stand for delivery or exact whatever price for its long position which a short is willing to pay to avoid having to make delivery.”<sup>23</sup>

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20. *Id.*

21. *Indiana Farm Bureau*, *supra* note 18, at 27,286.

22. *Id.* at 27,285.

23. *Id.*

This “reasoning” is extremely pernicious, as it essentially extends a manipulation option to a large long. Anyone who buys a big futures position with colorably legitimate speculative or hedging motive can exercise market power at expiration. By emphasizing the “contractual right to . . . exact whatever price . . . a short is willing to pay,” the Commission, in effect, guts the anti-manipulation provisions of the CEA, for exploiting contractual rights to “exact whatever price a short is willing to pay by seeking the best price from the existing situation,” is a very succinct definition of market power manipulation.<sup>24</sup>

In sum, the CEA explicitly proscribes market power manipulation, and distinguishes such manipulations from other types that rely on deceit and fraud. However, legal precedents—most notably the decisions of the CFTC in several cases in the 1980s—severely undermine the Act’s deterrent effect. These decisions are predicated on a misunderstanding of the economics of manipulation, and the use of price and quantity data to detect it.

So, the CEA is arguably defensible in concept, despite the deficiencies of application. The same cannot be said of the anti-manipulation provisions of the EPA and the EISA. As I show next, these are indefensible in concept, and as a result, will inevitably prove destructive in application.

#### V. THE MARKET POWER PEG AND THE FRAUD HOLE

The anti-manipulation provisions of the EPA are IESA are consciously and explicitly patterned on those of the Securities Exchange Act. This would be sensible if the kinds of manipulation in commodity markets and securities markets are likely to be similar. This is, alas, not the case.

Frictions arising from transportation costs, and other costs of transformation, are important in commodity markets.<sup>25</sup> It is these frictions that make market power manipulation a serious concern in such markets. Not that fraud and deceit (e.g., misreporting price or crop information) cannot be used to manipulate commodity markets (including energy markets)—they can. However, the pervasiveness of such frictions makes market power manipulation a chronic concern in commodities. Moreover, these concerns are amplified by the ability of large commercial and financial firms to amass large derivatives positions that can be used to exploit these frictions. Thus, market power manipulation is a first order concern in commodity markets.

In contrast, although market power manipulations that exploit frictions are not unknown in securities markets,<sup>26</sup> many important manipulative strategies in securities markets rely extensively on fraud and deceit. This is because the prices of securities, especially equity, are highly information sensitive. Deceiving investors about the value of a stock, for instance, can lead to price movements that the manipulator can exploit. Thus, in a securities market context, it makes sense to emphasize fraud and deceit—that is, information-based—manipulation strategies.

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24. *Id.*

25. *See generally* Pirrong, *supra* note 11.

26. For instance, squeezes and corners occur periodically in securities markets. Famous squeezes occurred in the Treasury note market in the early-1990s. These manipulations exploit frictions, albeit somewhat different ones than are important in commodity markets.

It does not make sense to do so in commodity markets, however, to the exclusion of explicit and distinct prohibition of market power manipulation. Commodity prices are information sensitive, but there are also more pronounced frictions (attributable to transportation costs and spatial trading patterns, for instance) in commodity markets than securities markets. Thus, ignoring market power manipulations that exploit frictions is to give wide latitude to commit an important form of manipulation. But this is what the EPAct 2005 and EISA anti-manipulation provisions do. They explicitly mention fraud and deceit, but are utterly silent on market power or anything related to market power (e.g., a corner).

This presents an immediate, substantial, and practical problem. Market power manipulations are likely to occur in energy markets subject to the statutes, and the FERC and FTC rules issued to implement them. Regulators—the FERC and the FTC—will almost certainly attempt to utilize their statutory authority to act in such instances; the FERC has arguably done that in *Amaranth*. However, since market power manipulation does not distort prices through fraud and deceit, any such enforcement actions are likely to require extreme logical contortions to fit the square market power peg in the round fraud and deceit hole. This is a recipe for confusion that will make litigation under the CEA seem a model of clarity by comparison.

Ironically, a recent CEA case illustrates the dangers of trying to interpret a market power manipulation as a case of fraud and deceit. In 2004, British Petroleum attempted to corner the market for propane.<sup>27</sup> There is considerable evidence that propane prices were distorted exactly as one would expect during a corner. Moreover, a “Lessons Learned” presentation by BP trading personnel involved describes a strategy that can reasonably be characterized as a corner.<sup>28</sup>

Several BP employees were indicted for their roles in this endeavor. In a decision in this case, District Court Judge Gary H. Miller dismissed the indictment on a variety of grounds.<sup>29</sup>

Most interesting from the perspective of manipulation law, in his opinion Judge Miller heavily criticized elements of the government’s arguments that attempted to portray the defendants’ actions as a species of fraud. For instance, Judge Miller noted that:

[t]he government next implies that defendants’ actions were not legitimate because they ‘took substantial pains to conceal from other market participants as well as BP management not involved in the scheme, the truth about their purchasing of TET propane.’<sup>30</sup> Even though the government alleges specific instances of defendants attempting to conceal their actions, it never alleges that defendants lied about their activity. Mere concealment is not sufficient to show that their actions were not legitimate forces of supply and demand.

As noted above, most of the government’s arguments regarding price artificiality center on the implications created by reference to deception and questionable

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27. In order to avoid criminal prosecution for manipulation under the CEA, BP entered into a deferred prosecution agreement with the Department of Justice, whereby it agreed to pay a large fine and to compensate those harmed as a result of its actions in the market.

28. BP Confidential, NGL Feb Value Trade Lessons Learned, available at <http://www.cftc.gov/ucm/groups/public/@lrenforcementactions/documents/legalpleading/opa-bp-lessons-learned.pdf> (last visited Jan. 23, 2010).

29. *U.S. v. Radley*, 2009 WL 3013457 (S.D. Tex. Sept. 17, 2009).

30. *Id.*

motives. While these implications can be used to impeach a party's credibility, the actions which support the implications are not actually illegal. While they could be capitalized on in front of a jury, they do not support an indictment, which much plead unquestionably criminal acts.<sup>31</sup>

In other words, the government tried to convince Judge Miller that the defendants' actions were a type of fraud or deceit, but failed miserably in doing so.

Amazingly, the government did not even attempt to allege that defendants had cornered the market.<sup>32</sup> Despite the fact that there was substantial evidence that BP attempted a market power manipulation rather than one based on fraud and deceit, the prosecutors avoided alleging a market power manipulation, but instead emphasized "deception and questionable motives."

In my view, the government made a serious mistake by doing so. But at least it had the choice to make such a mistake. Under the EPCA 2005, the FERC would have no such choice. Similarly, under EISA, the FTC would have no such choice either. If either agency wanted to proceed in a case involving a market power manipulation, statutory language would virtually compel them to make the arguments that Judge Miller found so unpersuasive in *Radley*.

Market power manipulation is a serious concern in energy markets; market power manipulation is distinct from fraud and deceit, and can be executed without making false or misleading statements. As a consequence, statutes and rules that identify manipulation as a species of fraud are completely inadequate to reach market power manipulations. Judge Miller's decision in *Radley* demonstrates clearly the difficulties of even attempting to do so. Given the language of the anti-manipulation provisions of the relevant statutes, the FERC and the FTC are compelled to try. Nothing good can come of that.

## VI. HOW TO FIX MANIPULATION LAW

Based on the foregoing, I conclude that the CEA at least has the virtue of explicitly recognizing market power manipulation as an important phenomenon, and one distinct from fraud. I further conclude that, several decisions in market power manipulation cases have made it extremely difficult to sanction market power manipulators. Lastly, I conclude that the situation is even more bleak in the gas, power, and petroleum markets, because the statutes empowering the FERC and the FTC to act against manipulation do not explicitly recognize market power manipulation.

Consideration of the problems with manipulation jurisprudence suggests that courts and commissions have gone astray largely because of Congress's failure to define and describe manipulation with sufficient specificity to permit those tasked with enforcing and interpreting the law to apply it reliably to the kinds of conduct that are most damaging to the market, and the interests of market participants. In its efforts to draft statutes that conceivably cover any possible type of manipulative conduct, Congress has instead created laws that do

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31. *Id.* at 16.

32. *Id.* at 21. Based on his understanding of the facts, and his interpretation of the legal precedents regarding corners, Judge Miller opined that even if it had, it would have failed to make a case. I disagree with some elements of his analysis. Others reflect a reasonable interpretation of precedent, and serve to illustrate that even largely sensible cases (such as *Cargill*), are somewhat shaky on the basic economics of manipulation.

not reliably reach any kind of manipulative conduct, especially the types that are quite common and quite costly.

The first element of a sensible anti-manipulation law is a clear recognition that there are distinct kinds of manipulation, some of which involve fraud, and some of which involve market power. 10b(5)-type language is reasonably applicable to fraud-based manipulations, but completely inappropriate for market power-based manipulations. Given that market power manipulations are likely to be the most important and costly forms of this conduct in energy (and other commodity) markets, statutes that simply copy 10b(5) should be supplemented by additional language that reaches the manipulative exploitation of market power.

As noted above, the CEA is clearly intended to punish and deter the manipulative exercise of market power. But, as also noted above, the statute's language has not been sufficiently clear to permit the CFTC and the courts to identify and punish consistently clearly (market power) manipulative conduct. Thus, to improve the deterrence effect of the law, it is also imperative to augment the CEA to make it a more effective deterrent of market power manipulations.

In some respects (though not completely) following the recommendations of Markham<sup>33</sup>, I would suggest language that (a) specifically identifies conduct that is likely to be (market power) manipulative, and (b) sets out standards for determining whether this conduct, in fact, distorted prices. By identifying particular forms of conduct that are most likely to be manipulative, and by setting out rigorous methods for quantifying price distortions and evaluating intent, this approach also reduces the likelihood that innocent (although perhaps aggressive) traders are accused of, and perhaps found liable for, market power manipulation.

Economics is quite clear on each of these points, and can be used to craft laws that will reliably target those who exercise market power to their own advantage but the detriment of the functioning of the market as a price discovery and hedging method, while at the same time protecting non-manipulative traders from misguided legal attacks.

Specifically, something along the following lines would clearly identify the kinds of conduct by which trader would exercise market power in order to manipulate a commodity market; the kinds of evidence that is appropriate for evaluating whether this conduct distorted prices; and the appropriate methods for evaluating manipulative intent. What I propose would go a long way towards correcting some of the misguided precedents that have made the CEA an unreliable bulwark against the exercise of market power:

1) It shall be a felony intentionally to make or take excessive deliveries against any commodity contract; and/or to make excessive purchases or sales of any commodity; and/or to liquidate an excessively small number of commodity contracts; and/or to take any other action that distorts [or, causes a distortion in] the price of any commodity, or distorts [or causes a distortion in] the relationships between any commodity price and the prices of related commodities.

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33. Markham, *supra* note 12.

2) In determining whether prices have been distorted by any of the types of conducted listed above, the trier of fact shall consider, and evaluate according to the prevailing standards applicable to scientific evidence, statistical, econometric, and analytical evidence pertaining to prices and price relationships, including, *inter alia*, spatial and temporal price relationships.

3) Intent shall be evaluated based on the actions undertaken at the time market prices and/or price relationships are distorted.

4) Any action that would be commercially unreasonable, or unprofitable, but for the effect of that action on prices [or price distortions] constitutes evidence of manipulative intent.

Point 1 specifically describes the types of conduct by which a market participant would exercise market power to manipulate prices. Identification of these forms of conduct is predicated on rigorous economic analysis.<sup>34</sup> Moreover, this language is sufficiently narrow to avoid reaching unobjectionable forms of conduct, while simultaneously addressing some misconceptions about manipulation that have appeared in authoritative cases.

As an example of this, the *Cargill* case states that:

[A] corner amounts to nearly a monopoly of the cash commodity, coupled with the ownership of long futures contracts in excess of the amount of that commodity, so that shorts—who would because of the monopoly cannot obtain the cash commodity to deliver on their contracts—are forced to offset their contract with the long at a price which he dictates.<sup>35</sup>

This analysis confuses a (perhaps) sufficient condition with a necessary one. Although ownership of the deliverable commodity can facilitate the exercise of market power in a commodity market, it is not necessary to do so. Indeed, at contract expiration, a futures contract and the commodity deliverable against that futures contract are perfect substitutes.<sup>36</sup> All that is necessary to execute a corner is that an entity own futures (or other derivatives) contracts in a quantity that exceeds the supply deliverable at the competitive price that he does not own. This can occur even if the entity owns none of the underlying commodity before completion of the manipulation (although he will own large quantities *after* the manipulation is over), as long as the derivatives position is sufficiently large.<sup>37</sup>

Although the government did not allege a corner in *Radley*, Judge Miller utilized the *Cargill* language to rule that it need not bother; since BP did not own any of the deliverable propane when it was engaging in its alleged manipulation, it could not, according to the logic of *Cargill*, have cornered the market. As a matter of economics, this is wrong, and provides a road map for a would-be manipulator: stay out of the cash market, and just accumulate a big derivatives position.

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34. See generally Pirrong, *supra* note 9.

35. Hardin, *supra* note 2, at 1162.

36. Pirrong, *supra* note 9, at 351.

37. Similarly, *In re Soybean Futures*, 892 F. Supp. 1025, 1034 states “a party is said to ‘corner’ a market when it has a net long position and owns all or substantially all of the deliverable supply of a particular commodity”. It is possible to execute a market power manipulation even if the clause beginning with the “and” is not applicable.

Relatedly, the language in Point 1 regarding liquidating an excessively small number of contracts is intended to address a manipulative act that has been found in at least one case not to be manipulative. Specifically, a long market power manipulator distorts prices by demanding excessive deliveries in order to make additional deliveries so costly that the remaining shorts would prefer to buy back their derivatives positions at a supercompetitive price rather than incur this cost. But demanding excessive deliveries means that the manipulator liquidates too few contracts. Put differently, he withholds some of his contracts from the market.

At least one old case, pre-dating even the CEA, recognizes this. In *U.S. v. Patten*, the Supreme Court stated:

‘running a corner’ consists, broadly speaking, in acquiring control of all or the dominant portion of a commodity, with the purpose of artificially enhancing the price; one ‘of the important features of which,’ . . . is the purchase for future delivery, coupled with a *withholding from sale for a limited time*.<sup>38</sup>

If “withholding from sale” is interpreted, as it should, to mean withholding of futures contracts (or the derivative instrument that the manipulator utilizes) from sale, then this description is exactly correct.<sup>39</sup> However, if the concept of “withholding” is applied only to the deliverable commodity, it leaves the door open for market power manipulation.<sup>40</sup> The language of Point one makes it clear that withholding is not limited to physical supply alone; withholding claims against physical supply (e.g., futures contracts) is also manipulative if done with the intent and effect of distorting prices.

Point two is intended to require the application of rigorous social scientific methods to the determination of whether particular, putatively manipulative, conduct in fact distorted prices. It also directs triers of fact to focus on the most powerful evidence of such price distortions: anomalous relative prices.

For example, a market power manipulation of the Henry Hub natural gas futures market would cause the manipulated Henry Hub price to rise relative to the prices of Henry Hub gas for delivery in subsequent months. Moreover, it would cause the price of Henry Hub gas to rise relative to the prices at other geographic locations. Furthermore, the end of the corner would cause a rapid decline in these relative prices. As Judge Easterbrook has noted, manipulation leaves such a “characteristic trail” in prices.<sup>41</sup> Point two requires triers of fact to evaluate price data for evidence of such a characteristic trail. A positive result of such an inquiry, when combined with an analysis of an accused manipulator’s actions, can provide powerful evidence to support inferences about whether the accused took “excessive” deliveries.

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38. 226 U.S. 525, 539-540 (1913) (emphasis added).

39. *Id.*

40. Radley, *supra* note 27, at 19. At expiration, a derivatives contract is a perfect substitute for the commodity deliverable against it; Pirrong, *supra* note 15, at 351. This means that any distinction between ownership of a derivatives contract and ownership of the commodity deliverable against it is logically untenable. Put differently, at expiration, a firm that owns futures contracts on 10 million barrels has the exact same claim on deliverable supplies, and hence the same market power, as a firm that owns 5 million barrels of futures and 5 million barrels of deliverable oil. It is the ownership of the deliverable after a manipulation, not before, that provides evidence of manipulation.

41. Easterbrook, *supra* note 6, at S107.

Points 3 and 4 are intended to address problematic analyses of intent in some cases, notably *Indiana Farm Bureau*. Point 3 directs the triers of fact to evaluate whether somebody intended to squeeze the market by examining conduct at the time the squeeze actually occurs: when an entity engages in the conduct listed in Point 1, and distorts prices as described in Point 2. It is possible for someone to enter a derivatives position as a legitimate hedge or speculation, but subsequently find it profitable to exercise the market power inherent in that position as the contract nears expiration. It is conduct and intent at the latter date that is relevant. Point 3 directs triers of fact to look for intentional exercise of market power when it is actually exercised.

Point 4 provides specific guidance for evaluating intent. It is on this issue that lawyers and economists often part ways. Lawyers, in my experience, tend to believe that intent can only be proven through statements made in emails, correspondence, documents, or recorded conversations. Thus, they tend to consider proving intent to be very problematic in manipulation cases, because these materials are often lacking, or impervious to unambiguous interpretation if they are.

Economists look at things differently. They believe that it is impossible to make highly accurate evaluations of intent by comparing the conduct of an alleged manipulator, to that of a profit maximizing, commercially rational, but competitive (i.e., price taking not price making) trader. A manipulator who intends to move prices will do things that no price taking trader would. By determining whether an alleged manipulator indeed engaged in such conduct, it is possible to rule out non-manipulative explanations for this behavior. This supports a finding of manipulative intent.

A concrete example (based on a real world example) helps here. In a long market power manipulation, a large long takes excessive deliveries of the commodity. That is, he is willing to take delivery of the commodity at supercompetitive prices in order to force other shorts to buy out their positions at these inflated values.

As an example, consider a firm that wants to manipulate the soybean market. The competitive price of soybeans in the delivery market is \$10/bushel. There are 1 million bushels of soybeans in the delivery market, and an additional 1 million bushels that can be brought there for a total cost (price plus transportation cost) of \$11/bushel. There is an unlimited quantity that can be brought to the delivery market for \$12/bushel. The large long has a position of 10 million bushels of soybean futures.

There is one market outlet for delivered soybeans. They can be exported. The price in the export market is \$11/bushel, and it costs \$1/bushel to ship them from the delivery market to the export market.

The rational strategy for the manipulator is to demand delivery of 2 million bushels of soybeans. This will drive up the futures price to \$12/bushel, because shorts can obtain an unlimited quantity at this price, and hence are unwilling to pay any more to liquidate their futures positions.

The large long therefore liquidates 8 million bushels, and reaps a \$16 million manipulative gain on these bushels (the \$2/bushel price distortion x 8 million bushels liquidated at this distortion). He takes delivery of 2 million bushels, and must “bury the corpse” of the manipulation by selling them into the export market.

Evaluated using the appropriate opportunity costs, the long loses \$2/bushel on the deliveries taken. If he was a price taker, he could sell a futures contract for \$12 instead of taking delivery; the prevailing futures price is the opportunity cost of taking a delivery. By taking delivery, he receives \$11 on the export market and must pay a \$1 shipping cost, for a net revenue of \$10. Putting this all together, taking delivery imposes a completely predictable \$2 loss on the trader.

Anyone with a sharp pencil and basic math skills can do this “delivery economics” calculation and determine that it would be uneconomical for a price taker to demand delivery, instead of selling his futures position at the prevailing price. By selling the futures contract, the price taker gets \$12. By taking delivery he gets \$10. The price taker would sell the contract. Every time.

But a price making manipulator rationally does not sell the marginal contract. By eating a \$2 loss per bushel on the 2 million bushels of delivery, the manipulator realizes a gain of \$2 per bushel on the remaining 8 million bushels of his position.

Thus, a manipulating trader behaves very differently from a competitive one. A manipulating trader will take deliveries when, at the margin, simple price calculations indicate that a price taking trader would never do so. Observing this behavior indicates that the trader is not a competitive price taking trader, but is instead attempting to exercise market power with the specific intent of distorting prices in order to enhance profit.

In brief, in a market power manipulation, it is possible to evaluate manipulative intent rigorously without reading a single email.

If implemented, Points 1 through 4 (or something like them) would go a long ways towards rescuing manipulation law from its current muddle. These points focus on market power manipulation (the failure to do so being a major weakness of some anti-manipulation statutes); identify the specific kinds of conduct by which a market power manipulation is executed; provide specific guidance to finders of fact on exactly what kinds of conduct can be manipulative; clear up misconceptions in the controlling authorities; indicate the methods that can be utilized to determine whether prices have been manipulatively distorted; and provide bright line standards by which triers of fact can determine intent.

Although this analysis has been framed as identifying ways of reducing the likelihood that guilty manipulators escape unpunished, that is not the only virtue of the approach I advocate here. By identifying particular forms of conduct that are most likely to be manipulative, and by setting out rigorous methods for quantifying price distortions and evaluating intent, this approach also reduces the likelihood that innocent (although perhaps aggressive) traders are accused of, and perhaps found liable for, market power manipulation. That is, these standards address the Clayton Concern that manipulation is deemed to be any market operation that does not suit the person who is speaking at the moment—especially if that person is a government enforcement attorney.

Given the existing state of the law, I am highly skeptical that less thorough, more limited approaches will be sufficient to invigorate manipulation deterrence. For instance, Senator Cantwell has proposed changing the intent standard under

the CEA to one of recklessness, rather than the current specific intent standard.<sup>42</sup> Although this would address some of the problems caused by *Indiana Farm Bureau*, it (a) would not address the other problems with manipulation law, and (b) would increase the legal risks that legitimate traders run.

With respect to (a), as noted above, and in my earlier research, intent is not the only problem with manipulation law. Indeed, Judge Miller's decision in *Radley* does not even address issues of intent, but finds grounds to dismiss manipulation charges on issues of artificial price alone.<sup>43</sup> He also relies on precedents to rule that actions that were textbook manipulative conduct, were, in fact legitimate.

That is, as I noted in my earlier review of manipulation law, "existing judicial and regulatory decisions on manipulation resemble a rickety three-legged stool, ready to collapse under the slightest weight. Each leg—artificial price, causation, and intent—is rotted through."<sup>44</sup> Even if I do say so myself, *Radley* validates that judgment fifteen years after I rendered it. Which means that fixing intent alone would be insufficient to make Federal manipulation law a reliable deterrent of the abuse of market power.

With respect to (b), since it is possible to evaluate manipulative intent very accurately and rigorously even under a specific intent standard, weakening the burden for proving intent is unnecessary. Moreover, such a weakening would increase the legal risks faced by aggressive, but non-manipulative traders. That is, a recklessness standard would make every trader worry about the Clayton Concern.

In sum, it is possible to fix manipulation law. This involves two, essential measures.

The first is to recognize that there are different kinds of manipulation, some based on fraud, others on market power, and to draft statutes accordingly. Section 10b(5)-based language is well suited to addressing manipulations that rely on fraud and deceit, but utterly inappropriate for addressing market power manipulations.<sup>45</sup>

The second essential measure is to embody in statute language that specifically identifies: the kinds of conduct that market power manipulators employ; the kinds of evidence that is appropriate for evaluating whether this conduct distorted prices; and the appropriate methods for evaluating manipulative intent. Economics is quite clear on each of these points, and can be used to craft laws that will reliably target those who exercise market power to their own advantage but the detriment of the functioning of the market as a price discovery and hedging method, while at the same time protecting non-manipulative traders from misguided legal attacks.

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42. Testimony of Futures Industry Hearing on Commodity Futures Trading Before the U.S. Senate Committee on Agriculture, Nutrition, and Forestry, 111th Cong. (2009) (statement of Bart Chilton, Commissioner of the Commodity Futures Trading Commission).

43. *Radley*, *supra* note 25, at 988.

44. *Id.*

45. 17 C.F.R. § 240.10b-5 (1934).

## VII. SUMMARY AND CONCLUSIONS

Commodity market manipulation generally, and energy market manipulation specifically, are the objects of intense criticism and scrutiny. The run-up in energy prices in 2007-2008 has fueled these developments, and legislators and regulators are intent on taking actions that would reduce the frequency and severity of manipulation.

Manipulation can certainly occur in commodity markets (including energy markets) and impose deadweight losses. It is therefore desirable to adopt efficient laws and regulations to reduce the frequency and severity of this form of conduct. Indeed, Congress has passed multiple statutes proscribing manipulation.

Unfortunately, efforts to deter manipulation through the courts have been less than successful; the case law on manipulation is confused and contradictory. Moreover, some of the laws on the books, notably those passed in the past four years, fail to reach the most important form of manipulation in commodity markets—market power manipulation.

This bleak situation is not irreversible, however. It is possible to invigorate manipulation enforcement in a way that both reduces the likelihood that manipulators escape punishment, and also protects aggressive but non-manipulative traders from legal risk.

The first step in this process is to understand that there are distinct types of manipulation, some based on market power and others based on fraud and deceit. The second step is to draft laws and regulations that distinguish between these distinct types of manipulation; to identify with more specificity the kinds of conduct that constitute market power manipulation; and to lay out precisely the kinds of evidence that triers of fact should evaluate to determine whether someone has, in fact, executed a market power manipulation.

By taking these measures, Congress would go far to improving the efficiency of commodity and commodity derivatives markets. It would more effectively deter predatory conduct, thereby improving the functioning of the markets as risk management and price discovery tools. At the same time, it would reduce the legal risks that legitimate traders face.

Congress and regulators have struggled with manipulation for nigh on to eighty-eight years now. By taking an economics-based approach to this problem, they can finally put these struggles to rest.