Consumer Federation of America
1620 I Street, N.W., Suite 200 * Washington, DC 20006

STATEMENT OF DR. MARK COOPER
DIRECTOR OF RESEARCH

on

ENERGY MARKET MANIPULATION AND FEDERAL ENFORCEMENT REGIMES

Before the

COMMITTEE ON COMMERCE, SCIENCE AND TRANSPORTATION
UNITED STATES SENATE

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SUMMARY

The speculative bubble in petroleum markets has cost the economy well over half a trillion dollars in the two years since the Senate Permanent Subcommittee on Investigations, Committee on Homeland Security and Governmental Affairs first called attention to this problem. That speculative bubble in energy commodities has cost households, on average, about $1500 over the past two years in increased costs for gasoline and natural gas.

The Commodity Futures Trading Commission and the Federal Energy Regulatory Commission have failed to protect the public because they were slow to recognize the problem and are not looking for the real causes, examining a narrow set of abuses that ignore the much broader problem in the commodity futures markets. The Federal Trade Commission's recent Advanced Notice of Proposed Rulemaking implementing the expanded powers it was given under the Energy Independence and Security Act of 2007 appears to be repeating the same mistake that the Federal Energy Regulatory Commission made in implementing the provision of the Energy Policy Act of 2005 that gave it expanded powers.

The overall pattern of prices supports the proposition that they have run up beyond anything that is justified by the problems in the physical market.

- We have a commodity that is vulnerable to abuse, in a new market that has been under-regulated from its birth.
- Public policy adopted in 2000 further reduced regulation and opened the door to counterproductive, if not outright manipulative, behaviors and pushed prices higher.
- We have a clear theory about how consumers could be hurt in this market.
- The problem is that both the structure of the market and the behaviors of market players are biased in favor of higher prices and against consumers.
- We have evidence at the micro levels of a pervasive pattern of past abuses and rumors about suspicious behavior in the current market.

The economic analysis does not support the claim that these markets operate efficiently to establish prices.

- Risk premiums, which raise the price substantially (10 to 20 percent), are high and rising.
- Prices are well above the underlying costs of production.
- The operation of financial markets is no accident. Trading reflects the rules that are established – by law and through self-organization.
- The majority of transactions take place in markets that are largely unregulated.
- These over-the-counter markets, reported in unaudited, unregulated indices, are a major factor in setting the price of natural gas. And these unaudited, unregulated markets have behaved very poorly in recent years, with numerous instances of misreporting of prices.
- The abuses include a wide variety of practices including manipulation facilitated by large positions, lack of transparency, structural advantages enjoyed by large traders or the exercise of market power, insider trading and self-dealing, trading practices that accelerate market trends, perhaps causing them to overshoot.

It would be reassuring if we could blame the current speculative bubble on the blind ignorance and ineptitude of the regulatory agencies with oversight responsibilities. If that were the case, we could just fire the commissioners and secretaries and clean up the problem. Unfortunately, there is a more fundamental problem that must be addressed.

Commodity futures markets have ceased to provide their proper function of helping to smooth the functioning of physical markets for vital commodities like energy and food. Instead they have become

engines of speculation that feed volatility, amp up volume, and increase risk that increase prices and drive physical (commercial) traders or out of these markets.

Public policies have made these markets the playgrounds of the idle rich, while consumers suffer the burden of rising prices for the necessities of daily life. We have made it so easy to play in the financial markets that investment in productive long term assets are unattractive. We must turn down the volume by imposing more stringent conditions on these markets.

The most blatant mistake occurred when Congress allowed the Commodity Futures Trading Commission to forego regulation of over the counter trading in energy futures – creating what is known as the Enron-Loophole. Because there is no regulation of this huge swath of activity, regulators have little insight into what is going on in energy commodity markets. We must not only close the Enron-loophole, but ensure vigorous enforcement of registration and reporting requirements.

Large traders who trade in commodities in the U.S. ought to be required to register and report their entire positions in those commodities here in the U.S. and abroad. Registration and reporting should trigger scrutiny to ensure the good character, integrity and competence of traders. If traders do not have comprehensive reporting requirements, there will always be room for mischief that is out of sight to the regulator. If traders are unwilling to report all their positions, they should not be allowed to trade in U. S. markets. If they violate this provision, they should go to jail. Fines are not enough to dissuade abuse in these commodity markets because there is just too much money to be made. We need mandatory jail sentences.

Regulatory authorities must also require full auditing of private indexes. The FERC failed to impose this condition on the critical natural gas indexes and has been tied up in court over even modest transparency requirements. Federal and state regulators should refuse to allow indices that are not fully audited and transparent, to be used in any ratemaking transactions. Unaudited indices should simply not be allowed to influence consumer costs in regulatory proceedings.

More broadly, we need to restore the balance between speculation and productive investment. Public policy has made speculation much more attractive than investment in genuinely productive enterprises. Margin requirements on organized exchanges are a fraction of the margin requirements on stocks. If it is cheaper to put your money into speculation, why bother with real investment. The margin requirement for commodity trading among non-commercial traders should be fifty percent higher than the margin requirement for investment in stocks. However, we should impose less onerous terms on physical traders and even scale the terms to the size of the position, so that smaller physical traders can regain access to these futures markets.

We must also set lower position limits and increase settlement windows so that individual players have less ability to influence price.

We must level the playing field between long term productive investment and short term speculative gains. We need a tax on short term capital gains between 33 and 50 percent to make holding productive investments for long periods as attractive as flipping short term financial paper.

Mr. Chairman and Members of the Committee,

My name is Dr. Mark Cooper. I am Director of Research at the Consumer Federation of America. I greatly appreciate the opportunity to testify today on the immense burden that the speculative bubble in commodities is placing on American households. Congressional studies, like that prepared by the Senate Permanent Subcommittee on Investigations, committee on Homeland Security and Governmental Affairs[1] and industry analyses[2] have become convinced that speculation is contributing to skyrocketing energy prices – by adding as much as $30 per barrel or more. Natural gas prices have been afflicted by a speculative premium of a similar order of magnitude.[3] Since the Senate Permanent Subcommittee on Investigations first flagged this problem two years ago, the speculative bubble in the energy complex has cost the economy more than $500 billion – i.e. half a trillion dollars. Expenditures for household energy have more than doubled in the past six years and speculation has played a significant part in that run up.[4] In the past two years, the speculative bubble has cost consumers over $1500.

The national economy and households budgets are being clobbered by these rising energy prices and it is not just supply and demand that are to blame. Our analysis shows that there is a powerful interaction between physical market problems and financial market problems that creates a vicious, anti-consumer price spiral (see Exhibit 1). In today's hearing I focus on the financial market aspect.

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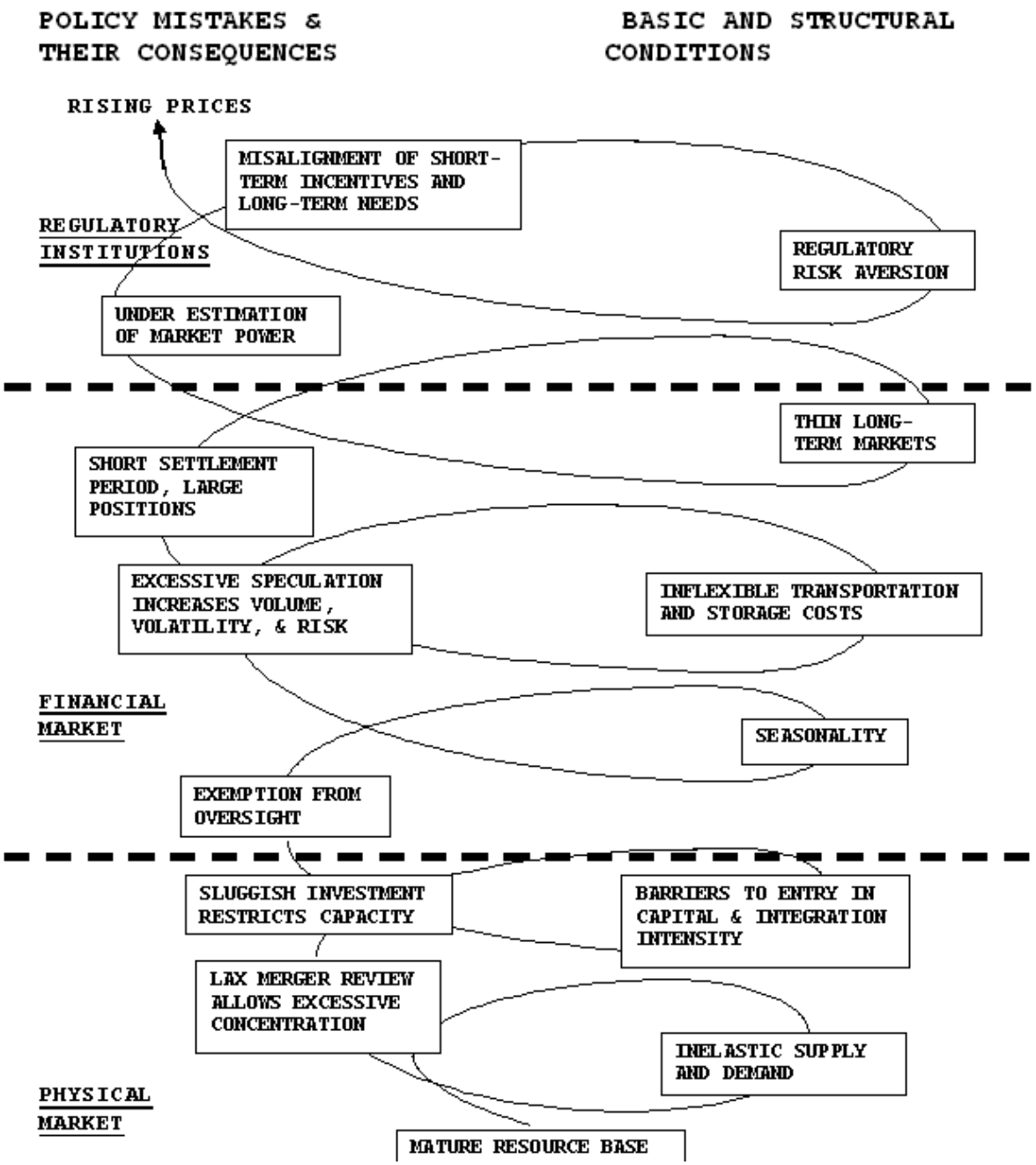
[1] Senate Permanent Subcommittee on Investigations, Committee on Homeland Security, *The Role of Market Speculation in Rising Oil and Gas Prices: A Need to Put the Cop Back on the Beat* (June 27, 2006).

[2] Akira Yanagisawa, *Decomposition Analysis of the Soaring Crude Oil Prices: Analyzing the Effects of Fundamentals and Premium* (Institute of Energy Economics, March 2008; Robert J. Shapiro and Nam D. Pham, *An Analysis of Spot and Futures Prices for Natural Gas: The Roles of Economic Fundamental, Market.*

[3] Mark Cooper, *The Role of Supply, Demand and Financial Commodity Markets in the Natural Gas Price Spiral, A report Prepared for the Midwest Attorney General Natural Gas Working Group (Illinois, Iowa, Missouri, and Wisconsin* (March, 2006) *Structure, Speculation and Manipulation* (August, 2006).

[4] Statement of Dr. Mark Cooper, "Consumer Effects of Retail Gas Prices," Judiciary Committee Antitrust Task Force, United States House of Representative, May 7, 2008

EXHIBIT 1:
PHYSICAL, FINANCIAL AND REGULATORY FACTORS IN THE ENERGY PRICE SPIRAL



Source: Mark Cooper, "The Failure of Federal Authorities to Protect American Energy Consumers from Market Power and Other Abusive Practices," *Loyola Consumer Law Review,* 19:4 (2007), p. 318.

The Problem of Hyper-Speculation in Energy Commodity Markets

In March of 2006 I published a report for the Attorneys General of Illinois, Iowa, Missouri and Wisconsin that concluded that all was not right in natural gas financial markets.

> Thus, while there is a spiral of upward pressure on prices radiating from the physical market and filtered through regulation, this analysis shows that the financial commodity markets may be dramatically accentuating the problem of high and volatile prices.
>
> Defenders of the financial markets want to blame the whole problem on the physical markets and even claim that traders will help solve the problem. But the evidence suggests that the financial commodity market bears at least some of the blame for pushing prices up. Today, the evidence that the financial commodity markets are significantly accelerating price increases in natural gas markets is circumstantial, but quite strong.
>
> The overall pattern of prices supports the proposition that they have run up beyond anything that is justified by the problems in the physical market.

- We have a commodity that is vulnerable to abuse, in a new market that has been under-regulated from its birth.
- Public policy adopted in 2000 further reduced regulation and opened the door to counterproductive, if not outright manipulative, behaviors and pushed prices higher.
- We have a clear theory about how consumers could be hurt in this market.
- The problem is that both the structure of the market and the behaviors of market players are biased in favor of higher prices and against consumers.
- We have evidence at the micro levels of a pervasive pattern of past abuses and rumors about suspicious behavior in the current market.[5]

> There are several ways in which financial markets may be magnifying the upwardly volatile spiral of prices and contribute to the ratchet:
>
> Financial markets thrive on volatility and volume, but volatility and volume have costs. Producers of gas demand to be paid a higher premium to bring their gas to market sooner rather than later. Traders demand to be rewarded for the risks they incur, risks that are increased by the trading process itself.
>
> The influx of traders fuels volatility and raises concerns about abusive or manipulative trading practices.
>
> Econometric analyses of the natural gas markets in recent years raise important questions as to how well the natural gas markets work. Given the uncertainty about the functioning of these markets, the claim that the market price is always right because it's the market price should be questioned:

[5] Cooper, Mark Cooper, *The Role of Supply, Demand and Financial Commodity Markets in the Natural Gas Price Spiral*, p. 88.

The economic analysis does not support the claim that these markets operate efficiently to establish prices.

Risk premiums, which raise the price substantially (10 to 20 percent), are high and rising.

Prices are well above the underlying costs of production.

The operation of financial markets is no accident. Trading reflects the rules that are established – by law and through self-organization. The most troubling part about natural gas trading is that policy makers really have no clue about what goes on:

The majority of transactions take place in markets that are largely unregulated.

These over-the-counter markets, reported in unaudited, unregulated indices, are a major factor in setting the price of natural gas. And these unaudited, unregulated markets have behaved very poorly in recent years, with numerous instances of misreporting of prices.

Even where there is light-handed regulation, the rules are inadequate to protect the public:

Players in the natural gas markets can hold very large positions without having to disclose the size of their positions to any regulatory authority, and a small number of large players can influence the price that consumers pay in a very short period of time and under circumstances that place the consumer at risk.

Index prices are often based on a small number of self-reported transactions and there are no mechanisms for determining if such transactions represent an accurate sampling of the natural gas market. When even the hint of accountability was imposed by merely being asked to certify the veracity of reported transactions, traders stopped reporting.[6]

There has been a failure of public policy at every level to build a system that protects the public. The structure of the physical markets induces conduct that has created and is sustaining a tight market. The structure of the financial commodities markets induces conduct that magnifies upward pressures on prices…

The financial markets are not only largely unregulated, they are structured in such a way that there are a large number of small buyers who have weakened incentives and limited ability to resist price increases facing a small number of large sellers who have a strong incentive and a much greater ability to hold out for higher prices. Holding out on the supply side may simply mean buying and holding assets in the ground or positions in the futures market and waiting for buyers who need the commodity to blink.

Most troubling is the fact that many of the impacts of many of the legislative and regulatory policies that have worked to the detriment of consumers were

[6] Cooper, Mark Cooper, *The Role of Supply, Demand and Financial Commodity Markets in the Natural Gas Price Spiral*, p. 9.

> predictable and preventable, given the nature of the commodity and the type of market that Congress and the regulatory agencies in Washington created.[7]

When the Federal Energy Regulatory Commission got wind of the report, without ever talking to us about it, they ridiculed it at an open meeting of the Commission. The Chairman of the FERC, reflecting the party line of the Administration, insisted that all the price gyrations were the result of market fundamentals. He was absolutely certain that the FERC had its finger on the pulse of the commodity markets. He was absolutely wrong.[8] At the very moment he was rejecting our analysis, unbeknownst to him, the Amaranth corner was taking place. Neither the FERC nor the CFTC had a clue about what was going on.

Missing a massive manipulation is embarrassing, but the real damage came when the blind ignorance of the FERC led it to waste the chance to use its newly minted powers under the Energy Policy Act of 2005 to follow our recommendations to adopt a broad view of abusive behaviors that afflict energy commodity markets.[9] As I wrote in the natural gas report:

> The FERC has also issued rules implementing the Energy Policy Act of 2005 that change its market monitoring procedures and implement new powers granted in the Act. It has entered into a vague memorandum of understanding about sharing information. The foregoing analysis demonstrates that a lot more than manipulation is at issue in the natural gas price spiral and suggests that much more needs to be done. Both the FERC and the CFTC are looking for a very narrow range of manipulative behaviors with a very narrow telescope. Unlike other physical commodities, a vast amount of trading of natural gas goes on in the over-the-counter markets that are hidden from the view and beyond the authority of these agencies. The indices that are based on this unregulated market activity have been unreliable and remain subject to doubt.
>
> In the case of regulated activities the changes at the FERC replicate the weaknesses of the CFTC approach by adopting its definitions and case law. It may be illegal to contrive to manipulate markets and there are new fines if you are caught doing so, but the FERC is going to have great difficulty proving manipulation, when prices are "moved." It is precisely for this reason that the

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[7] Cooper, Mark Cooper, *The Role of Supply, Demand and Financial Commodity Markets in the Natural Gas Price Spiral*, p. 89.

[8] A point-by-point response to the FERC's misguided comments on the report was provided to but never acknowledged by the Commission (Letter Appendix to Cooper, The Role of Supply, Demand and Financial).

[9] Federal Energy Regulatory Commission, Order No. 670, Prohibition of Energy Market Manipulation, Docket No. RM06-3-000, January 19, 2006; Memorandum of Understanding Between The Federal Energy Regulatory Commission and the Commodity Futures Trading in Commission Regarding Information Sharing and Treatment of Proprietary Trading and Other Information, October 12, 2005.

> CFTC and the exchanges subject to its jurisdiction do more than rely on narrowly defined manipulation statutes to prevent abuse.[10]

The FERC and the CFTC have failed to adopt a broad view of abuses in financial markets. They cannot see the abuse because they are not looking for it. My earlier analysis of natural gas markets identified the numerous ways that prices can be moved by actions that are well below the radar of the FERC and the CFTC.

> There are strands in this literature that identify potential and actual abusive practices…
>
> manipulation facilitated by large positions,
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> lack of transparency,
>
> structural advantages enjoyed by large traders or the exercise of market power,
>
> insider trading and self-dealing,
>
> trading practices that accelerate market trends, perhaps causing them to overshoot.[11]

Instead of taking a hard look at the broad pattern of abuse, the FERC adopted a very narrow view of manipulation, taking on the existing CFTC case law and definitions. Instead of providing new and vigorous oversight over the natural gas market, we have a second cop walking the same beat with it eyes half shut.

Unfortunately, the Federal Trade Commission has started down the same useless path. The lengthy discussion of intension (scienter) in the advanced notice of proposed rule making points the FTC down the same dead end path that the FERC took. The FTC needs to break out of the narrow "scienter" manipulation view to identify and attack the broad range of practices and structural conditions that can and have been moving prices in the markets.[12]

The problems that have afflicted natural gas have afflicted other energy commodities.

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[10] Cooper, Mark Cooper, *The Role of Supply, Demand and Financial Commodity Markets in the Natural Gas Price Spiral*, p. 93

[11] Cooper, Mark Cooper, *The Role of Supply, Demand and Financial Commodity Markets in the Natural Gas Price Spiral*, p. 68.

[12] Federal Trade Commission, *Prohibition on Market Manipulation and False Information in Subtitle B of the Energy Independence and Security Act of 2007*, 16 CFR 317.

> Natural gas markets share this pattern of abuse with other energy markets. Unilateral actions by any of a number of individuals in any of a number of circumstances provide a landscape in which upward price movements are probable. "There are regular squeezes in the Brent [oil] market… The whole trick is to collect more money in CFDs [contract for differences] than you lose on the physical squeeze… People seem to do it in turn. It depends on who's smart enough to move in a way nobody notices until it happens."
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> In a case brought by a private party in late 2001, the practical reality was revealed.
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> Tosco won a settlement claiming that Arcadia Petroleum (a British subsidiary of the Japanese firm Mitsui) engineered an elaborate scheme to manipulate oil prices in September of 2001 through the use of OTC derivatives and a large cash market position to corner the market in Brent crude oil. As a result, the price of Brent crude soared between August 21st and September 5th and pushed its price to a premium over West Texas Intermediate crude oil (WTI)…
>
> *Dated Brent, which acts as a price marker for many international grades, is physical crude traded on an informal market, rather than a regulated futures exchange. This lack of regulation poses problems for oil producers and consumers seeking a fair price… A typical Brent squeeze involves a company quietly building a strong position in short-term swaps called contracts for difference, or CFD's, for a differential not reflected in current prices. The company then buys enough cargoes in the dated Brent market to drive the physical price higher, which boosts the CFD differential…*
>
> *The Company may lose money on the physical side, but it's more than compensated for by profits on its offsetting paper position in the short-term swaps market."*[13]

The problem in oil markets has continued to mount, as I explained in a law review article last year.

> On April 29, 2006, the *New York Times* ran a front-page article under the headline "Trading Frenzy Adds to Jump in Price of Oil."[14] The *Times* article opens with a brief paragraph on the conditions in the physical market but then devotes about 36 column inches to the proposition that financial markets are adding to the price increase.
>
> "A global economic boom, sharply higher demand, extraordinarily tight supplies and domestic instability in many of the world's top oil-producing countries – in that environment higher oil prices were inevitable.
>
> But crude oil is not merely a physical commodity . . . It has also become a valuable financial asset, bought and sold in electronic exchanges by traders around the world. And they, too, have helped push prices higher...

[13] Cooper, Mark Cooper, *The Role of Supply, Demand and Financial Commodity Markets in the Natural Gas Price Spiral*, p. 64.
[14] Jad Mouawad & Heather Timmons, *Trading Frenzy Adds to Jump in Price of Oil*, N.Y. TIMES, Apr. 29, 2006, at A-1.

"Gold prices do not go up because jewelers need more gold, they go up because gold is an investment," said Roger Diwan, a partner with PFC Energy, a Washington-based consultant. "The same has happened to oil…"

"It is the case," complained BP's chief executive, Lord Browne, "that the price of oil has gone up while nothing has changed physically."[15]

Three key factors serve to drive the price spiral higher: volume, volatility and risk…

The structure and availability of markets plays a role in allowing the volumes to increase.

Changes in the way oil is traded have contributed their part as well. On Nymex, oil contracts held mostly by hedge funds – essentially private investment vehicles for the wealthy and institutions, run by traders who share risk and reward with their partners – rose above one billion barrels this month, twice the amount held five years ago.

Beyond that, trading has also increased outside official exchanges, including swaps or over-the-counter trades conducted directly between, say, a bank and an airline…

Such trading is a 24-hour business. And more sophisticated electronic technology allows more money to pour into oil, quicker than ever before, from anywhere in the world.

The influx of new money is sustained by movements of different institutions and individuals into the market. "Everybody is jumping into commodities and there is a log of cash chasing oil," said Philip K. Verleger Jr., a consultant and former senior advisor on energy policy at the Treasury Department."

This fundamental observation had been offered a couple of years earlier in a front page *Wall Street Journal* article entitled, "Oil Brings Surge in Speculators Betting on Prices: Large Investors Playing Ongoing Rise is Increasing Demand and Price Itself:"

Oil has become a speculator's paradise. Surging energy prices have attracted a horde of investors – and their feverish betting on rising prices has itself contributed to the climb.

These investors have driven up volume on commodities' exchanges and prompted a large push among Wall Street banks and brokerage firms . . . to beef up energy-trading capabilities. As the action has picked up in the past year, those profiting include large, well-known hedge funds, an emerging group of high-rollers, as well as descendants of once-highflying energy-trading shops such as Enron Corp.[16]

[15] *Id.*
[16] *Id.*

A recent paper from the Japanese Ministry of Economy Trade and Industry (METI) has echoed the conclusion of the Senate Permanent Subcommittee on Investigations.

> According to the METI paper, during the second half of 2007, when the physical price of Wet Texas Intermediate crude averaged $US90 a barrel, market speculation, geopolitical risk and currency factors were responsible for $US30-$US40 of the price.
>
> The average WTI "fundamental price," consistent with the underlying supply/demand situation, was around $US60/barrel during the December half-year, according to the paper, citing research for the Institute of Energy Economics in Japan.
>
> Last week the benchmark WTI futures contract touched $US135/bbl, more than double the level of a year previously.
>
> "We cannot say exactly what the fundamental price is at the moment," a METI official said yesterday. "But we believe the increases this year in the market price have much to do with the influx of speculative money.[17]

The study from the Institute on Energy Economics mentioned above draws a direct link between the growth in speculation and the rising price.

> In the futures market, oil-futures trading at New York Mercantile Exchange (NYMEX) are expanding faster than actual spots. While the futures markets are designed to hedge price fluctuations risks, oil is becoming a commodity, making the futures market something like an alternative investment target. As a result, long position by speculators ("non-commercial" and "non-reportable") conspicuously leads to a rise in the oil prices in more cases.[18]

The plague of the "influx of speculative money" has now spread to food commodities. For instance, the evidence is mounting that speculation is contributing to the run up in food commodity prices that we have experienced over the past year. Speculation can be seen as contributing to price increases and volatility, as a study from the University of Wisconsin recently noted.

> One unique aspect of the market the last year has been the size of the non-commercial position in the futures market for corn. Speculative traders have significantly increased their net long position over the last year, while non-

[17] Peter Alford, "Japan Blames Speculators for Oil Hike," May 28, 2008.

[18] Akira Yanagisawa, *Decomposition Analysis of the Soaring Crude Oil Prices: Analyzing the Effects of Fundamentals and Premium* (Institute of Energy Economics, March 2008), p. 5.

> commercial traders have tended to be net short. Note that corn prices have been highly correlated with the net positions of non-commercial traders since the first quarter of 2006/2007, and the speculators have had large net long positions most of the year. It is important to note that this does not imply causality, only correlation. However, there does appear to be reason to study more carefully the impact of speculative activity on both price levels and volatility.[19]

POLICY MUST RECOGNIZE THE UNIQUE NATURE OF VITAL COMMODITIES AND THE DYSFUNCTIONAL NATURE OF CURRENT FINANCIAL MARKETS

It would be reassuring if we could blame the current speculative bubble on the arrogance, ignorance and ineptitude of the regulatory agencies with oversight responsibilities. If that were the case, we could just fire the commissioners and secretaries and clean up the problem. Unfortunately, there is a more fundamental problem that must be addressed. Federal authorities must look broadly at the conditions in modern financial markets that feed volatility, amp up volume, and increase risk and policymakers must impose new structural oversight on these markets to return them to their proper role, as institutions that help smooth the functioning of physical markets. They have become centers of idle speculation that do vastly more harm than good.

Congress must recognize that certain commodities are fundamentally different. Energy is at the top of the list of commodities that have special vulnerabilities, but energy commodities are not alone. The transformation of commodity markets into speculative engines is hurting food commodities as well. The description I wrote of natural gas applies to greater or lesser degree to the entire energy complex and many food commodities.

> Because natural gas is a physical commodity that is actually consumed (unlike a pure financial instrument), difficult to store, and expensive to transport, natural gas markets are challenging… The key elements identified are the supply-side difficulties of production, transportation and storage, and the demand-side

[19] T. Randall Fortenbery and Hwanil Park, *The Effect of Ethanol Production on the U.S. National Corn Price*, University of Wisconsin-Madison, Department of Agricultural Economics, Staff Paper 523, April 2008, p. 16.

challenges of providing for a continuous flow of energy to meet inflexible demand, which is subject to seasonal consumption patterns.

"[T]he deliverables in money markets consist of a "piece of paper" or its electronic equivalent, which are easily stored and transferred and are insensitive to weather conditions. Energy markets paint a more complicated picture. Energies respond to the dynamic interplay between producing and using; transferring and storing; buying and selling – and ultimately "burning" actual physical products. Issues of storage, transport, weather and technological advances play a major role here. In energy markets, the supply side concerns not only the storage and transfer of the actual commodity, but also how to get the actual commodity out of the ground. The end user truly consumes the asset. Residential users need energy for heating in the winter and cooling in the summer, and industrial users' own products continually depend on energy to keep the plants running and to avoid the high cost of stopping and restarting them. Each of these energy participants – be they producers or end users – deals with a different set of fundamental drivers, which in turn affect the behavior of energy markets…

What makes energies so different is the excessive number of fundamental price drivers, which cause extremely complex price behavior."

Complexity of physical characteristics translates into a highly vulnerable product in this commodity market.

"Although the formal analysis examines transportation costs as the source of friction, the consumption distortion results suggest that any friction that makes it costly to return a commodity to its original owners (such as storage costs or search costs) may facilitate manipulation.

The extent of market power depends on supply and demand conditions, seasonal factors, and transport costs. These transport cost related frictions are likely to be important in many markets, including grains, non-precious metals, and petroleum products.

Transportation costs are an example of an economic friction that isolates geographically dispersed consumers. The results therefore suggest that any form of transactions cost that impedes the transfer of a commodity among consumers can make manipulation possible.[20]

These characteristics demand much more vigorous oversight of energy and food commodity markets than other commodities, especially financial instruments and precious metals that have few physical uses. Unfortunately, for about a decade we have had much less oversight of energy markets. More broadly, the transformation of commodity markets generally has

[20] Cooper, Mark Cooper, *The Role of Supply, Demand and Financial Commodity Markets in the Natural Gas Price Spiral,* pp. 28-29

created problems for physical markets. When commodity markets lose touch with the underlying physical market fundamentals, they do more harm than good.

Physical traders get frozen out. I found this in my study of the natural gas market. The utilities that actually sell the gas to the consumer could not play in the hyper-inflated commodity markets. They simply tied their purchases to the indexes, hoped for the best and let the consumer suffer the consequences.

> There is a general consensus that utilities are not in the markets as hedgers, although a small number are. Moreover, there is a belief that hedging has declined, as volatility and large financial players have moved into the market.
>
> "Most utilities have stopped hedging and instead rely on the fuel-adjustment clause that allows them to pass on to consumers… Many utilities exited trading, Duke being the last one. The point is they are not really in the game except for Constellation, Sempra, Dominion and a few others. That more customers are exposed to price risk because they are passing on the higher costs to customers."
>
> Cooper said many utilities probably have stopped hedging in such a risky environment because they have to eat their losses if they miscalculate. "Utilities are not in the business of predicting prices," he said. "They don't care what the price it. They pass it on to customers."
>
> While the institutional context in which utilities function certainly restricts their inclination to play in the financial market, as volatility and prices mount, it becomes more burdensome for all users. The cost of hedging becomes higher and higher.
>
> But with gas above $10/mmBtu and futures market direction unpredictable, even hedging and other risk management tools are becoming more and more expensive – raising the question of whether the benefit is worth the cost…
>
> For example, Invista uses financial derivatives, collars and similar tools to hedge against current market conditions. But gas at $10/mmbut or higher and unprecedented volatility "makes all of these actions a little more costly," Poole noted. "It raises the question: is the elimination of price volatility worth the cost?"
>
> And while Invista has the money and in-house expertise to handle risk management activities internally rather than farming them out to marketers or energy service companies, "unfortunately, for smaller-volume companies that may not be a feasible option."
>
> Tying prices to indices is the ultimate short-term strategy. This institutional view raises concerns because the capital-intensive infrastructure of the industry has historically been financed by long term contracts. The deregulation and

> unbundling of the industry inevitably shortened the time horizon of the participant. Flexibility and choice loosens commitments and makes "bypass" possible. Pipelines cannot count on shippers as much as in the past. Utilities cannot count on load as much as in the past. Merchants demand faster recovery of costs.
>
> In fact, a major impetus for restructuring of the natural gas industry was the high social cost associated with rigid long-term contractual arrangements…
>
> With the natural-gas sector restructuring… trading arrangements have become much more short term and flexible in both price and in terms and conditions. We have observed this phenomenon throughout the natural-gas sector, from gas procurement, gas storage, and retail transactions, to capacity contracting for pipeline services.
>
> Long term commitments to transportation and storage facilities, exposes the contracting parties to greater risk in this environment, especially where long term commitments to supply cannot be secured. The mismatch between the incentive structure and the necessary time horizon results in missed opportunities. For example,
>
> *Jack Flautt,* Managing Director of March & McLean, suggested there is an anomaly in the storage investment area. It is strange, in his view, that investors are not trampling one another to participate in the storage development market. "The value of storage today is greater than at any time in my lifetime," but Flautt reported he gets only blank stares from bankers at the suggestion.
>
> The hesitance of public utility commissions to push utilities to jump back in to long-term commitments is understandable and the task of realigning risks is challenging.[21]

The disutility of hyper-inflated commodity markets was recently underscored by a study of food commodities conducted by Texas A&M University.

> The increased activity in futures markets has had the unexpected consequence of reducing producer's ability to manage price risk using futures markets. The large influx of money into the markets, typically long positions, has pushed commodities to extremely high levels. But, these funds also quickly move large amounts of money in and out of positions. This has generated much more price volatility in the futures markets. In response, the exchanges have increased the daily move limits for most of the agricultural commodities over the past six months….
>
> The up and down volatility in the market and expanded trading price limits mean that more margin calls occur. Small elevators and even large grain companies and cotton merchants, who are trading even larger volumes, not to mention farmers

[21] Cooper, Mark Cooper, *The Role of Supply, Demand and Financial Commodity Markets in the Natural Gas Price Spiral*, p. 83.

> doing their own price risk management, have been unable to make the margin calls.
>
> Producers, elevators, and companies use bank financing to finance their businesses and the price risk management. As the margin calls have increased, they have exhausted their ability to finance their normal hedging activities and have therefore been forced out of the market.[22]

Simply put, commercial entities that need the physical commodities to run their enterprises are priced out of the market. If you do not have deep pockets, are tied to the physical schedule of production and consumption, and live in the real world of bank finance, hyper-inflated commodity markets are a big part of the problem, not the solution.

POLICY RESPONSES

The exchanges have come to serve the interests of the idle rich speculators by constantly adjusting rules to make it comfortable for the non-commercial entities to play their games and abandoned their role of providing liquidity to promote productive commercial enterprise. We need to deflate this speculative bubble and return these commodity markets to their proper role.

Oversight

Congress has closed a loophole in the Commodity Futures Trading Commission Modernization Act that allowed energy commodities traded off exchanges to go unregulated. This foolish provision allowed the Enron debacle to spread broadly to energy markets and fostered dozens of other cases and uncounted thousands of abuses. Affectionately known as the Enron-loophole, Congress recently voted to close it, but that is not enough. Congress needs to make sure that this provision is implemented with extreme vigor. Large traders who trade in commodities in the U.S. ought to be required to register and report their entire positions in those

[22] David P Anderson, et al. *The Effects of Ethanol on Texas Food and Feed,* Agricultural and Food Policy Center, Texas A&M University, April 10, 2008, p.32.

commodities here in the U.S. and abroad. Registration and reporting should trigger scrutiny to ensure the good character, integrity and competence of traders.

If traders are not subject to comprehensive reporting requirements, there will always be room for mischief that is out of sight to the regulator. If they are unwilling to report all their positions, they should not be allowed to trade in U. S. markets. If they violate this provision, they should go to jail. Fines are not enough to dissuade abuse in these commodity markets because there is just too much money to be made. We need mandatory jail sentences.

Regulatory authorities must also require full auditing of private indexes. The FERC failed to impose this condition on the critical natural gas indexes and has been tied up in court over even modest transparency requirements. Federal and state regulators should refuse to allow indices that are not fully audited and transparent to be used in any ratemaking transactions. Unaudited indices should simply not be allowed to influence consumer costs in regulatory proceedings.

Incentives

We need to restore the balance between speculation and productive investment. Public policy has made speculation much more attractive that investment in genuinely productive enterprise. Not only was energy commodity trading less regulated, it was also less demanding. Margin requirements on organized exchanges are a fraction of the margin requirements on stocks. If it is cheaper to put your money into speculation, why bother with real investment. The margin requirement for commodity trading among non-commercial traders should be fifty percent higher than the margin requirement for investment in stocks. However, we should impose less onerous terms on physical players and even scale the terms to the size of the position, so that smaller physical players can regain access to these futures markets.

We must also set lower position limits and increase settlement windows so that individual players cannot influence price.

We must level the playing field between long term productive investment and short term speculative gains. We need a tax on short term capital gains between 33 and 50 percent, (which reflects the difference in the net present value of income from on a one year investment repeatedly flipped and the net present value of a stream of income an investment held for ten years – discounted at the OMB suggested discount rates of 7 and 10 percent respectively), to make holding productive investments for long periods as attractive as flipping short term financial paper.

Physical Markets

While this hearing focuses on the financial markets, I would be remiss if I did not also mention the physical market. Again, my analysis of natural gas markets provides a broad framework for oversight policies to begin addressing the institutional flaws that have given rise to physical market problems.

> In the physical market, policymakers have allowed the supply side to become concentrated and vulnerable to the exercise of market power. Meanwhile, producers have been slow to invest in exploration and development, compounding the problem of tight supplies.
>
> The Federal Energy Regulatory Commission exacerbated the problem by failing to ensure a transparent price reporting mechanism. It deregulated markets and granted market–based rate authority without requiring full and honest disclosure of information or effective competition on the ground. In retrospect, it appears that there have been repeated market "aberrations," but fraud and market manipulation are not the only concerns. The ability of strategic behavior to influence price because of structural weaknesses in market rules is a more general concern.
>
> The position of the major oil companies with large holdings of natural gas physical assets, dominance of natural gas marketing, and active involvement in natural gas financial markets poses a serious threat to consumers. The inadequate investment in exploration over the course of a decade or more contributed to the tight supply conditions. The massive windfall of cash flow in recent years dulls the incentive for the majors to supply gas to the market. They can keep it in the

> ground and hold out for higher prices. They are under no pressure to sign long-term contracts, except at extremely high prices. As major marketers and traders, they can move markets.
>
> The fact that the majors straddle these markets, several of which are lightly or unregulated, compounds the problem, since their ability to profit by taking contrary positions in various markets is hidden from regulators. Policymakers must have the information necessary to make informed judgments about whether the major oil companies are exercising market power, strategically in the long-term and unfairly exploiting the tight markets they have helped to create in the short term.
>
> A joint task force of federal and state anti-trust and regulatory authorities should be formed…

CONCLUSION

Vigorously enforced registering and reporting requirements will chase the bad actors out of the commodity markets and the margin and tax policies will direct capital out of speculation and into productive long term uses. Creating a class of idle rich speculators, who are immune to the business cycle, was a huge mistake. Allowing this huge log of money to pump up the volume, volatility and risk has cost consumers dearly.

Let us assume a modest estimate of $30 per barrel that is cited by industry analysts as the amount that the speculative bubble has added to the price of oil in the past two years and use my modest estimate of $2.50 per thousand cubic feet for natural gas. Since the Senate Committee on Oversight and Investigations issued its report, the speculative bubble in energy commodities has cost America well over half a trillion dollars. It is time to do something about it.

The investigations of manipulation by the FERC and the CFTC, stepped up grudgingly in response to mounting political pressure, are woefully inadequate and looking for the wrong thing. This is not a question of manipulation, but a fundamental breakdown of the functioning of these markets. The FTC seems inclined to make the same mistake in its Advanced Notice of Proposed Rulemaking. We need much more vigorous action to reign in the speculative bubble and return

the futures markets to their proper role to improve the functioning of physical commodity markets.

Consumer Federation of America
1620 I Street, N.W., Suite 200 * Washington, DC 20006

STATEMENT OF DR. MARK COOPER

DIRECTOR OF RESEARCH

on

EXCESSIVE SPECULATION IN ENERGY COMMODITIES

Before the

Subcommittee on Agriculture, Rural Development, Food and Drug Administration and Related Agencies,
Appropriations Committee
United States House of Representatives
Hearing on Review of Legislation Amending the Commodity Exchange Act

July 10, 2008

MR. CHAIRMAN AND MEMBERS OF THE COMMITTEE,

My name is Dr. Mark Cooper. I am Director of Research at the Consumer Federation of America. We greatly appreciate the opportunity to testify today on the immense burden that the speculative bubble in energy commodities is placing on American households.

The story has been told many times, but the lessons have still not been learned. The lack of effective prudential regulation of financial and commodity markets leads to excessive speculation, bubbles and bursts that disrupt the economy and cost consumers hundreds of billions of dollars. Too much money chasing too few goods in the commodity markets has contributed to the price spiral, amping up volume, increasing volatility and adding to risk. We must turn down the volume in commodity markets and sound prudential regulation is the key to restoring order.

THE FAILURE OF PRUDENTIAL REGULATION OF COMMODITY MARKETS HAS COST OIL CONSUMERS HUNDREDS OF BILLION OF DOLLARS

Two and a half years ago I prepared a report for the Attorneys General of Illinois, Iowa, Missouri and Wisconsin that described and explained the 2005-2006 price bubble in natural gas.[i] A few months later I prepared a similar analysis dealing with oil for the Attorney General of Wisconsin, which reached the conclusion that excessive speculation was pushing up the price of oil.[ii] In the past two years the Senate Permanent Committee on Investigations has confirmed my findings, [iii] as have numerous other reports.[iv]

In the years since my reports first came out, as demonstrated in my comments today, the speculation in oil alone has cost the economy about $285 billion. If we add in similar effects on natural gas, then the total reaches half a trillion dollars. This places a huge burden and household budgets. Average annual household expenditures on gasoline have increased by $1200. For households in rural areas, the increase has been over $1500 per year.

With such huge stakes foe consumers, it is encouraging to see that Congress is actively seeking to **restore prudential regulation** to the commodity futures markets and disappointing to see a group of Op-ed page economic columnists outraged by the fact that Congress understands that some markets can fail sometimes and that prudential regulation can do some good[v] I emphasize **restore prudential regulation** because one thing the Op-ed economists never acknowledge is that the financial instruments, trading practices, and loopholes that are the target of the current policy debate did not exist or were rarely utilized just a decade ago. Commodity futures markets performed their important functions of smoothing the operation of physical markets for three quarters of a century without the contrivances that have opened the door to excessive speculation in the past decade. Bad policy and lax oversight created the conditions for the speculative bubble; good policy and effective oversight can burst the bubble, restoring these markets to their proper role in society.

Because I have written the technical side of the analysis and presented it to Congress several times in recent weeks,[vi] I submit those for the record, but I want to use my testimony today to respond to the arguments made by the Op-ed economists. They are big names, in big newspapers that get a lot of notice and the surge of columns around the time of Congressional hearings is certain to get your attention. I frequently agree with them, but they are dead wrong on this issue.

MULTIPLE CAUSES OF RISING PRICES: EXCESSIVE SPECULATION PLAYS AN IMPORTANT ROLE

The Op-ed economists are simply unwilling to accept the proposition that financial market can become dysfunctional or overshoot. They insist that whatever price the market puts on a barrel of oil must be right, except, of course, for the price last year, which was half of

today's price. In that case, last year's price must have been wrong because it must have been too low. In the world of Op-ed economics it would appear that markets can only err on the low side.

The analysis of the current oil market must start from the recognition that oil prices have been rising for quite some time, as Exhibit 1 shows. The price increases between 2002 and 2005 reflected a tight market situation that produced the sharpest sustained increase in prices since the Arab oil embargo. Between 2002 and 2005 prices tripling from just over $17/bbl to just over $52/bb, or about $0.73 per month. The 2005 price of just over $50 per barrel is right in the middle of the range where the oil industry executives have told Congress that the economic cost of delivering a barrel of oil is today.[vii] In the two and a half years after January 2005, however, prices have been increasing over four times as fast, over $3.00 a month, rising to about $145/bbl in recent weeks. If the 2002-2005 trend had continued, the price of oil today would be about $65/bbl (see Exhibit 2).

Thus, we are not saying that markets are not tight or that prices should not have increased, but we are suggesting that the explosion of prices on top of an already rapid price increase was excessive. Speculation would not be having the effect it is if fundamentals were not so tight, but there is no doubt that speculation is making matters much worse. With the real marginal economic cost of a barrel of oil is in the range of $35 to $60 per barrel, adding a cartel rent for OPEC which is targeting $70 to $80 per barrel, [viii] and even a geopolitical risk premium, we conclude that the current price at about $140 per barrel includes a large speculative premium. We think a speculative premium of $40 to $50 per barrel is excessive.

The effects of speculation are evident in much more sophisticated models than the simple trend line analysis in Exhibit 2. A recent paper from the Japanese Ministry of Economy Trade and Industry (METI) has echoed my conclusion and the conclusion of the Senate Permanent

Subcommittee on Investigations.[ix] We reach a similar conclusion when we compare the output of the results of the Energy Information Administration's *National Energy Modeling System*, which is a market fundamentals model used to produce the price projections in the *Annual Energy Outlook*,[x] to actual prices. As Exhibit 3 shows, the model did just fine predicting the price of crude one year in advance for 1995 to 2002. It then began to deviate on the low side. The magnitude of the underestimation for this year is just about $50 per barrel. This is another good indicator of a speculative premium.

Thus, a multi-causal explanation of rising oil prices is necessary, one that combines rising economic costs, rising cartel rents, **and** speculation, but the Op-ed economists seem unable to accept such an explanation. In a multi-causal world, Congress must pick it spots for action. There is not a lot congress can do to influence the rising economic cost of finding oil and OPEC's ability to collect cartel rents is difficult to challenge in the near term, but there is something Congress can do about excessive speculation. Even if you believe that the social, national security and environmental costs of oil consumption (the externalities) demand aggressive policies to end our national addiction to oil,[xi] allowing cartels and speculators to rip the public off is not the way to solve the problem. Maybe we need to get to $145/bbl oil by 2020, but accelerating that price increase to 2008, with extremely low elasticities of supply and demand, just punishes consumers and the economy, while it enriches members of the oil cartel and speculators, who do not put the money to work solving the problem.

THE RECENT EXPLOSION OF OIL PRICES: FUNDAMENTALS LEAVE A GREAT DEAL UNEXPLAINED

The claim that the problem is solely due to physical market fundamentals just does not fit the facts. What the Op-ed economists want you to do is get out an electron microscope and focus on minute changes in supply and demand that are barely perceptible and not closely

correlated with price changes, arguing that in a jittery market these minuscule changes trigger huge price swings. At the same time they ask you to ignore the most obvious changes in trading patterns that are visible to the naked eye and highly correlated with changes in price.

As Exhibits 5 and 6 show, both short term and long term fundamentals had been essentially constant over the past six years. The short term measure most frequently cited is spare OPEC capacity (see Exhibit 5). While it has fluctuated, it shows no significant downward trend. In fact, over this period, the correlation between excess capacity and price is positive, not negative; which is, of course backwards.

Similarly, the best long-term measure of capacity – the reserve to consumption ratio – is also increasing slightly while prices are increasing (see Exhibit 6). Again, upon close examination we find that the correlation is slightly positive, which is contrary to the claim and expectations. These oil market numbers do not include a doubling of biofuel production, representing a growth of about 1 million barrels per day, equal to about half of the OPEC excess capacity.

If fundamentals did not change and are unlikely candidates as the cause of the explosion in prices, we have to find something that did change. A broad range of analysts and physical traders now point to the explosion of trading as the cause (see Exhibit 7).[xii] There is no doubt that there has been a huge influx of money into these markets and a dramatic increase in the number of open positions. The volume of trading has increased four-fold in the past six years, while the value of trading has increased over twelve times and the price has risen a well.

This is just correlation. But the correlation between our causal factors and reality is a lot stronger than the correlation between the Op-Ed economists' causal factors and reality. At least it is in the correct direction; our account is more plausible.

CLOSE EXAMINATION OF CROSS-COMMODITY COMPARISONS STRENGTHEN THE CASE FOR A SPECULATIVE BUBBLE IN OIL

Although simple correlation of prices and the market fundamentals do not support their account, the Op-ed economists do rely on other simple correlations to try to make their point. One of the favorites is the rhetorical device of finding commodities that are not traded on exchanges but experience price increases.

> You see iron ore isn't traded on a global exchange; its price is set in direct deals between producers and consumers. So there's no easy way to speculate on ore prices. Yet the price of iron ore, like that of oil, has surged over the past year. In particular, the price Chinese steel makers pay to Australian mines has jumped 96 percent [xiii]
>
> Granted, raw materials prices have exploded across the board. From 2002 to 2007, oil prices rose 177 percent, corn 70 percent, copper 360 percent and aluminum 95 percent... Did speculators really cause *all* of those increases? If so, why did some prices go up more than others? And what about steel? It rose 117 percent – and has increased further in 2008 – even though it isn't traded on commodities futures markets.
>
> Recently, the giant mining company Rio Tinto disclosed an average 85 percent price increase in iron ore for its Chinese customers. That affirmed that physical supply and demand –- not financial shenanigans – is setting prices: Iron ore isn't traded on futures markets.[xiv]

What these comparisons teach us is unclear for a number of reasons.

First as noted above, we do not claim that there are no physical market fundamentals that are pushing up prices, rather that speculation is magnifying the problem. For most of the comparisons, crude increased a great deal more than the other commodities. Moreover, not only has oil increased most, but the volume of trading of oil increased most as well, particularly in the past couple of years as new pension fund and index fund moneys have flowed in (see Exhibit 8). Again the correlation analysis supports our explanation.

Second, there is a logical policy contradiction created by invoking a comparison between commodities that are traded on exchanges and those that are traded bilaterally. If bilateral physical markets work to transmit price signals, then damping down trading in exchanges won't do much harm. Traders can do bilateral deals for physical crude. In fact, for most of the history

of energy commodities, there were no exchanges or exchanges played a small role. Bilateral markets were the rule and they worked just fine.

Third, the empirical claim is dubious. The Op-ed economists point to a few recent deals made in iron and steel, but the price trend in the U.S. for oil and related products is radically different than that for iron and steel (see Exhibit 9). Comparing the producer price index for crude oil and the primary products derived form it (gasoline and diesel) to iron and steel and metals, supports out explanation, not theirs. The pricing patter is similar to the patterns we have seen throughout the empirical analysis.

Things were fairly stable across commodities in the 1998 to 2002 period, and then the oils began to lift off, exploding in the past year. Iron, steel and metals rose modestly and then ticked up in the past couple of months. The difference is a good candidate for a speculative bubble. In the five and a half years from January 2002-to May 2007 oil prices increased by about 250 percent, while iron and steel prices had increased 100 percent, underscoring the much larger increase in crude prices. Over the past year, as measured by the producer price index, the surge in crude prices has been 100 percent, compared to the surge in iron prices of 20 percent. Whether and how the recent Chinese deals will be transmitted through to the market remains to be seen (some of it may have been in reaction to the earth quake which suggests an insufficient use of iron to reinforce concrete in construction).

These comparisons do not disprove the existence of a speculative bubble; they make a good case for the usefulness of bilateral trading. Of course, the Op-ed economists will argue that iron was too low because it had not kept up with oil.

THE LINK BETWEEN TRADING AND RISING PRICES

Our explanation does not stop with correlation, however. We go a couple steps further in to turn correlation into a proper causal explanation. First, the patterns of price increases we have observed above are coincident with changes in commodity market policy and trading behavior (see Exhibits 10 and 11). We identify specific policy changes that led to changes in behavior that triggered increases in both prices and volatility. This close temporal coincidence strengthens the causal claim.

Second, we identify the conceptual mechanisms through which speculation translates into higher commodity prices.[xv] As prices and volatility rise in a market, it gets harder and harder to convince people who have the physical commodity in the ground to part with it. They have to be bribed with higher prices to lift the oil not only because they can expect a higher price in the future, but also because they demand a higher risk premium to insure against the chance that they are selling at the bottom of volatile price swings. This basic fact has been clear in the academic literature for quite some time[xvi] and it is finally penetrating to the popular press.

> Another financial factor behind the price rise that hasn't been talked about much on Capitol Hill or elsewhere is reduced hedging by oil companies on futures markets, says Larry Goldstein, a longtime energy analyst. In the past, crude producers would offer buyers a portion of their energy output in future years in order to protect themselves if prices pulled back. But energy companies got burned as prices kept rising during the past two years and have since cut back on selling untapped production – forcing prices for energy futures even higher. [xvii]

Some of the Op-Ed economists do not get this basic fact, arguing that"Investors who buy paper oil do not alter the demand for physical oil."[xviii] Others admit that it can happen, although they doubt that it is happening now –

> "Under some circumstances, speculation in the oil futures market can indirectly raise prices, encouraging producers and other players to hoard oil rather than making it available for use.
>
> Whether that's happening now is a subject of highly technical dispute. Suffices it to say that some economists, myself included, make much of the fact that the usual telltale signs of a speculative price boom are missing."[xix]
>
> In theory, high futures prices might reduce physical supplies by inspiring hoarding. But that's not happening. Inventories are modest.[xx]

The Op-ed economists insist that there has to be evidence of hoarding, narrowly defined, to make a colorable claim of manipulation and they point to the failure to build stock as evidence that there is no hoarding. Excessive speculation is not about manipulation, but structural incentives to hold out (not withhold) for a higher price before producers will bring supplies to market. In this context the evidence would not be the obvious build up of stocks above the ground, but the build of raw materials in the ground, since suppliers are willing to wait to deliver and insist on a higher price.

There is more than anecdotal evidence to support this alternative view. The Energy Information Administration reports that proved reserves increased by 27.5 percent between 2002 and 2007. Production increased by only12.5 percent. As a result, the reserve to production ratio increased by 14. 7 percent. This includes Canadian oil sands reserves starting in 2003. If we exclude that from the total, production growth equaled reserve growth. However, the effect of rising prices is to make more resources economic, so there is no reason to exclude these resources. The Op-ed economists cannot claim we need high prices to stimulate the search for alternatives, and then exclude the very reserves that are rendered economic by higher prices. Moreover, even without the oil sands, the reserve to production ratio is 36 years and the question becomes why a seven-fold increase in price did not lead to an acceleration of production and a decline in the reserve to production ratio. The answer is the incentive to keep crude in the ground. The OPEC cartel engages in explicit supply management,[xxi] while the oil companies call it capital discipline.[xxii]

Recognizing the difference between manipulation and excessive speculation is critical. The central issue is not manipulation, like the Hunt's in silver, or Enron in electricity, or Amaranth in natural gas, although there may be some of that in the present market. The central

issue is a broader structural problem of excessive speculation. Dismissing the possibility of manipulation is a rhetorical point that proves little. Even here we get conflicting accounts of how futures market manipulation might work. On the one hand we are told that manipulation of electricity markets was possible because it cannot be stored,[xxiii] on the other hand we are told that manipulation of oil markets is impossible because it is difficult and expensive to store.[xxiv] The right answer is that the difficulty of transportation and storage increases the ability to push the price up, just as it makes manipulation more feasible.

THE INCENTIVE TO PUSH PRICES UP

The above discussion explains how excessive speculation raises the price of the physical commodity. In order to have a complete explanation, we must also offer a theory of why speculators push them up, how the profit by driving prices up. The Op-ed economists are fond of pointing out that if every commodity transaction matches a buyer and a seller, then winners cancel out the losers no matter how high the price (ignoring the fact that the public is the loser when it pays the higher price).

Traders can profit from a rising price in a variety of ways. As long as there is more new money coming in that is willing to bid the price up, the old money in the market benefits by staying long. Given the entry of a series of new pots of money – first banks, then hedge funds, then pension funds, then index funds – this upward spiral is sustainable and profitable.

It is easier to ensure the inflow of funds when you are "advising" the new money what to do and the upward spiral of prices when you are hyping the market with reports about how high the prices will go.[xxv] Traders can engage in wash trades to push the price up.

As account values rise, excess margins and special miscellaneous accounts allow the trader to take money out or leverage more trading, to keep the upward spiral going.

Traders and exchanges benefit from transaction fees that grow with value.

The fact that longs must equal the shorts glosses over the different interests of different kinds of traders. Speculators can be net long (and therefore benefit from constantly rolling over contracts at higher prices) in markets that the regulator cannot see (over the counter) or through affiliates in regulated markets that are not well tracked.

Although we do not approach the issue from the point of manipulation, the historical accounts of hundred of corners and squeezes and the dozens of fines in energy markets in recent years do attest to the motive and opportunity that exists for traders to attempt to push the market up to profit.

SPECULATION IS THE SURPRISE, NOT FUNDAMENTALS

Unable to deal with inconvenient facts, the Op-ed economists resort to surprises and emotions to fill the gap in the analysis.

"When unexpectedly high demand strains existing production, prices rise sharply as buyers scramble for scarce supplies."[xxvi] "After years of ignoring the rather obvious fact that oil is a finite resource, the world has suddenly become acutely aware of that reality.[xxvii] Well functioning market are not supposed to be surprised. Indeed, in our account, far from ignoring the facts, the markets were dealing with the facts in the price run up from $17 to $50 in 2005. The trend line goes to $65 in 2008. The surprise is not the tight market, it is the speculative bubble.

Two recent pieces of analysis presented to the Energy and Commerce Committee by energy economists provide data that ties our account together. In Exhibits 10 and 11 we identified periods of trading by policy changes that affected trading behavior, primarily by attracting different kinds of players and trading strategies into the market. The upper part of

Exhibit 12 shows a categorization of the periods that parallels ours which sees three broad structures – traditional, fundamentals (demand and supply) and financial. The lower part of Exhibit 12 shows the correlation between open market positions and price. We have argued that the fundamentals period began in 2002 and data in the exhibit supports that view. The basic point is that a speculative bubble has been added to the underlying price increase driven by fundamentals.

Exhibit 13 shows the finding cost curve and uses that cost curve to predict crude prices. The rise from about $20 in 2002 to about $70 in 2008 is consistent with our earlier trend line analysis and the EIA market fundamentals model. Thus, price tracked fundamental closely until 2006, when the speculative bubble began to inflate.

INCONVENIENT FACTS AND NONECONOMIC EXPLANATIONS

In the final analysis, even the electron microscope cannot find changes in fundamentals that account for the explosion of prices in recent months, so the Op-ed economists are forced to abandon economic explanations and embrace psychology.

> Everyone in the oil market is attuned to every little twitch that has the potential to damp supply or increase demand. That's why, for instance, when Libya announced on Thursday that it might cut oil production, oil jumped more than $5. Meanwhile, when Brazil discovers a huge new oil field, the market shrugs. That is not speculation at work – its market psychology. There's a big difference. If there is a bubble, that's what is causing it.[xxviii]

In the end, if it is just psychology, we would urge policy makers to ask themselves whether they are obligated to let the psychos run wild in a market as vital as oil. We submit that you are not. If the traders in this market have become irrationally attuned to "every little twitch" that might increase prices, but disregard facts that might lower prices, it is hard to conclude that the market is functioning properly. The psychos need a little sedation to restore balance to their perspective. Prudential regulation has the benefit of both preventing excessive speculation and

sedating the psychos, not to mention allowing the physical traders to reenter the market and use its price discovery and risk management functions.

REGULATORY REFORM IS THE WAY TO SOLVE THE PROBLEM

We urge you not to let the smoke and mirrors of the Op-ed economists dissuade you from your central mission to protect the public form abuse. The Congress is absolutely correct to conclude that it must address the problem of excessive speculation and correct in concluding that the CFTC cannot be trusted to effectively address the problem. With the commodities markets overwhelmed by speculation and the Congress empowering other agencies to do the job that the CFTC has failed to do, the CFTC has changed its tune, belatedly admitting that it did not have sufficient information to perform its primary function of preventing excessive speculation and recognizing that foreign boards of trade do not exercise effective regulation of trading. Begging foreign exchanges for data and foreign regulators to act responsibly is not only embarrassing; it is absurd when the CFTC has not put its own house in order. The CFTC's proposals are too little too late.

There are five areas in which reform is necessary, with a variety of policy making institutions needing to take action. We recognize that this is a tall order, but a half a trillion dollars sucked out of the economy and the pocketbooks of American households by the speculative bubble of recent years demands you take action now.

Chase out the bad guys

- **All traders must register and be certified (for honesty and competence, like bankers and brokers).**
- **All trading must be reported across all transactions**

Eliminate the funny money

- **Raise margin requirements**
- **Increase capital reserve requirements**

Reduce the ability to push prices up

- **Lower position limits and tie limits and margin policies to needs of physical traders**
- **Lengthen settlement windows**

Ban conflicts of interest (analyst's reports that enrich analyst's portfolios)

Restore the proper functioning of commodity markets and their regulators

Enforce meaningful speculative limits

Do honest analysis (classify traders correctly)

Close the loopholes (foreign boards of Trade exemptions, the Enron and swaps)

Create minimum criminal penalties for violation of commodity laws

Redirect investment to productive long-term uses

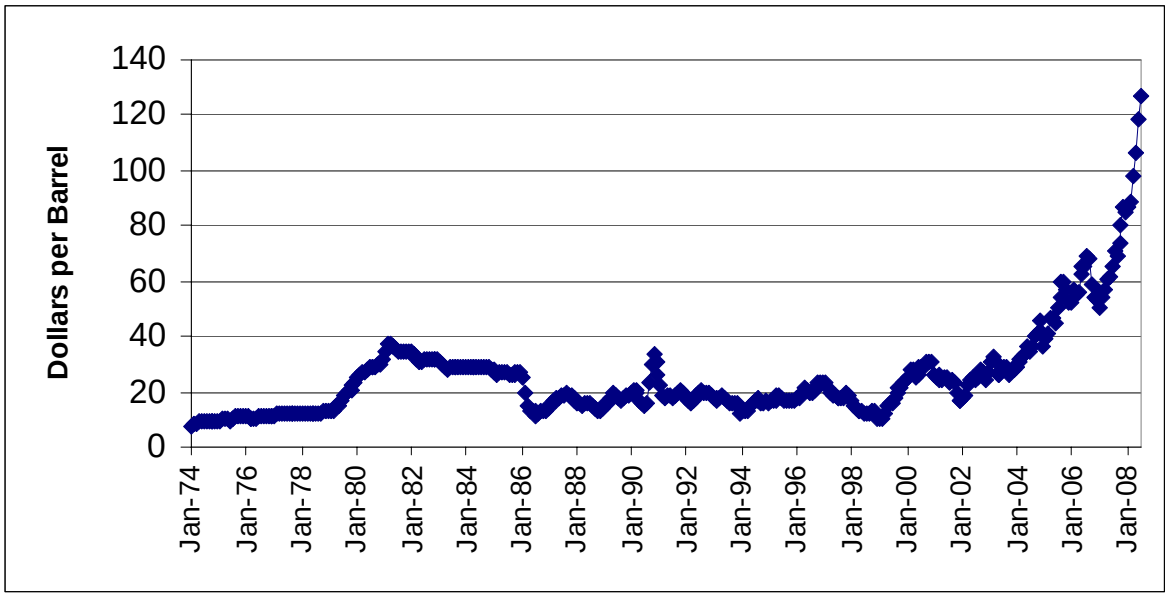
Put a tax on short-term capital gains

Move pension funds out of speculation

Ban institutional index funds

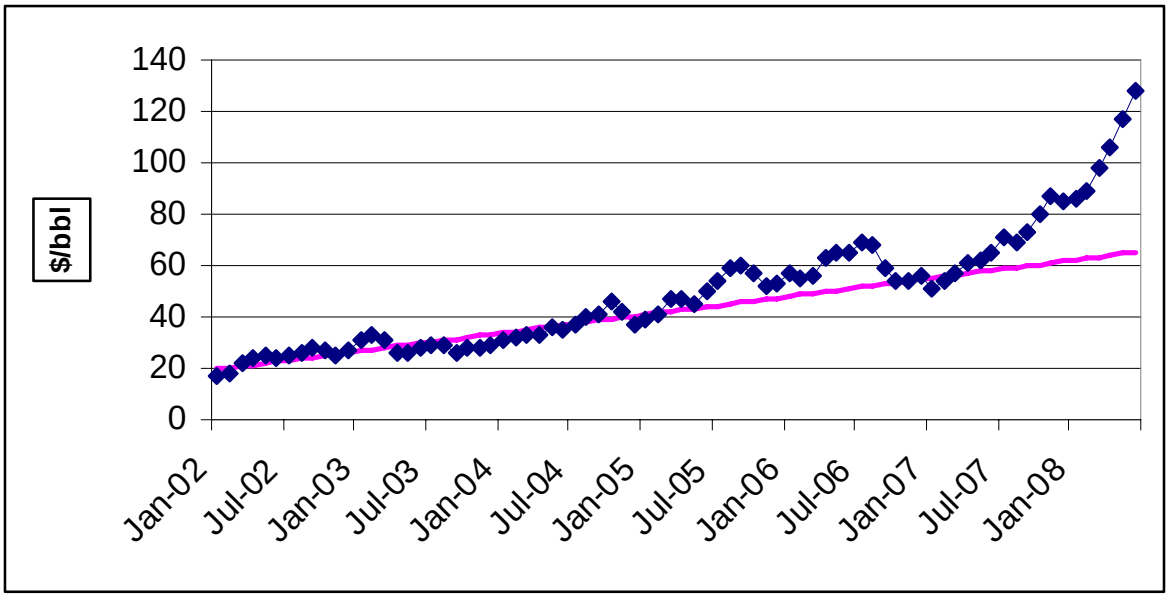
EXHIBITS

EXHIBIT 1:
LONG TERM TREND OF CRUDE OIL PRICES



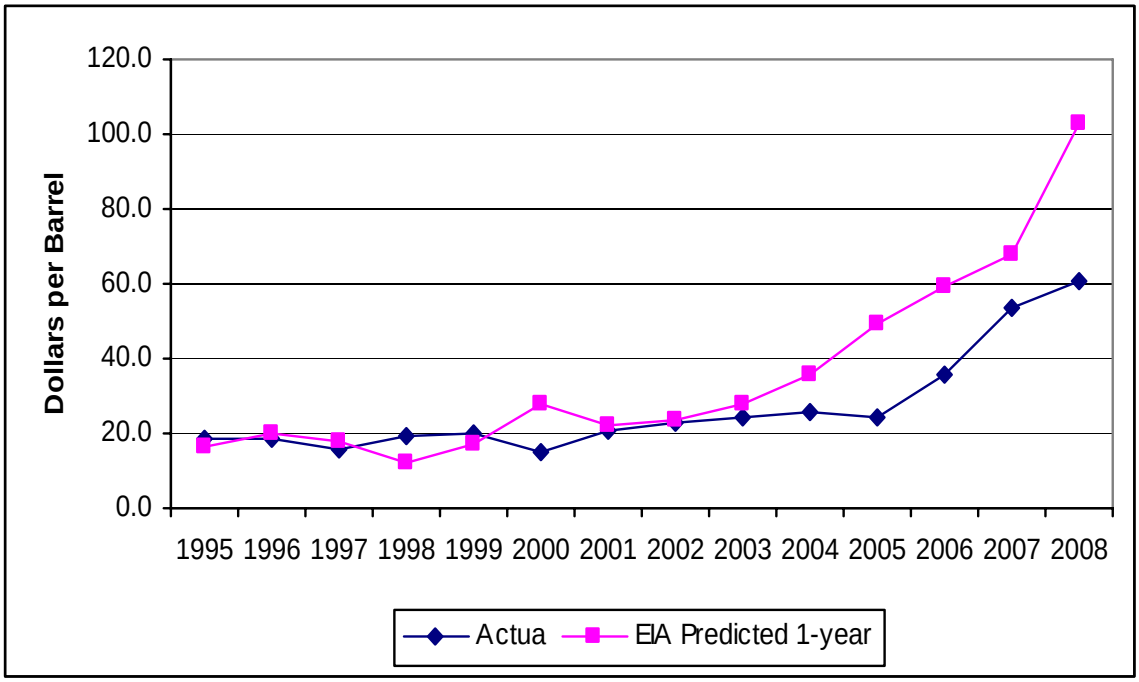
Source: Energy Information Administration, data base, *Refiner Acquisition Cost of Crude.*

EXHIBIT 2:
CRUDE PRICES COMPARED TO TREND LINE (1/2002-1/2005)



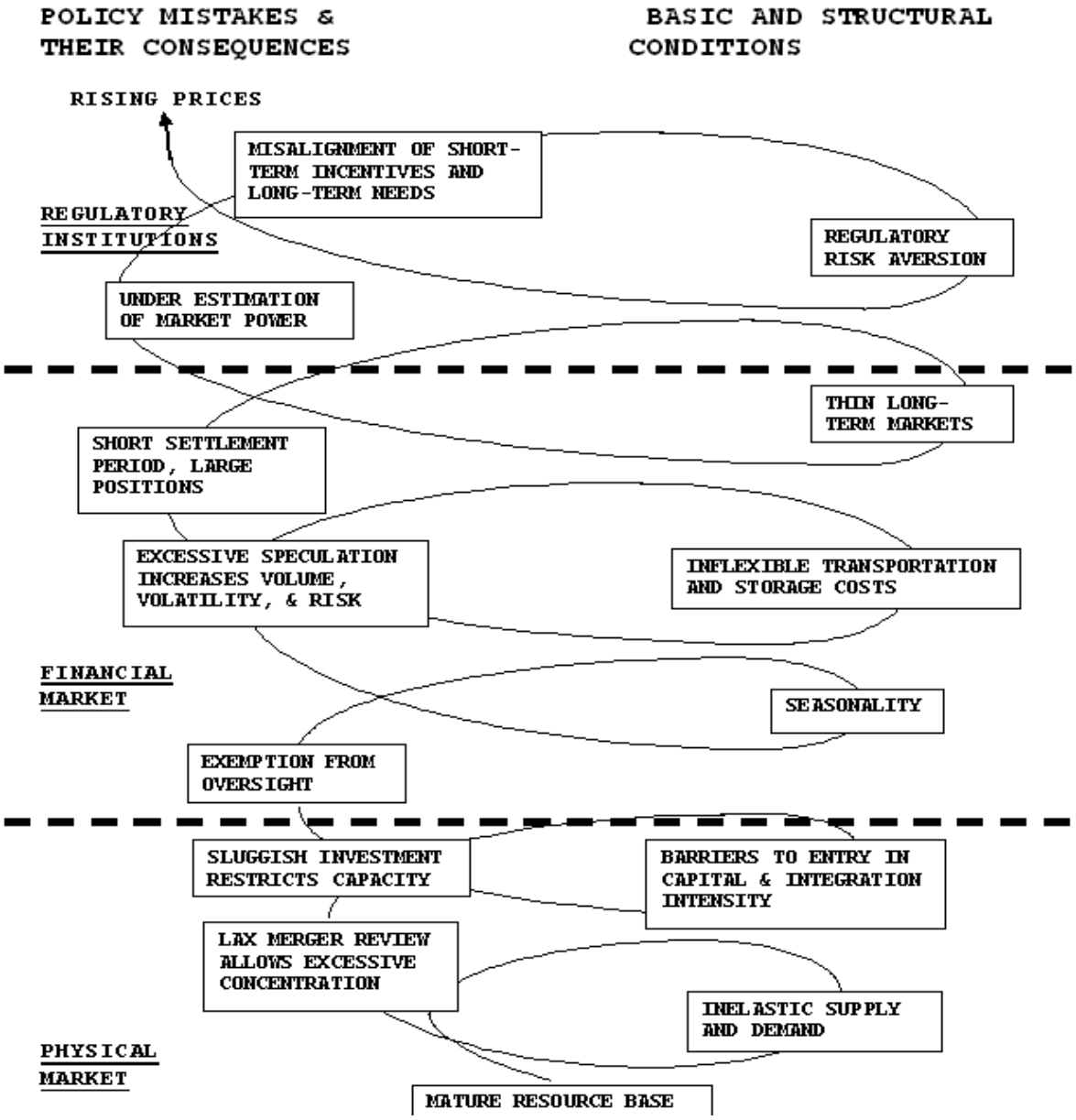
Source: Energy Information Administration, data base, *Refiner Acquisition Cost of Crude.*

EXHIBIT 3:
EIA CRUDE OIL PRICE PREDICTIONS (1-YEAR FORWARD) COMPARED TO ACTUAL PRICES



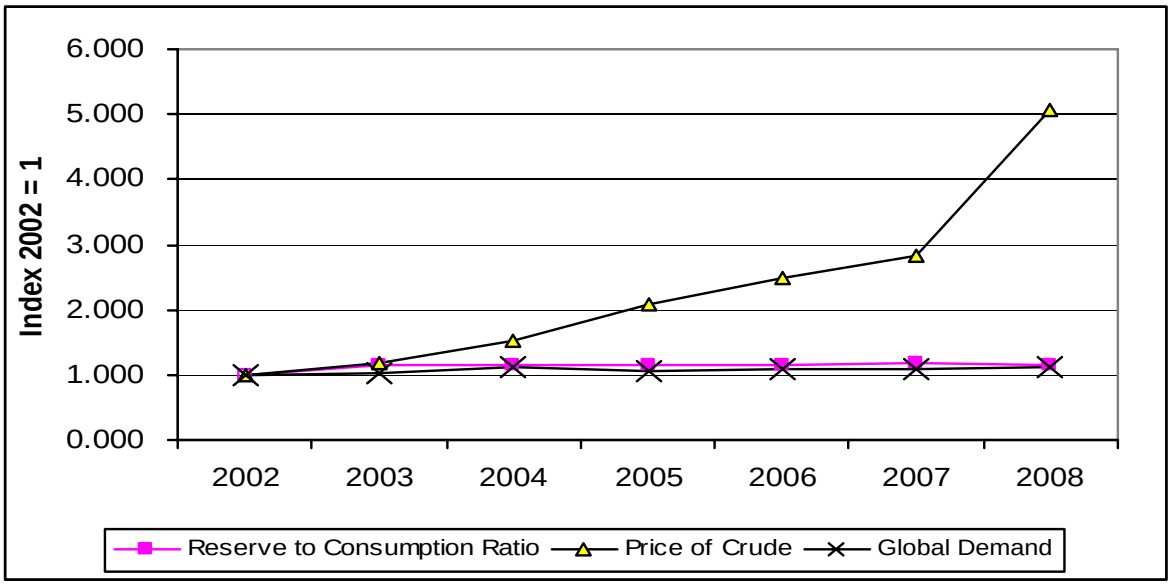
Source: Energy Information Administration, *Annual Energy Outlook: Retrospective Review, Evaluation of Projections in Past Editions (1983-2006), Annual Energy Outlook, 2006, 2007, 2008. Landed Cost of Crude,* is used for actual cost.

EXHIBIT 4:
PHYSICAL, FINANCIAL AND REGULATORY FACTORS IN THE ENERGY PRICE SPIRAL



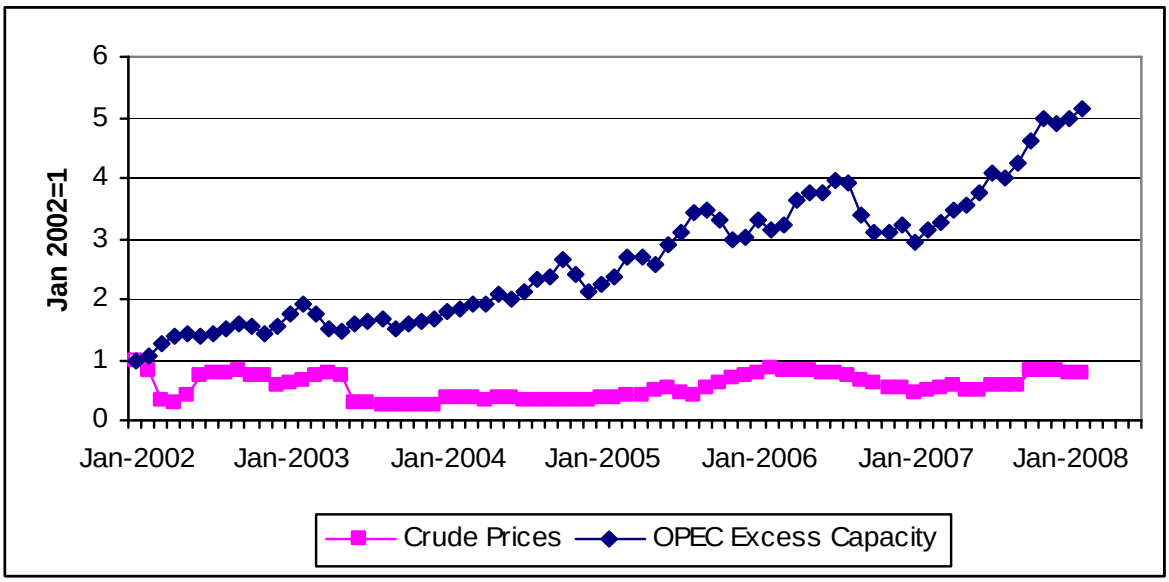
Source: Mark Cooper, "The Failure of Federal Authorities to Protect American Energy Consumers from Market Power and Other Abusive Practices," *Loyola Consumer Law Review*, 19:4 (2007), p. 318.

EXHIBIT 5:
LONG-TERM FUNDAMENTALS:
GLOBAL DEMAND AND RESERVE TO CONSUMPTION RATIO, COMPARED TO PRICE OF CRUDE



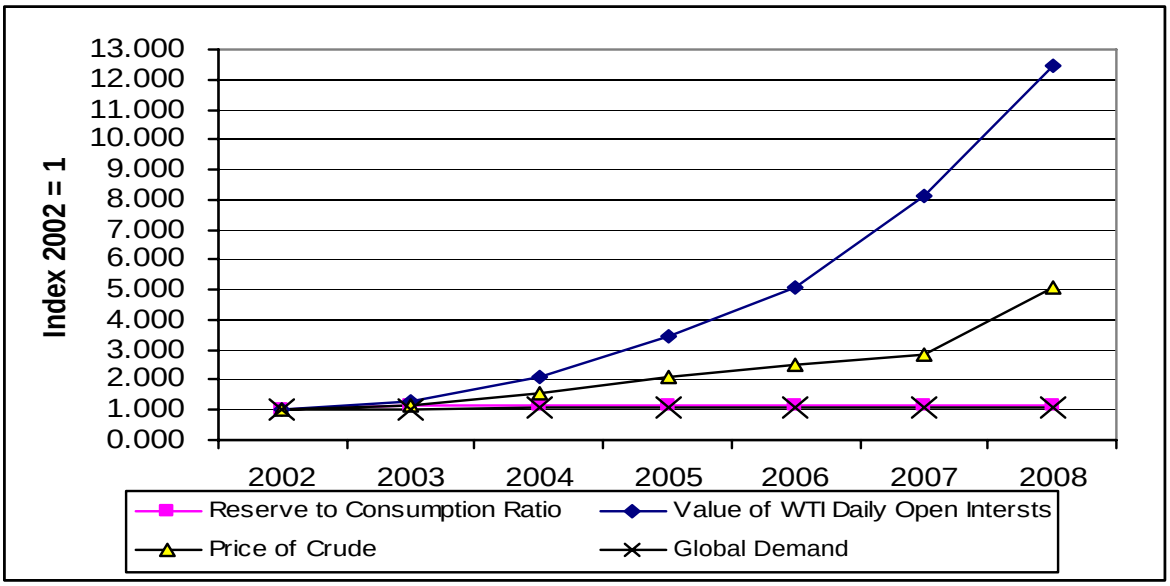
Source: Energy Information Administration, data base, *Refiner Acquisition Cost of Crude, International: World Oil Balance, Short Term Energy Outlook – OPEC Oil Production Capacity.*

EXHIBIT 6:
OPEC EXCESS CAPACITY COMPARED TO THE PRICE OF CRUDE



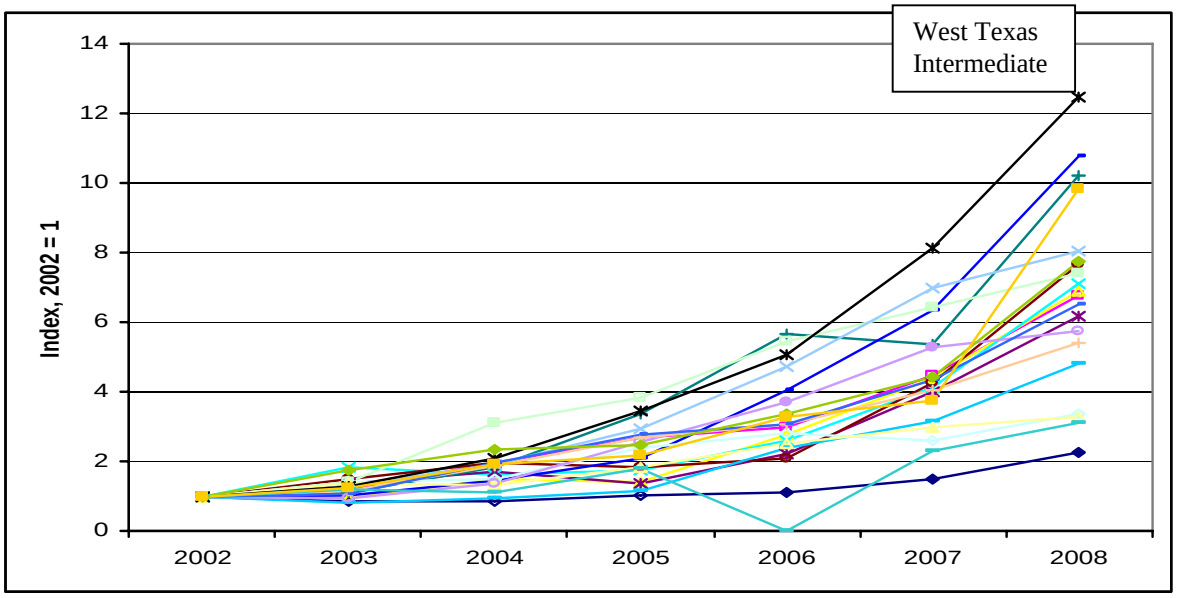
Source: Energy Information Administration, data base, *Refiner Acquisition Cost of Crude, International: World Oil Balance, Short Term Energy Outlook – OPEC Oil Production Capacity.*
EXHIBIT 7:
EXHIBIT 7:

AVERAGE DAILY VALUE OF OPEN POSITIONS ON WEST TEXAS INTERMEDIATE, CRUDE PRICES, LONG-TERM FUNDAMENTAL (RESERVES AND DEMAND)



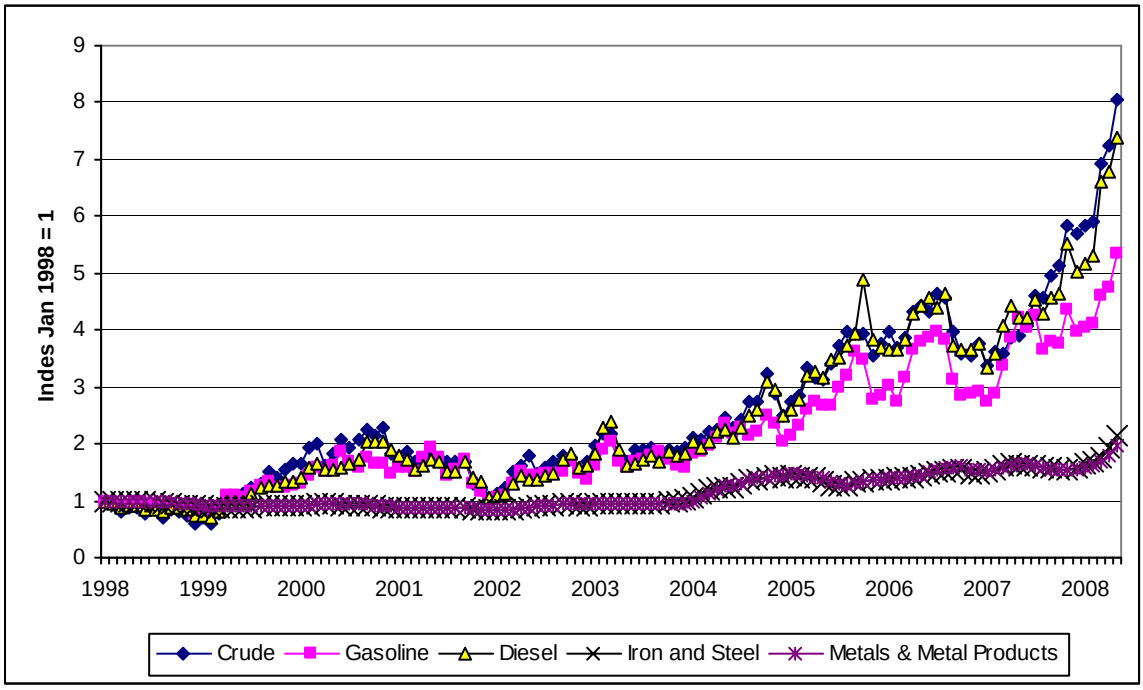
Source: EIA, Refiner Acquisition Cost of Crude, International: World Oil Balance, Short Term Energy Outlook – OPEC Oil Production Capacity. Testimony of Michael Masters, Managing Member/Portfolio Manager, Masters Capital Management, LLC, Committee on Homeland Security and Governmental Affairs, United States Senate, May 20, 2008, Note 16 for WTI Open positions.

EXHIBIT 8:
AVERAGE DAILY DOLLAR VALUE OF OPEN INTEREST: 20 INDEX COMMODITIES



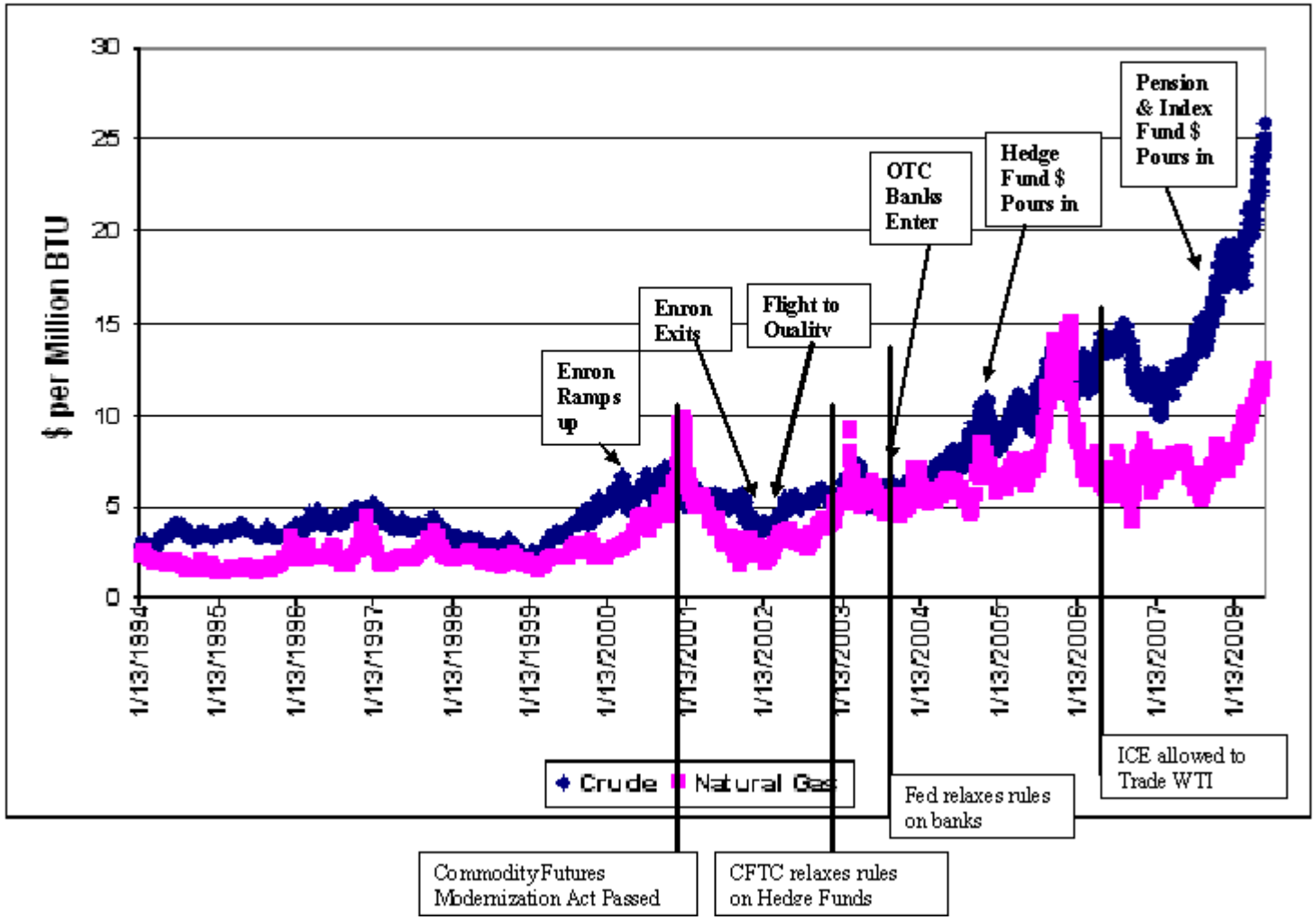
Testimony of Michael Masters, Managing Member/Portfolio Manager, Masters Capital Management, LLC, Committee on Homeland Security and Governmental Affairs, United States Senate, May 20, 2008, Note 16.

EXHIBIT 9:
PRODUCER PRICE INDICES FOR CRUDE, GASOLINE, DIESEL, IRON, STEEL AND METALS



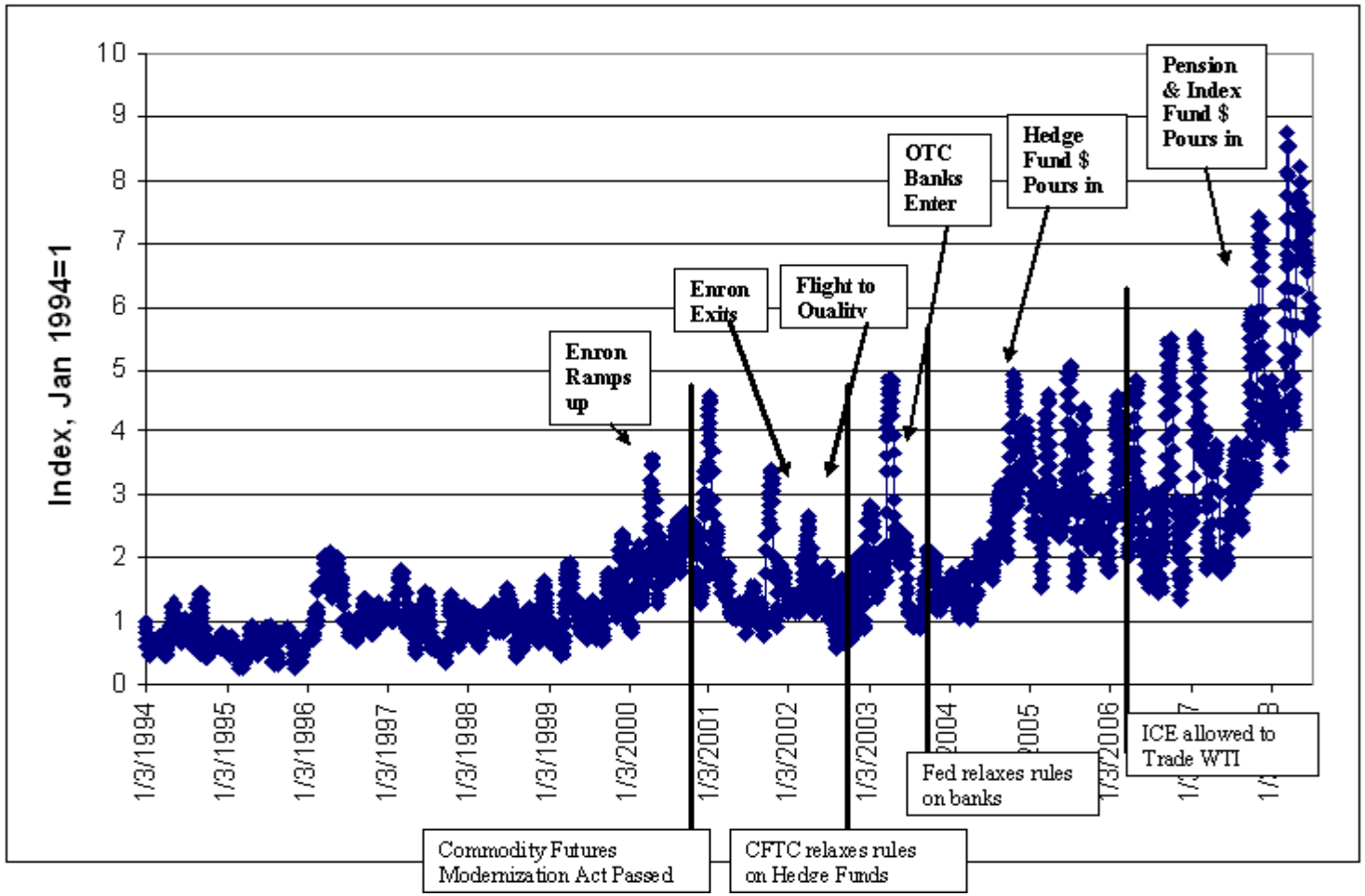
Source: Bureau of Labor Statistics, Producer Price Index.

EXHIBIT 10:
ENERGY SPOT PRICES, DEREGULATION AND CHANGES IN TRADING ACTIVITY



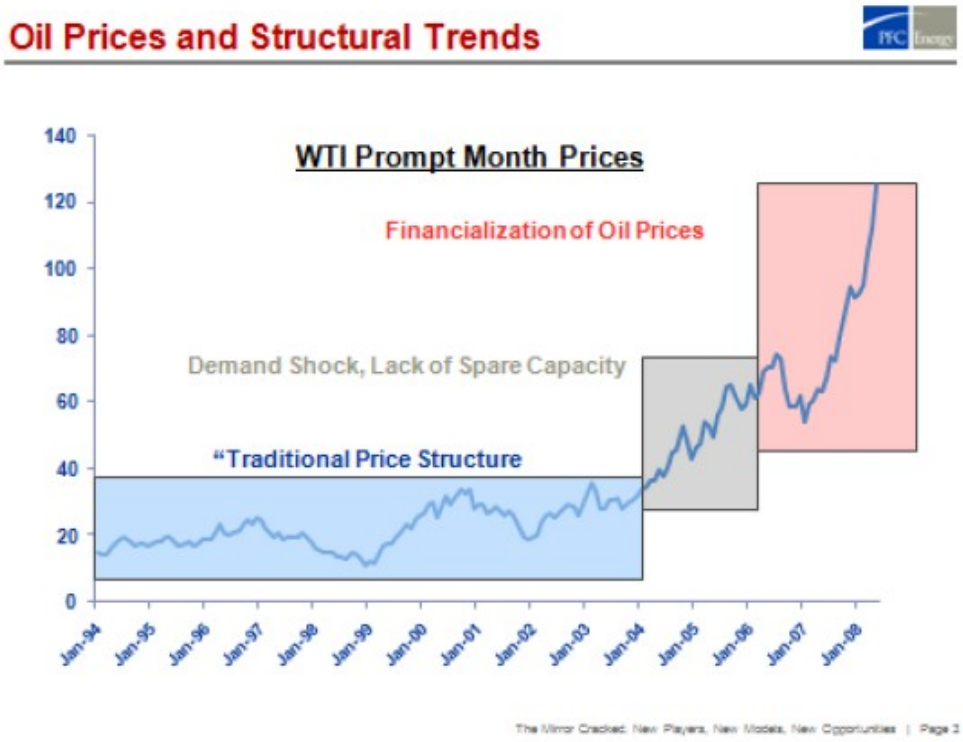
Source: Energy Information Administration, Database and Mark Cooper, *The Role of Supply, Demand and Financial Commodity Markets in the Natural Gas Price Spiral*, p. 8.

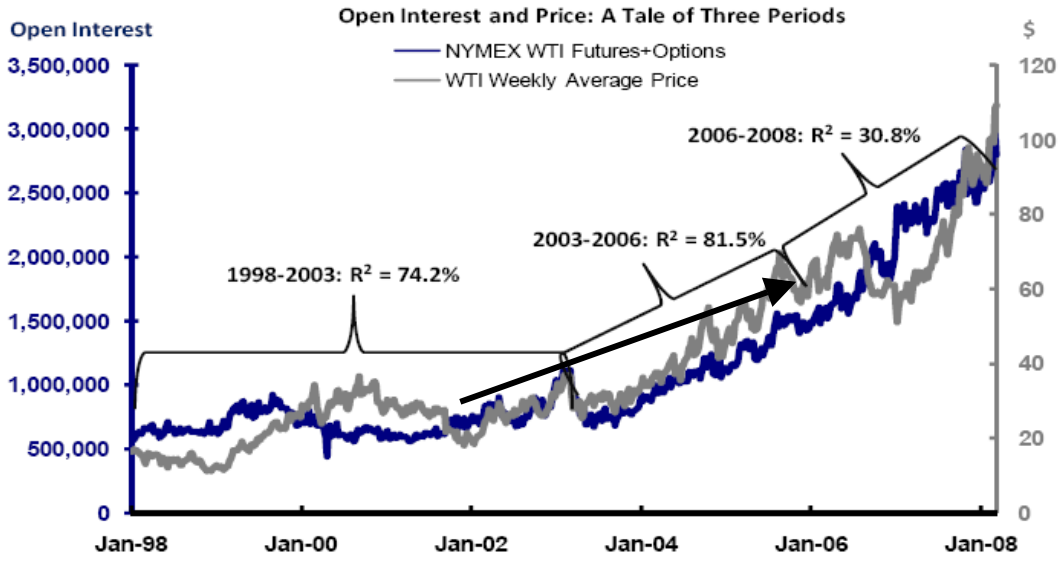
EXHIBIT 11:
SPOT PRICE VOLATILITY DEREGULATION AND CHANGES IN TRADING ACTIVITY
(30-DAY MOVING AVERAGE OF THE STANDARD DEVIATION OF THE DAILY SPOT PRICE)



Source: Energy Information Administration, Database and Mark Cooper, *The Role of Supply, Demand and Financial Commodity Markets in the Natural Gas Price Spiral*, p. 8.

Exhibit 12:



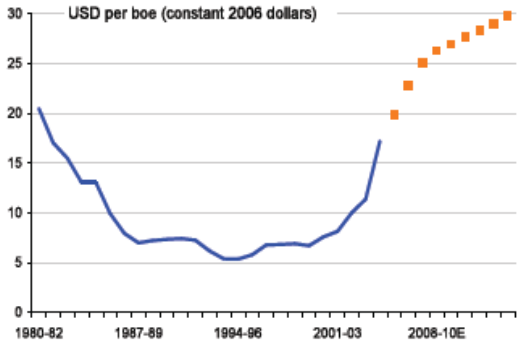


Source: "Testimony of Roger Diwan Regarding Energy Speculation: Is greater Regulation Necessary to Stop Price Manipulation," Subcommittee on Oversight and Investigations, Committee on Energy and Commerce, U.S. House of Representatives, June 23, 2008, pp. 2, 8

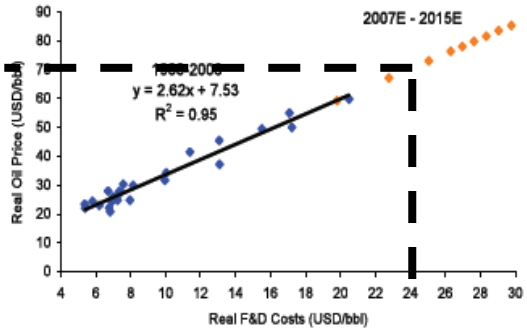
Exhibit 13:

What Does It Cost to Find a Barrel?

Worldwide Finding Costs (USD/bbl)



Oil Prices & Finding Costs Are Related



Source: DOE/EIA, Author

Outlook

- We estimate that finding and development costs have risen 20% per annum in real terms over the 2006 to 2008 period, and slower rates after that. This implies that F&D costs are likely to hit USD25/bbl in 2009 and possibly USD30/bbl in 2015.
- F&D costs have tended to be closely related to the oil price. Since 1980 we find that the oil price has tended to equal to 2.6x F&D costs plus USD7.5. This multiplier take into account taxes and gross margin.
- To get oil to USD200/bbl on a cost basis seems like a stretch- F&D costs of USD40/bbl and a multiplier of 5x, however USD80/bbl in the 2012-13 timeframe is very consistent with this data and USD100/bbl oil is possible.

Testimony of Adam Sieminski, Subcommittee on Oversight and Investigations, Committee on Energy and Commerce, U.S. House of Representatives, June 23, 2008, p. 7.

ENDNOTES

[i] Mark Cooper, *The Role of Supply, Demand and Financial Commodity Markets in the Natural Gas Price Spiral, A Report Prepared for the Midwest Attorney General Natural Gas Working Group (Illinois, Iowa, Missouri, and Wisconsin* (March, 2006)

[ii] Mark Cooper, *The Role of Supply, Demand, Industry Behavior and Financial Market in the Gasoline Price Spiral* (for the Wisconsin Attorney General, August, 2006).

[iii] Senate Permanent Subcommittee on Investigations, Committee on Homeland Security, *The Role of Market Speculation in Rising Oil and Gas Prices: A Need to Put the Cop Back on the Beat* (June 27, 2006); *Excessive Speculation in the natural Gas Market*(June 25 and July 9, 2007).

[iv] Akira Yanagisawa, *Decomposition Analysis of the Soaring Crude Oil Prices: Analyzing the Effects of Fundamentals and Premium* (Institute of Energy Economics, March 2008; Robert J. Shapiro and Nam D. Pham, *An Analysis of Spot and Futures Prices for Natural Gas: The Roles of Economic Fundamental, Market.*

[v] Paul Krugman, "Fuel on the Hill," *New York Times*, June 27, 2008; Joe Nocera, "Easy Target, But Not the Right One," *New York Times*, June 28, 2008, p. B8; Sebastian Mallaby, "Nixonian Fallacy," *Washington Post*, June 30, 2008; Robert J. Samuelson, "Who's Behind High Prices," *Washington Post*, July 1, 2008.

[vi] Mark Cooper, "Testimony on Oversight of Energy Markets and Oil Futures," before the Joint Hearing of the Senate Appropriations Subcommittee on Financial Services and General Government and the Committee on Agriculture, Nutrition and Forestry, United States Senate, Jun 17, 2008; Testimony on Energy Market Manipulation and Federal Enforcement Regimes," before the Committee on Commerce, Science and Transportation, United States Senate, June 3. 2008; see also "The Failure of Federal Authorities to Protect American Energy Consumers from Market Power and Other Abusive Practices," Loyola Consumer Law Review, 19:4 (2007).

[vii] J. Stephen Simon, Senior Vice President ExxonMobil, Select Committee on Energy Independence and Global Warming, put the cost at $50-$55. John Hofmeister, President of Shell Oil Co. put the cost at $35-$60 per barrel. John Lowe, Executive Vice President of ConnocoPhillip, put the figure at $90 per barrel, which appears to include OPEC cartel rents. Adam Siemiski's Testimony Subcommittee on Oversight and Investigations, Committee on Energy and Commerce, U.S. House of Representatives, June 23, 2008, p. 7, suggests a cost of $70, at the margin.

[viii] We do not condone OPEC's illegal management of supplies to create cartel rents and support policies to counteract that rent collection.

[ix] Akira Yanagisawa, *Decomposition Analysis of the Soaring Crude Oil Prices: Analyzing the Effects of Fundamentals and Premium* (Institute of Energy Economics, March 2008), p. 5, "According to the METI paper, during the second half of 2007, when the physical price of West Texas Intermediate crude averaged $US90 a barrel, market speculation, geopolitical risk and currency factors were responsible for $US30-$US40 of the price." The average WTI "fundamental price," consistent with the underlying supply/ demand situation, was around $US60/ barrel during the December half-year, according to the paper, citing research for the Institute of Energy Economics in Japan

[x] EIA, *NEMS International Energy Module (IEM): Model Documentation Report,* p. 2, "To summarize the model searches for a world price of oil compatible with supply-demand equilibrium in each region. Non-OPEC world demand and supply are determined by a set of price-quantity

relationships, and in equilibrium the difference between world demand and non-OPEC world supply equals OPEC production. OPEC production is determined by an exogenously specified output path. Output of a price run includes forecast of the world oil price, OPEC production, world petroleum production and consumption, net imports by regions OPEC revenue, and spare OPEC capacity."

[xi] Krugman, p. A19, "Regulating futures markets more tightly isn't a bad idea, but it won't bring back the days of cheap oil. Nothing will. Oil prices will fluctuate in the coming years – I wouldn't be surprised if they slip for a while as consumers drive less, switch to more fuel efficient cars and so on – but the long-term trend is surely up. Most of the adjustments to high oil prices will take place through private initiative, but the government can help the private sector in a variety of ways, such as helping develop alternative technologies and new methods of conservation and expanding the availability of public transit.

[xii] Yanagisawa, Siemiski, "Testimony of Roger Diwan Regarding Energy Speculation: Is greater Regulation Necessary to Stop Price Manipulation," Subcommittee on Oversight and Investigations, Committee on Energy and Commerce, U.S. House of Representatives, June 23, 2008; Testimony of Michael Masters, Managing Member/ Portfolio Manager, Masters Capital Management, LLC, Committee on Homeland Security and Governmental Affairs, United States Senate, May 20, 2008; "Testimony of Fadel Gheit," Subcommittee on Oversight and Investigations, Committee on Energy and Commerce, U.S. House of Representatives, June 23, 2008; Thomas Evans, Citi Futures Perspectives, July 3, 2008; Lehman Brothers, *Oil Cot-com*, May 29, 2008.

[xiii] Krugman, p. A19

[xiv] Samuelson, p. A1.

[xv] See Cooper, Natural Gas, Chapter IV.

[xvi] Hans R. Dutt and Lawrence E. Harris, "Position Limits for Cash-Settled Derivative Contracts, *The Journal of Futures Markets,"* 25 (2005), p. 497, "Even when thee settlement of cash-settled contracts are not purposefully manipulated, the settlement mechanisms may increase underlying volatility when hedgers unwind their hedges if hey have no incentive to control their trading costs. This generally is the case when hedgers trade out of their positions at the same price that determine the final cash settlement price." Robert J. Pyndyck, "The Dynamics of Commodity Sport and Futures Markets: A Primer," *The Energy Journal*, 22(2001), p. 12, emphasis in original, "Increased volatility increases the value of producers' *operating options*, options to produce now (as an "exercise price" equal to the marginal production cost and with a "pay-off" equal to the spot prices), rather than waiting for possible increases or decreases in rice. These options add an opportunity cost to current production: namely the cost of exercising the option rather than preserving them. This increase in volatility increases the opportunity cost of current production." Although Stephen Craig Pirrong, *The Economics, Law and Public Policy of Market Power Manipulation* (Boston, Kluwer, 1996), focuses on market manipulation, the conditions that facilitate manipulation also facilitate excessive speculation, particularly with the influx of new money, "[B]y demanding excessive deliveries a long induces distortion in the spatial and temporal distribution of consumption, transportation and storage. Shorts must pay current owners of the commodity increasingly higher prices in order to compensate current owners of the commodity for the surplus foregone. 9pp. 24-25). "[A} trader who does not possess any informational advantage is able to acquire market power as long as the flow of orders from other traders to the futures market is sufficiently volatile and large relative to the size of deliverable supply… Put another way, the existence of "nose traders" makes fraud possible." (p. 12)

[xvii] Nelson C. Schwartz, "Asleep as the Spigot," *New York Times*, July 6, 2008, Business Section, p. 7.

[xviii] Mallaby, p. A11

[xix] Krugman, p. A19.

[xx] Samuelson, p. A11.

[xxi] EIA, *Annual Oil Market Chronology*, provides a chronology of OPEC's supply management policies.

[xxii] Cooper, Oil, chapter II. The current controversy over tens of thousands of idle leases, while oil companies "hold out" for more attractive leases, even though high prices make them all worth working, highlights an important issue. The claim that a lack of drilling resources makes it impossible to exploit the leases only proves the point that the current prices are excessive on the supply side. If we face a vertical supply curve in a classic economic welfare analysis, then price increases result in pure wealth transfers from consumers to producers and do not contribution to efficiency. Consumers did respond to the price increases in 2002-2006, as demonstrated by a CBO study (Congressional Budget Office, *Effects of Gasoline Prices on Driving Behavior and Vehicle Markets*, January 2008), but the elasticity is quite low on the demand side as well. A near vertical demand curve means that price increases result in huge wealth transfer from consumers to producers and small efficiency gains.

[xxiii] Nocera, B8, "But remember, Enron was manipulating electricity prices, no oil, which was possible mainly because electricity cannot be stored." By getting power plants to shut down for hours at a time, Enron was able to create artificial shortages and jack up the price.

[xxiv] Mallaby, p. A11. Every paper claim they buy is a paper claim they will later sell because they have no intention of converting their paper into real oil stocks. Oil is too expensive and cumbersome to store. A speculator is not going to show up in Cushing, Okla., when his futures contract matures and drive away with a tanker truck full of oil

[xxv] Goldman Sachs, *Global: Energy: Oil, $100 Oil Reality, part 2: Has the Super-Spike End Game Begun?*, May 5, 2008; Morgan Stanley, *Commodity Shipping: Current Crude Oil Shipping Patterns Suggest $150/bbl WTI by July 4th*, June 5, 2008.

[xxvi] Robert J. Samuelson, p. A11.

[xxvii] Nocera, p. B8.

[xxviii] Nocera, p. B8.