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# NON-COMMERCIAL INSTITUTIONAL INVESTORS ON THE PRICE OF OIL

## HEARING

BEFORE THE

## COMMITTEE ON ENERGY AND NATURAL RESOURCES UNITED STATES SENATE

ONE HUNDRED TENTH CONGRESS

SECOND SESSION

TO

EXAMINE THE INFLUENCE OF NON-COMMERCIAL INSTITUTIONAL INVESTORS ON THE PRICE OF OIL

APRIL 3, 2008

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# NON-COMMERCIAL INSTITUTIONAL INVESTORS ON THE PRICE OF OIL

**THURSDAY, APRIL 3, 2008**

U.S. SENATE,
COMMITTEE ON ENERGY AND NATURAL RESOURCES,
*Washington, DC.*

The committee met, pursuant to notice, at 9:35 a.m. in room SD–366, Dirksen Senate Office Building, Hon. Jeff Bingaman, chairman, presiding.

## OPENING STATEMENT OF HON. JEFF BINGAMAN, U.S. SENATOR FROM NEW MEXICO

The CHAIRMAN. Ok. Why don't we get started here? I think there will undoubtedly be things that try to interrupt us as we go forward. I thank the witnesses for joining us.

Today's hearing will be about an issue that we've been debating in Congress for a number of years. That is how increased speculation in financial energy markets is contributing to recent record setting oil prices. Certainly there's a broad recognition that the fundamentals of supply and demand explain much of the current oil price.

We see increased oil demand especially in developing economies such as China and India. We've seen OPEC oil production policies successfully manage U.S. and global oil inventory levels keeping global commercial stocks low. This adds to market tightness and upward price pressure. At the same time we see frequent small scale oil supply interruptions, which in the last week included sabotage of energy infrastructure in Iraq, Ecuador, Nigeria, which are all OPEC members.

We also have a misguided, in my view, policy with regard to continued filling of the Strategic Petroleum Reserve. Senator Dorgan has consistently pointed out this and has been trying to do something about it, which I support. This removes more oil from the marketplace than the small-scale disruptions. Clearly there are fundamental factors that are very important, but as we heard from Guy Caruso, the Administrator of EIA, these market fundamentals could explain perhaps as much as $90 of the current price of a barrel of oil.

In addition to these factors there have been a number of important developments in financial markets in recent years. These trends include a dramatic increase in the volume of trading in oil derivative markets, the participation of new classes of traders in those markets. These trends are exacerbated by the historic weak-

ness of the dollar, which encourages non-commercial investors to seek commodity investments in order to protect against inflation risk.

According to a GAO report issued last fall, the average standing contract volume for crude oil traded on the New York Mercantile Exchange increased by 90 percent between 2001 and 2006. In addition, GAO noted the average daily number of non-commercial participants in crude oil markets included hedge funds and large institutional investors more than doubled from 2003 to 2006. So taken together, it seems that just as the demand for physical barrels of oil has grown with the global economy there is also an increased demand for oil purely as a financial asset.

Untangling whether and how these dual sources of demand may be operating in concert and potentially impacting all prices is complicated. Certainly, I think, it's accurate to say there's growing suspicion on the part of many Americans that at the very least Wall Street's geo-political judgments may be serving to increase current pricing trends. To my mind, unraveling these issues is made more difficult to the extent that we're confronted with the lack of reliable and comprehensive data across these markets.

There's a notable lack of reliable information with respect to global oil reserves; a lack of transparency related to certain corners of financial markets. It seems to me that markets operate best on the basis of complete and reliable information. In the absence of such information the probability increases for prevailing market prices to become untethered from the fundamental supply and demand consideration. In addition, I think it's also important for us to better understand the degree to which energy commodities in a purely financial sense have become an attractive investment given the state of the overall U.S. economy.

Today we have a very distinguished panel of witnesses, and I look forward to hearing from each of them on these complicated issues. I thank them for being here.

Let me defer to Senator Domenici for any opening statement he'd like to make.

[The prepared statement of Senator Salazar follows:]

PREPARED STATEMENT OF HON. KEN SALAZAR, U.S. SENATOR FROM COLORADO

Thank you Chairman Bingaman and Ranking Member Domenici for holding today's hearing on the influence of speculators and non-commercial investors on the price of oil. Today's hearing should shed light on the economic and market forces that determine the price of oil. Global demand for this resource grows stronger daily. This demand now comes in two varieties: demand for the physical product itself, and demand for oil as an investment commodity—so-called "paper barrels." In an increasingly uncertain global financial climate, many investors are seeking to lock their capital into commodities. At the same time, consumers and businesses are powerless as gasoline prices skyrocket.

We are all aware that the price of oil hit an all-time inflation-adjusted high last month. Some are projecting that we'll have $4 per gallon gasoline this summer. Many analysts have suggested that speculation in the crude oil market has played a determining role in the price surge. The recent increase in trading volume on energy commodities markets highlights the rising significance of investors' and speculators' behavior. It is reasonable to suspect that this behavior plays a significant role in determining the price of oil, and therefore the price of gasoline. If this is in fact the case, consumers are paying the price for investors' priorities.

Many people are also worried that the crude oil derivatives markets are susceptible to manipulation. We know from the Enron scandal that without adequate over-

sight and regulation, market manipulation is possible—and that the consequences can extend far beyond the bottom-lines of the investors involved and their shareholders to affect the lives of individual consumers. The new Energy Independence and Security Act explicitly prohibits manipulation of crude oil, gasoline and petroleum distillates wholesale markets. I am particularly interested to hear our panelists' assessments of whether the regulatory structures exist to properly enforce this new statute.

In the bigger picture, oil prices are still largely a function of OPEC's supply-and price-setting whims. The U.S. consumes 25 percent of the world's oil, but produces only 3 percent. Given our limited domestic supplies of crude oil, it is wrong to suggest that drilling in the Arctic or even offshore would have any impact on world prices. At the end of the day, we are still captive to OPEC's preferred oil price.

Ensuring a rational and open crude oil market is a matter of national and economic security. Because of strong leadership from this Congress, our country is on the verge of a clean energy revolution that will reduce our oil consumption. However, as we continue to rely on foreign oil in our transportation sector, it is imperative for us to understand the forces that affect the oil market. We must do everything we can to shield consumers from oil price shocks. I look forward to discussing these issues with our witnesses today, and I thank them each for participating.

Thank you, Mr. Chairman.

## STATEMENT OF HON. PETE V. DOMENICI, U.S. SENATOR FROM NEW MEXICO

Senator DOMENICI. Thank you very much, Mr. Chairman. Thanks to all of you for coming.

Mr. Chairman I might say that I listened carefully to your statement. Rather than deliver a detailed statement I would say for the record that I agree with everything Senator Bingaman said except two things that we already know we disagree on. One is SPR. I think it has an impact but I think the risk we're up against instead of having an extreme shortage justifies us having SPR and even perhaps even having it bigger than it is.

Other than that I agree with his comments and observations. I'm very concerned about whether we can ever find out the facts. But I hope that today we at least begin to understand the extent to which oil is becoming a commodity, in that it is being used to a much larger extent in the market for oil and what is the impact of that.

Now I think we know a few answers there. Commodity trading is growing dramatically: the part that is observed and readily seen is growing dramatically, and so is the over-the-counter market.

All that means, in my opinion, is that rather than buying the commodity, oil permits itself to be traded by all kinds of instruments that can be invented and used by those who trade for commodities. That oil comes closer and closer to being a commodity rather than being a good that is sold and bought on the market.

I concur with the Senator, the chairman, that there are various reasons that stand right out and indicate why the price is going up so much. It is obvious that the demand for oil is incredible. As compared with 10 years ago, the new users in the market including China and India are having an absolutely dramatic effect.

In addition the United States, with everything we do, is still unable to reduce its importation. We are using less, but at the same time our own production is going down. As a result, we are importing more.

We are net importers. So we belong in that same category with China. We have a dramatic impact on the world market. Much of our capital goes into $100 a barrel oil, even with our dollar devalu-

ing which the chairman spoke of. All of those are real impact of our current.

But some people say it is the speculators using these various commodity instruments, that are influencing high oil prices. Some say their actions add 10Rrcent impact, some say 50 percent. I think we did right on this committee to try and find out, as best we can, what that percentage is. But I'm not sure we're going to find out.

We're going to hear opinions. But again, I'm not sure we're going to find an exact answer. Instead, I think sooner or later we will get to the point of knowing enough to see if we have to change the way things are done or not.

Right now I wouldn't know how to change it without having people claim we're taking a risk that we shouldn't take, because we don't know enough. But I'm not averse to letting it be known that this Senate committee is serious about looking at the commodity trading of crude oil because we are concerned about whether or not that's having an unreasonable impact, a speculative impact, on the price of oil.

Thank you to the witnesses. I wish to hear from you. Thank you, Mr. Chairman.

[The prepared statement of Senator Domenici follows:]

PREPARED STATEMENT OF HON. PETE V. DOMENICI, U.S. SENATOR FROM NEW MEXICO

Welcome. I want to thank our panel of witnesses for taking time out of their busy schedules to join us today. Your testimony will be invaluable as we look into the role of non-commercial investors in the crude oil market.

In previous hearings, and discussions with others, we've heard everything from "speculators have little or no independent impact on the price of oil" to "they've driven up the price an additional $50 dollars or more." I commend the chairman for convening this hearing to attempt to shed more light on the true impact of these markets.

This is a useful discussion, and we must pay close attention to energy trading because of it clearly is a significant component of our energy markets. I am very concerned that it will deflect us focus from the factors that we KNOW threaten our energy security. I'm afraid that some may find that it is easier to blame nameless "oil speculators" for all our troubles rather than face the reality of fundamental problems with how we produce and consume energy in the United States and the world.

What are the factors that we know are driving up oil prices? First, higher demand. Despite a dramatic 60% increase in oil prices over the last year, the Energy Information Administration (EIA) projects that world oil consumption will continue to increase this year. This strong increase in demand, despite rising prices, is the result of economic growth in China, and India. Even despite a slower economy, consumption in the U.S. is expected to grow, as well.

In addition to an increase in global oil demand and a reduction in supply, geopolitical instability in Nigeria, Iraq, Iran, and Venezuela, and the weakening of the dollar have driven oil prices higher.

How has the depreciation of the dollar affected crude oil prices? Most oil price contracts are denominated in dollars and since 2002 the dollar has decreased in value by 30% against major currencies. This means that American consumers are more affected by the price of crude oil then consumers from other countries who have a stronger currency, such as the Euro or the Yen, because the prices of imports have gone up.

With high prices and growing consumption worldwide, we must find ways to increase domestic supplies. U.S. crude oil production is projected to decline 10,000 barrels a day in 2008. This, combined with projected increases in U.S. petroleum consumption, will require this country to rely even more heavily on foreign oil imports and continue to ship nearly $400 billion annually overseas to import oil.

Mr. Chairmen, I appreciate your willingness to examine the role of non-commercial investors in the crude oil market. But we must also recognize that while non-

commercial investors may contribute something to high oil prices, it is just one piece of a very large puzzle. I look forward to hearing from today's witnesses, and, going forward, to working with the members of this Committee to resolve all of the major obstacles to our Nation's energy security.

The CHAIRMAN. Thank you. Senator Dorgan wanted to make a statement here. Let me call on him.

**STATEMENT OF HON. BYRON DORGAN, U.S. SENATOR FROM NORTH DAKOTA**

Senator DORGAN. Chairman, thank you. I wanted to make a comment. I had requested, among others, that this hearing be held. I think this is very important.

The last 24, 36 hours, 2 airlines have shut down. We see news reports about truckers deciding that they can't continue trucking. They're going to slow down. They can't afford to buy the fuel. These energy prices are having significant consequences.

I'm not very generous with respect to the notion that it's just supply and demand that is driving these energy prices. I don't think pure supply and demand describes why the price of oil has gone from $50 to $100 in a relatively short period of time. I think the evidence is pretty substantial.

There's an orgy of speculation in the futures market. We've got people buying what they'll never get from people who never had it. I understand these markets and the reason for the markets and the need for liquidity in markets. But I think there has been an unbelievable amount of speculation.

We've not sat in this room before when hedge funds were neck deep in the oil and commodities futures markets. We've not sat in these rooms before when investment banks were actually buying oil storage so they could speculate and actually take oil off the market and put it in storage away before the price of oil goes up. There's an unbelievable amount of speculation, in my judgment.

Twenty times more oil is sold every single day in these markets than exists. Think of that. Now we've had testimony before this committee, Mr. Chairman, by some pretty respected analysts, top analysts for Oppenheimer and Company says there's no justification for the price of oil to be where it is.

It's about $20 to $30 above where it ought to be because this is a 24/7 casino with unbelievable speculation. I believe it's our job, and not to simply say well it's supply and demand. It's our job to ask tough questions.

We have a margin requirement here of what, 5 to 7 percent. You can control $100,000 worth of oil with a $5,000 or $7,000 investment. You can't do that on the stock market. We ought to increase the margin requirements in this country and get the speculators out of this system.

So, I feel very strongly about this. The consequences of what's happening with the price of oil are all around us. I understand the Indians are going to drive more cars. I understand the Chinese are going to drive more cars. I understand the future fundamental issues. I don't understand the current price, relative to the fundamentals, that exist today in these markets. I think there's an orgy of speculation that we ought to be deciding to do something about.

The CHAIRMAN. Let me ask if any other Senator wishes to make a statement.

Senator Barrasso.

**STATEMENT OF HON. JOHN BARRASSO, U.S. SENATOR FROM WYOMING**

Senator BARRASSO. Yes. Mr. Chairman, thank you very much.

Mr. Chairman, the message that I heard loud and clear during the most recent recess was that record prices at the pump are hurting the wallets of Wyoming families and American families. High oil prices hit consumers in States like Wyoming particularly hard, but it's just not Wyoming. It's Colorado. It's North Dakota. It's New Mexico. This committee is well represented with folks who are from States where people travel long distances to go to work, to run errands, and to see friends and family.

Mr. Chairman, I understand that the Research Director with Greenpeace was quoted earlier this week as saying that his organization wasn't inherently against high gas prices. I want to be very clear, Mr. Chairman, I'm very concerned about the prices at the pump. I'm pleased that this committee is holding this hearing.

There are multiple contributors to today's price of oil. Some relate to the fundamentals of demand and supply and growing world economies. Others relate to the geopolitical tensions, the weakness in the dollar, environmental regulations and the like. But in markets with very little available excess supply, marginal contributions to supply and demand seem particularly influential.

I don't believe that the American oil producers and refiners and distributors or the corner service stations are solely responsible for today's high gasoline prices. In that context the world economy, America's producers are generally price takers, not price makers. Free markets and competition serve to keep prices in check, but at a minimum I strongly believe government policies should not drive oil prices higher. This is true when it comes, in my mind, to deposits into the Strategic Petroleum Reserve, any calls for higher taxes at the pump or government mandates.

There are some short and long term policy proposals, which I believe warrant congressional attention. I am compelled by the GAO's recommendations that we begin dollar cost averaging in purchasing heavy oil for the Strategic Petroleum Reserve. These steps are simply sound, financially responsible measures.

I think Senator Dorgan's call for a temporary suspension of deposits into the Strategic Petroleum Reserve until the price is below a certain level have merit and should be debated. I believe high prices at the pump will ultimately encourage consumers to seek out individual ways to conserve and to invest in more efficient transportation. But these responses may not provide the immediate relief that the consumers need.

Congress has more tools that can and should be on the table. Part of a comprehensive solution must incorporate a vision for the future and expanded domestic production. There are areas throughout America that have vast potential for oil development and serious consideration must be given in how we manage these lands and deep seas.

Another component is technology. America must capitalize on existing opportunities and continue to invest in emerging energy technologies. One technology to me that is especially interesting is in the terms of domestic transportation fuel: coal to liquids. With respect to market excessive speculation, Congress needs to explore the extent to which price manipulation is occurring and to what extent the impacts can be minimized.

I appreciate the chairman's efforts in calling this hearing. In this global economy will more regulation result in America losing its leadership in financial markets? Or can stepped up efforts, to root out excessive speculation and manipulation, ultimately help American consumers?

I'm also increasingly compelled by concerns over our trade deficit. As America expends more and more of our hard earned money to purchase foreign oil of particular interest to the activities of the sovereign wealth funds. These funds, often supported national oil profits, can serve as a self-reinforcing mechanism pushing oil future prices up higher than they otherwise would have been.

So with that, Mr. Chairman, I look forward to today's informative discussion. Thank you for holding these hearings.

The CHAIRMAN. Thank you very much. Unless other members have just some burning need to speak at this point, I would prefer to go ahead and hear from our witnesses. Why don't we do that?

Let me introduce the six distinguished witnesses we have, and just have them testify in this order if they would. Jeffrey Harris is here from the Commodity Futures Trading Commission. Thank you for being here.

Sarah Emerson from Energy Security Analysis. Thank you for being here.

Kevin Book is here with Friedman Billings Ramsey and Company in Arlington, Virginia.

Jim Burkhard is here from Cambridge Energy Research Associates. Thank you for being here.

Sean Cota is here representing the Petroleum Marketers Association of America.

John Eichberger is here representing the National Association of Convenience Stores.

So thank you all for being here. If each of you could take about 6 minutes or something like that and make the main points that you think we need to understand from your testimony. We will include your entire testimony in the hearing transcript.

Mr. Harris.

## STATEMENT OF JEFFREY HARRIS, CHIEF ECONOMIST, COMMODITY FUTURES TRADING COMMISSION

Mr. HARRIS. Thank you, Mr. Chairman and members of the committee. I am Jeffrey Harris, Chief Economist of the Commodity Futures Trading Commission or the CFTC. I appreciate the opportunity to discuss the CFTC's role with respect to crude oil futures markets and the Office of Chief Economist's view of current trends in the marketplace as part of the government regulator charged with overseeing them.

Congress created the CFTC in 1974 as an independent agency with a mandate to regulate commodity futures markets in the

United States. Broadly stated CFTC's mission is two-fold. To protect the public and market users from manipulation, fraud and abusive practices and to assure that open, competitive and financially sound markets for commodity futures and options.

Commodity commission's oversight of future trading is focused on the New York Mercantile Exchange, West Texas intermediate crude oil contract. That's it. Designated contract market. Secondarily on the intercontinental exchanges in Europe, ICE futures of Europe contract because one of its contracts cash settles on the NYMEX settlement price.

The CFTC receives millions of data points everyday about trading activity in our markets. The agency's large trader data base system is the cornerstone of our surveillance system and is used to analyze data. Large trader positions reported to CFTC consistently represent more than 90 percent of all trading interest in NYMEX's WTI contract with the remainder being allocated to small traders who don't meet reporting requirements.

The CFTC closely tracks the developments in the crude oil markets. Crude oil prices have risen significantly in the last few years. Are currently above $100 a barrel. Concurrently open interest in WTI contracts has expanded dramatically from about one million contracts in 2004 to more than 2.8 million contracts in the most recent week.

The Office of the Chief Economist has studied these markets to better understand the compliments of this rapid growth. Our studies find three major things.

First, we find similar rates of growth for both commercial and non-commercial trading interest. Where non-commercial interest is commonly considered speculative.

Second, most of the growth in trading interest is concentrated in futures contracts that expire after 12 months suggesting that an increase in ability for hedging at longer horizons now exists in our markets.

Figures 1–A and 1–B* in my presentation here demonstrate these two points.

The CHAIRMAN. Are these also in the testimony?

Mr. HARRIS. These are also in the written testimony, yes.

The CHAIRMAN. Ok.

Mr. HARRIS. We've highlighted here 2000 verses 2007. As you can see the 2007 bars are much larger for commercial traders in 2007 than they were in 2000. Figure 1–B highlights the positions of non-commercial traders or speculators in these markets, which also exhibit significantly larger trading volume.

The second component is that you can see the bars are much larger as we move to the right on these graphs indicating the greater propensity or the opportunity to hedge in the futures markets at longer horizons.

Figures 1–A and 1–B also highlight the fact that commercial trading in short positions, hedging in the market, rely intimately on the ability of the speculators to take the opposite sides of trades.

The CHAIRMAN. Let me just ask on this. The second, the columns there, do I understand it correctly that that indicates the——

* Figures have been retained in committee files.

Mr. HARRIS. The bars above the zero mark are long positions.

The CHAIRMAN. Right. So there's——

Mr. HARRIS. Bars below are short.

The CHAIRMAN. So there's been well over a tenfold increase in the number of non-commercial traders involved in these 3 to 6 month futures contracts. Is that accurate?

Mr. HARRIS. Yes.

The CHAIRMAN. Ok. Go right ahead.

Mr. HARRIS. The point being with commercial traders being short and non-commercials being long, the supply and demand for hedging services intimately ties hedgers and speculators together in futures markets.

The third major trend during the past few years is that crude oil markets have witnessed a rapid growth in swap dealer trading. Swap dealers now hold significantly larger positions in crude oil. These dealers, who take the short sides of over the counter swap trades lay off their risk with long positions in the crude oil futures markets.

This development has altered the traditional role of commercial traders. Previously commercial traders predominately hedged using long positions in the stock market and went short in the crude oil futures markets. Recent development has swap dealers, those also classified as commercial dealers, hedging their short, swap positions with long positions in our futures markets.

Figures 2–A here and 2–B show the difference between the two different types of commercial traders. 2–A shows that traditional commercial traders are typically net short in the near term futures contract. Swap dealers also considered commercial traders are net long in these same contracts. So commercial traders, depending on the type, trade very differently in our markets.

Figure 2–B also demonstrates the growth in swap dealer market in the near term futures contracts. Partially represents this flow from commodity index trading. Even the substantial increase in open interest in crude oil futures, the Office of the Chief Economist utilizes the Commission's extensive data to examine the role of all market participants. How their positions might affect prices.

Although longer term studies show a slight increase in the number of non-commercial market share in crude oil market, OCE analysis shows that more recent increases in oil prices to levels above $100 has not been accompanied by significant changes to participants in the market. Figure 3 here shows that the number of commercial and non-commercial traders has remained nearly constant over the last 22 months with about 120 commercial and 310 non-commercial traders in the market.

OCE has also studied the impact of speculators as a group in the oil markets during the most recent price run up. Specifically we have closely examined the relationship between futures prices and the positions of speculators in the crude oil markets. Our studies have consistently found that when new information comes to the market it is commercial traders such as oil companies, utilities and airlines who react first by adjusting their futures positions. When these commercial traders adjust their futures positions it is speculators who are most often taking the other side of their trade.

Price changes that prompt hedgers to alter their futures positions attract speculators who've changed their positions in response. Simply stated there is little evidence that position changes by speculators precede price changes in the crude oil futures contracts. Instead, changes in commercial traders significantly precede oil price changes.

To highlight this effect a bit more clearly, Figure 4 plots the prices in the market share one group of highly active speculators, managed money traders, over the past 22 months. Notably, while the WTI contract prices have doubled in the last 14 months managed money positions, as a fraction of their overall market have changed very little. Speculative positions do not generally amplify crude oil price changes.

More specifically, the recent crude oil price increases have occurred with no significant change in the net speculative positions. The OCE has also studied position changes of commercial and non-commercial traders by category finding similar results. We find little evidence that net positions changes of any category of non- commercial traders is affecting or preceding price changes in crude oil futures prices.

Figure 5 highlights the fact that commercial and non-commercial open interest has grown during the most recent 22 months. But generally this growth remains balanced between long and short positions for each trader group. Looking at the trends in the marketplace combined with studies on the impact of speculators in the market there is little evidence that changes the speculative positions are systematically driving up crude oil prices.

Given the relatively stable make up of participants and their positions in the markets and the absence of evidence of speculation causing oil price changes, it appears that fundamentals provide the best explanation for crude oil price increases. These fundamentals can be either broad factors affecting many markets like the dollar or general inflation fears or factors particular to this market such as strong demand from China or India. In addition geopolitical events, tensions in Venezuela, Nigeria and other countries have affected crude oil markets.

Concerns about the high price of oil are not unique to the United States. I recently presented some of these findings to the International Energy Agency in Paris, which representatives attended from 40 different countries, OPEC, industry economists and traders. Our findings were supported by many of the conference presenters and attendees who've conducted their own research on these topics.

Given the widespread interest in crude oil in particular, is something I'm certain we will continue to monitor closely as will my counterparts around the world. This concludes my remarks. I'd be happy to answer any questions if you'd like.

[The prepared statement of Mr. Harris follows:]

PREPARED STATEMENT OF JEFFREY HARRIS, CHIEF ECONOMIST, COMMODITY FUTURES TRADING COMMISSION

Thank you, Mr. Chairman and members of the Committee. I am Jeffrey Harris, Chief Economist of the Commodity Futures Trading Commission (CFTC or Commission). I appreciate the opportunity to discuss the CFTC's role with respect to the

crude oil futures markets and our view of current trends in the markets as the government regulator charged with overseeing them.

CFTC MISSION

Congress created the CFTC in 1974 as an independent agency with the mandate to regulate commodity futures and option markets in the United States. Broadly stated, the CFTC's mission is two-fold: to protect the public and market users from manipulation, fraud, and abusive practices; and to ensure open, competitive and financially sound markets for commodity futures and options. To do this, the Commission employs a highly-skilled staff who work to oversee the markets and address any suspicious or illegal market activity.

The Commodity Exchange Act (CEA or Act) grants the Commission exclusive jurisdiction with respect to, among other things, accounts, agreements, and transactions involving commodity futures and options contracts that are required to be traded or executed on an exchange or a designated contract market, also known as a DCM. DCMs are regulated futures exchanges that are self-regulatory organizations (SROs) subject to comprehensive oversight by the CFTC. DCMs can list for trading any type of contract, they can permit intermediation, and all types of traders (including retail traders) are permitted to participate in their markets.

The CFTC has been overseeing the U.S. futures industry under principles-based regulation since the passage of the Commodity Futures Modernization Act (CFMA) in 2000. A principles-based system requires markets to meet certain public outcomes in conducting their business operations. For example, DCMs must continuously meet 18 core principles—ranging from maintaining adequate financial safeguards to conducting market surveillance—in order to uphold their good standing as a regulated contract market.

MARKET OVERSIGHT

The CFTC's Division of Market Oversight (DMO) is responsible for monitoring and evaluating a DCM's operations. DMO conducts market surveillance of all activity on DCMs. While operational, DCMs must establish and devote resources toward an effective oversight program, which includes surveillance of all activity on their markets to detect and deter manipulation and trading abuses. The CFTC routinely assesses the regulatory and oversight activities of DCMs through regularly scheduled examinations of DCMs' self-regulatory programs. The Commission currently regulates DCMs located in New York, Chicago, Kansas City, and Minneapolis.

The CFTC's market surveillance mission regarding DCM activity is to ensure market integrity and customer protection in the futures markets. Traders establishing positions on DCMs are subject to reporting requirements so that CFTC staff and the DCM can evaluate position sizes to detect and prevent manipulation. In addition, trade practice surveillance involves compilation and monitoring of transactional-level data by the Commission and the DCM to protect market participants from abusive trading such as wash sales, money laundering and trading ahead of customers.

A key market surveillance mission is to identify situations that could pose a threat of manipulation and to initiate appropriate preventive actions. Each day, for the estimated 1,400 active futures and option contracts in the U.S., the CFTC market surveillance staff monitors the activities of large traders, key price relationships, and relevant supply and demand factors to ensure market integrity.

Surveillance economists routinely examine trading in futures and options contracts that are approaching their expiration periods for any unusual trading patterns or anomalies. Regional surveillance supervisors immediately review unusual trading or anomalies to determine whether further action is warranted. Surveillance staff advise the Commissioners and senior staff of significant market developments as they occur and also conduct weekly surveillance meetings (non-public, closed meetings) so that the Commission will be prepared to take action if necessary. In addition to the transparency provided to the CFTC by position reporting by large traders, the Commission provides a degree of transparency to the public by publishing aggregate information in the CFTC's weekly Commitment of Traders Report.

As noted, surveillance of DCM trading is not conducted exclusively by the Commission. As SROs, DCMs have significant statutory surveillance responsibilities. Typically, however, surveillance issues are handled jointly by Commission staff and the relevant DCM. The Commission, while continuing to monitor market events, typically permits the DCM, as the front-line regulator, to utilize its self-regulatory authorities to resolve issues arising in its markets. If a DCM fails to take actions that the Commission deems appropriate, however, the Commission has broad emer-

gency powers under the CEA to order the DCM to take specific actions. The Commission has exercised its emergency authority four times in its history.

FINANCIAL OVERSIGHT

The Commission's Division of Clearing and Intermediary Oversight (DCIO) is responsible for and plays an integral role in ensuring the financial integrity of all transactions on CFTC-regulated markets. DCIO's most important function is to prevent systemic risk and ensure the safety of customer funds. DCIO meets these responsibilities through an oversight program that includes the following elements: (1) conducting risk-based oversight and examinations of industry SROs responsible for overseeing Futures Commission Merchants (FCMs), commodity trading advisors, commodity pool operators, and introducing brokers, to evaluate their compliance programs with respect to requirements concerning fitness, net capital, segregation of customer funds, disclosure, sales practices, and related reporting and recordkeeping; (2) conducting risk-based oversight and examinations of all Commission-registered derivatives clearing organizations (DCOs) to evaluate their compliance with core principles, including their financial resources, risk management, default procedures, protections for customer funds, and system safeguards; (3) conducting financial and risk surveillance oversight of market intermediaries to monitor compliance with the provisions of the CEA and Commission regulations; (4) monitoring market events and conditions to evaluate their potential impact on DCOs and the clearing and settlement system and to follow-up on indications of financial instability; and (5) developing regulations, orders, guidelines, and other regulatory approaches applicable to DCOs, market intermediaries, and their SROs. Collectively, these functions serve to protect market users, the general public and producers; to govern the activities of market participants; and to enhance the efficiency and effectiveness of the futures markets as risk management mechanisms.

The DCOs that the Commission currently regulates are located in New York, Chicago, Kansas City, Minneapolis and London, England. The intermediaries overseen by the Commission are located throughout the United States and in various other countries.

ENFORCEMENT

In Section 3 of the CEA, Congress provided that transactions subject to the Act "are affected with a national public interest" because they constitute "a means for managing and assuming price risks, discovering prices, or disseminating pricing information through trading in liquid, fair and financially secure trading facilities." The Commission's Division of Enforcement (Enforcement) is responsible for prosecuting fraudulent, abusive and manipulative trading practices. Enforcement has a substantial role over maintenance and protection of principles of fairness and integrity in commodity markets. At any one time, Enforcement's investigations (which are non-public) and pending litigation involve, on average, approximately 750 individuals and corporations.

In protecting the national public interest associated with transactions subject to the Act, the Commission has broad authority to investigate and prosecute misconduct occurring in both the futures and cash markets. Included in this broad authority is Section 9(a)(2) of the CEA which prohibits manipulating or attempting to manipulate the price of any commodity in interstate commerce or for future delivery, cornering or attempting to corner any such commodity, and knowingly delivering or causing to be delivered false or misleading or knowingly inaccurate reports of crop or market information that affects or tends to affect the price of any commodity in interstate commerce.

During the last five years, Enforcement has maintained a record level of investigations and prosecutions in nearly all market areas, including attempted manipulation, manipulation, squeezes and corners, false reporting, hedge fund fraud, off-exchange foreign currency fraud, brokerage compliance and supervisory violations, wash trading, trade practice misconduct, and registration issues. Working closely with the President's Corporate Fraud Task Force, Enforcement is staffed with skilled professionals who prosecute cases involving on-exchange transactions and, to the extent of the Commission's jurisdiction, complex over-the-counter (OTC) transactions as well. Enforcement also routinely assists in related criminal prosecutions by domestic and international law enforcement bodies. Through those efforts, during the past five years (April 2003—March 2008), the CFTC has obtained more than 2 billion dollars in monetary sanctions, which include civil monetary penalties and orders to pay restitution and disgorgement.

In the energy sector, from December 2001 through the present, Enforcement investigated or prosecuted Enron and BP, dozens of other energy companies, and more

than one hundred energy traders (including a pending action against Amaranth). With respect to crude oil in particular, Enforcement staff in August 2007 announced a settlement for a charge of attempted manipulation in OTC crude oil markets against Marathon Petroleum Company, a subsidiary of Marathon Oil Corporation (Marathon Petroleum). In that action, which imposed a $1 million civil monetary penalty, the Commission entered an Order finding that Marathon Petroleum attempted to manipulate a price of spot cash West Texas Intermediate (WTI) crude oil by attempting to influence downward the Platts market assessment for spot cash WTI on November 26, 2003. The Platts market assessment for WTI is used as the price of crude oil in certain domestic and foreign transactions. At the time in question, Marathon Petroleum priced approximately 7.3 million barrels of physical crude per month off the Platts market assessment for WTI.

CRUDE OIL TRADING ON FUTURES MARKETS AND OTHER MARKETS

The Commission's oversight of oil futures trading focuses on the New York Mercantile Exchange or (NYMEX) and secondarily on the Intercontinental Exchange Europe (ICE Futures Europe)—the latter because one of its contracts cash settles on the price of the NYMEX WTI Light Sweet Crude futures contract. (Notably, crude oil futures products are also traded on some Exempt Commercial Markets, but those contracts are fairly low in trading volume.)

NYMEX is a DCM with self-regulatory responsibilities and operates under the Commission's oversight as provided by the CEA. NYMEX lists several crude oil futures contracts. The exchange's highest volume crude oil contract is the WTI Light Sweet Crude Oil futures contract, which provides for physical delivery of oil in Cushing, OK. NYMEX's Light Sweet Crude contract traded a volume of 122 million futures contracts in 2007. NYMEX also lists several cash settled futures contracts based on the Light Sweet Crude Oil futures contract price. NYMEX also lists futures contracts based on Brent blend crude oil, which settle on the price of the ICE Futures Europe Brent contract, as well as a Dubai crude oil calendar swap contract. In addition, NYMEX offers several financially-settled, cleared contracts, including differential and spread contracts involving prices of the WTI, Brent and Dubai crude oil futures contracts.

ICE Futures Europe lists a Brent Crude Oil futures contract, a WTI Crude Oil futures contract that settles on the price of the NYMEX light sweet crude oil contract, and a Middle Eastern Sour Crude futures contract. The Brent and WTI contracts are very actively traded, while the Middle Eastern Sour Crude contract trades much less frequently.

ICE Futures Europe is a UK Registered Investment Exchange and is regulated by the UK's Financial Services Authority (FSA). The U.S.-based members of ICE Futures Europe were granted permission by Commission staff to directly access the Exchange's trading system from the U.S. pursuant to a Commission no-action letter issued to ICE Futures Europe's predecessor, the International Petroleum Exchange Limited, on November 12, 1999, as amended.

Pursuant to the no-action letter's terms and conditions and information—sharing arrangements, CFTC surveillance staff knows, among other things, when ICE Futures Europe proposes to list new contracts to be made available from the U.S., the volume of trading originating from the U.S., the identities of members who have direct access to the trading system in the U.S., and when there are material changes to any aspect of the information provided that resulted in the issuance of the no-action letter. Pursuant to CFTC-FSA information—sharing arrangements, CFTC surveillance staff also receives ICE Futures Europe's member position reports for its WTI Crude Oil futures contract on a weekly basis (daily during the week prior to contract expiration). Thus, CFTC surveillance staff knows the positions and identities of members/customers who meet or exceed position-reporting requirement levels in the ICE Futures Europe WTI contract, and can consider that data along with the large trader reporting information that it receives from NYMEX for its counterpart contract.

FOREIGN BOARDS OF TRADE

The CFTC employs a "no-action" process when foreign boards of trade (FBOTs) seek to provide electronic screen access to the U.S., but without registering as a DCM. With the advent of the ICE Futures Europe WTI contract in 2006, the CFTC undertook a thorough review of its FBOT policy. The Commission concluded that the best way to handle the issue was to continue its no-action approach, a response that reflects the internationally accepted "mutual recognition" approach used by regulators in many developed market jurisdictions to govern access to foreign electronic exchanges by persons located in their jurisdictions. This approach generally is based

upon a review of, and ongoing reliance upon, the foreign market's "home" regulatory regime, and is designed to maintain a threshold level of regulatory protections while avoiding the imposition of duplicative regulation.

The CFTC has followed the no-action approach since 1996 and it has never experienced any market integrity or customer protection problems. The no-action procedure provides the CFTC with flexibility in dealing with the particular foreign exchanges and different CFTC practices. The Commission held an FBOT hearing in June 2006, including a related open public comment opportunity, during which market users, foreign exchanges and even competitive domestic exchanges that compete with FBOTs overwhelmingly confirmed the success of the CFTC's approach in terms of market and customer protection and access to additional products. Subsequently, the CFTC issued a Statement of Policy re-affirming the use of the FBOT no-action process, but also enhancing it through the imposition of information-sharing conditions where no-action relief is sought for FBOT contracts that could adversely affect the pricing of contracts traded either on a DCM or on any cash market for commodities subject to the CEA.

On November 17, 2006, the CFTC and the UK FSA signed a Memorandum of Understanding (MOU) concerning consultation, cooperation and the exchange of information related to market oversight. The MOU established a framework for the CFTC and FSA to share information that the respective authorities need to detect potential abusive or manipulative trading practices that involve trading in related contracts on U.S. and UK derivative exchanges. Since the adoption of the MOU, the CFTC and FSA have been holding monthly conference calls to discuss matters of mutual interest including trading on ICE Futures Europe. Commission staff has found that the 6 MOU has strengthened information-sharing on an ongoing basis between the two regulatory authorities.

EXEMPT COMMERCIAL MARKETS

In the Commodity Futures Modernization Act of 2000 (CFMA), Congress enacted special provisions in the CEA to govern Exempt Commercial Markets (ECMs), which are electronic marketplaces for commercial participants to trade contracts in energy and certain other commodities. ECMs have been evolving over time since then, such that today, certain ECM contract settlement prices link to DCM futures contract settlement prices. Linkage of contract settlement prices was not something that was contemplated at the time of the CFMA.

Last September, the CFTC conducted an extensive public hearing on ECMs, and found that certain energy futures contracts traded on ECMs may be serving a significant price discovery function. This raised the question of whether the CFTC has the necessary authority to police the ECM markets for manipulation and abuse. The Commission concluded that changes to the CEA would be appropriate as a result and, to that end, in October 2007 the Commission recommended legislative changes in a Report delivered to Congress. Specifically, the Commission recommended that significant price discovery contracts on ECMs be subject to the same position limit and position accountability core principle that applies to contracts traded on DCMs. In addition, its recommendations would further require: 1) large trader position reporting on significant price discovery contracts on ECMs; 2) self-regulatory responsibilities for the ECM; and 3) CFTC emergency authority over these contracts.

We are pleased that the Commission's recommendations were endorsed by the President's Working Group on Financial Markets, and have been well received in Congress. In December, these recommendations were included in legislation that moved forward in both the House of Representatives and the Senate. Both bills largely adopt the CFTC's recommendations on the need for enhanced oversight over significant price discovery contracts traded on ECMs, including position limits and position accountability. The modest differences between the bills are being worked out as part of the Conference on the Farm Bill, and we are hopeful that Congress will take final action on these proposals soon to give the CFTC these additional and necessary authorities.

BILATERAL OVER-THE-COUNTER TRADING

Much crude oil trading also takes place by what is known as "over-the-counter" (OTC) trading. This trading is typically non-standardized and between two sophisticated participants. The CFTC does not regulate privately-negotiated OTC contracts, nor does it regulate cash markets or forward markets. However, we have the tools to adequately police the markets falling under CFTC jurisdiction. The typical OTC market transaction involves a sophisticated market participant's request to a swap dealer to structure an OTC transaction. The dealer facilitates the customer by taking the opposite side of the customer's position. The dealer then turns to the futures

markets to offset the risk that it has taken on. (We see the actions of OTC dealers in our Large Trader Reporting System as explained below.)

The first thing to recognize about OTC contracts is that they are typically benchmarked to NYMEX futures prices or to cash market indexes. In terms of administering the anti-manipulation provisions of the CEA, our current authority and our current surveillance program are sufficient to detect an attempted manipulation of the NYMEX futures price to benefit an off-exchange OTC position.

Our current authority also gives us the ability to ask what we call "reportable traders" in the futures markets to reveal their OTC positions, as well as their cash market and forward market positions. If required, we also have subpoena authority. We have used this authority to help bring 50 enforcement actions in energy markets in recent years.

The enactment of the CFMA brought about multilateral clearing of OTC positions at futures clearinghouses. As a result, OTC trades become transparent to the CFTC through the clearing process. For 2007, approximately 224 million OTC contracts cleared through NYMEX and the InterContinental Exchange (ICE). In fact, as traders in the OTC markets have become more aware of credit considerations and the benefits of transparency, they have been moving their positions onto exchanges where the exchange clearinghouse enhances credit worthiness and the market is transparent.

USING DATA TO OVERSEE THE MARKETS

The CFTC receives millions of data points every day about trading activity in the markets. The agency's Large Trader Reporting System is the cornerstone of our surveillance system and is used to look at data. Clearing members, FCMs, foreign brokers and other traders file confidential electronic reports with the CFTC each day, reporting positions of each large trader on each DCM. In the NYMEX WTI contract, for instance, a trader with a position exceeding 350 contracts in any single expiration is "reportable." Large trader positions reported to the CFTC consistently represent more than 90% of total open interest in the NYMEX WTI contract, with the remainder being smaller traders who do not meet reporting thresholds.

When a reportable trader is identified to the CFTC, the trader is classified either as a "commercial" or "non-commercial" trader. A trader's reported futures position is determined to be commercial if the trader uses futures contracts for the purposes of hedging as defined by CFTC regulations. Specifically, a reportable trader gets classified as commercial by filing a statement with the CFTC (using the CFTC Form 40) that it is commercially " . . . engaged in business activities hedged by the use of the futures and option markets." However, to ensure that traders are classified consistently and with utmost accuracy, CFTC market surveillance staff checks the forms and re-classifies the trader if they have further information about the trader's involvement with the markets.

In fact, a reportable participant may be classified at the CFTC as non-commercial in one market and commercial in another market, but is never classified as both in the same market. For instance, a financial institution trading Treasury Notes might have a money management unit whose trading positions are classified as non-commercial but a banking unit that is classified as commercial. Reporting firms must file Form 102 to identify each account, and this information allows the CFTC to relate separate traders to a single higher level of ownership.

In addition to the breakdown between commercial and non-commercial categories, the large trader data can be filtered by type of trading activity. For example, on the commercial side, the CFTC can sort the data by more than 20 types of institutions, ranging from agricultural merchants and livestock feeders to mortgage originators. Traders that are non-commercial include commodity trading advisors, commodity pool operators (managed money traders), and floor brokers and traders.

Using data from the Large Trader Reporting System, the CFTC also publishes a weekly breakdown of reporting positions of each Tuesday's open interest known as the Commitments of Traders (COT) report. COT reports are published for markets in which 20 or more traders hold positions above CFTC-established reporting levels.

COT reports are available on the CFTC's public website every Friday at 3:30 PM in both a short and long format. The short report shows open interest separately by reportable and non-reportable positions. The long report, in addition to the information in the short report, shows the concentration of positions held by the largest four and eight traders and groups the data by crop year, where appropriate. For reportable positions, additional data is provided for commercial and non-commercial holdings, spreading, changes from the previous report, percentage of open interest by category, and numbers of traders.

SPECULATION IN THE COMMODITIES MARKETS

The current market environment has brought questions about the role that speculators play in affecting prices in the futures markets. The proper and efficient functioning of the futures markets requires both speculators and hedgers. While certain targeted controls on speculation are appropriate, speculators, as a class, provide the market liquidity to allow hedgers to manage various commercial risks. Unnecessary limitations on the amount of speculation that an individual or entity may engage in could limit the amount of liquidity in the marketplace, the ability of hedgers to manage risks, and the information flow into the marketplace, which could in turn negatively affect the price discovery process and the hedging function of the marketplace.

While speculation is critical to well-functioning markets, excessive speculation can be detrimental to the markets. Under Section 4a of the CEA, the concept of "excessive speculation" is based on trading that results in "sudden or unreasonable fluctuations or unwarranted changes in the price" of commodities underlying futures transactions. The CEA specifically makes it a violation of the Act to manipulate the price of a commodity in interstate commerce or for future delivery. The CEA does not make excessive speculation a per se violation of the Act, but rather, requires the Commission to enact regulations to address such trading (for example, through speculative position limits).

The Commission has utilized its authority to set limits on the amount of speculative trading that may occur or speculative positions that may be held in contracts for future delivery. The speculative position limit is the maximum position, either net long or net short, in one commodity future (or option), or in all futures (or options) of one commodity combined, that may be held or controlled by one person (other than a person eligible for a hedge exemption) as prescribed by a DCM and/or by the Commission. Moreover, CEA Section 5(d)(5) requires that a DCM, "[t]o reduce the potential threat of market manipulation or congestion, especially during trading in the delivery month . . . shall adopt position limitations or position accountability for speculators, where necessary and appropriate."

All agricultural and natural resource futures and options contracts are subject to either Commission or exchange spot month speculative position limits—and many financial futures and options are as well. With respect to such exchange spot month speculative position limits, the Commission's guidance specifies that DCMs should adopt a spot month limit of no more than one-fourth of the estimated spot month deliverable supply, calculated separately for each contract month. For cash settled contracts, the spot month limit should be no greater than necessary to minimize the potential for manipulation or distortion of the contract's or underlying commodity's price.

With respect to trading outside the spot month, the Commission typically does not require speculative position limits. Under the Commission's guidance, an exchange may replace position limits with position accountability for contracts on financial instruments, intangible commodities, or certain tangible commodities. If a market has accountability rules, a trader—whether speculating or hedging—is not subject to a specific limit. Once a trader reaches a preset accountability level, however, the trader must provide information about his position upon request by the exchange. In addition, position accountability rules provide an exchange with authority to restrict a trader from increasing his or her position.

Finally, in order to achieve the purposes of the speculative position limits, the Commission and the DCMs treat multiple positions held on a DCM's market that are subject to common ownership or control as if they were held by a single trader. Accounts are considered to be under common ownership if there is a 10 percent or greater financial interest. The rules are applied in a manner calculated to aggregate related accounts.

Violations of exchange-set or Commission-set limits are subject to disciplinary action, and the Commission, or a DCM, may institute enforcement action against violations of exchange speculative limit rules that have been approved by the Commission. To this end, the Commission approves all position limit rules, including those for contracts that have been self-certified by a DCM.

OFFICE OF THE CHIEF ECONOMIST STUDY OF TRENDS IN THE CRUDE OIL MARKET

The CFTC's Office of the Chief Economist (OCE) closely tracks developments in the crude oil markets. Crude oil prices have risen significantly during the past few years and are currently above $100/barrel. Concurrently, open interest in WTI crude oil futures has expanded dramatically, growing from about 1 million contracts in 2004 to more than 2.8 million contracts during the most recent week.

OCE has studied these markets to better understand the components of this rapid growth. Our studies find three major trends in crude oil markets. First, we see similar rates of growth for both commercial and non-commercial interests. Non-commercial participants are commonly considered speculators. Non-commercial share of total open interest has increased marginally from 31% to about 37% over the past three years. It is important to understand that the majority of non-commercial positions are in spreads; that is, taking a long position in one contract month and a short position in another.

Second, much of the growth in open interest is concentrated in futures contracts that expire after 12 months. Whereas contracts beyond one year were rare in 2000, we are now seeing significant open interest in contracts with expires out to five years. In fact, contracts beyond six years are now available at NYMEX. Figures 1a and 1b below highlight these two trends.

Figures 1a and 1b also highlight the fact that commercial traders taking short positions to hedge rely on non-commercial traders to take the opposite side of their trades. Were fewer non-commercial positions opened, hedging costs would likely increase. In this light, commercial traders demand hedging services that are supplied by non-commercial traders. The supply and demand for hedging services intimately ties hedgers and speculators together in futures markets.

The third major trend during the past few years in crude oil markets is that swap dealers now hold significantly larger positions in crude oil. These dealers, who take the short sides of over-the-counter swaps against commodity index traders, hedge this exposure with long futures positions in crude oil. This development has altered the traditional role of commercial traders. Previously, commercial traders predominately hedged long cash positions using short futures contracts. The recent development has swap dealers (also classified as commercial traders) hedging their short swap positions with long futures. Figures 2a and 2b below depict these differences.

Figure 2b also demonstrates the growth in swap dealer trading in the near-term futures contract, which largely represents flows from commodity index trading.

Given the substantial increase in open interest in crude oil futures markets, OCE utilizes the Commission's extensive data to examine the role of all market participants and how their positions might affect prices. Although longer-term studies show a slight increase in non-commercial market share in the crude oil market, OCE analysis shows that the more recent increase in oil prices to levels above $100/barrel has not been accompanied by significant changes to the participants in this market. Figure 3 below shows that the number of commercial and non-commercial traders has remained nearly constant over the past 22 months, with about 120 commercial and 310 non-commercial participants in the market.

OCE has also studied the impact of speculators as a group in oil markets during the most recent price run-up. Specifically, we have closely examined the relation between futures prices and positions of speculators in crude oil. Our studies have consistently found that when new information comes to the market and prices respond, it is the commercial traders (such as oil companies, utilities, airlines) who react first by adjusting futures positions. When these commercial traders adjust their futures positions, it is speculators who are most often on the other side of the trade. Price changes that prompt hedgers to alter their futures positions attract speculators who change their positions in response. Simply stated, there is no evidence that position changes by speculators precede price changes for crude oil futures contracts. Instead, changes in commercial positions significantly precede crude oil futures price changes.

To highlight this fact more clearly, Figure 4 below plots the prices and the market share of one group of active speculators (managed money traders) over the past 22 months. Notably, while WTI contract prices have more than doubled during the past 14 months, managed money positions, as a fraction of the overall market, have changed very little. Speculative position changes do not amplify crude oil futures price changes. More specifically, the recent crude oil price increases have occurred with no significant change in net speculative positions.

OCE has also studied position changes of commercial and non-commercial traders by category, finding similar results. In no case do we find net position changes of any category of non-commercial traders significantly preceding changes in crude oil futures prices. Figure 5 below highlights the fact that commercial and non-commercial open interest has grown during the most recent 22 months, but generally remains balanced between long and short positions for each trader group.

OCE staff has also studied the propensity of various market participants to be trading on the same side of the market concurrently—a phenomenon commonly known as "herding." Although many rules govern the behavior of individual traders, the Commission recognizes that concurrent trading by groups of traders—"herds"—can detrimentally affect markets. Herding behavior can represent an impediment to

the efficient functioning of markets if market participants follow the herd blindly, causing prices to over-adjust to new information. The OCE study found little evidence of significant herding in crude oil futures markets. In fact, when herding was found, it appeared to be beneficial, and not destabilizing for prices—buy herding appeared only when prices were falling and price increases were unrelated to herding activity.

CONCLUSION

Looking at the trends in the marketplace, combined with studies on herding behavior and the impact of speculators in the markets, there is little evidence that changes in speculative positions are systematically driving up crude oil prices. Given the relative stability of the makeup of participants and their positions in the markets and the absence of evidence that speculation has caused oil price changes, it appears that fundamentals provide the best explanation for crude oil price increases. These fundamentals can be either broad factors that affect many markets—like the value of the dollar or general inflation fears—or factors particular to a market—such as strong demand from China and India for crude oil and other commodities. In addition, geopolitical events, such as tensions involving Venezuela, Nigeria, Iran, Iraq, Turkey and the Kurds have affected commodity markets, especially the energy and precious metals markets.

Concerns about the high price of oil are not unique to the United States. I recently presented these findings to the International Energy Agency conference in Paris which included representatives from 40 different countries, OPEC, industry economists and traders. Our findings were supported by many of the conference presenters and attendees who have conducted their own research on the topic. Given the widespread interest in crude oil in particular, it is something I am certain we will continue to monitor closely, as will my counterparts around the world.

This is a dynamic time in the futures markets, given the growth in trading volume, product innovation and complexity, and globalization—in all commodities, including energy. The Commission will continue to work to promote competition and innovation, while at the same time, fulfilling our mandate under the CEA to protect the public interest and to enhance the integrity of U.S. futures markets.

The CHAIRMAN. Alright. Thank you very much for your testimony. Ms. Emerson, why don't you go right ahead?

## STATEMENT OF SARAH A. EMERSON, MANAGING DIRECTOR, ENERGY SECURITY ANALYSIS, INC., WAKEFIELD, MA

Ms. EMERSON. Good morning, Mr. Chairman, distinguished committee members. I'm the Managing Director of Energy Security Analysis, an Energy Research Firm. I oversee all petroleum market analysis for my firm. I have been asked today to provide a physical market context for the increased oil prices to over $100 and the role of the institutional investors in the oil markets.

We are witnessing striking developments in global markets. The price of crude oil has doubled since the beginning of 2007 and is at or above $100 today. The dollar has fallen and is now worth only about two-thirds of a Euro. Oil exporting countries are pumping petrodollars into the global economy. Some estimates put that amount at $4 trillion as of the end of 2007. This is the status quo.

As shocking as it seems it appears to be relatively stable because these developments reinforce each other. The weak dollar cushions the impact of high oil prices on consumers outside of the United States. The petrodollars provide liquidity of investment which helps grow the global economy, especially outside of the United States.

These two factors support oil demand growth, again outside the United States, in spite of the higher price. Excuse me. Meanwhile the weak dollar and the high oil price encourage institutional investors to buy commodities especially oil as a hedge against inflation. Now as we witness these developments in global markets it's

important to keep in mind that we have reached this status quo in large part because of what is taking place in the underlying physical market for oil.

During the 1980s and 1990s as you know, the global oil markets was characterized by over supply. The capacity to produce oil significantly exceeded demand. Nominal prices were flat. Real prices fell. These low oil prices supported oil demand not only in the transportation sectors of the industrialized countries, but also in the power generation, industrial and now chemical transportation sectors of the developing world.

As a result global oil demand caught up with the capacity to produce oil. Spare crude production capacity has been reduced to a bare minimum. To illustrate, in the 1980s there was as much as 15 percent spare crude oil production capacity in the global market. By the 1990s that number had fallen to 7 percent. Now we are down to 2 to 3 percent.

In the meantime with low consumer prices for much of the last two decades, refining has been a fairly low margin business discouraging capacity investment. Except in countries where refiners are at least partially protected by government policies such as price subsidies or import controls. In sum, today both crude oil production and global oil refining have very limited spare capacity when compared to the previous two decades.

In addition to these structural factors, there have also been more transient factors that have contributed to crude oil march from $30 to $100. Some have been geopolitical events already referenced this morning, such as interruptions to oil flows in Iraq and Nigeria or just the threat to an interruption of oil from Venezuela or Iran. There have also been supply chain mishaps, like pipeline explosions and of course, the hurricanes hitting our own refining facilities in the Gulf coast.

In the past, these surprise events might have had a limited or short-lived price impact as alternative supplies flowed into the market. But today, regardless of the severity of the threat they pose to the supply of crude or products, the impact of these events on prices is tremendous because again of the absence of spare capacity, no alternative suppliers. We are still living in a world with little margin for error.

These factors have helped lift crude oil prices from $30 to at least $50 or $60. So this brings us to 2007 and 2008 and the current run up in oil prices. At the end of 2006, oil prices were sliding and OPEC decided to cut production by about 1.7 million barrels per day. This decision had a significant impact on the global balance for oil in 2007.

Let me explain. In a typical year, on a global basis, oil demand exceeds oil supply in the first and fourth quarters of the year and inventories typically climb. In the second and third quarters, oil supply typically exceeds oil demand and inventories typically rise.

In 2007 oil demand exceeded oil supply in the first, third and fourth quarters and was essentially balanced in the second quarter. In short the global market did not build supplies last summer to use this winter. On average in 2007, global oil demand exceeded global oil supply by somewhere between 500,000 barrels per day

and one million barrels per day. A rally in oil prices was a forgone conclusion at the end of 2007 or at least in the second half of 2007.

There were of course, other factors that affected the oil price in 2007. But this basic story of demand outstripping supply has been the physical market backdrop for the recent run up in prices. Now we get to the critical question. Can it account for the entire move to $110?

I personally do not think so. As I said at the beginning of these comments, institutional investors have identified oil as an attractive investment. This is in part, in large part, because the physical market had not discouraged the community investors who want to buy and hold oil as a portfolio investment.

Let me conclude by saying some relief is on its way in the physical market. Hope OPEC has increased production significantly since late 2007, although perhaps not as much as some would like them to. Oil demand indeed is slowing because of the economic slow down here in the United States.

But the fundamentals have not turned yet enough. They haven't flipped enough to discourage investors who want to invest in and hold oil as a portfolio investment. In the meantime, we on the physical side see nothing in the financial markets themselves that indicates a desire to sell crude oil. Thank you very much.

[The prepared statement of Ms. Emerson follows:]

PREPARED STATEMENT OF SARAH A. EMERSON[1] MANAGING DIRECTOR, ENERGY SECURITY ANALYSIS, INC. WAKEFIELD, MA

Good morning Mr. Chairman and distinguished committee members. I am honored to testify before you today. I have been asked to provide a physical market context for the increase in oil prices to over $100 and the role of institutional investors in the oil markets.

INTRODUCTION

We are witnessing striking developments in the global markets. The price of crude oil has doubled since the beginning of 2007 and is at or above $100 per barrel. The dollar has fallen precipitously and is now worth only about 2/3 of a Euro. Oil exporting countries are pumping "petrodollars" into the global economy. Some estimates put that amount at $4 trillion dollars as of the end of 2007.[2]

This is the status quo, and as shocking as it seems, it appears to be relatively stable. The weak dollar cushions the impact of the high oil price on consumers outside of the U.S., the petrodollars provide liquidity in investment which helps grow the global economy, especially outside of the U.S. And one could argue the Fed's monetary policy, designed to stimulate our slowing economy by lowering interest rates, keeps the dollar weak, which in turn encourages investors to buy commodities, especially oil, as a hedge against inflation.

But, as we witness these developments in the financial markets, it is important to keep in mind that oil prices could only display this kind of strength because of what has taken place in the physical market for oil.

Over the 20 year period prior to 2003, the global oil market was characterized by over-supply. The capacity to produce oil significantly exceeded demand. Nominal prices were flat and real prices fell.

Years of relatively low oil prices supported oil demand not only in the transportation sectors of the industrialized countries, but also in the power generation, industrial and now chemical and transportation sectors of the developing world. As a result, global oil demand caught up with the capacity to produce oil. The spare capacity held by OPEC has been reduced to a bare minimum. Specifically, in the

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[2] "Oil Producers See the World and Buy it Up," NYT, Wednesday, November 28, 2007, page A1.

1980s, there was as much as 15 percent sparecrude oil production capacity in the global market. By the 1990s, that number had fallen to 7 percent. Now, we are down to 2–3 percent.

In the meantime, with low consumer prices for much of the last two decades, refining has been a fairly low-margin business, discouraging investment except in countries where refiners are at least partially protected by government policies such as price subsidies or import controls. In sum, both global crude production and global refining have very limited spare capacity relative to the previous two decades.

In addition to these structural factors, there have also been more transient factors that have contributed to crude oil's march from $30 to $100. Some have been geopolitical events such as interruptions to oil flows in Iraq and Nigeria or threats to the flow of oil in Venezuela or Iran. There have also been supply chain mishaps like pipeline explosions or hurricanes hitting refining facilities. In the past, these surprise events might have a limited or short lived price impact.

What is most striking about these events today is that, regardless of the severity or the duration of the threat they pose to the supply of crude or products, their impact on prices is tremendous because of the absence of spare capacity (or alternative supplies). We are still living in a world with little margin for error.

This brings us to 2007/2008 and the current run up in oil prices. At the end of 2006, oil prices were sliding and OPEC decided to cut production by as much as 1.7 million b/d. This decision had a significant impact on the global balance for oil in 2007. In a typical year, on a global basis, oil demand exceeds oil supply in the first and fourth quarters and inventories decline. In the second and third quarters, oil supply exceeds oil demand and inventories typically rise. In 2007, oil demand exceeded oil supply in the first, third and fourth quarters and was essentially balanced in the second quarter. In short, the global market did not build supplies last summer to use this winter. The global market dug a big hole. On average, in 2007 global oil demand exceeded global oil supply by somewhere between 500,000 b/d and 1.0 million b/d. A rally in oil prices in late 2007 was a foregone conclusion.

There were other factors that affected the oil price in 2007, but this basic story of a tight global market has been the physical market backdrop for the run-up in prices. Can it account for the entire move to $110? No I do not think so. But, the physical market has not discouraged or disciplined the community of investors who want to buy and hold oil as a portfolio investment.

Relief is on its way in the physical market. OPEC increased production significantly in the latter half of 2007 and oil demand is slowing because of the economic slowdown here in the U.S. But the fundamentals have not turned enough . . . yet . . . to discourage investors who want to invest in and hold oil. In the meantime, we see nothing in the financial markets that indicates a desire to sell crude oil.

## ATTACHMENT.—THE FACTORS ENCOURAGING HIGH OIL PRICES

### BACKGROUND PAPER

### BY SARAH A. EMERSON

Sarah A. Emerson is the Managing Director of Energy Security Analysis, Inc (ESAI), an independent energy research and forecasting firm located just outside of Boston, Massachusetts. Ms. Emerson adapted this paper from one she wrote for the Electric Power Research Institute.

During the 1950s, 1960s, and the early 1970s, oil prices were "posted" or set by the major integrated oil companies. Indeed, the volume of trade in crude oil spot markets accounted for only about 15 percent of international crude oil transactions. Moreover, spot transactions were possible only because the major oil companies needed to balance their own supply and demand, unloading small surpluses and covering minor deficits in the spot markets. The oil crises of 1973–74 and 1979–80 led to a threefold increase in prices, the adoption of fixed prices by OPEC, and the abandonment of fixed volume contracts between OPEC member countries and their customers. Higher world prices for oil stimulated non-OPEC production and cut global oil demand. As a result, in the market for the marginal barrel of crude (the spot market) prices fell below OPEC's elevated and fixed price. Not surprisingly, independent refiners, traders and even the integrated majors bought more and more crude in the spot market. By the early 1980s, crude oil transactions at spot prices or prices tied to the spot market accounted for more than 50 percent of total international crude oil transactions.

Within OPEC, the role of swing producer in defense of higher prices became increasingly untenable for Saudi Arabia. Ultimately, Saudi Arabia abandoned this

role, a market share war ensued and prices collapsed in 1986. Since 1986, almost all of the world's oil has been sold bilaterally with transactions linked to some kind of market-based pricing, such as netbacks or formulas tied to spot, and more recently, futures prices.

*. . . Gives Way to Market Forces*

The emergence of spot and futures markets in oil has led to two decades of market forces as the organizing principle of the global oil sector. The deregulation of domestic oil industries and the liberalization of petroleum product pricing have proceeded all over the world as countries have opted to integrate into the large, transparent and relatively low priced global oil market. The view that market forces, rather than government policies, were best suited to allocate resources equitably was mirrored by the rise of Reagan-Thatcher laissez-faire conservatism of the 1980s and the eventual collapse of the Soviet bloc by the early 1990s. The devaluation of the Russian ruble and the Asian financial crisis later in the 1990s showed the folly of policies that ran counter to market forces in global capital markets. More recently, the market-friendly approach adopted by the Bush White House and China's accession to the World Trade Organization (WTO) have again underscored the dominance of the "market."

Meanwhile, financial institutions have become important participants in the futures markets, buying and selling paper barrels of oil. Futures markets and the liquidity provided by speculators have transformed the global oil market from one dominated by month-to-month pricing to one driven by minute-to-minute pricing. A striking example of the influence of speculation in the futures market on short-term price direction has been the impact of the net position (long or short) of the non-commercials (non-hedgers) on the price of WTI on the NY Mercantile Exchange (NYMEX).[3]

It is not just the existence of spot and futures markets and the political preference for unfettered markets, however, that has allowed the market to reign in oil. Over most of the last 20 years, the global oil market has been characterized by over supply. The capacity to produce oil has significantly exceeded demand. Nominal prices have been flat and real prices have fallen.

*The Era of Market Forces May be Coming to an End*

Now as we face the next 20 years, the era of "market" as the primary organizing principle may be coming to an end. Market forces are under attack from many sides. This is, in part, due to the state of the physical market itself. Years of relatively low oil prices have supported oil demand not only in the transportation sectors of the industrialized countries, but also in the power generation, industrial and now chemical and transportation sectors of the developing world. Global oil demand has caught up with the capacity to produce oil. The spare capacity held by OPEC has been reduced to a bare minimum. That cushion will not be replaced overnight, unless something distinctly slows oil demand growth.[4]

In the meantime, with low consumer prices for much of the last two decades, refining has been a fairly low margin business, discouraging investment except in countries where refiners are at least partially protected by government policies such as price subsidies or import controls. In sum, both global crude production and global refining are capacity constrained relative to the previous two decades.

But that is only part of the physical market story. The market impact of the capacity crunch has been intensified by government efforts to protect the environment. Policies to cut polluting emissions have led to fuel specification changes that have chipped away at the profitability of refining by forcing refiners to focus on investments to refine predominantly medium sour crude into clean low sulfur transportation fuels rather than investments to expand capacity. These refining investments have barely kept pace with demand for cleaner products, so the global market for clean products is supported not only by tight distillation capacity but also limits on the upgrading and desulphurization capacity available to make cleaner and lighter fuels.

*High Oil Prices*

In thinking about the factors that have led crude oil prices from $30 to almost $100, some are structural factors that will take years to change. Others are more

[3] A chart comparing the net long position of the non-commercials with the price of WTI is included in the Appendix.

[4] A global balance that compares global oil demand with global supply is presented in the Appendix. Spare production capacity is held by OPEC and is presented graphically later in the text in Chart C.

transient factors that change almost daily. As shown in the chart A* the structural factors include basic items such as weighted average production costs and transportation, but they also include supply chain factors such as the preference for just in time inventories, limited refining capacity and thin spare production capacity.[5] These supply chain factors are not easily or quickly changed and they have made the current era of pricing a departure from the previous 20 years when companies carried a lot of inventory and there was significant spare refining and production capacity.

Charts B and C illustrate the elimination of spare capacity in both refining and crude oil production. In the case of global refining capacity, since 1990, the global utilization rate (here defined as global demand/global capacity) has exceeded 90 percent, but since 2004 has exceeded 95 percent.[6] 2004 was a remarkable year because oil demand grew very quickly around the world, but especially in the U.S. and China. Indeed, China's demand growth was extraordinary. Even though China's oil demand growth has slowed since then, that one-year spike drew a great deal of attention. China'sgrowth will continue on a steady pace, but is unlikely to return to 2004 levels. In any event, the enormous increase in oil demand in 2004 led to a commensurate increase in crude oil production, especially in OPEC countries.[7] That jump in output eliminated a significant volume of spare capacity. Since then, some spare capacity has been rebuilt as some new fields are brought on line in OPEC countries and as global oil demand has slowed down distinctly in 2005–2007. Indeed, oil demand growth in 2005 through 2007 has averaged about 1.2 million b/d whereas oil demand in 2004 was roughly 3.0 million b/d on the back of the Chinese surge.

The other factors included in chart A are more transient factors, which may have a shorter life span than structural factors. They include short-term developments in supply and demand, geopolitical events involving oil-producing countries like Nigeria, Iraq, Iran and Venezuela, supply chain mishaps like pipeline explosions or hurricanes hitting refining facilities. There is also speculation when noncommercial traders buy crude oil either as a short-term speculative investment or a hedge against something else like inflation. Each of these categories of factors has different impacts. Under the supply and demand developments, some factors have more lasting impact. The previously mentioned oil demand surge in 2004 was driven, in part, by a sudden acceleration in China's oil use. That was really a one-year phenomenon, although China continues to post healthy demand growth. Another example is the start up of a new oil field or a warmer or colder than normal winter. The rest of the transient factors are largely surprise events that are generally difficult to predict, but also relatively short lived. Regardless of the severity or duration of the threat these transient factors pose to the supply of crude or products, their impact on prices can be tremendous because of the absence of spare capacity in the global supply chain. This is well known by speculators who are inclined to "buy" oil at the first news of an actual or potential supply interruption.

*Will Market Forces Bring Oil Prices Down?*

In response to these oil market realities, a pure market economist might contend that high oil prices will spur conservation and temper demand growth while encouraging investment in crude oil production. The result will be more supply and less demand and oil prices will fall signaling the end of the current cycle. At current prices, even development of the least conventional sources of liquid hydrocarbon production (i.e., gas and coal to liquids and tar sand, shale and bituminous deposits) is affordable. In short, conventional oil gets a boost from the traditional investors and oil sands, bitumen, oil shale, biodiesel, and other alternatives get a boost from the entrepreneurs. The current boom cycle comes to an end, the market equilibrates and prices fall.

The mean reversion, market equilibrates view of today's prices, however, does not yield an accurate characterization of where we go from here. Given that many of the factors that have led to $100 oil are structural ones, the amount of investment in new production of oil (or alternatives) and the demand restraint required to re equilibrate the market is substantial. Moreover, the players in the market, whether

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* Charts A–F has been retained in committee files.

[5] The values in this chart are the judgment of the author.

[6] Data for chart B is based on the BP Statistical Review and ESAI's own database.

[7] Data for chart C comes from ESAI's own proprietary database. ESAI maintains a country-by-country database of supply, demand, inventories, refinery operations, crude production, production capacity for crude oil and each petroleum product for the entire world. All of ESAI's market analysis is based on a bottom-up approach to analyzing supply and demand at the national regional and global level.

they are national governments or private companies, are either changing altogether or developing new attitudes towards oil.

*Governments May Not Think So . . . and May Intervene in Markets*

In today's market, oil supply disruptions are perceived to be more likely and more difficult to counteract. The recent strength in oil prices is, in part, because they have internalized the energy security concerns highlighted by the War in Iraq and terrorist attacks in and outside of the Middle East. Civil unrest in Nigeria, the standoff between the U.S. and Iran over nuclear weapons, and tensions between the Bush Administration and President Chavez of Venezuela underscore historical concerns about the security of supplies. In a well-supplied market, the consequences of a supply disruption can be managed through alternative supplies. In a capacity constrained market, however, every disruption has more severe consequences. These energy security concerns have moved energy higher on the public policy agenda in many countries.

Higher oil prices have also lent perhaps undeserved credence to the claim that the volume of conventional oil production is at or very close to its peak. Pinpointing the year in which conventional oil production peaks or plateaus is unnecessary and far too contentious an exercise. What matters is that alternative liquid hydrocarbons like syncrudes from oil sands or bitumen and alternative fuels from biomass and agricultural crops will increasingly become part of the liquid fuel mix over the next few decades. The expansion of ethanol in the U.S. gasoline pool is an early and instructive example of the trend towards greater volumes of non-traditional hydrocarbons or non-hydrocarbons in the petroleum product pool. This trend will become more widespread.

Regardless of the veracity of the "Peak Oil" argument, it has raised a red flag about the longterm supply of conventional oil and its adequacy for meeting oil demand. This has led the major stakeholders, including producers, consumers and government regulators to rethink the alternatives. In some countries, especially those without oil production, the government response to these concerns is likely to be more conservation. Regulations that improve efficiency and reduce consumption seem almost inevitable in some countries. Likewise, countries with dwindling oil production, which are becoming bigger and bigger net importers are pursuing policies to secure foreign supplies. Meanwhile, all net oil-importing countries are considering changes to their energy mix if their resource endowments allow.

Finally there is the environment. Efforts to reduce emissions and clean up fuels, especially transportation fuels, will continue around the world. But behind those efforts is a far bigger environmental issue for the global oil sector: reducing greenhouse gas (GHG) emissions.

In sum, the continued dominance of the "market" as the organizing principle of global oil is under attack by two overriding concerns: energy security and the environment. One could argue that these challenges have always existed, but it seems clear that the absence of "spare" capacity in production and refining has dramatically underscored the energy security issue while growing consensus on climate change has transformed the environment issue. With this in mind, market regulation in the petroleum sector is far more likely in the next two decades than in the last two.[8]

*Where Do We Go from Here*

It is difficult to look very far out when examining the structural factors shaping oil prices today, but one can say something about the next 5 years or so with some confidence. As described earlier, the two most important structural factors contributing to high oil prices are tight refining capacity and limited spare crude production capacity. But investment is underway and in the medium term those problems will ease. *Charts E and F are projections of Charts B and C presented earlier. Based on ESAI's analysis of global expansion of refining capacity and production capacity, both improve. The refining capacity projection indicates that the global utilization rate should fall below 95 percent. This is still a high number, but more consistent with the 1990s when oil prices were lower. The production capacity projection is more speculative because it encompasses many countries with declining oil fields and a handful of countries with expanding production. All of the spare capacity is held in OPEC and the view in Chart F is probably optimistic in magnitude but accurate in direction.

[8] The recent signing of the 2007 Energy bill into law already signals more government intervention in the U.S. oil sector as it raises CAFE (fuel economy) standards to 35 mpg by 2020 and calls for 36 billion gallons of alternative fuels used in transportation fuels by 2022.

Beyond 2013, the picture is much more difficult to draw because the structural tightness in the global supply chain never disappears. It just improves and deteriorates depending on the ebb and flow of investment and demand. With that in mind it is difficult to imagine a return to $30 crude oil. At the same time, $90-100 crude oil will be hard to sustain. In short, market equilibrium is much more loosely defined and probably refers to a price range of $50-$80 with more potential to break above that range than below that range.

*Conclusions*

The last two decades of deregulation and reliance on market forces as the defining principle of the oil markets has run its course and, on the margin, regulation is moving back into the oil patch. The confluence of high prices, limited upstream and downstream spare capacity, instability in producing countries and concerns over climate change are encouraging coalitions that endorse change in energy policies. Whether it is in the name of environmentalism, national security, resource stewardship or mercantilism, many different political and economic interests are looking for a change to the regulatory status quo. Slowly their efforts will gain ground in countries all over the world.

In the meantime, the global oil market remains perched on a three-legged stool of high oil prices, a weak dollar and huge flows of petrodollars into investments around the world. This stool has been fairly steady over the last several months, but it does not represent a status quo that will satisfy most governments. The high oil prices, in particular, are a direct concern for consuming governments and an indirect concern for producing governments if they see consumers turning to conservation and alternatives. The weak dollar is a concern for U.S. consumers and must make oil producers worry about inflation in their economies. Consuming governments will be compelled to take action to protect their economies. Producing governments will invest to broaden their oil price windfall and, in the process, perhaps take the edge off high prices. But it will take time to effectively slow demand growth and increase supply growth. Moreover, slower demand and faster supply will not be smooth and not commensurate, especially as governments take a bigger role in markets. So the stool may rock, but remain upright for some time. Oil prices will eventually moderate (and the stool will topple), but prices will remain volatile and unpredictable as the steps taken by governments unfold.

The CHAIRMAN. Thank you very much.

Mr. Book.

**STATEMENT OF KEVIN BOOK, SENIOR ANALYST AND SENIOR VICE PRESIDENT, FBR CAPITAL MARKETS CORPORATION, ARLINGTON, VA**

Mr. BOOK. Thank you, Chairman Bingaman, Ranking Member Domenici and distinguished members of this committee. Thank you especially given what I do for a living is I analyze energy policy in the geopolitics of energy for institutional investors. So spending this time with you is a little bit like spending the morning with Elvis.

I'm very, very grateful to be here. Part of this discussion as well because I think you've done wonderful things on a bipartisan way to engage corporations and citizens in what has to be discussed which is how energy works and why it's important for energy and environmental security to know these things. So I'm very grateful for all of those things.

At the core of this discussion the global economies of emerging nations have entered their energy hungry adolescence. The policy decisions that will have 30 to 50 year implications amid rapid change will require public and private sector leaders to keep their heads. If history is any guide, it won't be easy.

Since there's a lot of the same things probably that are going to be said in our testimonies, I'm going to go a little off script. But I want to make a point that every one of the issues that has been cited by financial economists, Wall Street types, academics, have

been true as a result of what Ms. Emerson said just now and what I'll suspect you'll hear again and from others. They include insufficient working inventories, refinery capacity constraints, the growth of China, geopolitical risk, cost inflation and depreciation of the dollar and the notion that non-commercial buyers are driving prices up is also partially true today, I believe. Particularly if you believe that investors are seeking value retentive refuge from the falling U.S. dollar.

But what I would encourage is the thought that this phenomenon certainly won't be true forever. It may not even be true for long. Since you've kindly offered to put my written testimony in the record, I want to just hit on a few points that are incremental to what has already been said.

First, an institutional investor, these are the people that are my firm's clients. They manage other people's money professionally. Simply put those people will fire their money managers when they lose them money. This pressure applies equally to sovereign funds and hedge funds.

So CalPERS announced their plans to invest billions in commodities and commentators said well, if they're doing it and they're very conservative of the pension fund they must be by charter, and every investor must be doing it. I think that's partially true. Investors of all strides are indeed diversifying into commodities. Some are buying. Some are selling. Some who are buying today may be selling tomorrow. If the funds flow into commodities is in fact elevating oil futures and accumulating evidence of a slow down in oil consumer nations could provoke a sell off as conservative investors close their positions and aggressive investors sell short.

Second, I want to draw a distinction between markets and mobs. Markets price value and emotions move mobs. Markets tend to reflect disagreement over price where as mobs reflect uniformity of opinion. In market bubbles mobs of otherwise rational actors may ignore readily available data that might have discouraged their behaviors had they not been blinded by fear, greed, or what 19th century author Charles MacKay, Extraordinarily Popular Delusion and the Madness of Crowds.

It is not obvious to me that oil markets are over saturated. The aggregate value of daily oil consumption is about $7.5 billion. If every barrel for the next 8 years of future delivery were contracted at today's prices which is a hypothetical extreme and not a rational case, just to make the point. The volumes could absorb about $20 to $25 trillion.

As our first witness noted open interest in oil recently reached about 2.8 million contracts. That's about $280 billion at $100 dollars per barrel. That is a significant amount of money in its own right, but only about 1 percent of the theoretical market size.

This is also not the only place for speculative money to go. Investors buy stocks for tomorrow's cash-flows. They buy commodities for tomorrow's scarcity.

Too many dollars chasing too few barrels can be inflationary in the short term. In the medium term, however, non-commercial dollars provide working capital, as you know, to lower the cost of insuring future supply. In the long run premium signal even higher cost projects may be rewarded.

This year WTI futures prices have risen about 10 percent. With share prices of the three largest U.S. oil companies have fallen about 9 percent. As companies respond to these price signals those investments flows may shift.

Futures prices cannot trade ahead of distraction costs forever. The price of oil is driven by speculation. The economies are slowing as we're seeing. Eventually one of two things will dispel the mob. Either oil will fill up storage facilities and buyers will be physically unable to take delivery. Or new capacity will show up to take advantage of price premiums.

Just a couple comments on oil and I'll try to stick as close as possible to the time as well. Dramatic policy shifts and tax hikes can have self-defeating implications in a world where you're effectively transitioning. I think that is the vision of this committee. I think it's a good vision.

But let's look at what's happening right now. The market is telling investors there's a high price because of scarcity. Some of the marketers suggesting, and I don't think they're right, that countries like this one, industrialized economies, can't conserve, won't balance energy through environmental stewardship and don't have the technology to produce alternative fuels cheaply.

Others are suggesting that the production oil has peaked. I think that twice during the last 6 months, you know, you found big finds off the Brazilian coast. Currently high prices encourage new technologies. Part of oil companies will have to make those investments and operate those technologies for long periods of time.

When you start to get into the production process, you start to find things with new technologies. Oil production can become very sticky because if you're going to invest your own company, you don't necessarily have the option to stop producing. Your board is expecting you to pay off the debt and fund future operations. So volumes may show up even if the price starts to soften.

The circumstance of peak access is not a fundamental either. It's political. The majors are coming out. Last month $3.7 billion were bid for drilling rights in the Gulf of Mexico.

In this context you have to think that restricting where the U.S. has oil will only transfer wealth and market power to OPEC and this to my last point. OPEC can be, right now you can say it's a little bit more of an effective cartel. Because at $100 a barrel there's no reason for the weakest economies to blow through their quotas and defect to fund their cash-flows.

That doesn't mean, however, that protection isn't the right answer. These countries do control 80 percent of the world's reserves. They may not be enthusiastic about inviting western companies into their production bases, but they are enthusiastic about potentially investing their money in the downstream here in this country. Because they have very cheap oil and they can make more money if they can turn that oil into gasoline and sell it into our hungry market.

So I would caution against the protectionist response. I'd also just close with the notion that we are probably reaching a peak appetite for oil. As we get there we will diffuse new cars into the vehicle fleet will be more efficient. We will eventually get to flex fuel or more flexible fuel vehicles.

It's a lot of investment. It's a lot of time. But while we get there, flexibility implies a choice in policies that encourage petroleum investment will help keep that choice open hence the cautious response to the idea of raising taxes on the companies that produce oil here at home.

I've gone fairly off script, but I'm here for any questions. I look forward to them at the appropriate time. Thank you.

[The prepared statement of Mr. Book follows:]

PREPARED STATEMENT OF KEVIN BOOK, FBR CAPITAL MARKETS CORPORATION, ARLINGTON, VA

Chairman Bingaman, Ranking Member Domenici and distinguished Members of this Committee, thank you for the privilege of appearing before you today. The views I will present this morning are my own and do not necessarily represent those of my employer.

I would like to begin by offering my admiration for the comity and caution this Committee has demonstrated in addressing the energy and environmental security challenges facing the nation. Your efforts have already engaged corporations and private citizens alike in a necessary national discussion regarding the sources and uses of our natural resources. All around the globe, emerging nations are entering into their energy-hungry adolescence and the dislocations wrought by this paradigm shift will require public and private sector leaders to keep their heads. If history is any guide, it won't be easy.

During the last five years, the world's top energy economists have offered a disarmingly variable sequence of explanations for the run in crude oil prices. At the beginning of the decade, market watchers counted days of demand cover, a measure of whether working inventories contained sufficient oil to meet expected demand. Subsequently, many of the same experts linked escalating prices to refining capacity constraints, the growth of wealth in China, geopolitical risks in the Middle East and Nigeria, cost inflation and, most recently, the depreciation of the dollar relative to other currencies. Each of these phenomena has correlated to, and sometimes predicted, oil prices. But none of these explanations has proven consistently useful throughout the decade or when back-tested against earlier data.

The same might be said for the notion that non-commercial buyers of forward and futures contracts are driving up oil prices. This may be partially true today, and it may even be somewhat price-predictive to assess the flow of investor wealth into commodities, particularly if one believes that institutional investors may be seeking a value-retentive refuge from the falling U.S. dollar. But this phenomenon certainly won't be true forever. It may not even be true for long. My comments regarding investor motivations, market dynamics and oil production are intended to suggest that an optimal policy response should not ignore the historical tendency of the law of supply and demand to govern long-term oil market outcomes.

AN OVERVIEW OF INSTITUTIONAL INVESTORS' INCENTIVES

Generally speaking, an "institutional" investor manages other people's money professionally. One or several layers of management expertise can lie between primary investors and markets. Institutional investors themselves compete in the market for asset management services. Widely variable charters constrain the asset classes that different investment funds may hold and the strategies that institutional investors may employ, but all asset managers share a common trait: they are paid to retain, and ideally to augment, their clients' wealth. Simply put, investors fire managers who lose their money.

On February 28, 2008, CalPERS, the California pension fund, announced plans to invest as much as $7.2 billion through calendar year 2010 in commodities. At the upper bound, this could represent a little less than 3% of the portfolio, a meaningful commitment to commodities as an asset class. This was neither unexpected nor unheralded. The first exchange-traded fund (ETF) created to track crude oil contract prices began trading on the London Stock Exchange in July 2005. The first U.S. oil ETF began trading on the American Mercantile Exchange in April 2006. Oil ETFs typically buy and sell oil futures to enable investors who might not buy commodities to replicate the performance of oil markets. Oil ETFs largely resemble an earlier vintage of ETF, S&P 500 "index funds" that buy and sell S&P component equities.

At the time of the CalPERS announcement, several market commentators extrapolated its implications, reasoning that, if institutions as conservative as pension

funds were buying oil, then everyone else must be, too. I would respectfully submit an alternative thesis. Investors of all stripes may be diversifying into commodities markets, but they are not all buying. Some are likely to be selling, and many of the investors who are buying today might well be selling tomorrow, depending on their risk tolerances.

Hedge fund managers typically earn fixed management fees but the bulk of their compensation usually derives from percentages of earned profits. Because hedge funds may hold heavily concentrated positions or illiquid investments, it can take fund managers days, weeks or months to gracefully unravel their positions without destroying fund value. As a result, most hedge fund charters limit the opportunities for investors to "redeem" invested capital to narrow, periodic windows. This can encourage hedge fund managers to pursue higher-risk strategies, including investments that may result in short-term losses. But the wealthy individuals and institutions who buy into hedge funds pay premiums in return for high performance. These clients can grow impatient and vote with their wallets if managers deliver sustained losses. Managers of funds with smaller cash holdings could conceivably exert downward pressure on oil prices by closing long positions in a hurry to service a spate of redemptions.

Sovereign funds exist to diversify national wealth away from its source. This is a matter of particular concern for oil-producing nations and Asian export economies. Sovereign fund managers usually have a single client, eliminating the competitive pressures for performance that can force quick sales of securities or, for that matter, discourage risky bets. Historic wealth transfers from largely Western, consumer nations to the largely Eastern producer nations that supply them have provoked timely calls for best practices and transparency by the IMF and OECD. Transparency is warranted, but protectionism is not. If fund managers are "diversifying" producer nations' sovereign wealth into oil futures, this might suggest similar economic circumstances to those that often motivate corporate stock repurchases: managers may not see any better way to safely invest the money. If this is true, new barriers—including bills like the "No Oil Producing and Exporting Cartels" (NOPEC) Act—to U.S. investment might further encourage dollar flight to commodity futures.

At the same time, there may be two offsetting forces influencing sovereign investment in oil futures. Sovereign fund managers must answer to their clients, after all, and leaders of Gulf Cooperation Council nations have made known their concerns that the declining dollar has eroded their largely dollar-linked national wealth. Since oil trades in U.S. dollars, fund managers have an obvious motivation to hedge. On the other hand, these same clients are also best positioned to know when oil demand may be slowing, and they might well advise their fund managers to lighten up on commodities ahead of a slowdown, even if it means downward pressure on oil prices. This could conceivably occur if EU-27 economic growth began to slow as a United States slowdown continues, as oil could sell off at the same time that the U.S. dollar appreciated relative to the Euro.

If funds flowing into commodities are indeed elevating oil futures, then accumulating evidence of a slowdown within the world's biggest oil-consuming economies could provoke an equal and opposite reaction as conservative investors close their positions and aggressive investors sell short.

MARKETS, PRICES AND MOBS

The question remains unclear, in my mind, whether the oil markets are vulnerable to manipulation by speculators, or whether speculators are vulnerable to manipulation by the oil markets.

There is a lot of difference between a market and a mob. Markets are driven by the value of a good or service; mobs are driven by human emotions. Markets reflect disagreement over price; mobs typically reflect uniformity of opinion. Retrospective analyses of market bubbles often reveal how many otherwise rational actors caught up in the mob ignored readily available data that might have discouraged their behaviors, had they not been blinded by fear, greed or what 19th Century author Charles Mackay termed "extraordinary popular delusions and the madness of crowds".

Markets set prices for buyers and sellers, but market prices also inform those buyers and sellers by summarizing the collective decisions of market participants into a number and a direction. Numbers and directions are objective truths, but their interpretation can be very subjective. For example, the market could be suggesting that this—and other—nations lack the willpower to adhere to conservation plans, the flexibility to rebalance energy needs with environmental stewardship or the technological wherewithal to produce economically-viable alternative fuels.

Many market participants appear to believe with great certainty that high prices signify peak oil production. This seems particularly surprising now that, twice during the last six months, oil companies have identified possible "super-giant" oil fields off the Brazilian coast, underneath the salt layer and well within the reach of modern technology. It might seem safer to assume that the moment when mankind will have exhausted 50% of the oil molecules in the Earth's crust is still a long way off, but that's not what the futures market may have been thinking in March. A March 16, 2008 Financial Times story entitled, "Investors bet on $100 a barrel until 2016" was the first of many media reports I read that attributed the close of long-dated crude futures as a shift in sentiment towards enduring scarcity. Indeed there were bets out to 2016 on $100 oil, but not a lot of them. In fact, only 108 December 2016 WTI contracts traded on March 14, 2008 (the date referenced by the article) as compared to 293,217 front-month contracts.

The oil market isn't the only place for speculative money to go, nor are oil markets obviously oversaturated. Crude oil is the most widely traded commodity in the world. Daily oil consumption of about 86 million barrels has an aggregate value of approximately $7.5 billion, discounting for quality. Commodities exchanges trade contracts for physical deliveries eight years in the future. In theory, if every barrel for the next eight years of future delivery were contracted at today's price and volume assumptions, those contracts could absorb about $20–25 trillion. Open interest in light sweet crude oil contracts is approximately 2.5 million contracts. Each contract represents 1,000 barrels, making open interest worth $250 billion at $100 per barrel. $250 billion is a staggering sum in its own right, but only about 1% of the theoretical maximum market size, and a rounding error in contrast to the global notional value of derivative instruments of all kinds, which the Bank of International Settlements estimated in June 2007 to be worth more than $500 trillion.

Capital markets and commodities markets play different roles in wealth creation. The value of equity securities derives from investor expectations that today's investments will deliver tomorrow's cash flows. When equity values appreciate, corporations can sell treasury stock or issue a follow-on stock offering to capitalize investment or retire expensive debts. The value of commodities usually derives from scarcity, at least in the short-term. The short-term effects of a growing volume of dollars chasing a currently fixed number of barrels can be inflationary in cases where new investment grows meaningfully relative to the market size. For the intermediate term, however, dollars spent by non-commercial bidders provide working capital that doesn't have to come from either producers or commercial users, lowering the transactional and financial costs of ensuring adequate future supply. In the long run, dollars that rush into the oil markets will play a very important role. The premiums above production cost visible in today's oil market will ultimately have the effect of encouraging future production by signaling producers that even higher-priced projects like tar sands, tertiary oil recovery and alternative fuels may be rewarded.

As companies begin to position themselves to respond to price signals, investment flows may shift. This year, WTI futures prices have risen about 10%, while the share prices of the three largest U.S. integrated oil companies, ChevronTexaco, ConocoPhillips and ExxonMobil have fallen about 9% on a market-cap-weighted average basis during the comparable period. This suggests at a very cursory level that investors would rather hold oil itself than the companies that produce it (it is cursory to say this because the same investors don't always play equities and commodities markets). A shift in investment flows into oil companies and away from commodities may have predictive value as well as a technical effect. Historical oil prices have normalized in response to demand abatement, but also as a result of technology improvements and the economic decisions made by nations that control access to resources.

Investors have limited visibility into the true state of global oil production. Divining the state of affairs requires constant attention to the reserves and production data reported publicly by governments, investor-owned companies and some state-owned firms as well as the refiners who ultimately purchase oil for commercial use. Investors may also consider proxies for consumption, like economic growth, and value chain constraints, like freight and shipping indices, as well as a range of third-party, proprietary sources that investigate everything from the comings and goings of tankers to orders for specialized capital equipment used for oil production. Some investors may be overwhelmed by the sheer volume of data to the point where the marginal benefit of incremental analysis exceeds the marginal benefit (or cost) of making a bad investment. Ironically, other investors may rely in the absence of empirical evidence on the signals generated by financial markets for futures contracts, in which case the endless trumpeting of rising WTI contract prices may create a "feedback loop" that seems to suggest enduring scarcity.

Futures contracts cannot trade ahead of extraction cost forever. If the price of oil is, as OPEC suggests, being driven by speculation, then at least one of two things might happen to dispel the mob: either oil will fill up storage facilities and buyers will be physically unable to take delivery, or new capacity (or alternatives) will show up on the market to take advantage of price premiums.

PEAK OIL, PEAK ACCESS OR PEAK APPETITE?

The price of oil goes up—and down—but it doesn't always move smoothly. Commodities markets can be "sticky"—that is, supply may not immediately respond to price. The following, very brief description of the exploration, production and refining sectors may help illustrate some of the reasons.

First, let's be clear about what we mean by "oil". Geological petroleum deposits take many forms. The word "oil" can apply to a wide range of compounds of differing densities, viscosities and purities. The petroleum industry classifies oils that contain more natural gasoline and lower-density molecules as "light" and oils that contain lower levels of sulfur and other impurities as "sweet". Ultimately, the value of oil depends on the processing capabilities of the refiners—the commercial customers—who buy it. Refiners consider oils that are light and sweet to be "high quality" because they can be distilled into transportation fuels, chemicals and industrial products at lower fixed and variable costs than oils that are "heavy" and "sour". As global demand grows, oil companies are drilling deeper for oil and producing, on average, barrels that are heavier and sourer. Refiners' corresponding investment in new and higher complexity refineries generates new market opportunities for exploration and production companies (or divisions) to look again at resources they once ignored.

Oils of similar composition tend to be interchangeable in the short-term. In the intermediate term, refiners of higher-quality oils who want to use lower-quality oils must invest in new refining equipment capable of processing impurities. Operating these higher-complexity refineries requires more energy, resulting in increased per-unit costs. However, the finished products that refiners make from oil—gasoline, diesel and jet fuel—are also commodities. Refiners must accept the market price offered for the products they produce, because any attempts to recapture additional costs by charging a higher price are likely to be undercut by competitors who produce fuel at lower marginal cost. As a result, the global refining industry as a whole typically prefers to pay less for lower-quality grades. Price relationships between oil grades tend to normalize over time because refiners will eventually invest in highercomplexity equipment to take advantage of sustained discounts for heavier or sourer oils. Similarly, greater demand for low-quality oils can bid them up relative to high-quality oils and diminish or stabilize demand for high-quality oils.

Thanks to high prices, oil companies are willing to consider new technologies. Incremental technology improvements are expensive to deploy. Oil companies will be most willing to put capital at risk when they believe robust demand will reward their investments. Incremental deployments of new technologies often bring rewards in the form of process improvements as employees climb their "learning curves". In subsequent deployments, oil companies can also take advantage of scale economies by standardizing operations around new technologies. On the other hand, oil production doesn't easily switch on and off, for a variety of practical and economic reasons. Petroleum production takes time; seven to ten years typically lie between the corporate decision to proceed and delivery of oil to the market. Because executives at investor-owned companies are accountable to shareholders, even if the price of oil falls between the time company management puts money into a project and the time production begins, oil companies may need to operate at loss in order to generate enough cash to pay back their up-front investments and fund future efforts.

Thanks to technology, it's easier to find oil. The days when a lone wildcatter with a dowsing rod and big dreams could uncover a gusher of Texas Tea with a hand drill ended decades ago. That's because most of the readily accessible large oilfields discoverable through yesterday's technologies are already in production. But this doesn't mean that the world's oil supply has peaked. The Earth is a big place, and oil deposits reside at varying depths throughout the Earth's crust all the world over. New seismic and electromagnetic technologies and advanced computer modeling make it possible for oil companies to identify significant new petroleum deposits in places where it had never been possible to look in the past, like underneath thousands of feet of rock or seawater. Drilling technologies are becoming superficially similar to endoscopic surgical techniques. In the not-too-distant future, producers may be able to access underground reservoirs by creating minimally intrusive surface holes and threading their drill-bits between rock formations. Oil companies are getting more out of every well, too. Enhanced oil recovery technologies using water

and carbon dioxide are enabling North American production volumes that exceed original estimates by as much as 30% to 45%.

Are we on the other side of "peak access" to oil reserves? Investor-owned companies face increasing barriers to drilling overseas as oil-rich sovereigns renegotiate, expropriate and nationalize their petroleum sectors to capture greater value from high prices. High prices may also have made OPEC a more effective cartel. At $100 per barrel, OPEC nations collectively generate about $3 billion each day. When prices were $10 to $15 per barrel, the poorest oil exporters sometimes exceeded their assigned quotas to keep national treasuries solvent. Today, even weaker producer economies can afford to hold the line on supply. Greater wealth means that the state-owned oil companies that control more than 80% of global reserves can afford their own advanced oilfield technologies and have fewer incentives to grant favorable concessions to investor-owned oil companies. A telling sign that the game is changing arrived last month, when oil companies bid a record $3.7 billion for offshore drilling rights in the Gulf of Mexico. In this context, restricting drilling where the U.S. has oil—including the Arctic National Wildlife Refuge and the Eastern Gulf of Mexico—will only transfer wealth and market power to OPEC.

Once again, protectionism is the wrong answer. Petroleum refining is a tough business for the U.S. oil companies that must pay top dollar for raw materials on the global market but end up selling a commodity. The prospect of punitive taxation and escalating environmental expenditures may make investor-owned companies understandably leery of committing multiple billions of dollars towards the building and expansion of their refineries. Not every oil company may regard investment in U.S. energy infrastructure as a bad deal. For state-owned oil companies, a new or bigger U.S. refinery could improve the profits associated with production of lower-quality crudes by turning them into gasoline to capture what has typically (but not always) been at a premium to their unrefined value.

It may be that we are merely reaching our "peak appetite" for oil. Energy crises provoke transformational efficiency gains, even though they are expensive and take a long time to play out. Assessing oil production limits requires an examination of the vehicles that use petroleum-derived fuels, too. Today's cars, trucks and things that go are already quite flexible and will become more so. Forecasts made by the EIA, IEA and industry groups leave little doubt that many of the vehicles on the road today are taking growing advantage of fuels from non-oil sources that are similar in composition and performance to petroleum distillates. Likewise, tomorrow's transportation fleet is likely to employ liquid fuels of any origin much more efficiently than today's fleet. Technologies like hybrid petroleum-electric propulsion systems are now maturing. High prices are already provoking commercial aviation companies to look for low-cost, high-yield design changes that minimize energy lost to friction, like the wing "tips" frequently installed on commercial airlines. It seems likely that a conservation response is already underway and I believe the U.S. government is right to encourage it.

New taxes could have self-defeating implications in the meantime. Replacing the 230 million passenger vehicles on U.S. roads will take 15 to 20 years if we start today. Electric cars may require, among other things, investment towards a more reliable power grid. Likewise, diffusion of flexible fuel vehicles and E85 dispensers could require more than $50 billion in incremental spending and will rely on economic, large-scale production of cellulosic biofuels. A "flexible" vehicle implies a choice, and policies that encourage petroleum investment will keep that choice open, even as policies this Committee has enacted pave the road to future fuels. Corporate leaders of for-profit companies must balance expected returns from 30-year projects against the risks that federal budgets can change annually, congressional polarities can reverse biennially and new regulators might reinterpret existing law every four or eight years. Dramatic policy shifts and tax hikes could make it harder, not easier, for oil companies to transition to future fuels.

AN AFTERTHOUGHT REGARDING THE U.S. RELATIONSHIP WITH PETROLEUM

Addiction is the wrong metaphor. We didn't start refining oil by accident. Oil continues to fuel 97% of the world's vehicles because generations of engineers, corporate leaders and policy planners selected it on the basis of its suitability. Oil is energy-dense, readily transportable and plentiful relative to alternatives, even despite the high prices of the moment. Allow me to suggest a different metaphor. For the foreseeable future, petroleum will continue to fuel industrialized societies the same way oxygen nourishes the body. Two obvious conclusions emerge.

- First, increasingly prosperous, growing populations will require more oil, not less.

- Second, a man who is short of breath is not addicted to oxygen; he may just need to get in shape. We will need to use oil more efficiently.

This concludes my prepared testimony. I will look forward to responding to any questions the Committee might have at the appropriate time.

The CHAIRMAN. Thank you very much.

Mr. Burkhard.

**STATEMENT OF JAMES BURKHARD, MANAGING DIRECTOR, CAMBRIDGE ENERGY RESEARCH ASSOCIATES, CAMBRIDGE, MA**

Mr. BURKHARD. Thank you, Mr. Chairman. It is an honor to address the committee on the issue of the influence of non-commercials on the price of oil.

First of all, who are these non-commercial investors? They are more than just short-term, speculative, traders. They represent a broad spectrum of investors ranging from managers of pension funds and university endowments and other institutional investors. They allocate investment capital based upon a view of the world's need for oil and other commodities.

So why have oil prices been rising? The growing role of non-commercial investors can accentuate a given price trend. But the primary reasons why oil prices in recent years have been rising are rooted in several factors.

One is the fundamentals of demand and supply, which we've heard about. Geopolitical risks which do have a real impact. Skyrocketing oil industry costs. More recently we've seen the decline in the value of the dollar play a more significant role, particularly since the credit crisis first erupted last summer and energy and other commodities got caught up in the upheaval of the global economy.

That to be sure the balance between demand and supply is integral to oil price formation and will remain so. But there are, what we call, new fundamentals that are behind the momentum that push oil prices to their recent record high levels. These new fundamentals are one, new cost structures and two, global financial dynamics.

First, new cost structures. As oil prices have risen, so has demand for the people and equipment that are needed to find, develop and produce oil. Major shortages of equipment and personnel have dramatically raised the cost of finding and developing oil all around the world. The latest IHS CERA upstream capital cost index, which is a sort of consumer price index for the oil industry, shows that the cost of developing oil fields has doubled in the last 3 years. In addition, increasingly heavy fiscal terms on oil investments and in the form of higher taxes and greater state participation mean that much higher oil prices are needed to support development of new supplies.

The second new fundamental is what we refer to as global financial dynamics. The oil price has long reflected major trends in the economy and geopolitics. For example in 1998 when the oil price went down to $10 that was largely a reflection of the fallout from the East Asian financial crisis.

Today two major trends are the decline of the dollar and the rising economic clout of regions outside of the United States. In the

past half year in particular, lower interest rates in this country in anticipation of further cuts in interest rates has pushed the dollar lower. Amid great turbulence and credit and other financial markets the influence of the weak dollar on the oil market has grown.

Oil has become what we refer to as the new gold. A financial asset in which investors seek refuge as inflation rises and the dollar weakens. That key element of the oil as the new gold story is the expectation that demand for oil will continue to grow and thus be able to hold its value despite the weak dollar and rising inflation. To degree an expectation of a strong oil price environment is a bet on the future of China, India and other high growth markets around the world.

Since the beginning of last year, eight of the ten largest oil markets in the world have seen their currencies appreciate significantly against the dollar. When the currency appreciates against the dollar it diminishes the impact of an increase in the dollar price of oil for that market. This helps to sustain oil demand growth outside the United States.

If economic and oil demand growth remain vibrant outside the United States and the dollar continues to weaken then financial dynamics are likely to drive oil prices higher. In addition the political and man power difficulties that are currently constraining oil supply growth will not disappear overnight. The desire for higher living standards in China, India and other emerging markets will remain as strong as it was in Europe, Japan and the United States in post World War II period. Higher living standards mean longer life expectancy, lower infant mortality and higher energy consumption.

This year just as economic worries began to mount oil prices touched a new high of around $110 per barrel. Although oil prices are just one factor that affects the global economy, they are a significant one. Because the world economy was able to take $70 oil in stride does not mean that it can easily absorb $100 or higher.

Oil prices are fluctuating in line with the latest economic signals. This will continue until a clearer view of economic growth materializes. But one factor is clear. The price of oil will reflect major swings in the value of the dollar both up and down. Thank you.

[The prepared statement of Mr. Burkhard follows:]

PREPARED STATEMENT OF JAMES BURKHARD, MANAGING DIRECTOR, CAMBRIDGE ENERGY RESEARCH ASSOCIATES, CAMBRIDGE, MA

It is an honor to address this Committee on the relationship between oil prices and the influence of noncommercial institutional investors, sometimes referred to as market speculators. Trading in futures markets establishes the reference price for nearly all crude oil sold in the world. Crude oil futures trading activity on the New York Mercantile Exchange—the largest in the world—is currently about 350 percent higher than in 2002.[1] Noncommercial investors have contributed to this increase. Growth in trading activity is coincident with a rise in oil prices from $26 per barrel in 2002 to more than $100 in early 2008. The concurrence of these two trends has raised the question about the level of influence that noncommercial investors have in oil price determination.

[1] The figure of 350 percent represents the increase in open interest in NYMEX crude oil contracts, which is a proxy for levels of trading activity. Open interest is defined by the US Commodity Futures Trading Commission as "the total number of futures contracts long or short in a delivery month or market that has been entered into and not yet liquidated by an offsetting transaction or fulfilled by delivery."

What has been driving oil prices upward? It is primarily the fundamentals of demand and supply, geopolitical risks and rising industry costs. The decline in the value of the dollar has also played a role, particularly in the past six months. But with noncommercial investors playing a bigger role, the direction of a given price trend can be accentuated. And since the credit crisis first erupted last summer, energy and other commodities have become caught up in the turbulence of the global economy.

NONCOMMERCIAL INVESTORS

The US Commodity Futures Trading Commission defines noncommercial or speculative investors as those who are not physically exposed to the commodity but trade "with the objective of achieving profits through the successful anticipation of price movements." This group of market participants includes more than just short-term speculative traders. It represents a broad spectrum of investors with different time frames and motivations such as mangers of pension funds, university endowments and other institutional investors. These investors increasingly view commodities and oil in particular as an asset class. They allocate investment capital based upon a view of the world's need for oil and other commodities. For example, the California Public Employees Retirement System (CalPERS), the largest public pension fund in the United States, recently increased the amount it could invest in an asset class that includes commodities. This move is part of a "new strategy to provide a hedge against inflation while diversifying investments, thus mitigating losses during equity market downturns."[2]

Noncommercial investors are an essential part of a futures market. In the 1860s Chicago grain traders developed the first futures contract: an agreement to buy or sell a commodity at a future date. Farmers were able to offload price risk to speculative traders. In exchange for providing price certainty to the farmer, the trader had the opportunity to turn a profit—or a loss—from future price changes. This allocation of risk remains the foundation of today's futures markets.

Noncommercial investors can also provide another attribute of a well functioning futures market: liquidity. Liquidity refers to how quickly a counterparty can be found for a transaction. The current turbulence in credit markets illustrates the dangers that materialize when trading in a market becomes illiquid. Uncertainty and fear come to the fore, which exacerbates market turmoil. Oil futures markets are among the most liquid in the world—and have remained so despite the upheaval in credit markets.

In a sufficiently liquid market, the number and value of trades is too large for speculators to unilaterally create and sustain a price trend, either up or down. The growing role of non-commercial investors can accentuate a given price trend, but the primary reasons for rising oil prices in recent years are rooted in the fundamentals of demand and supply, geopolitical risks, and rising industry costs. The decline in the value of the dollar has also played a role, particularly since the credit crisis first erupted last summer, when energy and other commodities became caught up in the upheaval in the global economy. To be sure, the balance between oil demand and supply is integral to oil price formation and will remain so. But "new fundamentals"—new cost structures and global financial dynamics—are behind the momentum that pushed oil prices to record highs around $110 a barrel, ahead of the previous inflation-adjusted high of $103.59 set in April 1980.

NEW COST STRUCTURES

In 2004 the price of oil (in nominal terms) averaged above $40 for the first time ever. This was sparked by extraordinary demand growth that reflected strong global economic expansion and a temporary surge in the use of oil to generate power in China. Further demand growth in 2005 reduced spare oil production capacity to just 1 million barrels per day (mbd)—compared with 4 to 6 mbd in the 1990s. Amid the whittling away of spare capacity, political change and security worries in several major oil exporting countries fueled anxiety about the adequacy of oil supplies. With so little spare capacity, such fears drove oil prices higher.

As oil prices rose, so did demand for the people and equipment needed to find, develop and produce oil. But nearly 20 years of low oil prices and industry consolidation meant "a missing generation"—a generation that skipped entering the petroleum industry. As a result, major shortages of equipment and personnel dramatically raised the cost of developing an oil field whether in the Gulf of Mexico, West Africa or the Middle East. CERA and IHS have developed a series of indices to measure changes in cost—sort of a Consumer Price Index for the energy industry.

[2] CalPERS February 19, 2008 press release.

Costs to build power plants and oil refineries have surged higher. But the one most relevant to our discussion today is the latest IHS/CERA Upstream Capital Cost Index. This index shows a doubling of oil field costs over the last three years. In other words, companies have to budget twice as much today as they did three years ago. Adding to the cost pressure are increasingly heavy fiscal terms on oil investments in the form of higher taxes and greater state participation in oil projects. The net result is that much higher oil prices are needed to support development of new supplies. Some projects that in the past needed oil prices of $20 or $30 in order to move forward now need price levels that are double that amount—or even higher.

It can take ten years or more to find, develop and begin production from a new oil field, particularly if it is large and complex. Long lead times and the severe upturn in costs have led to one of the most significant changes in the oil market: a steep increase in long term oil price expectations. For nearly two decades, until 2004, expectations for long-term oil prices hovered around $18 to $25 per barrel. Since 2004 the price of a futures contract to buy or sell crude oil five years out has risen steadily. It topped $100 per barrel this year. Five years is considered long-term from an oil market perspective as opposed to the longer times that can be required to develop a new oil field. The sustained breakout of oil prices from a relatively narrow historical range along with global financial dynamics has fostered greater interest in oil among financial markets.

## GLOBAL FINANCIAL DYNAMICS

The oil price has long reflected major trends in the economy and geopolitics. Rising inflation, a rush to invest in commodities and worrisome tension between the United States and Iran drove oil above $100 per barrel in real terms in 1980. In 1998 the price of oil collapsed largely because of the fallout from the Asian financial crisis. Today, two major trends that are reflected in the price of oil are the decline of the dollar and the rising economic clout of many regions outside the United States.

### *Oil and the Dollar: The New Gold*

The effect of a declining dollar on the price of oil first became prominent in early 2005. The dollar had fallen about 35 percent relative to the euro since 2002. OPEC generally imports more from Europe than the United States, so a weak dollar damages terms of trade from OPEC's perspective. The falling dollar contributed to the lifting of OPEC's implicit oil price objective, which altered market expectations about price and the balance between demand and supply. The price of oil was nearing $50 per barrel—a very high price at the time.

In the past half year lower interest rates and anticipation of further cuts in interest rates pushed the dollar lower. Amid great turbulence in credit and other financial markets, the nature of the weak dollar's influence on the oil market changed. Oil has become the "new gold"—a financial asset in which investors seek refuge as inflation rises and the dollar weakens. This may seem counterintuitive at a time of weak oil demand in the United States, but today's dynamics in the marketplace reveal oil's increasingly cosmopolitan nature. The price of oil reflects not only demand and supply, but broader macroeconomic and geopolitical changes such as the growing influence of Asia, the Middle East, Russia and the Caspian countries.

Strong economic growth outside the United States has not only supported growing oil demand but also propelled rising demand and prices for many commodities. In addition to energy, food prices are surging around the world. According to the International Monetary Fund. global prices for cereals—wheat, rice, corn (maize), and barley—increased 82 percent from 2000 to 2007. More than half of this increase has been in the past two years. Recent data from China show food prices pushing overall inflation to 8.7 percent—the highest level in more than a decade.

A key element of the "oil as the new gold" story is the expectation that demand for oil will continue to grow, and thus be able to hold its value despite a weak dollar and rising inflation. To a degree, an expectation of a strong oil price is a bet on the future of China and India. The United States is the world's largest oil consumer, but 75 percent of global demand is outside the United States. For example, since the beginning of 2007 eight of the ten largest oil markets in the world (excluding the United States and Saudi Arabia, whose currency is pegged to the dollar) have seen significant currency appreciation ranging from 9 percent (India) to 19 percent (Brazil). When a currency appreciates against the dollar, it diminishes the impact of an increase in the dollar price of oil in that market. Also, regulated prices of gasoline and diesel in some key markets means that consumers are not exposed to the full increase in the global market price of those products. This places pressure on government and company budgets, but if a given country enjoys strong economic growth it can withstand, at least for a time, rising oil prices.

OUTLOOK

If economic and oil demand growth remain vibrant in large markets around the world and the dollar continues to weaken, then financial dynamics could continue to drive oil prices higher. But oil's role as a financial hedge does not mean that its price will rise continuously. Prior to the ascent in recent years, both gold and oil prices had been mired in long-term price slump. In the late 1990s, $100 oil—or even $80 oil—seemed preposterous. Today, $20 oil seems quaint.

The political and manpower difficulties currently constraining oil supply growth will not disappear overnight. The desire for higher living standards in China, India, the Middle East, Russia and elsewhere will remain as strong as it was in Europe, Japan and the United States in the post World War II years. Higher living standards mean longer life expectancy, lower infant mortality—and higher energy consumption.

But just when the future seems preordained in the oil market, the unexpected can unfold. It did in the decade following 1998, just as it had several times since 1970. This year will be a stiff test for the new oil price era that dawned on the world several years ago. Economic growth is the single most important determinant of oil demand growth—and the course of the global economy in 2008 is fraught with worries.

Financial innovation and the globalization of securities helped to lubricate the wheels of the global economy during an extraordinary expansion, but it also created risks that were not—and still are not—fully understood. The US subprime mortgage meltdown is the most current example of misunderstood risk, but is it the last?

Oil prices can remain high during an economic downturn. In the early 1980s, one of the weakest periods of economic growth since the depression of the 1930s, oil prices were at very high levels for several years. But eventually, the economy and demand catch up: the 1986 oil price collapse was due to a multiyear decline in oil demand.

This year, just as economic worries began to mount, oil prices touched a new high of about $110 per barrel. Although oil prices are only one factor affecting the global economy, they are a significant one. Because the world economy took $70 per barrel in stride does not mean that it would easily absorb $100. If prices hover in the $90-$100 plus range for six months or more, then it would be increasingly difficult to argue that high oil prices do not have a significant impact on economic growth. Moreover, given the growing use of corn-based ethanol, oil prices are now connected to food prices, which are rising. And the increase in food prices is a major source of inflation in many emerging markets around the world. Oil prices are fluctuating in line with the latest economic signals—up and down. This will continue until a clearer view of economic growth materializes. But one factor is clear. The price of oil will reflect major swings in the value of the dollar—both up and down.

The CHAIRMAN. Thank you very much.

Mr. Cota.

## STATEMENT OF SEAN COTA, CO-OWNER AND PRESIDENT, COTA & COTA, INC., PRESIDENT, NEW ENGLAND FUEL INSTITUTE, BELLOWS FALLS, VT

Mr. COTA. Honorable Chairman Bingaman and Ranking Member Domenici, distinguished members of the committee, thank you for this invitation to testify before you today. As both a petroleum marketer and as a representative of two respective trade groups that together represent our nation's independent motor fuel consumption and heating fuel dealers, I appreciate the opportunity brought to provide you with insight on extreme volatility and record setting prices seen in the recent months on the energy commodity markets.

I serve as the Petroleum Marketers Association of America's executive, on their executive committee. PMAA is a national federation of 46 States in regional associations representing 8,000 independent marketers that collectively account for approximately half the gasoline and nearly all of the distillate fuel consumed by motor vehicles and heating equipment in the United States.

I'm also President of the New England Fuel Institute, a 60–year-old trade association representing over 1,000 heating fuel dealers in related companies in Northeastern United States. The five member companies deliver about 40 percent of the nation's home heating oil and many market diesel fuel, bio, heat, propane, jet fuel and so on.

Finally I provide insight as co-owner and President of Cota and Cota, Inc. of Bellow Falls, Vermont, a third generation, family owned business operating as a heating fuel supplier in Southeastern Vermont, Southwestern New Hampshire. My business provides home heating fuel to approximately 9,000 homes and businesses. Unlike larger energy companies most retail heating fuel dealers are small family run businesses.

Also unlike larger companies, heating oil and propane dealers deliver products directly to the doorstep of American homes and businesses. Because of this close association with our customers we have deep concerns for their well-being and the general welfare of our communities. Few recognize the small business nature of our industry. We recently have proposed an array of measures to policymakers in Washington that can assist our industry in assuring adequate supply of home heating fuel and insulate the consumer from current volatility in excesses that dominate commodities markets.

First we urge members of this committee and this Congress to support our recent and standing request to the Bush Administration to release all 1.97 million barrels of the Northeast home heating oil reserve. Contrary to statements from the Administration the release of this product from this reserve may not be tied solely to crude—to heating oil differentials for a trigger mechanism. This speculation driven vault of futures market with a record price surge as seen in recent months perhaps this measure could break the back of some of this excess speculation.

Second we urge Congress and the Administration to implement real and substantial reforms to existing law and Federal regulation designed to fully insure transparent and accountable and stable energy futures markets. For 2 years now the New England Fuel Institute and the Petroleum Marketers of America and their various allies in the energy market oversight commission have asked for such changes and little has been done. Consequences of inaction are now apparent and will only continue to worsen. For the sake of all Americans and the economy at large, you must act now.

It has become apparent that excess speculation on energy trading facilities is driving this crude runaway train with prices. One example, on January 3, 2008, one floor trader bought 1,000 barrels of crude oil and immediately sold it at a loss for about $600. The trader deliberately pushed the price of the barrel of crude over $100 just because he wanted to tell his grandchildren that he was the first person to ever buy crude over $100.

Commitments in trading like this concerns PMAA and NEFI members who argue that recent volatility in crude prices will force small business and consumers to pay excessively high energy prices that do not reflect supply and demand factors. The rise in crude prices in the recent weeks, which has reached $110.21 a barrel on March 13, 2008, this is dragged with every single refined petro-

leum product, which is especially heating oil. Just over 1 month also heating oil prices from February 11, 2008, to March 18, 2008, have risen from $2.65 a gallon to $3.31 a gallon.

The price by it comes despite reports by the Energy Information Administration, EIA, that heating oil inventories remain around 5 year averages. Gasoline inventories have also risen dramatically reaching a high of $3.33 per gallon on March 17, 2008, at nearly two-decade high inventory levels.

Many heating fuel companies like myself hedge in order to protect the consumers against roller coaster volatility. However, our ability to manage in these commodity markets in order to set price on economic fundamentals has become less and less reliable. As a result so do our hedging programs. As the influence of price setting functions on unrelated and under regulated markets in trading on over the counter and foreign based exchanges continues to be the norm, American consumers are forced to ride the speculative roller coaster on energy prices.

For far too long insufficient oversight and transparency has encouraged excessive speculation. Created a trading environment that rewards trading misdeeds like that of the Amaranth hedge funds and British petroleum. Loopholes in Federal law that have created what I call these dark markets or energy markets engaging in futures and futures like contracts, swaps, derivative and trades have nearly no oversight and very little Federal oversight and regulation. Today I believe the vast majority of trading occurs on these unregulated dark markets.

More specifically we urge Congress to take swift action to bring light to these dark markets by one, closing the notorious Enron loophole ripped open by the Commodities Futures Modernization Act, which through its trillions of dollars have poured since it was created in 2001. Virtually overnight the Enron loophole freed all electronic markets from oversight. Congress needs to close this loophole and close it for all energy commodities thereby returning the CFTC statutory authority that it lost in 2001.

As an important step in closing this Enron loophole Congress must pass the Senate version of the CEA Reauthorization Act included as an amendment on the 2007 Farm bill, HR 2419, which is currently in conference. This legislation will reauthorize the CFTC and bring greater transparency and accountability to energy trading facilities through an array of important policy reforms. It is stronger than the CEA Reauthorization language drafted by the Presidential Working Group currently under consideration in the House Agriculture Committee. Further the Senate legislation also gained bipartisan support from the United States Senators Levin, Feinstein, Chambliss, Snowe, Cantwell, Coleman, Conrad, Dorgan, Lieberman, Collins, Crapo, Durbin and Schumer.

Two, investigate CFTC's use of no action letters, which we believe equate to a loophole for foreign markets to gamble with American energy commodities and American economic interests. Under no action letters the CFTC may provide regulatory exemptions under certain conditions, which are—to which an applicable form board of trade, FBOT, offers contracts for delivery within the United States. The current process fails to provide sufficient public

notice and consultation and may not take into full account the impact that these letters have on markets.

Moreover, in order to obtain such exemptions CFTC requires that a comparable regulatory authority be present in the country, which the exchange operates. Congress should examine whether or not Congress determines such regulatory authority be comparable. Finally, we are concerned that no action letters may be or have been requested by exchanges to establish electronic platforms with the intent to circumvent United States law.

Three, reduce the dominance of non-fiscal players in the commodity markets. The commodity markets——

The CHAIRMAN. Could you sort of summarize the remaining points you have to make, please?

Mr. COTA. The markets have been taken over by the financial community. To reference George Soros from his interview yesterday on CNBC, we are in the worst financial crisis that this country has experienced since 1930. The crisis is exacerbated by the lack of regulation in a variety of investments, not the least of which is energy commodities.

Soros stated further without regulations, markets tend to extremes, not equilibrium. Because of this weakness in the United States dollar most of the speculative moneys going into commodities through dark markets to park cash, which will further exacerbate our economic crisis. This is now an economic and national security crisis. Thank you, Mr. Chairman.

[The prepared statement of Mr. Cota follows:]

PREPARED STATEMENT OF SEAN COTA, CO-OWNER AND PRESIDENT, COTA & COTA, INC., PRESIDENT, NEW ENGLAND FUEL INSTITUTE, BELLOWS FALLS, VT

Honorable Chairman Bingaman, Ranking Member Domenici and distinguished members of the committee, thank you for the invitation to testify before you today. As both a petroleum marketer and as a representative of two respected trade groups that together represent our nation's independent motor vehicle and heating fuel dealers, I appreciate the opportunity to provide you with our insight on the extreme volatility and record setting prices seen in recent months on the energy commodity markets.

I serve on the Petroleum Marketers Association of America's (PMAA)[1] Executive Committee and serve as PMAA's Brands Director. PMAA is a national federation of 46 states and regional associations representing over 8,000 independent fuel marketers that collectively account for approximately half of the gasoline and nearly all of the distillate fuel consumed by motor vehicles and heating equipment in the United States.

I am also President of the New England Fuel Institute (NEFI)[2], a 60-year-old trade association representing well over 1,000 heating fuel dealers and related services companies in the Northeastern United States. NEFI member companies deliver over 40 percent of the nation's home heating oil, and many market biodiesel, bioheat, propane, kerosene, jet fuel, off-road diesel and motor vehicle fuels.

And finally, I provide you insight today as co-owner and President of Cota&Cota, Inc. of Bellows Falls, Vermont, a third generation family-owned and operated heating fuel provider in southeastern Vermont and western New Hampshire. My business provides quality home heating fuel to approximately 9,000 homes and businesses. Unlike larger energy companies, most retail fuel dealers are small, family-run businesses. Also unlike larger energy companies, heating oil and propane dealers deliver product directly to the doorstep of American homes and businesses.

Because of this close association with our customers, we have a deep concern for their well being and the general welfare of our communities. Not only do few recognize the small business nature of our retail industry, but few also grasp also our

[1] Official website www.pmaa.org.
[2] Official website www.nefi.com.

deep commitment to providing the highest quality products at the most affordable and competitive prices. To this end, we have recently proposed an array of measures to policy makers in Washington that can assist our industry in ensuring adequate supply of home heating fuel and insulate the consumer from the currently volatility and excess that dominate the commodities markets.

First, we urge members of this committee and this Congress to support our recent and standing request to the Bush Administration release all 1.97 million barrels of the Northeast Home Heating Oil Reserves. Contrary to statements from the administration, release of product from the reserve need not be tied solely to a crude oil to heating oil differential trigger mechanism.[3] Federal law also permits a release from the reserve under discretionary authority provided there is a "regional supply shortage of significant scope and duration."[4] We are indeed in the midst of such a shortage due to: skyrocketing distillate demand overseas; the steepest decline in refinery runs in over two years; infrastructure limitations and pipeline partitioning due to the current transition to lower sulfur off-road diesel fuel; and declining interest by small bulk plants and terminals to take on high sulfur distillates such as jet fuel and heating oil due to the backwardated market and, as mentioned, the transition to low/ultra-low sulfur diesel. All of these factors will only further exacerbate the already speculation-driven, volatile futures market and record price surges seen in recent months.

Second, we urge on Congress and the administration to implement real and substantial reforms to existing law and federal regulation designed to ensure fully transparent, accountable and stable energy futures markets. For two years now, the New England Fuel Institute, the Petroleum Marketers Association of America, and their various allies in the Energy Market Oversight Coalition have asked for such changes and little has been done. The consequences of inaction are now apparent and will only continue to worsen. For the sake of all Americans and the economy at large, you must act.

It has become apparent that excessive speculation on energy trading facilities is the fuel that is driving this runaway train in crude oil prices. For example, on January 3, 2008, one floor trader bought 1,000 barrels; the smallest amount permitted, and sold it immediately for $99.40 at a $600 loss. The trader deliberately pushed the price of a barrel of crude oil over the $100 just because he wanted to tell his grandchildren that he was the first person ever to buy crude oil over $100.[5]

In addition, in times of a national crisis, excessive speculation can also exacerbate an emergency. An example of this comes from a Wall Street Journal article from September 2005, wherein an oil trader bragged about his profits following Hurricane Katrina. This futures trader bragged that some traders made enough money in one week following Katrina that they would not have to work for the rest of the year. Comments like these concern PMAA and NEFI members who argue that the recent volatility in crude oil prices will force small businesses and consumers to pay excessively high energy prices that do not reflect supply and demand factors.

And the rise in crude oil prices in recent weeks which reached $110.21 on March 13, 2008 has dragged with it every single refined petroleum product, especially heating oil. In just over one month, wholesale heating oil prices from February 11, 2008—March 18, 2008 have risen from $2.65 to $3.31.[6] The spike comes despite reports by the Energy Information Administration (EIA) that heating oil inventories remain around the five-year average.[7] Gasoline prices have also risen dramatically reaching as high as $3.33 on March 17, 2008.

Many heating fuel companies like mine hedge in an effort to protect their customers against roller-coaster-like price volatility on the energy commodity markets. Because of our industry's hedging activities, we strongly support open, transparent and well-managed exchanges subject to the rule of law. In fact, it is essential to businesses like mine. My company began offering fixed price programs to our customers twenty years ago. We enter into New York Mercantile Exchange (NYMEX) based futures contracts with our suppliers, who purchase contracts for future delivery and resell these contracts to me for a profit. In this way, companies like mine are able to financially hedge heating fuels for the benefit of the consumer, and help protect them against uncertainty and volatility.

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[3] 42 U.S.C. 6250b(a)(1).

[4] 42 U.S.C. 6250b(a)(2).

[5] (BBC News, 2008).

[6] Energy Information Administration, "U.S. No. 2 Heating Oil Wholesale/Resale Prices," February 11–March 17, 2008.

[7] The EIA reported that U.S. heating oil inventories were to remain within the 5-year average. See Ibid, "Short Term Energy Outlook," March 11, 2008.

However, the ability of the commodities markets to set a price based on economic fundamentals has become less and less reliable, and as a result, so do our hedging programs. As the influence of price-setting functions on unregulated or under-regulated markets continues to grow, and as trading on over-the-counter and foreign-based exchanges continues to become the norm, American consumers are forced to ride the same speculative roller coaster as the energy trader. For far too long, insufficient oversight and transparency has encouraged excessive speculation and created a trading environment that rewards trading misdeeds, like that of Amaranth Hedge Funds and British Petroleum. "Loopholes" in federal law have created what I call "dark markets," or energy commodity markets engaging in futures or futures like contracts, swaps and derivatives trades without adequate federal oversight and regulation. Today, a vast majority of trading occurs on these markets.[8]

More specifically, we strongly urge Congress to take swift action to bring light to the "dark markets" by:

1. Closing the notorious "Enron Loophole," ripped open by the Commodity Futures Modernization Act (CFMA)[9] and through which billions of dollars have poured since it was created in 2001. Virtually overnight, the "Enron Loophole" freed all electronic markets from oversight. Congress needs to close the loophole, and close it for all energy commodities, thereby returning to the Commodity Futures Trading Commission (CFTC) the statutory authority that it lost in 2001. As an important first step in closing the Enron Loophole, Congress must: Pass the Senate version of the CEA Reauthorization Act, included as an amendment to the 2007 Farm Bill, H.R. 2419 is currently in conference. This legislation will reauthorize the CFTC and bring greater transparency and accountability to energy trading facilities through an array of important policy reforms. It is stronger than the CEA Reauthorization language drafted by the Presidential Working Group and currently under consideration in the House Agriculture Committee. Further, the Senate legislation gained bipartisan support from U.S. Senators Levin (D-MI), Feinstein (D-CA), Chambliss (R-GA), Snowe (R-ME), Cantwell (D-WA), Coleman (R-MN), Conrad (D-ND), Dorgan (D-ND), Lieberman (I-CT), Collins (R-ME), Crapo (R-ID), Durbin (D-IL), and Schumer (D-NY).

2. Investigating the CFTC's use of "no-action letters" which we believe equates to a loophole for foreign markets seeing to gamble with American energy commodities and economic interests. Under the no-action letter process, the CFTC may provide regulatory exemptions under certain conditions to an applicable foreign board of trade (FBOT) offering contracts for delivery within the United States.[10] The current process may fail to provide sufficient public notice and consultation, and may not take into account the full impact that these letters may have on the market. Moreover, in order to obtain such an exemption, the CFTC requires that a "comparable" regulatory authority be present in the country where the exchange operates. Congress should examine whether or not it determines such regulatory authorities to be "comparable." And finally, we are concerned that no-action letters may be or have been requested and approved for exchanges seeking to establish electronic platforms overseas with the intent to circumventing U.S. regulatory authority.

3. Reduce the dominance of non-physical players in the commodities markets: The commodity-related futures markets were primarily created to provide industry participants with a tool to manage inventory and future price related risks. However, our industry's management tool has been dominated by investment banks and hedge funds that profit from price volatility. This market domination is an extremely significant contributor to high gasoline, natural gas, diesel and heating oil prices. Virtually every commodity has experienced price volatility, reaching record levels from gold to wheat and it seems that there is no end in sight.

Hedge funds and investment banks are not driven to provide U.S. citizens the most affordable energy supplies; they are driven to profit from volatility. PMAA and NEFI believe that margin requirements for speculators who do not have the ability to take physical delivery of their product should be dramatically increased. Futures market officials could impose a physical delivery component for traders to qualify for reduced margins. Earlier this week, Congressman John Larson of Connecticut announced legislation that would eliminate the commod-

[8] Nearly all experts agree that a majority of trading now occurs off of traditional exchanges like the NYMEX, and some estimate that number to be 75 percent or more.

[9] See 7 U.S.C. §2(h)(3), (g) (2006)

[10] See 17 CFR 140.99.

ities markets as an investment tool and return the market to the physical players and consumers that have lost faith in its ability to reflect hard fundamentals.

We realize that there are several different policy recommendations floating around Capitol Hill from an array of sources, including legislators, commission and administration officials, futures trade groups and the commodity exchanges themselves. We ask that your deliberations take in to account all trading environments and all energy commodities, not just the regulation of one commodity at the exclusion of all others.

I thank you again, Mr. Chairman, and to your colleagues for this opportunity to share my insight on this issue. I am open to any questions that you might have.

The CHAIRMAN. Thank you very much.

Mr. Eichberger, go right ahead.

**STATEMENT OF JOHN EICHBERGER, VICE PRESIDENT, GOVERNMENT RELATIONS, NATIONAL ASSOCIATION OF CONVENIENCE STORES, ALEXANDRIA, VA**

Mr. EICHBERGER. Thank you very much and good morning. I think it's fitting that I'm the last witness today because my testimony is going to be quite different from what we've heard already today. I represent the convenience and petroleum retailing industry, which sells about 80 percent of the gasoline in the United States. I thank you for the opportunity to share that perspective today.

We've been hearing a lot about crude oil today because that's the topic of the hearing. But I think Senator Barrasso commented earlier that that's not really what your constituents are talking about around the water cooler. They're not talking about the $4 increase yesterday in the crude oil price.

But they probably are talking about the price of retail gasoline in their neighborhood. That's what I'm here to talk about. Hopefully give a little bit of understanding of what happened to the market.

The retail petroleum marketplace is the most transparent, competitive market in the nation. For no other product can your constituents drive down the road, shopping for the best price at 45 miles per hour. Our members have put their price on big billboards on the side of the road to empower consumers to find the best deal as easy as possible. Competition is thriving.

To me, this is a predominantly small business, entrepreneurial industry. There are more than 115,000 convenience stores selling gasoline. Nearly 60 percent of those are owned by companies that operate just one store. Despite common misconceptions integrated oil companies and refining companies only own and operate less than 5 percent of retail outlets. This number is actually declining.

Convenience stores rely upon their daily operations to generate revenue. This is getting increasingly difficult. In 2006, the average convenience store made only about $33,000 in profit. Motor fuel sales represented two-thirds of gross revenues, but only contributed to less than one-third to the bottom line.

Retailers make their money by selling in store products like coffee and sandwiches. Gasoline is predominately used to draw customers to the store. This makes it critical that fuel prices are as competitive as possible.

The competition for the consumer is extremely fierce. 73 percent of consumers say that price is the most important factor when choosing a gasoline retailer. They are so focused on price that 29 percent of them say that they would drive 10 minutes out of the way to save as little as three cents per gallon. If you would run the numbers you'd see that they'd actually lose money on this transaction. Yet it is exactly this type of behavior that has created a situation in which profitability at the pump has reached its lowest level in history.

According to oil price information service in 2006 the annual average national retail price for gasoline has increased 53 cents from 2006, has increased 53 cents to about $3.09 so far this year. Meanwhile gross retail margins have dropped nearly half a cent to 13.4 cents per gallon. This 13 and a half cents must cover operating costs, like labor, rent and most importantly credit card fees.

You may not realize it at $3.09 every time you swipe your card at the dispenser the bank takes 7.7 cents from the retailer leaving him with 5.7 cents to cover all of his other expenses. Today the banks are making more on gas than the retailers selling the product. This is putting tremendous pressure on the market.

Crude oil, as we know, is the most significant component of the retail price of gasoline. According to EIA in February crude oil was responsible for 69.7 percent of the retail price of gasoline. This is a sharp departure from historic norms. Between 2000 and 2005, crude oil averaged only 45.3 percent of the retail price. The increase in crude oil price has driven the wholesale price of gasoline and put retailers in a very precarious economic situation.

The price for an 8,000 gallon delivery has gone up more than $4,000 in the last 2 years. Yet the average margin for that delivery has actually gone down. Many retailers have been forced to extend their credit lines while their creditors have tightened lending terms to protect the liquidity of their business. This situation is increasing costs incurred by the retailer, forcing them to suspend investments necessary to improve its operations and could ultimately jeopardize its ability to obtain future delivery of motor fuel.

Clearly the impact of crude oil is being felt throughout the economy, nationally and internationally. In January, 45 percent of consumers reported that gasoline prices already affected their spending behavior. Retailers are increasingly concerned of the growing liquidity problems they're facing as they attempt to pass through higher cost of fuel. Even some refiners are struggling to accommodate the higher cost of crude oil.

Congress has a responsibility to monitor the markets to protect against inappropriate behavior and this hearing is one of those opportunities. However, I would like to advise caution as you move forward. The motor fuels market is critical to the economic welfare of the United States. Any legislative or regulatory actions that could disrupt the market, reduce supplies or cause unnecessary cost to the system should be avoided whenever possible.

I urge Congress to work with the affected stakeholders to identify challenges and develop solutions that benefit the long-term interest of the motor fuel market. Thank you for the opportunity. I look forward to your questions.

[The prepared statement of Mr. Eichberger follows:]

PREPARED STATEMENT OF JOHN EICHBERGER, VICE PRESIDENT, GOVERNMENT RELATIONS, NATIONAL ASSOCIATION OF CONVENIENCE STORES, ALEXANDRIA, VA

Chairman Bingaman, Senator Domenici, Members of the Committee. My name is John Eichberger and I am vice president of government relations for the National Association ofConvenience Stores (NACS). Thank you for the opportunity to share with you today the effects of high crude oil and motor fuel prices on the retail marketplace.

NACS is an international trade association comprised of more than 2,200 retail member companies. The convenience and petroleum retailing industry in 2006[1] generated $569.4 billion in sales and sold more than 80 percent of the gasoline in the United States.

This hearing focuses primarily on the factors influencing the price of oil. While this is a very important topic and one with serious implications for the economy in general and investors in particular, it does not necessarily resonate with your typical constituent. However, the downstream effects of crude oil prices, in particular the retail price of gasoline, do have a profound impact on these individuals. It is this level of trade that I will address today.

First, let me point out for the Committee that the retail petroleum marketplace is the most transparent and competitive market in the nation. For no other product can consumerscomparison shop for the best value while driving down the road at 45 miles per hour. Retailers advertise their motor fuels prices on billboards along the side of the road, empoweringconsumers to wield an amazing influence over prices in a competitive market. Yet, it is at the same time a market about which there is much confusion.

THE RETAIL MARKETPLACE

Before we can begin to assess the impact of crude oil prices on the retail marketplace, it is essential to have a basic understanding about the composition of that market. Withoutspending too much time on the topic, below is a snapshot of who controls the retail marketplace:

| | |
|---|---|
| **Total Convenience Stores as of Dec. 31, 2007** | **146,294** |
| **Convenience Stores Selling Motor Fuel:** | **115,157** |
| Owned by Refining Companies | < 5% |
| Privately Owned, Selling Refiners Brand of Fuel | approx. 53% |
| Privately Owned, Selling Private Brand of Fuel | approx. 43% |
| Owned and Operated by Single-Store Companies | approx. 57% |

Source: NACS, TDLinx, *National Petroleum News*

The convenience and petroleum retailing industry is dominated by small, independent companies. These companies rely on their daily retail sales to generate sufficient revenues tocover their operations and provide a modest profit, a point reinforced by an April 1, 2008, Associated Press story that appeared in dozens of newspapers and media outlets this week. Just as they do not benefit from the corporate revenues generated by the corporations which provide drink and snack items sold inside the store, retailers do not benefit from the revenues generated by their petroleum suppliers. In fact, the typical convenience retailer in 2006 reported a pretaxprofit of only $33,360.

COMPETITION DRIVES PRICE

Although motor fuels are a major source of revenues, representing about threequarters of a store's overall sales, they contributed only about one-third to gross profits in 2006. By contrast, in-store items were about two-thirds of overall gross profits but represented only about one-fourthof overall sales. Consequently, it has become essential for retailers to price motor fuels at a level that is sufficiently competitive in the market to generate enough customer traffic togenerate sales inside the store. Meanwhile, competition for the consumer has become even more intense as retail prices have escalated.

[1] Data for 2007 is not yet available.

In February 2008, NACS released its 2008 Consumer Fuels Report which reported information obtained through interviews with more than 1,200 nationwide consumers conductedbetween December 2007 and January 2008. We sought a better understanding of consumers' behavior with regards to the retail marketplace. What we learned helps explain why retailers areunable to generate significant profits at the dispenser:

- 73% of consumers report that price is the most important factor when choosing a retailer from whom to purchase gasoline
- 45% say that high gas prices have had a "very significant" effect on their spending behavior
- 29% say they will drive 10 minutes out of their way to save 3 cents per gallon

The bottom line is consumers feel the pressure of higher gasoline prices; they are shopping for the best-priced gasoline; and they will go out of their way to save as little as a fewcents per gallon. In addition, the competitive market has become even more so with the popularity of gasoline pricing websites which enable consumers to plan their routes to take advantage of lower prices. Retailers understand these dynamics and are aggressive about pricing motor fuel to maximize their customer volume and their in-store sales potential.

HIGHER RETAIL COSTS DO NOT MEAN HIGHER RETAIL PROFITS

While retailers set their prices to remain competitive in the marketplace, their profitability at the pump is determined by their costs, which have been increasing substantially inrecent years. According to the Oil Price Information Service (OPIS) weekly report, Retail Fuel Watch, the average national retail price for regular unleaded gasoline has increased 53 cents per gallon from the average of 2006 to the most recent week reported. Meanwhile, retail gross margins (the difference between retail price and wholesale cost) have declined 0.4 cents.

| Year | Average Retail Price | Average Gross Margin | Margin as % |
|---|---|---|---|
| 2006 | $2.558 | 13.8 cents | 5.39% |
| 2007 | $2.785 | 13.8 cents | 4.96% |
| 2008 (through March 21) | $3.088 | 13.4 cents | 4.34% |

Source: Oil Price Information Service

It is important to remember when considering profitability in the petroleum industry, one must not take a snapshot approach. At any given time throughout the year, a retailer may be losing money per gallon sold or may be making more than the averages demonstrated above. However, only by analyzing a complete market cycle can one obtain a clear understanding of aretailer's potential profitability.

There was a time when retailers would receive notification of price changes once a day. The price set in the morning was often sufficient to cover operations for the entire day. Morerecently, however, due to the dynamic nature of the market and the advent of technology, wholesale prices fluctuate several times throughout the day. Given the slim operating margins onwhich retailers operate, they must ensure that the gallons they sell will generate sufficient revenues to purchase the replacement gallons at the new wholesale price. In a perfect world, if they learn their next load will cost an additional 10 cents per gallon, they would increase their retail prices 10 cents to cover the next shipment. Unfortunately, their competitors may not be incurring the same increase in costs and may not enable the retailer to increase prices to that extent, at least not immediately. According to the U.S. Energy Information Administration, the statistical arm of the U.S. Department of Energy, it may take several weeks before a change in the wholesale price of gasoline may be fully reflected in the retail price. (Source: U.S. Energy Information Administration, "Gasoline Price Pass-through," January 2003).

Because of the market delay in passing through wholesale price changes, during periods of escalating wholesale prices, retailers typically experience a decline in gross margins.However, the opposite is true when wholesale prices decline-retailers seek to completely pass through costs previously incurred and to recover their lost margins by holding retail prices steady for as long as competition may allow. But at some point, one retailer in a market will begin to drop prices in search of additional customer volume, and others will follow suit to avoid losing in-store sales.

This is why it is necessary to look at a retailer's operation from the perspective ofa complete market cycle, the duration of which can vary greatly.

A significant cost not represented in the OPIS report of average gross margins is credit card fees. Whenever a consumer uses a credit card to purchase any product or service, the banksthat issue the card and that process the transaction collect a set of fees. For petroleum retailers, this typically equates to about 2.5 percent. As gasoline prices have gone up, so have the fees associated with these transactions. Over the time period represented above when gasoline prices increased from $2.56 to $3.09, credit card fees increased from an average of 6.4 cents to 7.7 cents per gallon. While this increase may not seem significant, to the retailer this automatically reduces potential profitability. Subtracting credit card fees from the OPIS reported margins during that time period, retail profitability declined from 7.4 cents per gallon to 5.7 cents. Credit card companies and their banks now make more per gallon sold than does the retailer. In fact, the convenience and petroleum retailing industry paid $6.6 billion in fees in 2006 while generating only $4.8 billion in pretax profit.

Compounding the impact of credit card fees is the fact that consumers are increasingly turning to this form of payment as prices increase, for a variety of potential reasons. The typicalconsumer does not often carry sufficient cash to pay for a $50 gasoline fill-up, consequently plastic payment has become the default currency for many. For others, their household budgetsmay not have sufficient cash flow to cover increasing fuel expenses, leaving credit as their best option to finance purchases.

CRUDE OIL DRIVES WHOLESALE COSTS

The price of crude oil is a significant factor in the retail price of gasoline. Each month, the U.S. Energy Information Administration reports the breakdown of retail gasoline prices into four sectors: crude oil, taxes, refining, and distribution/marketing. This last category includes all the factors that are incurred after the product leaves the refinery, including pipelines, terminals, distribution and retail. The latest data available is for February 2008 and indicates that crude oil at the time contributed 69.7% to the retail price of gasoline. This is a sharp departure from historic norms. Crude oil's average contribution from 2000 through 2005 was only 45.3%. Meanwhile, the relative contribution of the other components has declined:

| | Price | Crude Oil | Taxes | Refining | Distribution/ Marketing |
|---|---|---|---|---|---|
| **Average 2000-2005** | $1.655 | 45.3% | 26.6% | 15.8% | 12.3% |
| **Average 2006** | $2.569 | 56.0% | 18.1% | 16.7% | 9.0% |
| **Average 2007** | $2.799 | 57.9% | 14.8% | 17.0% | 10.3% |
| **January 2008** | $3.043 | 67.9% | 13.1% | 7.8% | 11.1% |
| **February 2008** | $3.028 | 69.7% | 13.2% | 9.9% | 7.2% |

Source: U.S. Energy Information Administration

RETAILERS STRUGGLE WITH LIQUIDITY

The overall impact on retailers of higher crude oil prices, and the resulting increase in wholesale and retail gasoline prices, is profound. Not only have consumers become more pricesensitive resulting in lower margins, but the overall economics of retail operations have become more challenging. As margins have remained static on a cents-per-gallon basis over the past few years, inventory costs have not.

| | Avg. Rack Price (not including tax/delivery) | Cost of 8,000 Gal. Delivery | Gross Margin per Delivery |
|---|---|---|---|
| **2006** | $1.960 | $15,680 | $1,104 |
| **2007** | $2.180 | $17,440 | $1,104 |
| **2008 (through March 21)** | $2.485 | $19,880 | $1,072 |

Source: Oil Price Information Service

The combination of increased inventory costs with declining profitability has created a potential liquidity crisis for retailers. Retailers now must pay more for the inventory they sell, reducing cash flow and increasing liabilities. Compounding this increase in costs, many retailers incur additional fuel surcharges for each delivery as their distributors seek to cover the increased expense of the fuel required to power their trucks. (Similar surcharges also apply to the delivery of in-store items.) This has greatly reduced the ability of cash flow from fuel sales to purchase replacement gallons.

Consequently, many retailers are forced to extend their lines of credit to keep fuel in their tanks. This has brought with it additional costs. In addition, terms extended to retailers may have historically required payment within 10 days. Now that creditors are seeking to ensure their own liquidity, these terms may have been reduced to 7 days or even fewer. Many of these creditors are actually wholesale distributors servicing multiple retailers and they are running into their own credit limits in their efforts to keep their customers supplied with fuel. As more inventory is purchased on credit, the additional payments of interest have further reduced cash flow.

After months of operating on credit, while wholesale costs have continued to increase and gross margins have remained stagnant or declined, many retailers are approaching the limit of their available credit. This forces companies to delay or suspend investments in their operations and, in the most dire circumstances, threatens their ability to keep fuel in their tanks.

CONCLUSION

It is clear that the price of crude oil has a profound impact on the domestic motor fuels market, and in particular its retailers and their customers. With higher prices, motor fuelsretailers regularly see that increased price volatility reduces already slim margins. In the last few years retailers have continued to see both gross and net margins decrease to the level where they are at historic lows on a percentage basis and the lowest since the the early 1980s on a cents-per-gallonbasis. Quite simply, motor fuels retailers cannot survive on fuels sales alone and have to either reinvent themselves to expand their in-store offers or sell what is often a multi-generation, long-term community-based business.

While motor fuels retailers are as frustrated by the current state of the industry as consumer and policy-makers, I would caution the Senate to proceed carefully when consideringpolicy options. The motor fuels market is critical to the economic welfare of the United States and any legislative or regulatory actions that could disrupt this market, reduce supplies, or cause unnecessary costs to the system, and ultimately consumer, should be avoided whenever possible. I urge Congress to work with motor fuels retailers and other affected groups to come to a solution that addresses the dynamics of the marketplace and affects long-term change.

Thank you for the opportunity to share the perspective of the nation's convenience and petroleum retailing industry on the impact of crude oil prices on the retail motor fuels market. Iwelcome your comments and input at this hearing and in the future on how we can help create a system that addresses our nation's motor fuels challenges and can affect permanent change to a system that frustrates both consumers and retailers alike.

**2006 Average Weekly Prices and Margins**

| Date | Crude Price | Rack Price | Retail Price | Net Retail[2] | Gross Margin | Credit Cards[3] |
|---|---|---|---|---|---|---|
| **January 2, 2006** | $59.82 | $1.668 | $2.197 | $1.742 | $0.074 | $0.055 |
| 9-Jan | $63.39 | $1.782 | $2.292 | $1.833 | $0.051 | $0.057 |
| 16-Jan | $63.74 | $1.743 | $2.323 | $1.863 | $0.120 | $0.058 |
| 23-Jan | $66.79 | $1.774 | $2.323 | $1.863 | $0.089 | $0.058 |
| 30-Jan | $66.82 | $1.757 | $2.332 | $1.872 | $0.115 | $0.058 |
| 6-Feb | $66.59 | $1.747 | $2.342 | $1.880 | $0.133 | $0.059 |
| 13-Feb | $63.06 | $1.627 | $2.296 | $1.834 | $0.207 | $0.057 |
| 20-Feb | $59.37 | $1.596 | $2.241 | $1.780 | $0.184 | $0.056 |
| 27-Feb | $59.93 | $1.657 | $2.238 | $1.777 | $0.120 | $0.056 |
| 6-Mar | $62.27 | $1.758 | $2.281 | $1.820 | $0.062 | $0.057 |
| 13-Mar | $60.89 | $1.801 | $2.381 | $1.889 | $0.088 | $0.060 |
| 20-Mar | $62.64 | $1.946 | $2.472 | $2.008 | $0.062 | $0.062 |
| 27-Mar | $61.36 | $1.912 | $2.500 | $2.036 | $0.124 | $0.063 |
| 3-Apr | $65.67 | $2.021 | $2.558 | $2.092 | $0.071 | $0.064 |
| 10-Apr | $66.56 | $2.112 | $2.650 | $2.182 | $0.070 | $0.066 |
| 17-Apr | $68.85 | $2.231 | $2.769 | $2.300 | $0.069 | $0.069 |
| 24-Apr | $71.87 | $2.347 | $2.891 | $2.420 | $0.073 | $0.072 |
| 1-May | $70.38 | $2.284 | $2.927 | $2.458 | $0.174 | $0.073 |
| 8-May | $72.14 | $2.291 | $2.912 | $2.444 | $0.153 | $0.073 |
| 15-May | $71.50 | $2.342 | $2.917 | $2.450 | $0.108 | $0.073 |
| 22-May | $69.07 | $2.228 | $2.903 | $2.437 | $0.209 | $0.073 |
| 29-May | $70.35 | $2.238 | $2.861 | $2.397 | $0.159 | $0.072 |
| 5-Jun | $71.53 | $2.305 | $2.863 | $2.398 | $0.093 | $0.072 |
| 12-Jun | $71.54 | $2.319 | $2.902 | $2.438 | $0.119 | $0.073 |
| 19-Jun | $69.48 | $2.243 | $2.880 | $2.416 | $0.173 | $0.072 |
| 26-Jun | $69.94 | $2.262 | $2.852 | $2.388 | $0.126 | $0.071 |
| 3-Jul | $72.65 | $2.372 | $2.915 | $2.449 | $0.077 | $0.073 |
| 10-Jul | $74.65 | $2.399 | $2.960 | $2.493 | $0.094 | $0.074 |
| 17-Jul | $75.21 | $2.400 | $2.967 | $2.501 | $0.101 | $0.074 |
| 24-Jul | $73.98 | $2.429 | $2.995 | $2.528 | $0.099 | $0.075 |
| 31-Jul | $73.87 | $2.428 | $3.010 | $2.544 | $0.116 | $0.075 |
| 7-Aug | $75.20 | $2.444 | $3.022 | $2.556 | $0.112 | $0.076 |
| 14-Aug | $75.63 | $2.325 | $3.011 | $2.544 | $0.219 | $0.075 |
| 21-Aug | $71.79 | $2.211 | $2.937 | $2.472 | $0.261 | $0.073 |
| 28-Aug | $72.12 | $2.114 | $2.858 | $2.395 | $0.281 | $0.071 |
| 4-Sep | $70.06 | $1.983 | $2.757 | $2.295 | $0.312 | $0.069 |
| 11-Sep | $67.53 | $1.859 | $2.643 | $2.184 | $0.325 | $0.066 |
| 18-Sep | $63.98 | $1.760 | $2.514 | $2.057 | $0.297 | $0.063 |
| 25-Sep | $61.40 | $1.665 | $2.400 | $1.946 | $0.281 | $0.060 |
| 2-Oct | $61.94 | $1.668 | $2.310 | $1.856 | $0.188 | $0.058 |
| 9-Oct | $59.77 | $1.643 | $2.258 | $1.806 | $0.163 | $0.056 |
| 16-Oct | $58.58 | $1.614 | $2.219 | $1.768 | $0.154 | $0.055 |
| 23-Oct | $58.48 | $1.615 | $2.194 | $1.744 | $0.129 | $0.055 |
| 30-Oct | $58.88 | $1.636 | $2.191 | $1.741 | $0.105 | $0.055 |
| 6-Nov | $58.55 | $1.618 | $2.181 | $1.731 | $0.113 | $0.055 |
| 13-Nov | $59.96 | $1.675 | $2.206 | $1.756 | $0.081 | $0.055 |
| 20-Nov | $57.56 | $1.662 | $2.218 | $1.768 | $0.106 | $0.055 |
| 27-Nov | $57.24 | $1.686 | $2.230 | $1.779 | $0.093 | $0.056 |
| 4-Dec | $62.02 | $1.744 | $2.263 | $1.812 | $0.068 | $0.057 |
| 11-Dec | $62.32 | $1.708 | $2.287 | $1.836 | $0.128 | $0.057 |
| 18-Dec | $61.91 | $1.725 | $2.288 | $1.836 | $0.111 | $0.057 |
| 25-Dec | $62.40 | $1.762 | $2.333 | $1.880 | $0.118 | $0.058 |
| 1-Jan | $60.66 | $1.722 | $2.323 | $1.870 | $0.148 | $0.058 |
| **2006 Average** | **$65.92** | **$1.960** | **$2.558** | **$2.097** | **$0.138** | **$0.064** |

**Source:** Crude Prices: Energy Information Administration, date is set to date reported by OPIS
Rack, Retail, Margin Data: Oil Price Information Service (OPIS), *Retail Fuel Watch*

[2] Net Retail: Retail price less local, state and federal taxes and 1.5 cents freight
[3] Estimated at 2.5% of the retail price

**2007 Average Weekly Prices and Margins**

| Date | Crude Price | Rack Price | Retail Price | Net Retail[4] | Gross Margin | Credit Cards[5] |
|---|---|---|---|---|---|---|
| **January 8, 2007** | $57.76 | $1.661 | $2.309 | $1.856 | $0.195 | $0.058 |
| 15-Jan | $54.11 | $1.544 | $2.248 | $1.796 | $0.252 | $0.056 |
| 22-Jan | $51.51 | $1.477 | $2.176 | $1.726 | $0.249 | $0.054 |
| 29-Jan | $53.57 | $1.538 | $2.145 | $1.695 | $0.157 | $0.054 |
| 5-Feb | $57.11 | $1.604 | $2.168 | $1.715 | $0.111 | $0.054 |
| 12-Feb | $58.99 | $1.667 | $2.207 | $1.754 | $0.087 | $0.055 |
| 19-Feb | $58.41 | $1.716 | $2.253 | $1.798 | $0.082 | $0.056 |
| 26-Feb | $59.57 | $1.816 | $2.329 | $1.874 | $0.058 | $0.058 |
| 5-Mar | $61.64 | $1.940 | $2.459 | $2.000 | $0.060 | $0.061 |
| 12-Mar | $60.85 | $1.963 | $2.527 | $2.067 | $0.104 | $0.063 |
| 19-Mar | $57.94 | $1.977 | $2.550 | $2.090 | $0.113 | $0.064 |
| 26-Mar | $58.26 | $2.021 | $2.583 | $2.121 | $0.100 | $0.065 |
| 2-Apr | $64.18 | $2.124 | $2.667 | $2.203 | $0.079 | $0.067 |
| 9-Apr | $64.82 | $2.203 | $2.755 | $2.289 | $0.086 | $0.069 |
| 16-Apr | $62.85 | $2.294 | $2.840 | $2.373 | $0.079 | $0.071 |
| 23-Apr | $63.06 | $2.233 | $2.859 | $2.392 | $0.159 | $0.071 |
| 30-Apr | $65.26 | $2.389 | $2.928 | $2.459 | $0.070 | $0.073 |
| 7-May | $63.82 | $2.444 | $3.021 | $2.549 | $0.105 | $0.076 |
| 14-May | $61.90 | $2.490 | $3.055 | $2.583 | $0.093 | $0.076 |
| 21-May | $63.61 | $2.601 | $3.158 | $2.683 | $0.082 | $0.079 |
| 28-May | $64.89 | $2.541 | $3.203 | $2.728 | $0.187 | $0.080 |
| 4-Jun | $63.94 | $2.471 | $3.156 | $2.681 | $0.210 | $0.079 |
| 11-Jun | $65.90 | $2.357 | $3.085 | $2.612 | $0.255 | $0.077 |
| 18-Jun | $66.62 | $2.319 | $3.005 | $2.534 | $0.215 | $0.075 |
| 25-Jun | $68.78 | $2.356 | $2.973 | $2.503 | $0.147 | $0.074 |
| 2-Jul | $69.13 | $2.331 | $2.952 | $2.481 | $0.150 | $0.074 |
| 9-Jul | $71.78 | $2.384 | $2.948 | $2.475 | $0.091 | $0.074 |
| 16-Jul | $72.79 | $2.426 | $3.032 | $2.556 | $0.130 | $0.076 |
| 23-Jul | $74.92 | $2.250 | $2.967 | $2.489 | $0.239 | $0.074 |
| 30-Jul | $75.15 | $2.168 | $2.885 | $2.411 | $0.243 | $0.072 |
| 6-Aug | $76.75 | $2.162 | $2.830 | $2.358 | $0.196 | $0.071 |
| 13-Aug | $71.92 | $2.084 | $2.771 | $2.300 | $0.216 | $0.069 |
| 20-Aug | $72.05 | $2.157 | $2.754 | $2.284 | $0.127 | $0.069 |
| 27-Aug | $70.19 | $2.105 | $2.747 | $2.278 | $0.173 | $0.069 |
| 3-Sep | $72.93 | $2.204 | $2.762 | $2.292 | $0.088 | $0.069 |
| 10-Sep | $75.96 | $2.218 | $2.804 | $2.333 | $0.115 | $0.070 |
| 17-Sep | $78.95 | $2.185 | $2.778 | $2.309 | $0.124 | $0.069 |
| 24-Sep | $82.26 | $2.228 | $2.787 | $2.318 | $0.090 | $0.070 |
| 1-Oct | $81.70 | $2.186 | $2.786 | $2.316 | $0.130 | $0.070 |
| 8-Oct | $80.59 | $2.143 | $2.758 | $2.289 | $0.146 | $0.069 |
| 15-Oct | $81.46 | $2.161 | $2.747 | $2.279 | $0.118 | $0.069 |
| 22-Oct | $87.80 | $2.251 | $2.801 | $2.331 | $0.080 | $0.070 |
| 29-Oct | $89.23 | $2.273 | $2.832 | $2.362 | $0.089 | $0.071 |
| 5-Nov | $93.46 | $2.418 | $2.961 | $2.489 | $0.071 | $0.074 |
| 12-Nov | $95.81 | $2.510 | $3.076 | $2.603 | $0.093 | $0.077 |
| 19-Nov | $93.56 | $2.456 | $3.092 | $2.624 | $0.168 | $0.077 |
| 26-Nov | $97.93 | 2.483 | $3.076 | $2.607 | $0.124 | $0.077 |
| 3-Dec | $92.47 | $2.359 | $3.066 | $2.598 | $0.239 | $0.077 |
| 10-Dec | $88.71 | $2.301 | $3.004 | $2.538 | $0.237 | $0.075 |
| 17-Dec | $91.18 | $2.352 | $2.981 | $2.514 | $0.162 | $0.075 |
| 24-Dec | $91.16 | $2.356 | $2.966 | $2.500 | $0.144 | $0.074 |
| 31-Dec | $95.64 | $2.466 | $3.011 | $2.545 | $0.079 | $0.075 |
| **2007 Average** | **$72.21** | **$2.180** | **$2.785** | **$2.318** | **$0.138** | **$0.070** |

**Source:** Crude Prices: Energy Information Administration, date is set to date reported by OPIS
Rack, Retail, Margin Data: Oil Price Information Service (OPIS), *Retail Fuel Watch*

[4] Net Retail: Retail price less local, state and federal taxes and 1.5 cents freight
Estimated at 2.5% of the retail price

**2008 Average Weekly Prices and Margins**

| Date | Crude Price | Rack Price | Retail Price | Net Retail[6] | Gross Margin | Credit Cards[7] |
|---|---|---|---|---|---|---|
| **January 7, 2008** | $98.17 | $2.514 | $3.078 | $2.610 | $0.096 | $0.077 |
| 14-Jan | $94.76 | $2.417 | $3.074 | $2.606 | $0.189 | $0.077 |
| 21-Jan | $91.51 | $2.327 | $3.016 | $2.549 | $0.222 | $0.075 |
| 28-Jan | $89.41 | $2.340 | $2.983 | $2.516 | $0.176 | $0.075 |
| 4-Feb | $91.14 | $2.383 | $2.976 | $2.509 | $0.126 | $0.074 |
| 11-Feb | $89.08 | $2.341 | $2.954 | $2.487 | $0.146 | $0.074 |
| 18-Feb | $94.13 | $2.444 | $2.992 | $2.525 | $0.081 | $0.075 |
| 25-Feb | $99.61 | $2.560 | $3.112 | $2.643 | $0.083 | $0.078 |
| 3-Mar | $100.84 | $2.573 | $3.153 | $2.684 | $0.111 | $0.079 |
| 10-Mar | 103.44 | $2.613 | $3.195 | $2.725 | $0.112 | $0.080 |
| 17-Mar | 109.35 | $2.682 | $3.269 | $2.797 | $0.115 | $0.082 |
| 24-Mar | 105.28 | $2.629 | $3.257 | $2.785 | $0.156 | $0.081 |
| **2008 Averages** | **$97.23** | **$2.485** | **$3.088** | **$2.620** | **$0.134** | **$0.077** |

**Source:** Crude Prices: Energy Information Administration, date is set to date reported by OPIS
Rack, Retail, Margin Data: Oil Price Information Service (OPIS), *Retail Fuel Watch*

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[6] Net Retail: Retail price less local, state and federal taxes and 1.5 cents freight

[7] Estimated at 2.5% of the retail price

The CHAIRMAN. Thank you all very much. I think it's excellent testimony. Let me start questioning.

Mr. Burkhard, let me ask you about your comment, oil is the new gold. That raises some concerns on my part. I think for a long time people have seen gold as something to invest in order to essentially hedge against what is happening in other financial markets. It's a way to hedge against the decline of the value of the dollar.

I think we've seen what's happened to the price of oil, of gold. As more and more people have gone into that market and bought gold or bought gold futures, or whatever it is they're buying. That's something which doesn't affect the daily lives of most people.

It doesn't affect the folks Mr. Eichberger was talking about, primarily in the sense that I don't need to go buy gold everyday to get to work. But in the case of oil, I do have to go buy gasoline refined from that oil to get to work. If we have the same thing happening with oil where it is become a refuge.

I think you referred to it as people investing in oil seeking a refuge from the decline of the value of the dollar. If that is having the effect of driving up the price of oil and thereby impacted what I have to pay in order to get gas to come to work, isn't that something we ought to try to confront and deal with in the financial market some way or other, to try to discourage the investment in oil strictly as a refuge against volatility elsewhere?

Mr. BURKHARD. I don't know if it should be discouraged or encouraged. But what's happening is the impact of the dollar is simply a reflection of broader macroeconomic trends that are underway. The large forces that have been putting downward pressure on the price of oil are really at the roots of oil being viewed as a hedge against inflation.

Oil has a different supply and demand dynamics relative to gold, but because of those dynamics it has placed it in a position where it can act as a hedge against inflation.

The CHAIRMAN. My understanding is the value of the dollar is declining because of our budget deficit, because of our trade deficit,

because of a whole bunch of factors. But I understood your testimony to be that the decline of the value of the dollar is driving up the price of oil.

Mr. BURKHARD. That has been one of the factors that has contributed to it. Yes.

The CHAIRMAN. Therefore we got more and more people just investing in oil in order to find that refuge against declining value in other assets, in this case, the dollar.

Ms. Emerson, you referred, I think, in your testimony to the fact that the physical market does not in any way discourage investment in oil. Should we be doing something? Senator Dorgan in his early comments talked about the margin requirements if you want to go in and buy oil.

Is there anything that should be done in a regulatory way or legislative way to discourage oil from being invested in by folks who have no earthly need to be buying oil?

Ms. EMERSON. There's no quick fix. There's no easy tool for doing that. I would actually agree that the margin requirements should be raised.

The CHAIRMAN. But should they just be raised for oil. I mean, I don't feel a burning desire to raise the margin requirements if someone wants to go out and speculate on gold.

Ms. EMERSON. Yes, I don't think I can speak to the entire range of commodities. But in the case of oil, I do think it seems to be that the ratio between how much money you have at stake and how much you can make is striking. So I think that would be one step to take.

The CHAIRMAN. So you think having a different margin requirement for oil would make sense, a difference than the margin requirement for something like gold.

Ms. EMERSON. Again, I only feel I can speak thoughtfully to the oil situation. I do think that the margin requirements are a little—I do think that's one tool that the Congress has. But I—or legislation would result in.

There really aren't any other easy fixes. I mean, say, drawing down the SPR, which I wouldn't necessarily recommend.

The CHAIRMAN. Mr. Book, did you have any comment on any of this?

Mr. BOOK. I think that that's a—I don't entirely disagree or agree. I think that the margin requirement, it's an experiment that deserves a lot of thought. Senator Dorgan mentioned that there was 20 days of money chasing each day of oil or something like that. I think it may have hit 280 billion, be closer to 30.

The question is whether or not the market requires 30 days of money chases each day of oil in order for it to keep that market well supplied. I'm not sure that we know that. There may be an optimal size. Margin requirements are the way to start that experiment and that's reasonable.

The CHAIRMAN. Senator Domenici.

Senator DOMENICI. Thank you very much, Senator Bingaman. Let me just say to all of you, in particular to you, Mr. Harris, as you represent a larger group within your umbrella organization. I hope the American people understand what you said and what has

been said here today about how much is being invested for oil by people that are not going to use the product.

Investors are not buying a tanker full of oil—they're buying instruments of credit and instruments of purchase and sale and the like. If the people understood that, I guarantee you that they would insist that we find out, absolutely, whether that's impacting on the price of oil. I don't believe they would sit for a minute as a group, the American people, and let the price of oil rise as high as it is if a large percentage of that increase is being driven by speculators who are not going to use the product. That's the people you regulate. Speculators, right?

They're good for America. But for me, after today's testimony, I'm seriously wondering how much we have made by way of mistakes in not further regulating—at least for the American investment—how people could invest in oil that they were not going to use themselves. The more I hear, the more I get concerned.

Please understand all of you at the table, I have heard five or six major and minor reasons that represent traditional factors for high prices. I believe every single one of them. But I somehow believe that maybe there is something else when it comes to the American investor who might be driving this market up because of pure speculation. This is a very rich and ripe market.

I want to also tell you that some of you know I work diligently around here. Some of you think I know an awful lot about what I'm doing. I knew how to proceed when we put the Energy bill together, but I'm telling you I'm learning this one. So don't think I know as much as I knew about the bill we put together for the United States on energy three years ago. This is a very confusing subject that seems to confuse everybody.

I don't think, Mr. Chairman, that just because this is difficult and confusing that we ought to let it go. Some of you testified that speculators are not playing that much of a role. Things may be going alright at some of your firms, but I'm not sure of that, and I'm not sure they're alright for everyone else.

Let me just ask, just to have a little bit of dialog with you. Mr. Cota, I believe you recommended the legislation that Congressman Larson of Connecticut introduced, which would eliminate non- commercial investors in the commodities market. You said that you recommended that approach. I don't assume anything has happened to that bill, has it?

Mr. COTA. It's currently just being introduced right now. Nothing has happened at this point.

Senator DOMENICI. Ok. May I ask, Mr. Harris, do you support that kind of legislation?

Mr. HARRIS. I would focus on the fact that speculators are intimately related to hedging in these markets. I think futures markets in particular. You speak to the fact that nobody buys or sells oil, but futures markets in particular is set up to discover prices and to transfer risk. To the extent that we eliminate an entire group of traders from the market, I think that would be detrimental to both of those functions of the market.

Senator DOMENICI. This would eliminate non-commercial investors in the commodities market, the whole commodities market. Your response is that you don't know what would happen. But

what do you think may happen? Can you tell me why you oppose it? What do you think is going to happen?

Mr. HARRIS. We're not in the business of prognosticating, but I believe, I guess, my statement was that we if we remove an entire group of traders from the market that take on risks that other people don't want that that diminishes or eliminates the entire need for a market. In particular it's futures markets are there to hedge risks and transfer risk from one party to another. I think part of my testimony is showing that the longer term futures contracts in crude oil in particular, signify that people are worried about future prices of oil and speculators and hedgers alike are transacting at longer and longer horizons to try and hedge against those price changes.

Senator DOMENICI. See, I don't know what that means. You're giving me an answer that I don't understand. Explain that to me in ordinary language.

Mr. HARRIS. Somebody who wants to buy oil for instance, they have to contract it. It's not like stopping at the gas station. You can't just get 4,000, four million gallons of oil delivered today. So the futures markets operate in projecting out future needs of purchases of oil.

One of the risks of future needs is that if you need oil next September, you could wait until next September or next August and purchase that oil. The risk that you take in that chance is that oil between now and August goes up in price. So in this regard you might come to the futures market to lock in the price to buy the oil in September.

So you can transfer the risk from your balance sheet or your books right now to some other counter party who's willing to take the risk that oil prices might go up between now and August in our markets. If you eliminate the counter party that is willing to take that risk it puts me, again, at more risk as a producer, as a manufacturer or as a convenience store operator that I don't know on any one day what I'm going to get for the price. I can't lock in a price in the futures market.

Senator DOMENICI. Ok. So that overall set of transactions has some benefit, in your opinion, in terms of investors and the financing of crude oil from the supplier to the ultimate user. Is that right?

Mr. HARRIS. Yes.

Senator DOMENICI. Alright. Ms. Emerson, I appreciated your testimony very much. I understand how hard you have worked on trying to answer some of these questions that seem to you to be intractable.

But you have a chart in your testimony which I think at least puts you on record as giving your best estimates. You've got one chart that shows the factors lifting oil prices. I wish you would have had it blown up so everybody could see. But maybe we'll just talk about it. Based on that chart and the rest of your testimony, can you tell me how much speculation contributes to an $83 barrel of oil?

Ms. EMERSON. This, as you can see, because this chart is only $90 or $85. It was made well before the recent run up in prices.

Senator DOMENICI. Yes. I guessed $83, but how much would speculation contribute to $85 oil?

Ms. EMERSON. You know I'm reluctant to put a specific dollar sign on that because I think what——

Senator DOMENICI. What percent is it?

Ms. EMERSON. I don't think you can even put a percent. I don't think that moves the dialog forward, trying to identify a specific dollar amount for speculation. I think it's, you know, it's—can we say today's price is $85 fundamental and $20 speculation. I think that kind of layer cake analysis it's not really useful to us because——

Senator DOMENICI. Ok, now let me tell you, ma'am, and excuse me. I'm not interested in a view of the layer cake impact. I'm interested in how we can understand the problem. Now if you don't have that box in there at all in your analysis then I would say let's button up the hearing. It's one thing if an expert says there is nothing, no speculation involved. But you say there is some.

Ms. EMERSON. Ok.

Senator DOMENICI. You understand?

Ms. EMERSON. Yes.

Senator DOMENICI. I'd just like to know what percent you think it is because it's rather significant if you look at your chart A. I'm not able to put on exact percent on the "speculation" box—is it about ten percent?

Ms. EMERSON. Let me define speculation and then I'll give you that number.

Senator DOMENICI. Ok.

Ms. EMERSON. Speculation, and I think I want to make a distinction between investment and the casino example used earlier. Speculation, and I think part of the reason of the hearing is in part the purchasing of oil by institutional investors. I think Mr. Book here mentioned the California pension fund purchasing oil.

To me this is buying an asset to hold like you would buy an equity to hold. They're buying that for their members of their pension plan to hold value. That's one kind of speculation. Then on top of that, of course, there is some day-to-day trading that is perhaps a little bit more short term. Not necessarily where you're buying the oil to hold it as an investment in your portfolio.

If I were to add the two of those together to get back to your question, you know, and I had to give you, and this is a gut call. If I had to say, I'd say the fundamental price is probably somewhere in the 1980s or 1990 or 1995 at the most. Probably there is some additional strength in the price as a result of not just sort of the gamblers in the casino, but in terms of actual institutional investors who see this as a way to hold value when they can't hold value necessarily in the equity markets or they want to diversify their portfolio.

Senator DOMENICI. I understand your statement. Your explanation to us now makes sense to me. I just think eventually in my own analysis I have to go back beyond this and see if I could organize in my thoughts what would be the case if we did not permit oil to be speculated upon in any way, even the decent way that you mentioned.

If we, from the beginning, had said that isn't going to be around, I believe there still would have been plenty of capital for oil. I believe people would have invested in it. But they would have been closer to the ultimate user than to the faraway investor.

I can't do that yet, but I can have somebody look at it for me. I thank you very much. Thank you, Mr. Chairman.

The CHAIRMAN. Thank you.

Senator Dorgan.

Senator DORGAN. Mr. Chairman, thank you. Let me make a couple of comments and then ask a couple of questions.

I want to hold up the quote from Mr. Gage who has testified before this committee. This is November 6. I think the price of oil was around $85 then.

But here's what he said. He's one of the top analysts with Oppenheimer. He said there's no shortage of oil. I'm convinced that oil prices shouldn't be a dime above $55 a barrel. Oil speculators including the largest financial institutions in the world, I call it the world's largest gambling hall that's open 24/7. Totally unregulated, like a highway with no cops and no speed limit.

You know, I don't know. Thank you. I don't know what all the facts are. I don't disagree with what's been said. I think the value of the dollar has an impact.

I mean you'd have to be drunk not to understand when you run $800 billion yearly trade deficits you're not going to have some effect on the value of the dollar. I mean, you know, everybody understands that's coming at some point. So, I understand all of this has an impact.

I also think there's a fairly substantial amount of evidence that there's too much speculation. We had EIA, Mr. Caruso say it was about 10 percent of the price. I don't know what it is. He thinks, Mr. Gage thinks it's about $30 a barrel. Mr. Harris, you don't think it's very much.

Now Mr. Harris, I want to tell you. I mean I've read about the speculative bubbles. This is not quite that. I mean I know that they used to sell tulip bulbs during tulip mania for $25,000 a tulip bulb. Sounds a little nuts four centuries later, doesn't it? But it happens. You have speculative binges.

I think there's some speculation going on here. We do have as was referenced by a question a moment ago, we have people involved and interests involved now. They are buying oil they will never get from interest that have never had it all to provide liquidity.

I'm all for liquidity. Every market needs liquidity. I think we're way beyond liquidity here. I understand that, you know, we put on blue suits and then we come and describe what's happening. But we really don't know what's happening except drivers know. Truckers know. Airlines that close their doors know.

We need to think about, as best we can, what kind of a normal market mechanism should exist and how would it work? I'm involved with Carl Levin to try to close the Enron loophole with some of my colleagues. It's an unbelievable loophole.

Mr. Harris, my understanding is that your staffing at the CFTC at a time when we need referees is somewhere near a 33-year low and that third of a century, you're at the low point. At a third of

a century when we've got these run up and these dramatic markets and you're supposed to be the referee. My understanding also is that you come and testify to us based on what you know not on what you can't know because a substantial amount of that, I call it dark money, a substantial amount of that dark money is elsewhere. You can't see it and you don't know it.

It's why, for example, a 32-year-old trader with a hedge fund named Amaranth, as you know, held huge sway over the price this country paid for natural gas not so long ago. It controlled, I think, 70 percent of the natural gas commodities of this country. You all, the CFTC, finally said, that you can't do that, you've got to stop. Finally you said that. They he just went to the intercontinental exchanges. Then you couldn't see him. He continued to do it anyway.

So, you tell us what you know today. I appreciate your being here. But you can't tell us what you don't know. There's a lot that's dark for you.

So, and Mr. Book, you either have bad judgment or bad vision suggesting your performing in front of Elvis here. I mean does anybody here look like Elvis to you?

[Laughter.]

Senator DORGAN. But I appreciated the comment of coming to the Congress, but this is not an Elvis committee. Let me ask——

The CHAIRMAN. I think all of us take exception to that comment.

[Laughter.]

Senator DORGAN. When you said it I immediately leaned over to the chairman. I said, it's unbelievable he would refer to the chairman and the vice chairman as Elvis, but at any rate, we're pleased that you're here.

Mr. BOOK. I think highly of Elvis, sir.

[Laughter.]

Mr. BOOK. You.

[Laughter.]

Senator DORGAN. Let me ask about this issue of margin requirements. It is so interesting to me that if you want to go in the stock market and buy a margin you pay about a 50 percent margin, I think. If you want to go control some oil or natural gas at the moment, you pay 5 to 7 percent. So you can control a substantial amount of the commodity with a very small investment.

Does anybody here think that that ought to be changed? Mr. Cota?

Mr. COTA. Yes, Senator. The amount of leverage that you get in these markets is just tremendous. You're doing ten times the amount of leverage trading by having a low margin requirement in commodities. It should be the same as all other equities because we become an investment tool. It's no longer about the base commodity.

To answer Senator Domenici's question from earlier about how much we're paying to excess speculation. I think it's a minimum of a dollar a gallon. You know that's very significant.

As to your point, Senator Dorgan, which is completely accurate, nobody can prove that because there's no data. The Amaranth's study was done by the Senate Investigations Committee was as close as we got. They had a figure of about 20 percent minimum.

That was back when crude oil was trading about $50 a barrel. So we're way beyond that.

Senator DORGAN. It took them well over a year to do that study. It took them subpoena power. It was something that couldn't have come from our regulators, which I think, describes this deep hole that exists where dark money moves around. Without transparency. I think the market is not working properly.

Now I don't want oil to go back to $10 because I think what happens is you dry up all investment for development here at home. But neither do I want it to go to $110 because investment banks and hedge funds, who never want, in most cases, don't want to take possession of oil ever, just want to effectively gamble in the marketplace. So the victim here is the consumer and the country.

I mean it's not insignificant that two airlines have closed their doors in the last couple days. It's not significant that was on the news last night, the truckers said, you know, we can't continue doing this. So I want the price to be reasonable.

I do think, however, this hearing that the chairman has called, and I appreciate it, is about the issue of speculation. Is there something happening in the marketplace that we don't quite understand that you can trace to speculation? The EIA says yes, but it's only about 10 percent. Others say it's much more. But it has a profound impact and will continue to have a profound impact on this country.

There are certainly other things we have to do. We're going to borrow $800 billion in fiscal policy this year. I know they say that the Federal budget deficit is going to be 400. It's not.

We're going to borrow $800 billion in fiscal policy. We're going to borrow $800 billion in trade policy. That's $1.6 trillion against this economy in 1 year. That's unsustainable.

So I know there are all kinds of other issues. But the price of oil has a profound impact on virtually everything else as well. I think there's a substantial portion of that that has no relationship to supply and demand.

Mr. Harris, do you agree with my analysis that at a critical time when we need a referee, you can't see a lot of what you should be able to see and your staffing is at a 33-year low?

Mr. HARRIS. I think it's a fairly well known fact that we're at historically low staffing. It's a fairly well known fact that we're at historically high volumes in every commodity asset to monitor. So I would be supportive of, I guess, the reauthorization of our, that's pending now in front of Congress. That would be a positive development from our standpoint.

Senator DORGAN. The issue that you can't see a lot of what you need to see in order to really understand all of the markets?

Mr. HARRIS. I think one of the things I wanted to bring forth on my testimony today is that we—in these markets we actually do know quite a bit. The natural gas case with Amaranth in particular, went to highest futures. We also have pending legislation in front of Congress on that to try to close some of those loopholes.

In the crude oil markets though we do have an information sharing agreement with the FSA for instance where's there's a large amount of trading in crude oil in the Brent contract and in ICE Futures UK. We get daily reports from the ICE Futures UK on trad-

ing activity in their markets in addition to the West Texas intermediate on NYMEX. So one of the—and part of our data and the large trader data as well is that we can identify large groups of traders classified by speculators or managed money in the case that I presented today where we can look at what groups of traders are doing. So we do have some tools to dig fairly deeply into these markets where you probably don't have the same capacity, for instance in the stock market, to understand who's buying and selling on a daily basis.

Senator DORGAN. Mr. Chairman, I've exceeded my time. But let me just say what's going on these days with the Fed and our country's decision makers is that there's not a lot of risk for being a big speculator because if you're big enough in this country, we'll just take care of your losses at some point along the way which should raise another discussion, another committee perhaps.

The CHAIRMAN. Thank you.

Senator Barrasso.

Senator BARRASSO. Thank you very much, Mr. Chairman. Following up with Mr. Harris. Alan Greenspan actually 4 years ago, argued that in a tight market where supplies are not easily expanded that the futures investing does impact price. That was a time when oil was at $40 a barrel.

Now watching all your charts, I got the impression that you weren't necessarily agreeing with the former chairman of the Fed on that. Would you like to expand because I see Ms. Emerson moving her head yes, up and down?

Mr. HARRIS. The impression is futures markets do serve a price discovery function. So in the sense that, as I mentioned earlier, people forward contracting looking to purchase oil in the future will use the futures markets to do that. I can't speak to whether I agree or disagree.

We've heard that there's a large speculative premium for a number of years now. One of the issues there is we heard that it was $50 a barrel. Then it's $60 and now we're at $100.

I find it hard to believe that the speculative premium could be that variable over that short a period of time. We do see prices still reacting to fundamental changes in political risk around the world. It seems to make a little bit more sense to me.

Senator BARRASSO. Do you draw a distinction between the markets where you have good oversight? When I think of excessive speculators, there's hedge funds, general asset managers, pension funds or sovereign wealth funds. To me a difference is that sovereign wealth funds do have actually a control over the supply from some nations. Some nations have a wealth funds that have that.

Is that something you feel you have enough information to comment on and if that impact is different than a hedge fund or a general asset manager?

Mr. HARRIS. We do have fairly rich information, I would say. We're aware of the sovereign wealth fund issue. I'm not aware that we identified how sovereign wealth funds trades in our data.

Senator BARRASSO. Mr. Book, then, if I could ask you. You wrote the Associated Press article of March earlier this year where they talked about sovereign wealth funds adding speculative heat to the already red hot market. I think your comment was: while Persian

Gulf sovereign funds would be taking a risk since oil prices could decline, it isn't the worst investment idea you could have, Book added, if you control the oil supply. Would you like to comment on that?

Mr. BOOK. I would love to. I think that if you believe in markets you believe in transparency. If you believe in transparency, you believe in shame. Price discovery and actors in markets who exploit markets routinely should be excluded from markets.

I do believe that fund managers, as a profession, are not the same thing as oil producers as a profession, nor sovereigns as a profession. In fact, the sovereign wealth funds will have an incumbent on them, not just for oil, but for all commodities and all investments to make clear the distinctions in who controls the money and who controls the decisions. I think with clarity there is no problem.

I also, as I suggested in the article, I think that there are reasons why you might not want to do that. You might, if you paid this guy to diversify you out of the oil revenues that make your country go and then he puts you back in oil, that may not be the best performing fund manager you could hire. So it's not clearly the best decision. It may simply reflect, as I said in my testimony, that there aren't a lot of other good investments available right now for professional investment managers of any stripe, whether they be sovereign, hedge, mutual or other.

Senator BARRASSO. Our abilities, in the United States, to regulate sovereign wealth funds in terms of what they're able to do in international markets would be quite limited would you say?

Mr. BOOK. Yes. The way they can invest can be through regulated vehicles. Again I think that the appreciation and their assets under management has occasioned already among the OECD and the IMF vigilance. I think it's appropriate. I also think it's important to not judge before we know.

Senator BARRASSO. Ms. Emerson, in your written testimony you concluded it with consuming governments will be compelled to take action to protect their economies. What specific government policies would you propose or endorse right now in terms of what we as a consuming nation should be, will be, compelled to take to protect our economy?

Ms. EMERSON. The way I see this problem is it's a structural one. There's no quick fix. I think that the kinds of policies that I see as being critical are going to be polices to conserve, to promote fuel efficiency.

I mean, if you look at it from the U.S. prospective, it's all about transportation fuels. It's not about anything else. And we've made some steps last year with raising the CAFE standards and of course the EPA is considering $CO_2$ emissions regulations, which would indirectly improve fuel economy as well.

We just need to be as vigilant and as aggressive on conservation and fuel efficiency as we can be because I don't see us rebuilding a whole lot of spare capacity. We're not going to return to $30 oil, certainly not in my lifetime.

Senator BARRASSO. You had made the issue of transportation fuels. That, Mr. Cota, if I could visit with you for a second. I think

people are able to be good windshield shoppers at 45 miles an hour like Mr. Eichberger talked about driving around.

I drive around the State of Wyoming. All of us drive around our States, long distances between one community and other. You can't shop on that one main street when you're 75 or 100 miles away. You may see a jump in prices, as I did this last week, driving around Wyoming. Maybe 25 cents per gallon and all the prices in one community may be 25 percent higher or lower than another community even though they're all pretty close in price. But that differential of $3 to $3.25 per gallon is a 7-percent difference.

Would you like to comment on that and why that differential can be so great?

Mr. COTA. I think that deferential could exist in the current market simply because of the volatility that's occurred. There has been a 70-cent change in the wholesale price within a 30-day period. So just depending on just a matter of days what could occur within that market could justify that.

There have been a number of days where just the high and the low in some of these contracts has had us spread as high as 20 cents a gallon within the day. That's just one day. So, you know, I get price changes as often as three times a day. Often I don't know what I actually paid until I've actually gotten the invoice the next day and it's draft out of my account. So that would explain that. It goes to underscore the volatility that we have in the markets.

To bring up your point on the sovereign funds, which I think is really critical. That's a national security issue. If you have a sovereign fund that doesn't particularly like the United States and you want to go in a dark market through a derivative type of bilateral deal. You're selling the commodity that you want to also hurt the other guy with, you could make a huge impact for very short money both to jeopardize that economy and maximize your own commodity.

We would have no way of knowing. There is no oversight. You don't even have the data.

Senator BARRASSO. Mr. Eichberger, anything else you'd like to add?

Mr. EICHBERGER. I think Mr. Cota kind of nailed it on the head is that the volatility in the wholesale market is tremendous. I was with a retailer earlier this week who told me over a ree day period he had something like a 20 cent increase in his wholesale cost in one day, a twelve cent drop the next day and an eight cent increase the following day. The volatility is incredible. Retailers are constantly chasing that cost where their competition will allow them to do.

In different markets, competitive pressures are very different. The cost basis of their operations are very different. The distribution challenges of getting product to those retail locations could be very different. So the variables that influence retail price are huge.

Senator BARRASSO. Thank you, Mr. Chairman. I think I've exceeded my time.

The CHAIRMAN. Senator Lincoln.

Senator LINCOLN. Thank you, Mr. Chairman. As usual thanks for bringing us together on an important issue, but a very complicated one as well.

Just a couple of questions. Mr. Harris, you said repeatedly I think that future markets existed to discover prices and limit risk. You just I think answered Senator Barrasso's question with a version of that.

I guess, although I do agree to some degree that that exists in a properly functioning futures market. I guess, would you also agree the flip side of that, that an improperly functioning futures market could distort prices and certainly inadequately limit risk resulting in the kind of excessive speculation that perhaps could exist?

Mr. HARRIS. I totally agree. In fact that's the mandate of our organization is to monitor and investigate any activity that might be deemed suspicious, manipulative or otherwise in the market. So we do have——

Senator LINCOLN. Do you feel like you're agency or your department's got the adequate means to be able to do that?

Mr. HARRIS. I don't work for the enforcement division in particular. I think it's pretty well known again that we're at low staffing levels. We're at record volumes in these markets.

We're doing the best that we can. We have record numbers of enforcement cases as I understand. We have hundreds of investigations going on any given day in these markets to try and make sure that there is no nefarious behavior going on in any market.

Senator LINCOLN. Ms. Emerson, following up on Dr. Barrasso's question about what countries can do. You also, and I'm apologizing because I had to excuse myself and these questions may have been asked, but you did touch on the impact of biofuels and other new fuels and the effect that they could have on the price of oil is certainly of particular interest to me. Many of us come from agricultural-based States and innovative States.

My State has a diversity of feedstocks that could be used. We've got a lot of interest among our Ag community. But also in terms of the innovation and technology that people are looking for in renewable fuels.

I'd like to hear, I guess, more about what you believe and how you believe that maybe, perhaps, that could affect oil markets and what needs to be done to grow those industries properly in a way that could make a positive impact.

Ms. EMERSON. I think biofuels, both in the United States market and also in the global market are, must be seen as a portfolio approach. They're not a magic bullet.

Senator LINCOLN. Right.

Ms. EMERSON. But they certainly can be part of the solution. Obviously they have to be developed in a way that deals with the food or fuel issue and with the inflation issue. So you have to look very closely at the kinds of import, excuse me, input materials and the way in which they're grown.

Then now we have the issue of are they grown in such a way or are the biofuels manufactured in such a way that they use more energy and/or emit more $CO_2$. So I tend to be a little bit of a biofuels skeptic only because I find there's more emotion and ex-

citement than careful planning with biofuels. Maybe that's what you have to do. Maybe you have to start with the excitement and then sort of throttle back and come up with the appropriate plan.

Senator LINCOLN. Second to Hollywood, we're all about glamour here in Washington.

[Laughter.]

Senator LINCOLN. So you may be correct that creating the enthusiasm and excitement for things is what gets us started and then, obviously, practicality. I have a research physician in my house and certainly looking for the practicality. But I know in our State everything from algae to chicken litter, poultry litter to, you know, switch grass and a whole host of other things, looking at those as alternative for fuel and energy are great ideas in a sense that they're feed stocks that make sense and don't necessarily distract from other places in the marketplace. So your point is well taken in terms of making sure that we create that balance in terms of where those feed stocks come from.

Mr. Eichberger, your testimony you mention that the affects of the increased use of credit cards to purchase fuel at convenience stores and the fees that are a part of that transaction. I have just met with my Arkansas marketers, petroleum marketers. I heard an awful lot about that issue.

They, our petroleum marketers, are seeing, as you say, not only the volatility and the fluctuation in terms of price at the pumps. What they have to deal with, but also the lack of transparency. As well as what, you know, when that volatility happens what happens to them in terms of their cost of doing business.

Could you expand any on your testimony as to how extensive you believe that problem is and what your association would see as a solution to that?

Mr. EICHBERGER. It is the number one issue facing the retail market today. In 2006 overall convenience stores paid $6.6 billion in credit card fees. They only generated $4.8 billion in profit.

This is an escalating situation. The card will assess a fee of about two and a half percent on average on every gallon sold. As the price of gasoline goes up, their revenues go up. Yet they have absolutely have no risk in terms of buying product, putting in the ground, making sure you don't release in the environment, making sure that everybody is filling up properly and you're doing all your business operations. They just skim it right off the top.

So as retailers who are constantly chasing the volatile wholesale markets and trying to figure out how they're going to be able to break even on gasoline to see seven and a half cents from every gallon come right out of their pocket, it's a major issue. A lot of retailers are in the situation where it is make or break. If something is not done to level the playing field and give them some relief at the pump, they may not be able to make a profit on gasoline in the long term. It could really destroy their economic well being.

Senator LINCOLN. I appreciate that. You certainly confirmed what I've been hearing at home. So thank you. Thank you, Mr. Chairman.

The CHAIRMAN. Senator Murkowski.

Senator MURKOWSKI. Thank you, Mr. Chairman. Thank you ladies and gentlemen for your testimony this morning.

Mr. Eichberger, listening to you this morning, we recognize that—we're always looking for some scapegoat, somebody to blame. The guy that you're getting the gas from at the pump seems to be the quickest and easiest but it reminds me of, you know, the scene in the airport where you've got the customer who is chewing out the ticket rep there for the cancellation of their flight. To a certain extent the retailers are in that situation. So I think your testimony here this morning was important for people to hear and to understand.

Ms. Emerson, I think you said at least a half dozen times here this morning there is no single answer. There is no silver bullet. This is complicated. This is complex.

But it seems that we are very, very quick to try to attach blame. But if we were to just take some of the profits from the oil companies, all would be fine in the world. I think it is important to understand how many different factors really go into what affects the price of oil. Why we're seeing what we're seeing today.

As I listened to all of you, well, it's not clear to me that any one of you is wiling to attach a percentage or a price on what the speculation is in terms of all those factors that go into the price of oil. We recognize that speculation does play a role, maybe some of you think it's a much more limited role than others. But the other factors, the supply and demand, the geo-political factors, the oncoming role of China and India, it's clear to me that we're looking at this and recognizing all that comes into it.

Mr. Burkhard, in your testimony you mentioned these new fundamentals and the first was the aspect of the cost structure and the reality that the labor and the materials that go into it are just continuing to increase. Then the second of those fundamentals was the global financial dynamics. You speak again of the role of China and India.

I look at those two fundamentals that you've identified and I just see them continuing. Does this mean in your opinion that the price of oil will continue to rise because we're not able to contain these two areas or do we plateau it at some point here?

Mr. BURKHARD. The—first of all can't continue to rise forever. On the cost side, over a long period of time there will be more people and equipment entering the industry. But one important thing to keep in mind is in for most of the 1980s and 1990s for a generation, there is a whole generation of people that skipped entering the petroleum industry because of low prices and industry consolidation. So it's going to take time to reinvigorate the ranks of particularly on the technical side of the oil industry. But 10, 15 years, we hope to see more relief on that front.

On the China, India issue, their aspirations for higher living standards are like anywhere else in the world. But there are limits in terms of price that those countries can take. They are, on average, the per capita income is lower than it is here in the United States.

So when we get to—if we were to have a sustained oil price of let's say 110 to 120. By sustained, I mean 6 months or more, not a day or two. We would expect to see demand, even in those countries start to be negatively affected and push that could over time begin to take some of the pressure off price.

Senator MURKOWSKI. I don't think any of you have specifically mentioned the growing role, the domination really, of the nationally owned oil companies and what role this may play in driving up the prices worldwide. Could someone speak to that? Ms. Emerson?

Ms. EMERSON. It is absolutely the case where we're seeing a shift in the balance of power among oil companies from the integrated majors that we all know to national oil companies around the world. That's in part because they, in their host—in their home countries they hold a lot of reserves. Actually they've become much larger companies and often times they're backed by their government in some of their investments.

I think some commentators have said that this is just all together a bad development. I think that's a too simplistic. I think some of the national companies that I personally deal with are making very big steps to invest in oil production and in oil refining. They will probably significantly impact some of these capacity restraints that we have.

So I think we have to adjust our thinking a little bit to understand that, you know, they're big players too now. It's not just about the Exxons and BP and Shell.

Senator MURKOWSKI. So you're viewing it as a positive in the sense that it will add to capacity.

Ms. EMERSON. Yes. What we're seeing is significant investment in capacity and from many national oil companies or companies that are technically private, but behave a little bit like national oil companies.

Senator MURKOWSKI. But what about their aspect then as a nationally owned oil company to really attempt to control, to what extent they can, the available prices. Are you not as concerned about that aspect of it?

Ms. EMERSON. I think it's a complicated issue. You have to look at national oil companies in terms of whether they are part of a net importing country or part of a net exporting country. So the decisions that a CNPC to a Chinese company would make would be different than a Saudi Aramco would make.

I think in the case of the national oil companies in net exporting countries they're making so much money. They are definitely pumping that, to some degree back into capacity. Not necessarily maybe as much as we would like, but certainly they're building that capacity. That's a good thing.

But it does mean that it's going to be those companies controlling the flow more so than in the olden days when Exxon and Mobil were sort of controlling the flow for the global market. You know, it depends a little bit on how you perceive the objectives of their governments.

Senator MURKOWSKI. Mr. Cota.

Mr. COTA. The national oil companies, the exporting national oil countries and their companies have more subtle yet very large impact. It's in how they are taking the United States dollars, which they will continue to take into diversifying their portfolio. Then they in that way, part of that diversification to get out of United States dollars is to do the arbitrage deals to buy Euros, other foreign currencies and in the last form of cash which is commodities.

So in their efforts in these predetermined arbitrage programs of diversifying their portfolios they are driving up the same thing that they're trying to diversify out of. So they're making a large impact by increasing the price, inadvertently, I don't think directly and inadvertently because they're trying to get out of United States dollars. As the United States dollar goes down everyone's buying commodities worldwide in United States dollars, not just energy. As you diversify out of the United States dollar because that's declining, you're going to go into commodities, which is going to drive the price up and which is going to return more to them.

Senator MURKOWSKI. My time is up, but Mr. Book had a comment. Let me ask him.

Mr. BOOK. Senator, I just—I did speak to that briefly in my written remarks. I just wanted to point out that if you're going to satisfy global petroleum demand, you're going to need an and within demand, not an or. So the good thing about the national oil companies is that as they become richer and gain access to greater technology, they add to global supply on the market, typically when they make the investments that have been discussed.

The other part of and was mentioned earlier, it's bio- fuels, it's alternatives, unconventional sources of petroleum. It is also access where you can have it. We are—I go to Norway sometimes to see clients. They have national sovereign wealth and oil producing, I think they might be importing, but I don't know.

They say they take the—they like to tease me because we don't produce all of our offshore oil. Yet they're one of the greenest, sort of, national economies in terms of their ethos and their culture. They have paired responsible production with conservation. If you're going to get to and, I think responsible production and conservation are both parts of the story.

Senator MURKOWSKI. Alaska wants to help there. Thank you, Mr. Chairman.

The CHAIRMAN. Thank you.

Senator Cantwell.

Senator CANTWELL. Thank you, Mr. Chairman. Panelists, thank you for being here. There was an earlier testimony this week in the House by oil company executives and an executive from Exxon Mobil was quoted as saying, "based on supply and demand fundamentals that they have observed that they estimate the price of oil should be about $50 to $55 per barrel." That's what the oil company executives believe.

I think this hearing is very important. So I'm asking starting with you, Mr. Burkhard and Mr. Book. Did you predict that oil prices a year ago would be at $100 a barrel without a major oil supply shock or disruption? Did either of you predict that?

Mr. BOOK. I'm wrong currently. I have this year's price at $85.

Senator CANTWELL. Mr. Burkhard.

Mr. BURKHARD. We were lower than the current price too because of the impact of the dollar and the rising cost as well.

Senator CANTWELL. If I asked you to predict what oil prices are going to be in 6 months, do you think you could give me a good basis for that?

Mr. BURKHARD. I could describe to you in detail the assumptions that would go into the outlook, but whether that actually happens

or not is a different story. But it's if the dollar does weaken more than it's difficult to see oil prices declining.

Senator CANTWELL. Mr. Book, do you want to comment on that?

Mr. BOOK. I believe in fact that $85 reflects a couple of things that do make sense to me. I'll enumerate them even if I'm wrong about the magnitude. The marginal nonevect barrel is probably $70.

Senator CANTWELL. Ok. Actually you've already made my point, which is just this that we didn't, no one predicted this without a major oil shock. Here's where we are today.

When you are asked to predict again, which is trying to have some predictability in the markets with some certainty so people can hedge with some expectation, so that they can protect themselves. Yet we're basically saying this is all over the map. We don't have the fundamentals here. We don't have the fundamentals that are giving everybody the certainty and predictability we would like to see.

It wasn't that long ago. I became a Senator in 2001 and at that time OPEC was doing all they could to keep oil prices between $22 and $28 a barrel. So my point is this thing is way out of control and it's causing great impact to the economy. I just don't understand why we aren't being way more aggressive.

I plan next week when the FTC is before the Congress committee to ask them to hurry up and expedite the rules that were given to them in the new Energy bill on anti-manipulation provisions to make sure that petroleum markets, just like electricity markets, have the proper oversight. But Mr. Harris, my question is for you, just yes or no. Do you believe in closing the Enron loophole? Yes or no?

Mr. HARRIS. Yes, absolutely.

Senator CANTWELL. So the CFTC will support that. Under your current authority while you may be able to look at the ICE markets, you don't have any ability to do any enforcement of wrongdoing. Is that correct?

Mr. HARRIS. That's right.

Senator CANTWELL. So, a big problem exists today in the fact that we have online trading that doesn't have the enforcement and oversight. So we—to me, I don't care how many people we have. I mean, we ought to be able to, Mr. Chairman, get the oversight.

That reminds me, you know, it took the Snohomish County PUD $100,000 to prove that Enron manipulated markets. It didn't take a lot. It didn't take the FERC to do that. Although they later found that, it took a little industry to bait a little entity to hammer home the point.

My second point is in this chart, Ms. Emerson. If you could—your chart on factors lifting oil prices you have just in time. My question is how much does the industry moving from a 30-day actual physical supply of oil to a just in time trading on paper of supply impacted the market in not having—in basically making a lot tighter supply and thereby more speculation.

Ms. EMERSON. I think, absolutely, the movement to just in time inventories has exacerbated the tendency of the supply chain to respond or prices to respond very quickly to supply chain hiccups. You know back in the 1980s and early 1990s we had as much as

30 days and we're probably around 22 days now of supply that the physical market is holding. To the degree that you reduce your capacity, you reduce your inventories. That, yes, absolutely, you cede control to others in terms of short-term price dynamics because you can't discipline the speculator by dumping some oil into the market.

You know in the olden days we used to talk about Brent squeezes. You know, someone would buy a bunch of Brent cargoes, but Shell or BP would just add another cargo and that would discipline that behavior out of the markets. So yes, you're right without the spare capacity and without the additional inventory it does make short-term speculation or short term trading have a bigger impact.

May I also respond to your other question just to be sure?

Senator CANTWELL. It's up to the chairman. I'm out of time but it's up to the chairman. But I will just say these things are a lot clearer.

Mr. Cota, thank you for your testimony. I think you were very crisp. I think when the oil industry is coming to us saying that they, in fact, see problems in this. It's time for us to clearly list out the things that need to happen and closing the Enron loophole. Basically looking at how to make sure that there's more physical supply for less speculation, making sure that the FTC gets about their job.

It's just clear there is not—we can't go from 2001 at 28 to where we are today at over 100 and then having people play these guessing games and thinking that we're going to have any kind of functioning markets. There's just too much going on here. If we were going to protect our economy we have to be a lot sharper at closing what are the lack of functioning market trends that are absent here. I think they're pretty clear. So, go ahead Ms. Emerson.

The CHAIRMAN. Ms. Emerson, go ahead. Give whatever response you want and then Senator Sessions has some questions.

Ms. EMERSON. I'll just do 2 seconds and that's just to say about this issue of is the fundamental price at $50 or $80 or $90. One of the things that I wanted to make clear in my testimony this morning is that 2007 we had a very strong fundamental development which did move prices well above $50 for supply/demand reasons. So I don't want to leave the impression that the potential speculative premium is something between $50 and $100. It's probably closer to $80 and $100.

The CHAIRMAN. Alright. Senator.

Senator CANTWELL. For a lot of families even that is a big difference. Thank you.

The CHAIRMAN. Senator Sessions.

Senator SESSIONS. Ms. Emerson, it seems a little odd to me that you and Mr. Book seem to think that the national governments that are taking ownership of the oil in their country in contradiction to normal free market principles is not a problem. Mexico has tremendous reserves, yet their production is down. That's generally accepted because of corruption, inefficiency that is typical in these country's governments and in their production capacity.

Isn't that a factor in the decline? Venezuela, showing a decline in their production, has large reserves. Isn't that a factor?

Ms. EMERSON. I absolutely agree that these countries are pursuing policies of resource nationalism. Their policies may or may not be beneficial to consuming governments.

Senator SESSIONS. But I'm talking about their own country. In the short run or at least, it seems to me, they're not very effective in producing oil and putting it on the market. Because they're inefficient and less efficient and productive than private oil companies that have to compete on the marketplace.

Second, isn't the biggest winner in all of this countries who own their oil reserves? When the prices go up dramatically, aren't Saudi Arabia, Hugo Chavez, and people like that just counting the money? Nothing has changed in their country. They have the same amount of production and they're getting more than two times what they were getting just a few years ago for their oil reserves.

Ms. EMERSON. Absolutely. But I would make a distinction that there are different kinds of producers. I wouldn't necessarily put Venezuela and Mexico which are having terrible problems for both political and institutional reasons with some of the Persian Gulf producers who are absolutely investing.

Senator SESSIONS. Is production increasing in some of the Persian Gulf countries?

Ms. EMERSON. Their production capacity is increasing.

Senator SESSIONS. They're taking advantage of these high prices.

Ms. EMERSON. Absolutely.

Senator SESSIONS. A little more effective than some other countries. What is the average? I've heard various figures. I'd like to know what is generally considered to be a fair estimate of the profit that oil companies make today on a gallon of gas. How many cents per gallon?

Mr. Eichberger, you're in the business of——

Mr. EICHBERGER. Yes, Senator. Probably the best proxy you'd have is the Energy Information Administration breakdown on the retail price of gasoline. They do it each month. They break it down to what crude oil contributes, taxes, refining and then everything below refiner.

If you look at the average for 2007 refinery operations and profit was 17 percent.

Senator SESSIONS. 17 percent.

Mr. EICHBERGER. 17 percent.

Senator SESSIONS. So a $3 gallon is 30, 45 percent—45 cents per gallon.

Mr. EICHBERGER. A $3 gallon would be 51. It would be 51 cents on a $3 gallon. But you have to keep in mind that's also their operation cost as well, not just profit.

Senator SESSIONS. Right. I was at a town meeting and a local, one of your guys, I guess, pointed out to me at $100 a barrel at 42 gallons a barrel. He wrote it on a napkin and gave it to me. That's $2.52 right there plus all the other costs that go into it.

But I'm told it only costs in Saudi Arabia about $8 a barrel to produce a barrel of oil to get it out of the ground.

Mr. COTA. Probably less.

Senator SESSIONS. So I mean this is a huge amount of money that's going now perhaps over 80 percent of the oil of the world today is owned by governments. Is that correct? So when the OPEC

meets and they talk about production levels. They control their production. They are taxing the American consumer. That's what they're doing because this is not a free market price. It's a cartel.

OPEC is, in itself, a price fixing mechanism. They work to fix the price. I think one sense of what we ought to do is focus on an internet foreign policy that deals honestly with that question.

I would like to ask, whoever would like to comment on it, a question about diesel fuel. It's very troubling to me the price of diesel fuel is considerably higher, Mr. Eichberger, at your stations than gasoline. It should be less.

Diesel automobiles get 35 to 40 percent better gas mileage, Ms. Emerson, which would be one of the ways to conserve. Fifty percent of Europe's automobiles are diesel. Why are we having such a high price for diesel fuel? Mr. Cota, I see you raise your hand.

Mr. COTA. Part of it has to do with our new flavor of diesel, ultra low sulfur diesel. So we now produce the highest quality diesel on the planet. We were a net importer of diesel prior to having this new standard.

Now with the arbitrage of the dollar and the Europeans having a higher demand. They import diesel and export gasoline. So because the Euro is so strong, our diesel in the United States is going to Europe. Much like our bio——

Senator SESSIONS. I asked the Energy Department that a few weeks ago and they told me we're not exporting diesel to Europe.

Mr. COTA. You can take a look, I, well, I'm not a trader. I don't work for the government. My understanding is that the arbitrage deals are encouraging cargoes in New York Harbor to go to Europe.

Senator SESSIONS. Mr. Burkhard.

Mr. BURKHARD. I think a fundamental reason for that, for the increase in diesel prices, is that is where demand globally has been strongest, China and Europe in particular. The demand for diesel, globally, for several years has been much stronger than gasoline.

Senator SESSIONS. My time is up. But I guess my question is why aren't we seeing any move to refinery? In the pure cost factor, even with the higher grade of diesel fuel that you referred to, it still should be produce-able at less cost than a gallon of gasoline, should it not?

Mr. COTA. It's all what the crack spread is and the refiners say. That's a question for the API group. They can tailor outputs. We are the last economy to focus on gasoline. The rest of the world, as was stated, is moving toward the diesel because it's cleaner and higher efficiency.

Senator SESSIONS. Mr. Chairman, I just hear that a lot from my trucking community.

The CHAIRMAN. Go ahead if you have any additional questions.

Senator SESSIONS. I would like to follow up a little bit on that. It seems to me that there's a slow transition. Would any of you comment on that? A slow transition to a diesel economy. When I ask about it, the Energy Department official said it was a lack of refinery capacity. Mr. Book and Ms. Emerson.

Mr. BOOK. Senator, there's a transition from the light duty vehicle perspective is about 230 million cars and SUVs that have to cycle out of the fleet and diesel vehicles to cycle in. So from the fuel side of the story there is the part of the story have been discussed.

The other part is how do you get higher efficiency vehicles into the fleet and get rid of the ones that were there before?

Scrap yard rates for cars are now at about 5 percent, 5.5 percent, which means you have a 15 to 20 year waiting period. In the 70s the height of that energy crisis, you were in the 12 to 13 percent scrap rate. So to the extent that you can get into a different car, you need to not to just have the new car made, the fuel to put in it, but you've got to get the old one off the road.

Senator SESSIONS. But it's still selling for substantially more than gasoline, which indicates to me that there's a large profit being made.

Ms. Emerson.

Ms. EMERSON. Senator, you raise a really critical question. I think this is the big issue that needs to be addressed. The United States refining industry is configured with catalytic cracking and coking to take medium sour crude oil and turn it into gasoline. We're not configured to maximize diesel production. We're configured to maximize gasoline production.

Right now refiners in the United States are working very hard with their gasoline configurations to make additional diesel because diesel demand is growing. It's growing. It's the only fuel right now that's growing in terms of—and it's growing fast. Part of the reason it's growing is because we're importing Chinese products in San Francisco and driving them to New England.

So it is the trucking demand is what is—so we have a structural problem there in that we have a refinery kit that really wants to make the gasoline. So the refiners are doing what they can to bend and tweak that to make more. They absolutely want to make more. And at the same time we have a very strong demand for.

Mr. EICHBERGER. Senator, if I could also add. I think you heard about the fleet turnover. I think we need also to look at Federal policy to a degree. The auto industry is not really being encouraged to produce a whole lot of the new diesel engines. They're being encouraged for just flexible fuel vehicles, hybrid vehicles, higher efficiency gasoline vehicles. The cars coming in imports are predominately going toward hybrid and the domestic auto manufacturers are going to flexible fuel vehicles.

So there is a preference through Federal policy to go to biofuels, to go to higher efficiency gasoline, the electric hybrid cars rather than going to the cleaner, more powerful, more efficient diesel engines that we've been talking about the last 5 minutes. Until we figure out and get away from this prejudice against new generation, fossil fuel powered vehicles, diesel is not really going to take off in a consumer's mind when you look at vehicles they can purchase from auto manufacturers. I think we need to balance our priorities, looking long-term.

We have a bio-fuel, renewable fuel standard we need to implement. But if we also want to increase fuel economy we need to look at all options and make sure they're all on the table and not prejudiced against one verses the other. I think that's a challenge that we have going forward from a policy perspective.

Senator SESSIONS. My only bafflement is why, with this kind of margin for diesel, we aren't seeing more refining coming forward to meet the demand that already exists?

Mr. COTA. Senator Sessions, with the profitability and refineries are measured in crack spreads. There's a gas crack and there's the distillate crack. Typically in the summer, in the spring and in the fall, refineries will switch their production to maximize whatever they think the seasonal demand is going to be. I think for the first time refineries are looking seriously hard, as was alluded to earlier, about maximizing more diesel.

Truckers are pretty smart when they know about efficiency. Diesels run a lot more efficient. Otherwise we'd be running gasoline-powered tractor-trailers, but we're not. As this trend goes, if the profitability, I mean, the crack spread with distillates is going to remain very high, the refiners will switch the refining over time, but it takes a huge amount of time and a huge amount of capital investment in order to do that. The crackers like $400 million for a refinery or a coker.

The CHAIRMAN. Thank you very much. I think it's been useful testimony. We will try to sort through it and figure if there are any initiatives we can pursue in this committee. Thank you very much.

[Whereupon, at 11:47 a.m. the hearing was adjourned.]

[The following statement was received for the record.]

STATEMENT OF VICTOR J. CINO, PRESIDENT, PYRAMID OIL MARKETING

I. The Clinton and Bush Administration have allowed mergers of oil companies in the last ten years which have decreased dramatically competition in the United States.

Crude oil price began to rise dramatically after four critical mergers of major oil producers, two during the Clinton Administration, and two more during the Bush presidency. In 1998, BP merged with Amoco. In 1999, Exxon merged with Mobil. In 2001, Chevron acquired Texaco, and in 2002, Conoco Inc. merged with Phillips Petroleum. All these mergers reduced the number of competitive oil producers in the marketplace. Less competition led to an easier path to higher crude oil prices.

II. The major oil companies utilized tragic events to foster fear that oil supplies would be disrupted and allowed them to increase prices at will, regardless of ample world supply.

The major oil companies benefited enormously from devastating and tragic events which hit the United States, and which made it easier for them to increase crude oil prices: 9/11; the Iraq War, and Katrina. The average price of oil in 2001 was $17 per barrel, but after 9/11, the average price of crude oil in 2002 went to $24 per barrel. Larger hikes in crude oil occurred in 2003 and 2004 after the Bush Administration went to war against Iraq. Crude prices shot up to $27 per barrel in 2003 and $36 in 2004, doubling the price of a barrel of oil in just three years.

The Iraq War kept prices climbing into the summer of 2005. The price of oil continued its rise above $40 per barrel. Then in the fall of that year, Hurricane Katrina devastated New Orleans, disrupted for a few days, Colonial Pipeline supply heading to the Northeast, shut down, for about two weeks, 20% of refinery production in the Gulf of Mexico, and cut off supply temporarily to the West Coast. Crude oil and gasoline prices soared even though the Northeast and the West coast possessed enough above ground stocks of crude and gasoline supply to last 45 days.

The media mistakenly suggested then that there would be major long term supply disruptions resulting from Katrina, and so the average price of crude oil in 2005 shot up even higher to $50 per barrel. But even though oil and gasoline supply began to flow normally within three weeks, crude oil remained at $50, and oil prices never retreated after Katrina.

Fed by doom and gloom news over oil supply by an overzealous national media aching for shock news, and an oil industry which continued to feed misinformation to the American public. Oil commodity traders began to hike up the value of crude futures, and thus the average price of oil artificially rose again in 2006 to $56 per barrel, doubling the price of oil from its average price in 2003.

Oil traders have played an important role in driving up the price of oil since they have recognized that the major oil companies no longer have any restrictions on its ability to raise prices here in the United States and elsewhere.

III. Major oil companies have a national influence on the media, the Executive branch of the U.S. government as well as the Congress.

Historically, major oil companies have effectively influenced the national media by releasing information conducive to generating fear that oil supply disruptions could occur. This year is no different. A few months ago it was Kurdish rebel attacks coming out of Iraq and into Turkey that would disrupt oil supply. This past week oil strikes in Scotland and Nigeria allowed Traders to hike up oil prices by purchasing oil futures on that news, and oil companies predictably followed suit and did just that, jumping to an incredible $120 per barrel. On Tuesday, April 29, a New York Times article claimed that oil supply was not keeping up with rapidly rising global demand and "the outlook for oil signaled an unprecedented scarcity of oil."

That statement can be no further from the truth as evidenced by the historical twenty five year ability of the oil industry to meet demand world wide crude oil, gasoline and distillates.

The argument that major third world countries are increasing demand so rapidly that oil supply cannot keep up with demand is absolutely false and is not based on the historical data. There is more than ample supply worldwide to meet oil demand. The argument is being used by oil propagandists to help drive up the price of oil worldwide.

The growing economies of China and India would push global energy demand for crude oil in the year 2030 beyond the limits of oil producers to supply. The New York Times reported just a few months ago, but the truth is that oil demand from these two major economies is barely making a ripple in the ability of the oil industry and OPEC to supply world needs.

The price of crude oil also keeps rising because of the political and financial influence of the major oil companies on the Congress and the Bush Administration. Large amounts of political contributions have created enormous oil industry influence in Washington for politicians to stand on the side of big oil and do nothing about rising crude oil prices. The president is from an oil state and his family has strong ties with the Saudis. His administration, consequently, will do nothing to discourage higher crude oil prices.

IV. There is a general apathy on the part of governments and consumers when faced with rising oil prices because the major oil companies have too much strength and financial clout to fight, and now with recent mergers and huge profits, they are more formidable.

Oil and gasoline consumers have demonstrated a distinct indifference to the rising prices of crude oil. It is an apathy based on consumers' essential resignation to the idea that we can do nothing about rising oil prices because of the overwhelming power and financial strength of major oil company producers and oil producing nations.

Given these reasons why crude oil prices are so high, where should the price be? I think the price of a barrel of crude oil today should be close to $50, the price a barrel of crude oil just after Hurricane Katrina hit New Orleans. This price takes into consideration all three major events which adversely affected crude oil prices, and were the events most responsible for a doubling of price from year 2000 when a barrel of crude was $23.

V. Why the price of crude oil is close to $120 per barrel. Oil price increases have been artificially induced to rise by major oil producers, OPEC, oil lobbyists and media friends of big oil. Historical data suggests that crude oil supply has met demand easily.

In the past ten years, worldwide oil demand increased by 12.7 million barrels per day, from 73.3 million barrels per day (mbd) in 1997 to 86 mbd in 2007, but oil producers easily met that additional demand, producing as much crude oil as demand required.

In fact, except for a few short term disruptions to the supply of crude oil, producers have met crude oil demand worldwide for the past thirty years, and have shown during this period how sophisticated and efficiently balanced the system of oil supply and demand has worked, almost to perfection

That stated, there is no viable reason for the current price of crude oil to be hovering at $120 per barrel. Therefore, one must conclude that the current price of crude oil has been artificially induced by the fear of short supply as a result of the three major events that shook the world, and which have provided the major impetus and opportunity for world oil producers to continue to raise prices of crude oil unchecked since 2005.

With an existing balance of supply and demand prevalent, there is no other reasonable explanation as to why oil rose almost 400% from its level of $23 per barrel in year1999 to almost $120, except that the control of oil by the major oil producing countries and big oil, have trumped the law of supply and demand. What can we expect in the near future?

VI. New discoveries of crude oil are clearly demonstrating the world's ability to meet crude oil demand and the record of discovery proves that. It is nonsense for anyone to think that we are running out of oil or in short supply, even for the short term.

I think the discovery of new oil reserves and increased production of oil in African countries, Canada and elsewhere, as well as the development of new technology for extracting oil from the ground, combined with an expected global economic slowdown, will create the conditions for lower oil prices over the next five years.

Angola, with eight billion barrels of proven reserves, is already producing 1.4 million barrels per day, and while Sudan produced a nominal 380,000 barrels per day, that figure is expected to climb dramatically. Chad produced approximately 157,000 barrels per day. More oil producers in the marketplace translates to more competition and lower prices.

Also, the world is finding more oil. Proven crude oil reserves are increasing yearly. Canada is now extracting oil from sand and shale. The U.S. Energy Information Administration asserts that Canada's proven oil reserves exceed 176 billion barrels. Its market for this secure source of oil is the U.S. More oil availability means lower prices.

By contrast, Iraq boasts 115 billion barrels of crude reserves, Iran has 136 billion barrels, and Saudi Arabia, weighs in at 262 billion barrels. There is no doubt that the Saudis can increase oil production at the turn of a spigot, and since the U.S. is prepared to defend Saudi Arabia in an overheated Middle East, it can aid the U.S. by cranking out more oil.

VII. Current levels of proven crude oil reserves worldwide are more than ample to meet crude oil demand for thirty to fifty years.

Total proven crude reserves worldwide stand at an incredible 1.31 trillion barrels. Can anyone seriously believe then that these countries will not be able to meet any kind of increased oil demand for the next fifty years, given the extraordinary amount of oil reserves they have available? The question still remains, however, at what price?

VII. The major oil companies have shifted their refinery production from gasoline to distillates because the refiner gross profit on diesel and other distillate products have risen dramatically to 61 cents per gallon , while the refiner gross profit on gasoline is now just 20 cents per gallon.

United States fuel oil needs are primarily based on the use of consumer and industry demand for gasoline, while economies overseas in Europe, China and India rely more heavily on crude oil. Since the major oil companies are making more money on distillates, they have shifted refinery production to distillates and shipping this product overseas where they can make 61 cents per gallon on diesel, for example.

Consequently, there has been less buildup of gasoline inventory from this shift in refinery production in the United States which would have driven down the price of gasoline as a result of current declining demand resulting from a slowing of the economy.

VII. What can our government do to halt the rising of oil prices in the marketplace when traditional laws of supply and demand are being trumped by the tragic and serious manipulation how then can we as consumers become a factor in reducing oil prices? What can we really do to thwart this seemingly unstoppable rise in oil prices?

A. The government must immediately step in. as President Nixon did in the early 70s and impose price controls on the entire oil industry, particularly where it affects United States consumers: at the refinery gross profit level and at the gasoline pump.

B. Immediately demand the oil companies to begin using their huge profits and vast resources to begin constructing four and perhaps five refineries in strategic locations throughout the United States. Refineries will assist in production dramatically, lessen the impact of shocks to the flow of oil and gasoline into the economy, and make us more independent.

C. Consider the breakup of recent oil mergers mentioned earlier which have caused a complete lack of oil competition and helped contribute to rising oil prices and a downtown turn in the United States economy. For the

long term we can encourage Washington to provide funding for the research and development of hydrogen fuel cells which can replace fossil fuel as a source of energy.

D. We can take seriously the role of renewable energy in meeting our energy needs by demonstrating a serious attitude to increasing the use of soft energy: solar, biomass, that is, wood, landfill gas and ethanol, for example, hydroelectric energy and wind energy. We can express that attitude in a major effort to change our energy sources. Soft energy accounts for 7% of our total energy sources. We need to double that amount in the next five years and oil prices will drop accordingly.

E. We can think conservation by purchasing hybrid automobiles. We can take public transportation in big cities. We can turn off the lights at home and at the office. We can turn down the thermostats at home, We can ride bikes and walk instead of drive. Above all, we need to think about cutting back on our energy usage. If all these efforts come into play, the price of oil will be declining and not rising.

F. The United States Senate needs to take a serious look at commodity traders activities to determine if there has been any manipulation of oil commodities which have driven up the price of crude oil.

# APPENDIX

## RESPONSES TO ADDITIONAL QUESTIONS

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### RESPONSES OF JEFFREY HARRIS TO QUESTIONS FROM SENATOR BINGAMAN

*Question 1.* Do you disagree that increased market participation of institutional investors and increased volatility of oil prices are correlated?

Answer. The Commodity Futures Trading Commission (CFTC) Office of the Chief Economist (OCE) agrees that market volatility can be affected by different traders in the futures markets. We monitor and measure volatility in a number of ways. These include volatility measures using daily and intraday prices from futures markets as well as implied volatility measures computed from prices in markets for options on futures. Generally speaking, we find that volatility in the NYMEX WTI Crude Oil contract has been relatively stable over the past five years, by each of these measures. While oil prices have been rising, the variability of price changes (volatility) on a daily or intradaily basis has not been rising concurrently.

To examine the question of the role and impact of speculative activity in price changes from a year ago, OCE has closely tracked changes in speculative positions to determine if those changes have played a role in pushing prices upwards. We have done this multiple times for various time periods. We have not found a consistent relationship between the positions that speculators take and subsequent price moves, but we continue to closely monitor and test the data.

*Question 2.* I am hoping you can further explain the CFTC's position on the role of institutional investors on oil prices. We had Guy Caruso testify before this committee last month that more than 10% of today's oil prices are likely the result of speculation. On Tuesday, we heard the major oil companies testify before the House Committee on Energy Independence and Global Warming that speculation is an important factor in today's high prices. The other five witnesses on this panel make compelling cases that institutional investors are playing a key role in determining the oil price. Your organization seems to be the lone voice arguing that increased market participants investing in commodities does not affect the price of those commodities.

Answer. At the CFTC, we are very aware of the increase in the price of crude oil and its impact on Americans. We have also heard the statement by some that speculators are the cause of this increase and our analysis has looked very closely to try to find evidence of that. It is true that all futures market participants impact the overall prices of a commodity—that is the very essence of the markets. We are rigorously analyzing the markets daily to discover what is driving these high prices.

Using some of the most comprehensive data available to market regulators anywhere in the world, OCE has closely examined the buying and selling behavior of every group of market participants in crude oil futures markets. Based on our analysis of this data, to date, CFTC staff economic analysis indicates that broad-based speculative or manipulative forces are not driving the recent higher futures prices in commodities across-the-board.

Because our comprehensive data set allows the OCE to know what groups of traders are buying and selling each day and we know how prices change each day, many of our tests examine the relations among position changes by various trading groups, including managed money traders (this category includes hedge funds) and swap dealers (who bring the growing investments of commodity index funds to our markets). OCE has analyzed the behavior of these different trading groups in the crude oil markets over numerous time periods to see whether their buy and sell activities induce daily price changes in the market. The only consistent outcome from these analyses has been that speculative traders appear to react to price changes—that is, speculative traders will be net buyers in the market on the day following price increases and net sellers in the market on the day following price declines.

We consistently find that crude oil price changes are related only to trading arising from groups within our commercial categories (which include producers, manu-

facturers, and others). On days when groups of commercial traders are net buyers in the market, subsequent prices increase and when these traders are net sellers, prices subsequently fall. We consider this evidence that markets are functioning properly. Comparing the various participant categories, commercial traders are the most likely to consistently have information about the fundamental value of oil.

*Question 3.* Does the CFTC believe that other commodities are similarly unaffected by increased investment? For instance, does the CFTC maintain that the price of gold and agricultural commodities is affected only by supply and demand for the physical products?

Answer. Generally speaking, the answer is yes. Based on our analysis, OCE believes that futures markets are generally reflecting supply and demand conditions for the physical products. The fundamental supply and demand conditions in many agricultural markets are very tight, and in many of these markets we have seen very high prices. Ethanol has increased demand for corn. The USDA projects that approximately 30 percent of the current year's corn crop will be used to produce ethanol. This demand increase has, by all accounts, resulted in higher corn prices. In addition, this demand increase is having ripple effects. Land diverted to corn tightens the available supply for other crops, raising the prices for those crops as well as inducing higher dairy and livestock prices because of the increased costs of feed. Poor growing conditions around the world, most especially two successive years of drought in Australia, have reduced wheat supplies. World demand for agricultural commodities continues to be very strong, even in the face of high prices. In addition, other fundamentals such as a weak dollar and increased demand from around the world has impacted the markets.

*Question 4.* According to EIA, the fundamental supply-demand balance cannot explain more than $90 of the current price of a barrel of oil. How would CFTC explain the difference between that price and today's $100+ market prices? Does CFTC feel that it has a more thorough understanding of oil market fundamentals than EIA?

Answer. We are very aware of the increase in the price of crude oil and its impact on Americans. We have also heard the statement by some that speculators are the cause of this increase and our analysis has looked very closely to try to find evidence of that. To date, OCE has not seen any analyses or data that point to a particular target price for oil. As you know, the CFTC is not a price-setting agency nor do we predict prices for commodities, rather the CFTC's mission is to oversee and regulate the trading of commodity futures and options in the U.S.—in which price discovery occurs—and accordingly, our expertise is in this area.

OCE believes the data we collect on a daily basis is adequate for supervising the futures markets and oil trading done on those markets. We have comprehensive and detailed data on various groups of speculators and, based on the buying and selling of these traders, our analysis shows little evidence that changes in speculative positions are systematically driving up crude oil prices.

*Question 5.* Please describe to us the means by which the CFTC goes about educating itself on oil market issues. How many staff positions are dedicated to oil market issues? Does CFTC regularly engage either EIA or private oil market analysts as it seeks to better understand oil markets?

Answer. The CFTC is organized into Divisions with specific areas of expertise, including the Office of the Chief Economist, the Division of Market Oversight, the Division of Clearing and Intermediary Oversight, the Office of the General Counsel, and the Division of Enforcement.

The Commission program that is most directly involved in oil market issues is the Division of Market Oversight (DMO) surveillance program. Four economists are assigned to the oil complex as part of their surveillance responsibilities. (In addition, supervisors and support staff also work on assignments that involve the oil complex.) These market surveillance professionals closely and continuously monitor trading activity in the petroleum futures markets in order to detect and prevent instances of possible price manipulation. Surveillance staff members receive daily reports identifying all large long and short positions in NYMEX petroleum futures and options-on-futures markets. Using these reports, Commission economists monitor trading in the petroleum markets, looking for large positions and trading activity that reveal attempts to manipulate petroleum prices. In addition, our analysts monitor prices and price relationships, looking for price distortions evidencing manipulation. They also maintain close awareness of supply and demand factors and other developments in the petroleum markets through review of trade publications, and through industry and exchange contacts. CFTC surveillance staff routinely reports to the Commission on surveillance activities at weekly market surveillance meetings, including information about market fundamentals and monitoring of trading activity throughout the markets. In addition, surveillance staff, who continually monitor the markets for potential problems, will immediately alert the Commission

and senior staff whenever there are significant, time-sensitive developments in the markets. Staff of the Energy Information Administration (EIA) has attended these surveillance meetings on several occasions. DMO also consults with relevant government agencies (such as EIA in the case of energy products), commercial participants (such as oil producers, consumers and marketers), and independent analysts and information providers (such as Platts or OPIS in the case of energy products).

In addition, the Division of Enforcement (DOE) has a successful history of investigating and prosecuting energy cases. It currently has more than a dozen ongoing crude oil manipulation investigations. In the process of investigating energy cases, DOE trains its professionals on the various nuances of the market. Furthermore, in certain situations, DOE hires professional experts to assist in fully exploring both physical and derivative trading issues.

In the other Divisions, staff work on a range of different market issues, including issues involving crude oil. Generally speaking, the CFTC employs a number of economists, surveillance experts, attorneys, enforcement investigators, and IT professionals who collectively work on crude oil market issues such as surveillance, new product approval, financial integrity, data gathering and analysis, and enforcement.

*Question 6.* If CFTC believes that oil markets tightness alone justifies the current $100+ oil price, I would think that your organization must also believe that removing 70 thousand barrels per day from the market to add to the Strategic Petroleum Reserve is adding to upward price pressure. Could you tell us how much your organization believes the SPR fill is adding to the price of oil?

Answer. Commission staff has not undertaken an analysis of the effect on the cash market for crude oil of removing 70 thousand barrels per day from crude supplies. The Commission's exclusive jurisdiction and thus the primary focus of its regulatory activities centers on the trading of commodity futures and options, rather than the physical market. The CFTC's mission is two-fold: to protect the public and market users from manipulation, fraud, and abusive practices; and to ensure open, competitive and financially sound markets for commodity futures and options. As part of our efforts to prevent manipulation, we monitor cash market information as part of our ongoing surveillance of futures markets, such as the NYMEX crude oil futures market. As a starting point for cash market information on crude oil, we typically look to the EIA.

*Question 7.* It is my understanding that your organization has concluded that there is no relationship between increased market participation and increasingly volatile oil prices because you have not found a statistically-verified causal relationship. It strikes me that causality is very difficult to prove with statistics, and I suspect that no single variable could pass that test at the moment. Have you run similar kinds of statistical analyses on other single variables influencing oil prices—such as OPEC production decisions, or inventory levels—and compared the results?

Answer. While I agree that statistically-verifiable causal relations can often be difficult to demonstrate, I am confident that OCE's analysis is rigorous. Noisy data and small data sets often lead to low power tests—the idea that a test may not be able to uncover a relation that actually exists, for example. As I have noted, however, our tests have uncovered statistically verified relations between groups of commercial traders and price changes, suggesting to me that our analysis is thorough and accurate. We have also taken steps to ensure our conclusions are rigorous, measuring positions of various combined groups (all non-commercial participants lumped together, for instance) and measuring the relation between speculative positions and price changes over different time periods (ranging from the late 1990s through the present) and over various futures contracts (examining positions in the nearby contract alone, positions in the nearby contract and the next month contract combined, etc.).

The CFTC's mission is to oversee and regulate the trading of commodity futures and options in the U.S., and as such our focus and expertise is in that area. While we monitor inventory levels, spot market developments and other macroeconomic factors, our analysis has not included a similarly rigorous look at macroeconomic data.

*Question 8.* Does your organization believe that it has sufficient oversight and regulatory authority to fully understand oil market trading activity? Can you have a complete picture of the market without data on trade in over-the-counter markets?

Answer. As stated in testimony approved by the Commission and given before the Senate Homeland Security and Governmental Affairs Committee on May 20, 2008, "The Commission has the authority it needs to continue to work to promote competition and innovation, while at the same time, fulfilling our mandate under the Commodity Exchange Act to protect the public interest and to enhance the integrity of U.S. futures markets."

There are amendments to the CEA that are now part of the Farm Bill conference report that largely reflect the Commission's recommendations on the need for some additional tools to oversee trading done on Exempt Commercial Markets, as well as the imposition of self-regulatory obligations on these markets. These provisions represent bipartisan efforts to find the right balance of enhanced market oversight and transparency while promoting market innovation and competition. Additionally, the Commission's anti-fraud authority over the transactions on these markets will be clarified and strengthened. Finally, the penalties that may be imposed for violating the anti-manipulation prohibitions of the CEA will be raised from $100,000 to $1,000,000 per violation. The Commission strongly supports this legislation that would give it additional necessary oversight of the markets, particularly energy trading.

The central focus of the Commission's oversight of oil market trading activity is, by mandate of the Commodity Exchange Act (CEA), futures trading activity in oil-related contracts on CFTC-regulated exchanges. The Commission does not have any direct regulatory authority over domestic or foreign oil cash markets, bilateral OTC oil derivatives transactions or oil futures contracts traded on foreign boards of trade.

The CFTC's ability to monitor oil futures contracts traded on CFTC-regulated markets, such as NYMEX's benchmark West Texas Intermediate (WTI) crude oil futures contract, is extremely robust. Traders with positions in regulated exchange contracts like the WTI contract are subject to a daily reporting requirement when their positions exceed a Commission-set "large" position threshold. Large trader position reporting enables CFTC staff to detect whether such traders may be engaging in manipulative conduct. Current position reporting thresholds ensure that about 85-90% of the outstanding open interest in any contract is subject to reporting. When the CFTC's surveillance staff finds that a trader's market behavior is troublesome, it has a number of available powers to correct the condition, including the forced liquidation of the trader's position.

In addition to large trader position reports, the Commission also receives daily transaction data from all of its regulated exchanges. This data provides a complete audit trail of all trades that occur in the contracts listed on those exchanges. The CFTC's surveillance staff uses this data to closely scrutinize trading activity, especially during key trading periods such as the final trading day of a contract.

Of course, with respect to oil products traded on CFTC-regulated exchanges such as NYMEX, the exchanges themselves have independent obligations, under Section 5 of the CEA, to actively monitor their contracts for manipulation and other abusive conduct and to takes steps to prevent such behavior. Given their mutual obligations and interests in this area, staff of the Commission and the exchanges traditionally work very closely together and buttress each other's efforts in deterring and detecting problematic conduct.

Although the Commission does not have any direct regulatory authority over domestic or foreign oil cash markets, bilateral OTC oil derivatives transactions or oil futures contracts on foreign boards of trade, it does have tools that enable it to see a wide swath of activity in these markets. For instance, many bilateral OTC oil derivatives transactions are executed through voice brokers and brought to NYMEX's Clearport facility for clearing. Because all positions cleared through Clearport are subject to the Commission's large trader reporting requirements, the CFTC has a significant insight into who is holding large OTC oil derivatives positions at any one time.

The Commission is likewise able to learn information about activity off of its regulated markets by virtue of the requirement that traders who are subject to the large trader reporting requirement in an exchange-listed futures contract, like the NYMEX WTI contract, must make available to the Commission, upon request, any pertinent information with respect to all other positions and transactions in the commodity in which the trader has a reportable position. This information can include, for instance, the trader's positions on other reporting markets, OTC positions held pursuant to any of the CEA's exemptive or excluding provisions, positions held on exempt commercial markets or exempt boards of trade, and positions held on foreign boards of trade.

To the extent that a Foreign Board of Trade (FBOT) with direct access to US-based members lists any contract that settles off of the settlement price of a contract listed on a CFTC-regulated exchange, the Commission's policy has been to establish information-sharing arrangements with that FBOT or its regulator to gain position information about the linked contract. For example, ICE Futures Europe trades a WTI crude oil futures contract that settles off the benchmark NYMEX WTI contract. Accordingly, the CFTC has an information—sharing arrangement with the UK's Financial Services Authority (FSA) so that CFTC staff receives on a weekly basis position reports for the ICE Futures Europe WTI crude oil futures contract.

During the last week of trading, the position data is reported on a daily basis. With this information, CFTC surveillance staff knows the positions and identities of members/customers who meet or exceed position-reporting requirement levels in the ICE Futures Europe WTI contract, and considers that data along with the large trader reporting information that it receives from NYMEX for its WTI contract.

*Question 9.* Could you comment on whether the reporting requirements for the NYMEX could offer a competitive advantage to trading platforms that are not similarly regulated—such as foreign exchanges, or over-the-counter markets?

Answer. There is no indication that the reporting requirements for NYMEX offer a competitive advantage to trading platforms that are not similarly regulated. Reporting requirements are a necessary component of a good market surveillance program and are designed to prevent such problems as manipulation and artificial pricing. In October 2007, the Commission amended its Rule 18.05 to make explicit that "reportable traders" in the regulated futures markets must disclose all their OTC positions, as well as their cash market and forward market positions, in response to a request from the Commission. See Maintenance of Books, Records and Reports by Traders, 72 Fed. Reg. 60767 (October 26, 2007). In doing so, the Commission asserted that it was highly speculative to conclude, and very unlikely, that market participants would move their trading activity to unregulated or non-transparent venues, or trade at a level below the reportable level on the regulated exchange, in order to avoid the consequences of holding positions that were reportable to the CFTC. The Commission also noted that as traders in the OTC markets have become more aware of credit considerations and the benefits of transparency, they have been moving their positions onto exchanges where the exchange clearinghouse enhances creditworthiness, the market is transparent and reporting requirements are in place. Finally, it should be noted that some FBOTs, including ICE Futures Europe (which is regulated by the FSA), also impose position reporting requirements. Therefore, we believe that it would be highly unlikely that a trader would elect to trade a futures contract on ICE Futures Europe rather than on NYMEX solely because of reporting requirements.

RESPONSES OF JEFFREY HARRIS TO QUESTIONS FROM SENATOR DOMENICI

*Question 1.* In your testimony, there are several charts that reference trading on the New York Mercantile Exchange. Do you have any information or data on transactions occurring on the Intercontinental Exchange?

Answer. Yes. Although the CEA does not currently provide for direct CFTC regulatory oversight over activity on exempt commercial markets (ECMs), such as the Intercontinental Exchange of Atlanta (ICE), the CFTC does have the ability to collect considerable information regarding trading activity on these markets.

Under CFTC Rule 36.3, ECMs are required to provide the CFTC with transaction data for those contracts that average five or more trades per day. This required data is essentially a contract's trade register reflecting the specifics of each trade executed in the contract, including the quantity, price and execution time for each transaction. This data must be provided to the CFTC by way of a weekly report reflecting the daily trading registers for the preceding week. CFTC staff currently receives trade register data for a number of contracts traded at ICE, as well as for contracts at other ECMs.

In addition, the CEA provides the Commission with the authority to issue special calls to ECMs for certain purposes, including obtaining data that it deems necessary to enforce the anti-manipulation prohibition applicable to ECM transactions. In the case of ICE, the CFTC's Division of Market Oversight has issued three special calls requiring ICE to provide ongoing information related to its cleared natural gas swap contracts that are cash-settled based on the NYMEX physical delivery natural gas contract. In each case, the information requested has been analogous to information that the CFTC receives from regulated futures exchanges, including NYMEX.

As noted above, Congress recently approved the Farm Bill conference report which contains, among other things, legislative provisions recommended by the Commission to require large trader position reporting for significant price discovery contracts on ECMs, require ECMs to adopt position limits or accountability levels for such contracts, impose self-regulatory responsibilities on ECMs with respect to significant price discovery contracts and establish CFTC emergency authority over these contracts. We are hopeful that this legislation is enacted soon to give CFTC these additional and necessary authorities.

*Question 2.* To what extent does different regulatory treatment of the U.S. futures exchange as compared to the over the counter market, contribute to higher crude oil prices?

Answer. The CFTC Office of the Chief Economist (OCE) analyzes some of the most comprehensive data available on trading in futures markets. Although there exists a large and robust market for over-the-counter trading in crude oil, the growing volume of trading on NYMEX suggests that U.S. futures exchanges are successfully offering contracts that are attractive to the marketplace. We find little evidence that changes in speculative positions are systematically driving up crude oil prices in these markets. Increased trading activity usually indicates a good level of liquidity in the marketplace. In turn, greater liquidity usually reflects more accurate prices. The OCE has no evidence that different regulatory treatment of exchange-traded futures contracts and OTC contracts leads to higher prices. Indeed, the U.S. regulatory structure in this area has remained largely unchanged during the past decade and yet oil prices have gone up, down and remained steady at various time during this period.

*Question 3.* Can you quantify the number of commercial versus non-commercial investors in the trading of oil contracts?

Answer. Yes, the Commission receives daily reports on all large traders in all regulated futures markets. For the NYMEX WTI Crude Oil futures contract, these reports account for about 97 percent of the long open interest and 96 percent of the short open interest. On April 22, 2008, there were 299 non-commercial traders in this market, who held 40 percent of the long and 35 percent of the short open interest, respectively. On this same date, there were 123 commercial traders, who held 58 percent of the long and 62 percent of the short open interest, respectively.

*Question 4.* he characteristics of the typical commodity investor are changing. In your opinion, do you think this is beneficial for the market? Why or Why not? And what impact has it had on the price of crude oil?

Answer. Markets, in general, provide more accurate prices when participation is high. As noted above, increased participation usually indicates a good level of liquidity in the marketplace, which, in turn, typically generates more accurate prices. Indeed, the increased participation in crude oil futures markets has been a positive development in our ability to monitor and surveil these markets. The CFTC's Division of Market Oversight (DMO) collects data on participant behavior precisely because we are concerned about the prospect for manipulation and other abuses in our markets. The addition of, or growth in, any group of market participants is closely monitored by CFTC staff in this light. The growth in commodity index trading in these markets has been largely mirrored by growth in commercial trading activity as well, and we continue to see a healthy mix of commercial and non-commercial activities in oil futures markets. Given the fact that we find little evidence that changes in speculative positions are systematically driving up crude oil prices in these markets, we see benefits but do not see corresponding negative implications of this growth.

*Question 5.* What type of additional regulation, or oversight, of energy commodities trading would be the most damaging or most beneficial, to the interests of the U.S. consumer?

Answer. Congress recently approved the Farm Bill conference report which contains, among other things, legislative provisions recommended by the Commission to give the agency additional regulatory and enforcement tools necessary to continue to effectively oversee the futures industry. Among other things, the legislation would provide the agency with essential oversight over contracts trading on Exempt Commercial Markets (ECMs)—a type of electronic trading facility offering (among other things) energy derivatives products. Under current law, ECMs are not subject to full CFTC regulatory authority. The new legislation outlines criteria for when an ECM contract should be considered a significant price discovery contract (SPDC) and gives the CFTC the authority to require large trader position reporting for SPDCs; require an ECM to adopt position limits or accountability levels for SPDCs; require an ECM to exercise self-regulatory responsibility over SPDCs in order to prevent manipulation (among other things); exercise emergency authority regarding SPDC transactions. We are hopeful that this legislation is enacted soon to give the CFTC these additional and necessary authorities.

From my vantage point as the Commission's Chief Economist, the futures markets are functioning as intended—to provide risk management and price discovery for market participants. Any policy that would adversely affect these critical functions may have unintended consequences harmful to consumers. Competitive and open future markets require both hedgers and speculators so that commercial interests can hedge their commodity price risks and businesses can rely on discovered prices to plan and commit resources as needed.

*Question 6.* What regulatory policies need to be implemented to assure the competitive workings of energy derivative markets?

Answer. As discussed above, the CFTC is an independent agency with the mandate to regulate commodity futures and option markets in the United States. Broadly stated, the CFTC's mission is two-fold: to protect the public and market users from manipulation, fraud, and abusive practices; and to ensure open, competitive and financially sound markets for commodity futures and options. The Commission utilizes a principles-based regulatory structure. We rely on self-regulation with rigorous federal oversight, which has a long history of ensuring properly functioning futures markets. Nevertheless, when abuses come to the attention of the Commission, they have been investigated and the appropriate enforcement actions taken. The Commission has very broad enforcement authority and during the past seven years the Commission has brought enforcement actions against Enron and BP, dozens of other energy companies, and more than one hundred energy traders. A list of cases filed by the Commission in the energy sector is attached. These cases were based on violations of the CEA ranging from manipulation to attempted manipulation and manipulative acts such as false price reporting.

As noted above, Congress recently approved the Farm Bill conference report which contains, among other things, CFTC legislative provisions recommended by the Commission to require large trader position reporting for SPDCs on ECMs, require ECMs to adopt position limits or accountability levels for SPDCs, impose self-regulatory responsibilities on ECMs with respect to SPDCs, and establish CFTC emergency authority over these contracts. We are hopeful that this legislation is enacted soon to give CFTC these additional and necessary authorities.

*Question 7.* Earlier this week the Secretary of Treasury, Henry Paulson put forth a proposal to combine the Securities Exchange Commission and the CFTC. Does the CFTC support or oppose this proposal? What impact if any would this proposal have on the commodity markets?

Answer. The Commission has not issued a statement opposing or supporting the recommendations of the Secretary of the Treasury's "regulatory blueprint."

CFTC Acting Chairman Walt Lukken has made the following statement in response to the blueprint:

> It is essential to examine ways to enhance the competitiveness of U.S. financial markets and seek improvements to the regulatory structure. Policymakers all strive for good government solutions that protect the public, reduce duplication and enhance competition and innovation. While I am still studying the Blueprint's many recommendations, I applaud Secretary Paulson and the Treasury Department for their work on this critical undertaking and for recognizing the CFTC model of regulation as an advantageous one.
>
> The CFTC utilizes a flexible and risk-tailored approach to regulation aimed at ensuring consumer protection and market stability while encouraging innovation and competition. Congress gave the CFTC these powers with the passage of the Commodity Futures Modernization Act (CFMA) in 2000, which shifted the CFTC's oversight from a rules-based approach to one founded on principles. This prudential style is complemented by strong enforcement against market abuse and manipulation as evidenced by the $1 billion worth of penalties assessed by the CFTC since the CFMA. The regulatory balance fostered by the CFMA has enabled the futures industry to thrive and gain market share on its global competitors with volumes on the U.S. futures exchanges increasing over 500 percent since 2000. During recent economic stress, these risk-management markets have performed well in discovering prices and providing necessary liquidity.

At this stage, it is somewhat preliminary to state what impact the proposal could have on the commodity markets. Notably, the blueprint recommends that the SEC adopt a principles-based regulation of securities exchanges and clearing organizations modeled after the CFTC's principles-based approach, before contemplating combining the agencies.

RESPONSES OF JEFFREY HARRIS TO QUESTIONS FROM SENATOR TESTER

*Question 1.* Oversight is only as good as the information available to the overseers. As the chief economist of the CFTC, do you have all the information necessary to ensure that speculators cannot significantly affect the price of oil, irrespective of the market it is traded on? If not, what can we do to make sure you have all the information you need?

Answer. As stated in testimony approved by the Commission and given before the Senate Homeland Security and Governmental Affairs Committee on May 20, 2008, "The Commission has the authority it needs to continue to work to promote competi-

tion and innovation, while at the same time, fulfilling our mandate under the Commodity Exchange Act to protect the public interest and to enhance the integrity of U.S. futures markets."

There are amendments to the CEA that are now part of the Farm Bill conference report that largely reflect the Commission's recommendations on the need for some additional tools to oversee trading done on Exempt Commercial Markets, as well as the imposition of self-regulatory obligations on these markets. These provisions represent bipartisan efforts to find the right balance of enhanced market oversight and transparency while promoting market innovation and competition. Additionally, the Commission's anti-fraud authority over the transactions on these markets will be clarified and strengthened. Finally, the penalties that may be imposed for violating the anti-manipulation prohibitions of the CEA will be raised from $100,000 to $1,000,000 per violation. The Commission strongly supports this legislation that would give it additional necessary oversight of the markets, particularly energy trading.

The central focus of the Commission's oversight of oil market trading activity is, by mandate of the CEA, futures trading activity in oil-related contracts on CFTC-regulated exchanges. The Commission does not have any direct regulatory authority over domestic or foreign oil cash markets, bilateral OTC oil derivatives transactions or oil futures contracts traded on foreign boards of trade.

The CFTC's ability to monitor oil futures contracts traded on CFTC-regulated markets, such as NYMEX's benchmark WTI crude oil futures contract, is extremely robust. Traders with positions in regulated exchange contracts like the WTI contract are subject to a daily reporting requirement when their positions exceed a Commission-set "large" position threshold. Large trader position reporting enables CFTC staff to detect whether such traders may be engaging in manipulative conduct. Current position reporting thresholds ensure that about 85-90% of the outstanding open interest in any contract is subject to reporting. When the CFTC's surveillance staff finds that a trader's market behavior is troublesome, it has a number of available powers to correct the condition, including the forced liquidation of the trader's position.

In addition to large trader position reports, the Commission also receives daily transaction data from all of its regulated exchanges. This data provides a complete audit trail of all trades that occur in the contracts listed on those exchanges. The CFTC's surveillance staff uses this data to closely scrutinize trading activity, especially during key trading periods such as the final trading day of a contract.

Of course, with respect to oil products traded on CFTC-regulated exchanges such as NYMEX, the exchanges themselves have independent obligations, under Section 5 of the CEA, to actively monitor their contracts for manipulation and other abusive conduct and to takes steps to prevent such behavior. Given their mutual obligations and interests in this area, staff of the Commission and the exchanges traditionally work very closely together and buttress each other's efforts in deterring and detecting problematic conduct.

Although the Commission does not have any direct regulatory authority over domestic or foreign oil cash markets, bilateral OTC oil derivatives transactions or oil futures contracts on foreign boards of trade, it does have tools that enable it to see a wide swath of activity in these markets. For instance, many bilateral OTC oil derivatives transactions are executed through voice brokers and brought to NYMEX's Clearport facility for clearing. Because all positions cleared through Clearport are subject to the Commission's large trader reporting requirements, the CFTC has a significant insight into who is holding large OTC oil derivatives positions at any one time.

The Commission is likewise able to learn information about activity off of its regulated markets by virtue of the requirement that traders who are subject to the large trader reporting requirement in an exchange-listed futures contract, like the NYMEX WTI contract, must make available to the Commission, upon request, any pertinent information with respect to all other positions and transactions in the commodity in which the trader has a reportable position. This information can include, for instance, the trader's positions on other reporting markets, OTC positions held pursuant to any of the CEA's exemptive or excluding provisions, positions held on exempt commercial markets or exempt boards of trade, and positions held on foreign boards of trade.

To the extent that a Foreign Board of Trade (FBOT) with direct access to US-based members lists any contract that settles off of the settlement price of a contract listed on a CFTC-regulated exchange, the Commission's policy has been to establish information-sharing arrangements with that FBOT or its regulator to gain position information about the linked contract. For example, ICE Futures Europe trades a WTI crude oil futures contract that settles off the benchmark NYMEX WTI

contract. Accordingly, the CFTC has an information-sharing arrangement with the UK's Financial Services Authority (FSA) so that CFTC staff receives on a weekly basis position reports for the ICE Futures Europe WTI crude oil futures contract. During the last week of trading, the position data is reported on a daily basis. With this information, CFTC surveillance staff knows the positions and identities of members/customers who meet or exceed position-reporting requirement levels in the ICE Futures Europe WTI contract, and considers that data along with the large trader reporting information that it receives from NYMEX for its WTI contract.

*Question 2.* Is there any practical reason that the Enron loophole should not be closed immediately? Is there any reason that oil futures should be exempted from any CEA requirements, irrespective of the market they are traded on?

Answer. With respect to the first question: No. Adoption of amendments to the CEA contained in the Farm Bill conference report, recently approved by the House and Senate, will close what some have referred to as the "Enron Loophole.

With respect to the second question: Oil contracts traded on regulated futures exchanges are subject to all the regulatory requirements outlined in the CEA. The CFTC amendments that are part of the Farm Bill conference report would require that any ECM contracts that serve a significant price discovery function be subject to regulatory requirements comparable to those that govern trades on CFTC-regulated exchanges.

*Question 3.* Are there any tools or authorities that could be given to the CFTC to better enable your organization to ensure both that the price of oil reflects the true market signals of supply and demand, and that there will not be a significant over investment, in the form of an oil bubble, that could put our economy or energy security at risk? Is your organization sufficiently capable of preventing over speculation and future oil bubbles?

Answer. As discussed above, the CEA amendments that are part of the Farm Bill conference report would significantly enhance Commission oversight over the trading of significant price discovery contracts on ECMs. The Farm Bill amendments would thereby strengthen market surveillance, and also include separate provisions that would enhance CFTC anti-fraud coverage and penalties.

The CFTC has several tools in place to prevent "over speculation." The Commission has utilized its authority to set limits on the amount of speculative trading that may occur or speculative positions that may be held in contracts for future delivery. The speculative position limit is the maximum position, either net long or net short, in one commodity future (or option), or in all futures (or options) of one commodity combined, that may be held or controlled by one person (other than a person eligible for a hedge exemption) as prescribed by a regulated futures exchange and/or by the Commission.

In conjunction with CFTC efforts, the exchanges themselves have independent obligations, under Section 5 of the CEA, to actively monitor their contracts for manipulation and other abusive conduct and to takes steps to prevent such behavior. Given their mutual obligations and interests in this area, Commission staff and the exchanges traditionally work very closely together and buttress each other's efforts in deterring and detecting problematic conduct.

As part of its ongoing surveillance program, Commission staff monitor daily large-trader reports to ensure compliance with Commission and exchange position limits. In order to achieve the purposes of the speculative position limits, both the Commission and exchanges treat multiple positions on an exchange that are subject to common ownership or control as if they were held by a single trader. Accounts are considered to be under common ownership if there is a 10 percent or greater financial interest. The rules are applied in a manner calculated to aggregate related accounts.

*Question 4.* Do you see increased trading of oil futures following events that may decrease the supply of oil, such as geopolitical events or natural disasters? Do these tend to be driven by the users/producers of oil or by the noncommercial investors? If they are driven by the noncommercial investors, would this be considered excessive speculation?

Increased trading in oil futures markets does indeed result from fundamental supply and demand factors like natural disasters and geopolitical events. As risks increase around the world, commercial entities that rely on oil supplies extend their risk management operations further into the future. Recent research by the CFTC's Office of the Chief Economist highlights the fact that crude oil futures contracts now trade out beyond 8 years, whereas the longest-term contracts in 2000 were only 4 years in duration. Participation in these longer-term contracts indicates that commercial traders are looking to lock in future delivery prices in an uncertain environment. Furthermore, in our research, non-commercial traders (including hedge funds) were largely net sellers in contracts beyond 4 years, suggesting that non-commercial traders are not speculating that oil prices will rise further.

RESPONSES OF KEVIN BOOK TO QUESTIONS FROM SENATOR BINGAMAN

*Question 1.* Do you disagree that increased market participation of institutional investors and increased volatility of oil prices are correlated?

Answer. I do not dispute the positive correlation between rising noncommercial volumes and increased volatility, but due to the nature and motivation of noncommercial trading, I do not think the correlation is sufficient to suggest a causal link and I would suggest that reverse causation is possible and even likely. Traders who participate in commodities markets are attracted to volatility. Entire classes of institutional investors pursue "special situations" characterized by risk and uncertainty as a way to diversify their funds under management away from conventional market moves. They may be pursuing the oil market with greater interest as a result of uncertainty and price volatility derived from non-financial events.

*Question 2.* I'd like to explore your statement that many institutional investors see the current price as evidence of the theory that we have reached the global peak oil production capacity. This strikes me as somewhat circular, in the sense that institutional investors are pushing the oil price upward, and then seeing that price increase as evidence of tight fundamentals, which then pushes the price further upwards. Is it your sense that the institutional investors, on balance, believe that we have reached peak oil production capacity? How important is this perception in the current marketplace?

Answer. You are correct, Senator, that I intended to suggest a circularity—investors responding to price signals by investing and, in turn, perpetuating price signals—because that is the nature of the feedback loop that can underlie market bubbles. Your questions are extremely prescient because they get to the heart of what investors do. Investors make money buying and selling securities, not underlying fundamentals. Sometimes it can be more important to short-term investors to know what the market will do next than it is to know what the underlying fundamentals of the market are, or should be. In investment parlance, those who argue fundamentals in the face of market dynamics are often said to be "fighting the tape"—because the nature of free and open markets is that they can fall prey to mobs. I do not believe that many of the better-educated, more-experienced investors I serve are convinced we are at either a geological or logistical "peak" in global oil production, however, and many have expressed their reticence to reposition their portfolios as if this were the case. If more long-term, large-scale investors were convinced we had arrived at peak oil, I would suggest that the stocks of alternative fuels companies—ethanol producers, coal-to-liquids names, natural gas fueling services, as well as companies with advantages in alternative fuels, like Shell and ChevronTexaco—might have displayed tremendous appreciation relative to the market. This has not yet occurred.

*Question 3.* You point out that oil is the most widely traded commodity in the world, as evidence that the oil market is not over-saturated. While it is certainly true that oil is the most actively traded commodity, it is also still a small fraction of the equities market. It seems to me that a small percentage of equities investment moving into commodity markets is still a lot of new activity for the commodity markets. Could you elaborate on why you believe that oil markets are not saturated?

Answer. I offer the volume of oil trading as evidence of market complexity, not as a comment on its saturation. My view that the oil market is not oversaturated derives from the size of the market eight years into the future relative to its size today—the oil market can hold about 100 times more money than it currently does. The out years in the market are less widely invested than contracts with nearer-term expiry dates. My computation in preparation for the hearing was that the open interest in NYMEX crude had an average expiration of 11.59 months. Listed equities have far greater value than commodities, but it seems premature to conclude that wealth transfer from commodities will continue indefinitely. At higher prices, it gets more expensive to buy oil contracts. Selling out of stocks to generate those funds would cause prices of those stocks to fall. Before long, those cheaper stocks—some of which include reserves owned by investor-owned companies—might be better investments than crude itself, and funds flow could reverse.

*Question 4.* How long do you see this strong relationship between the dollar and the price for oil remaining in tact? And, is it safe to say that this relationship would not be as strong without the proliferation of institutional investors in the oil market?

Answer. I believe the inverse relationship between the U.S. dollar and oil futures is likely to continue as long as oil trades in dollars, for reasons that have much more to do with the investment needs of oil producers than the behaviors of noncommercial traders. Ultimately, the currency-adjusted value of oil sales must pay

the oil producer's costs plus a reasonable return on investment. Middle-Eastern oil producers procure services, labor and products for related and supporting sectors of their economies in other currencies, including Euros and Pounds. They also continue to peg their native currencies to the U.S. dollar, not least because a large portion of their national wealth is held in dollars and dollar-denominated instruments. A falling dollar makes it more expensive for oil producers to produce oil and diminishes the value of their national wealth, ultimately encouraging producers to demand a higher price to maintain parity with expectations. I would not conclude that institutional investors necessarily accelerate the rise of crude vis-&-vis the dollar's fall; slower demand and a weaker currency basket in Europe could lower producers' indifference point at the same time that non-commercial traders sell oil futures.

*Question 5.* Historically, we've become accustomed to thinking of high oil prices causing recessions. It seems that this time, we might well be seeing a recession that—through a weak dollar and weak financial markets—is causing high oil prices. In your opinion, would a more healthy U.S. economy, with a stronger currency and a lower risk of inflation, likely result in lower oil prices?

Answer. The challenge of macroeconomic analysis of oil markets is the breadth of subject matter. I am no expert on government fiscal policy and would be hesitant to predicate my answer on the notion that a recession is causing high oil prices. In general, it is reasonable to believe that healthy economies consume more oil. On the other hand, it would be imprudent to discount the structural shift in consumer behaviors likely in the event of a sustained recession and full economic recovery. Drivers who feel the pinch of high prices now are likely, based on historical precedent, to switch into higher-efficiency cars when next they can afford to purchase them. Those cars might be on the road 10-15 years given the high quality of today's fleet and the policy changes to fuel economy standards enacted by this Committee. In this case, you might see a growing economy with flat and potentially even declining oil demand. Whether or not this would offset demand in other regions of the world, however, remains unclear. Countries without market prices for energy often rely on subsidies to maintain civil order, and consumption would need to slow everywhere—a likely outcome of a recession that spreads from the U.S. to its trade partners, not a global recovery—for demand effects to bring prices down.

RESPONSES OF KEVIN BOOK TO QUESTIONS FROM SENATOR DOMENICI

*Question 1.* Is there any benefit to the market for allowing non-commercial investors (speculators) to participate? Do they lead or do they follow?

Answer. Non-commercial investors generally make transactions cheaper. At the theoretical extreme, without non-commercial dollars, either the buyer or seller of oil would either sign longer-term contracts or put more money into every transaction. Longer-term contracts would give market power to sellers in this time of scarcity and could lead to high prices even if oil and oil products demand slowed. Putting more money into every transaction (either because the oil seller would need to borrow money for operations rather than selling forward or because the oil buyer would need to put the money up front first) would increase the cost of transactions even if interest costs were the only factor (about a 5% surcharge at a 10% cost of capital and the 11.59 months' average contract life, but potentially much, much more). As to your second question, speculation of any kind theoretically requires investors to "lead" because they are betting on their expectations of the future, but many of those expectations can be informed by past performance—rightly or wrongly—so it would be fair to say that non-commercials both lead and follow.

*Question 2.* What would happen to the price for oil if the ability of non-commercial investors to participate in the market was limited?

Answer. I would expect the price to rise somewhat, but the effect would depend on the extent of the limits. My prior reply addresses the range of potential price effects at the logical extreme—somewhere between 5% cost of capital effect and perhaps a 100-fold price increase if each barrel sold today incorporated every non-commercial dollar (both ends of the range are unlikely). Any incremental change to the margin requirement or participation rules might produce subtle effects that might take anywhere from one year to eight years to play out given the extent to which the market is invested into the future.

*Question 3.* Does the trading of oil derivatives benefit the American consumer, and if so, how?

Answer. In my view, the American consumer benefits from oil derivatives trading in two principal ways. First, refiners can buy options for oil to hedge against price and supply disruptions. Second, oil sellers—many of whom are publicly traded companies—earn income from derivatives sales that pass through to common shareholders, including American consumers.

*Question 4.* Some analysts see financial flows continually moving from the stock market to commodity markets, seeking the best return at the lowest risk. If this is an accurate characterization of the futures market, to what extent does it raise the average price and volatility of crude oil?

Answer. I echo the conviction that asset managers will always, in the long run, allocate investment capital to its highest-return, risk-adjusted use, but there are short-term limits to the merchantability of different classes of securities, and investors who are chasing returns in any one asset class—whether it be stocks in general, stocks of a certain type, bonds, venture investment, real estate or commodities—may discover that rising prices lower returns and uncertain "exit" windows make the commodities markets unattractive for more than a small portion of their funds under management.

RESPONSES OF KEVIN BOOK TO QUESTIONS FROM SENATOR TESTER

*Question 1.* Oil has become essential to our everyday lives, our economy and our security. Should national security concerns be considered in how oil is regulated and managed? Do you have any concerns with oil becoming the new gold?

Answer. While I appreciate the ways in which oil and gold are similar—as a currency-neutral repository for wealth—I do not think the analogy holds in scale or scope. Gold has valid industrial applications for electronic circuits, but derives its scarcity premium from its value as a precious metal. Oil is useless to most of the world in its raw form—only refiners of oil can typically extract value for themselves—and it takes 420 gallons of oil to add up to a single ounce of gold at today's prices. As a result, I would expect that most of the world's wealthiest people will probably prefer to keep gold in the safe deposit box and the vault, rather than oil.

Moreover, oil's importance to economic security derives from its availability, not its scarcity. The greatest risk the U.S. economy can suffer is a supply interruption severe enough to prevent transportation and industrial activities from occurring. Sudden price changes are also disruptive, but only for the short term. Over the long haul, the U.S. economy is one of the best positioned purchasers of crude oil at any price as long as it is available to markets. As global markets become better supplied and better managed, U.S. wealth becomes its own form of energy security. The best hedge against unanticipated events remains the U.S. Strategic Petroleum Reserve, followed closely by aggressive conservation strategies, alternative fuels programs and end-user education.

*Question 2.* If speculation is found to be artificially inflating the price of oil, what can we do to reduce this? In your opinion, is the CFTC sufficiently capable both of regulating all markets on which oil futures are traded to ensure speculation is not affecting the price of oil and of acting quickly and effectively when problems arise?

Answer. The Committee rightly identified one of the "throttles" that control how funds flow into and out of the commodities market—the margin requirements imposed on traders. To the extent that price levels and volatility occasion a regulatory response, I believe existing CFTC powers are adequate and, in the event the current language of the Senate Farm Bill passes into law, likely to be augmented to include reporting on positions on the Intercontinental Exchange. To your second question, I would offer a somewhat cautionary response: the greater the regulatory burden imposed on any market, the higher the transaction costs associated with trading on that market. As the world continues to globalize outside of the reach of U.S. regulation, I would urge this Committee and its peers to be careful not to drive commerce outside the U.S. to less-well-regulated, less free, less open markets.

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RESPONSES OF SEAN COTA TO QUESTIONS FROM SENATOR BINGAMAN

*Question 1.* Do you disagree that increased market participation of institutional investors and increased volatility of oil prices are correlated?

Answer. Increased market participation of institutional investors and increased volatility of oil prices are correlated. As an ever increasing number of non-commercial investors enter the market to buy commodities as an inflation hedge against the weak dollar, the demand for commodities increases which results in increased volatility and excessively high prices. The weak dollar tends to raise prices for commodities denominated in that currency. They become relatively cheap for non-dollar buyers and offer investors, such as hedge funds, a way to hedge themselves from any further weakening of the U.S. Dollar. Until the dollar appreciates against other currencies, we will continue to see investors flock to U.S. commodities, and their continued investment in commodities will only serve to further dislocate the cost of energy from the very economic fundamentals to which the markets were intended to look for direction.

Currently, there is no regulatory authority or federal law that would limit the amount of money flowing into energy commodities from non-commercial investors. That is why the New England Fuel Institute (NEFI) and the Petroleum Marketers Association of America (PMAA) are looking at possible increases in margin requirements for non-commercial investors to pay up-front before they enter into futures contracts. Stock market investors generally are required to keep more cash in margin accounts (around 50%) whereas futures investors only post margins between 5–7%.

*Question 2.* I understand that your operating costs are substantially increased, and that holding inventory is much more expensive in this high price environment. But could you explain to us why you don't simply pass on the cost to consumers? Why does this affect your margins so strongly?

Answer. Several reasons, some competitive, some due to the lack of sophistication of the small businesses that make up the industry, and some are due to the increased underwriting requirements of banks.

The retail petroleum industry marks up product on a cents per gallon basis, not on a percentage basis. As prices have doubled or tripled, the margins as a percentage have gone down dramatically. On a cents per gallon margin basis, other costs have increased and retailers are slow to recognize them. These expenses include:

- Diesel and other transportation costs have risen and do not show up until after the sales to the consumer have occurred. The average dealer has one day supply of fuel, and these costs appear later.
- Credit limits with suppliers have not increased, yet cost (heating oil specifically but others are similar) have gone from around $1.00 per gallon in 2004 to around $3.50 currently. Limits which allowed payment in 30 days are now reached in 10 days or less. This requires increased Lines of Credit with the local banks and the corresponding increased costs.
- As prices are increasing, it is taking longer for customers to pay for the fuel, further increasing credit line requirement needs.
- Customers are running out of disposable income, and are increasingly using their credit cards for payment. This cost is another 10 cents per gallon which is often not accounted for in the dealer margins. It also increases the cost of credit card transaction fees, a major burden for petroleum marketers, as mentioned in testimony by fellow panelist John Eichberger from the National Association of Convenience Stores.
- Wholesale prices to dealers today change as much as 3 times per day. Dealers often deliver products at higher cost without the corresponding increase to consumers because they do not know what the cost is until after the sale occurs.
- Dealer competition further erodes margin as dealers are reluctant to increase prices in our very competitive marketplace. Our segment of the energy market (retail heating fuel and motor vehicle fuel dealers) is the only one with direct contact with the consumer. Consumers complain, and fuel dealers (wrongly) are reluctant to pass along the increased costs. Finally, at a time when dealers need to rely on their banks more, banks are more rigorous with their underwriting for loans.

These are just some of the reasons why margins are affected, and why the consumer will continue to see increases in costs even if and when prices begin to stabilize.

RESPONSES OF SEAN COTA TO QUESTIONS FROM SENATOR DOMENICI

*Question 1.* How much of the recent $100-plus oil prices we have been seeing can be contributed to speculation?

Answer. While there is much debate on the actual percentage or dollar amount per barrel or per gallon that can be attributed to what I term the "speculative premium," it is clear that the numbers are significant. This is the general consensus of a majority economic analysts and market experts, including OPEC and major American oil companies (as evidenced by Exxon-Mobil's statements before the House of Representative's Select Committee on Energy Independence and Global Warming, only days prior to my own appearance before your committee).

I've have come to the conclusion that excessive speculation on energy commodity markets have excessively driven up the price of crude oil (and, consequently, all refined petroleum products) without the supply and demand fundamentals to justify the recent run-up from about $50-60 dollars per barrel in early 2007, to over $110 today. We have now moved beyond the previous inflation adjusted high of $104 in 1979, but without an equivalent disruption to oil availability that was experienced during that decade. The numbers don't add up.

However, to be able to accurately "add up" all of the numbers, you must have full market transparency. Unfortunately, this is perhaps the biggest barrier to obtaining an accurate percentage calculation of the per barrel cost of non-commercial speculative investment in crude oil, natural gas and other energy products. As I mentioned in my testimony, much of the non-commercial involvement in the commodities markets is isolated to the over-the-counter markets and foreign boards-of-trade, which, thanks to a series of legal and administrative loopholes, are virtually opaque. The U.S. Congress needs to work urgently to remedy this issue and bring full transparency to all trading environments.

Several other energy analysts and national trade ground and consumer groups have agreed with the above and are asking for margin increases. According to Fadel Gheit, Managing Director and Senior Oil Analyst at Oppenheimer & Co. Inc., who testified before the Senate Committee on Homeland Security and Governmental Affairs Permanent Subcommittee on Investigations at the hearing entitled, "Speculation in the Crude Oil Market," stated that "Oil prices were close to $60 in August 2007 and rose sharply to almost $100 in November 2007, although there were no changes in world oil supply or demand. Oil price volatility has attracted a large and growing number of speculators seeking the highest profit in the shortest time. Volatility, however, has an adverse impact on the oil industry because it increases uncertainty, and distorts market fundamentals, which could result in poor investment decisions in securing adequate reliable supply to meet global energy demand."

*Question 2.* In your testimony you mention legislation that Congressman John Larson introduced, which would eliminate non-commercial investors in the commodities market. Do you support this legislation?

Answer. While NEFI and PMAA support efforts to rein in the excessive speculation in order to level the playing field between non-commercial and commercial players, we are still considering Congressman Larson's (D-CT) proposal. NEFI and PMAA's goal is to minimize the role of non-commercial investors in energy commodity markets and return the market power back to the physical players. Congressman Larson's efforts should be further analyzed by a bi-partisan commission or a non-partisan agency (such as the GAO) so that Congress obtains the necessary information to formulate effective policy solutions.

*Question 3.* In your testimony, you discuss regulatory gaps. What regulatory policies do you believe need to be implemented to assure the competitive workings of energy derivative markets, including those that are not regulated under the Commodities Exchange Act?

Answer. First and foremost, Congress must pass the 2007 Farm Bill (H.R. 2419) which includes a very significant amendment added by unanimous consent in the Senate, the "Commodity Futures Trading Commission (CFTC) Reauthorization Act of 2008" (Title XIII). The legislation is an accumulation of numerous studies done by the Senate Permanent Subcommittee on Investigations, the Presidential Working Group on Financial Markets (PWG) and input from the CFTC's Commissioners, energy commodity exchanges, market participants, energy consumers and members of our coalition.

Secondly, revisit the use of the so-called, "no-action letters," issued by the CFTC which allows foreign boards of trade (FBOT) to virtually circumvent U.S. regulatory policy. NEFI and PMAA are especially concerned that the current no-action letter process may have opened a door to domestic exchanges and financial interests looking to trade U.S. Commodities overseas with the intent of circumventing U.S. federal oversight. According to Michael Greenberger, who was previously the Director of the Division of Trading and Markets at the CFTC from September 1997 to September 1999, the "FBOT no action process was initiated for exchanges that were organized and operated in foreign countries. It was never intended for the no action process to apply when foreign exchange obtaining no action FBOT status is bought by a U.S. entity; operated in the U.S. with trading engines in the U.S.; and with U.S. delivery contracts being traded on that exchange. This is now the trading exemption the Intercontinental Exchange (ICE) based in Atlanta, Georgia is operating with U.S. trading engines in the U.S. while trading, inter alia, West Texas Intermediate crude oil contracts." ICE is essentially regulated by the U.K. Financial Services Authority's regulatory requirements which are generally believed by Michael Greenberger to have lax regulatory policy as compared to CFTC's regulation of exchanges and transactions.

Congress should revisit the use of no-action letters by the CFTC. It should determine if legislative correction is necessary in order to bring full transparency and accountability to FBOTs that trade U.S. destined commodities and/or allow U.S. access to their platforms. It should especially examine existing no-action letters to determine if any need be withdrawn in order to preserve stability in the energy markets and in order to protect the American consumer and the economy at-large.

*Question 4.* What type of commodities trading oversight, would be the most damaging or most beneficial, to the interests of the U.S. Consumer?

Answer. The most beneficial type of commodities trading oversight for the interests of the U.S. Consumer would be to restore the authority to the CFTC before the passage of the Commodity Futures Modernization Act (CFMA) of 2000 (Public Law 10-554). NEFI and PMAA consider the definition of "Enron Loophole" to be the collective statutes found in this law that aim to exempt energy commodities from portions of the act and deregulate energy trading.

Of most concern are the following:

- 7 U.S.C. §1(a)(14) which defines energy and metals as "exempt commodities."
- 7 U.S.C. §2(d)(2), (h)(3) and (g), exempt most over-the-counter energy derivatives trades, trading on electronic energy commodities markets and energy swaps.

Additionally, as mentioned above, Congress should review CFTC Regulation 140.99, setting forth the requirements for issuance of no-action letters and other letters of exemption and interpretation. Congress should also evaluate existing no-action letters for withdrawal, as mentioned in the prior answer.

It is our belief that full transparency and accountability requirements, such as those that apply to traditional markets like NYMEX, should apply to all trading environments. What is good for NYMEX is good for ICE, and all OTC and derivatives exchanges.

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RESPONSES OF JOHN EICHBERGER TO QUESTIONS FROM SENATOR BINGAMAN

*Question 1.* Are there any panelists who disagree that increased market participation of institutional investors and increased volatility of oil prices are correlated?

Answer. I am not a crude oil market analyst and NACS does not focus its research on the upstream side of the business, therefore my ability to accurately answer this question is severely limited. I can say that if reports are true and investors are indeed shifting their portfolios to the commodities market to offset the risks inherent in the stock and bond markets, this influx of capital would have an inflationary effect on the price of those commodities. However, I am not qualified to make a definitive cause and effect correlation regarding the actual observed behavior of the crude oil market.

*Question 2.* I understand that your operating costs are substantially increased, and that holding inventory is much more expensive in this high price environment. But could you explain to us why you don't simply pass on the cost to consumers? Why does this affect your margins so strongly?

Answer. Retailers would like nothing more than to pass on to their customers any additional costs incurred in the system. However, competition makes this increasingly difficult. Today's consumer is acutely aware of retail prices and aggressively shops for the best available price.

According to a national survey of more than 1,200 individuals conducted on behalf of NACS between December 2007 and January 2008, 73% of consumers say that price is the most important factor when selecting a retailer from which to buy gasoline. In addition, a sizeable portion of consumers will inconvenience themselves to save money on gasoline: 32% will turn left across a busy intersection for 1 cent per gallon and 29% will drive 10 minutes out of their way to save 3 cents.

According to the NACS State of the Industry reporting financial performance for 2006, motor fuel sales generated two-thirds of a store's revenues but comprised only one-third of gross margins. Sales of in-store items, like coffee and sandwiches, are the primary profit center for a convenience store. To generate sufficient sales inside the store, a convenience store must generate sufficient customer traffic. This necessitates competitive prices at the pump. Retailers are constantly under-pricing one another in an effort to generate greater customer volume with the hopes of selling them more items from inside the store.

Competitive pressures determine what price a retailer may charge for motor fuel and still generate sufficient customer volume. Meanwhile, costs determine a retailer's profitability at the pump. Yet costs can be very different for every retailer and, consequently, the motor fuel margin required to sustain a business model can likewise be quite different. For example, one retailer may experience an increase in wholesale costs of 10 cents per gallon while his competitor's costs increased only 5 cents. Further, each retailer may receive deliveries at different times of the week, thereby exposing each to different wholesale costs (wholesale prices often change several times in one day). Rents and lease terms for each retailer may be different, as might the strength of their inside the store sales, each of which would affect the

break-even calculations on the motor fuel business. Each of these variations in cost structure between competing retailers affects their competitive positioning in the market and potentially compromises their ability to pass through increases in cost while remaining sufficiently competitive in motor fuels prices to attract the requisite number of customers.

RESPONSES OF JOHN EICHBERGER TO QUESTIONS FROM SENATOR DOMENICI

*Question 1.* Can you explain why the price of gasoline did not track oil prices in the last quarter of 2007? Crude oil prices increased by $29 per barrel or the equivalent of $.69 cents a gallon but gasoline prices have increased by $.32 cents per gallon or by half as much. Can you explain the disconnect here, especially when we are seeing the opposite trend since the beginning of the year, when gasoline prices increased by a greater percentage than crude oil prices?

Answer. According to the U.S. Energy Information Administration, the retail price of gasoline can be broken down into four components: crude oil, taxes, refining, and distribution/marketing. The follow chart replicates EIA's reported data:

| | Retail Price | Crude Oil | Taxes | Refining | Dist/Mktg |
|---|---|---|---|---|---|
| July 2007 | $2.965 | 56.8% | 13.4% | 18.4% | 11.4% |
| August 2007 | $2.786 | 60.4% | 14.3% | 13.5% | 11.8% |
| September 2007 | $2.803 | 64.3% | 14.2% | 12.8% | 8.6% |
| October 2007 | $2.803 | 67.6% | 14.2% | 10.1% | 8.1% |
| November 2007 | $3.080 | 68.3% | 13.0% | 10.0% | 8.7% |
| December 2007 | $3.018 | 68.1% | 13.2% | 8.1% | 10.5% |
| January 2008 | $3.043 | 67.9% | 13.1% | 7.8% | 11.1% |
| February 2008 | $3.028 | 69.7% | 13.2% | 9.9% | 7.2% |
| March 2008 | $3.244 | 71.8% | 12.3% | 8.0% | 7.9% |

As can be seen, the refining sector's contribution to the retail price of gasoline during the last half of 2007 diminished greatly while the contribution of crude oil escalated. This was largely the reason why retail prices remained relatively stable during this six-month period—profitability at the refining level was diminishing. Consequently, wholesale prices for gasoline were not tracking upwards with crude oil because most of these raw material costs were being absorbed at the refinery.

It is not reasonable to expect that any corporation could continue operations while sustaining diminishing returns, especially not in the long-term. By the beginning of 2008, the decline in the refining sector's contribution to the retail price of gasoline stabilized. Meanwhile, wholesale prices for gasoline began to climb at the beginning of February. One can look at data reported by the Oil Price Information Service for insight into what has happened thus far in 2008.

| | National Average Wholesale Price* | National Average Retail Price | National Average Retail Gross Margin |
|---|---|---|---|
| January 7, 2008 | $2.514 | $3.078 | $0.096 |
| January 14, 2008 | $2.417 | $3.074 | $0.189 |
| January 21, 2008 | $2.327 | $3.016 | $0.222 |
| January 28, 2008 | $2.340 | $2.983 | $0.176 |

| | National Average Wholesale Price* | National Average Retail Price | National Average Retail Gross Margin |
|---|---|---|---|
| February 4, 2008 | $2.383 | $2.976 | $0.126 |
| February 11, 2008 | $2.341 | $2.954 | $0.146 |
| February 18, 2008 | $2.444 | $2.992 | $0.081 |
| February 25, 2008 | $2.560 | $3.112 | $0.083 |
| March 3, 2008 | $2.573 | $3.153 | $0.111 |
| March 10, 2008 | $2.613 | $3.195 | $0.112 |
| March 17, 2008 | $2.682 | $3.269 | $0.115 |
| March 24, 2008 | $2.629 | $3.257 | $0.156 |
| March 31, 2008 | $2.708 | $3.268 | $0.090 |
| | Change: + $0.194 | Change: + $0.190 | Average: $0.131 |

*OPIS Rack prices do not include taxes and freight.

The wholesale price of gasoline has increased to the same degree as has the retail price of gasoline, although not always on the same schedule as can be seen looking at the volatility in retailer gross margins over the first quarter of 2008. Part of the reason for the increased price at wholesale could be found by analyzing the trends in EIA data which show that the refining sector's contribution to the retail price of gasoline stopped its downward spiral in 2008, thereby more completely transferring increases in the price of crude oil to the wholesale price of gasoline.

It is also instructive for Congress to consider the annual cycle of gasoline prices when considering the influences on the current market. NACS has been tracking the retail price of gasoline on a weekly basis since January 2000, using data reported by EIA. Analyzing this data, one can identify certain times throughout the year during which retail prices have historically escalated. One of these periods is February through June, during which time the motor fuels supply transitions from winter-specification fuel blends to summer-specification blends.

In the winter, gasoline is formulated with a higher evaporative tendency. This makes it easier for vehicles to start in the cold winter months. In the summer, however, these fuel formulations combine with warmer weather to contribute to the formation of smog. Therefore, in the summer months, the evaporative nature of gasoline (measured in terms of Reid Vapor Pressure and expressed as volatility) must be reduced. This requires refiners to remove additional components from their gasoline blends, leading to fewer gallons available from each barrel of oil and a higher cost of production.

In February, refineries begin the process of drawing down winter-blend fuels, which typically can't be delivered to wholesale outlets after May 1. (Some fuel blends are required weeks or months earlier, further complicating the system.) To accommodate these deadlines, refiners must estimate fuel needs months in advance and begin producing the more expensive summer-grade gasoline in February. Consequently, any unexpected increase in demand can significantly decrease the supply of winter-grade gasoline, causing the retail price of gasoline to increase while stocks of the more expensive summer-grade gasolines are built up.

The duration and the severity of the spring price increase has varied over the past eight years. Between 2000 and 2006, prices increased an average of 30-plus cents each spring from early February to the seasonal peak. In the past two years, increases in crude oil prices have likely contributed more to the retail price than has the spring transition and separating the two is very difficult. However, during the time frames in question the retail price of gasoline has increased $0.707 in 2006 and $1.044 in 2007.

Understanding how environmental policy, such as that establishing seasonal volatility standards, affects the production and supply of motor fuels is important when considering the overall performance of the market.

*Question 2.* In your testimony, you state that the price of crude oil is a significant factor in the retail price of gasoline and that consumers feel the pressure of higher gasoline prices. In your opinion what is the key to making gasoline prices cheaper?

Answer. Regardless of external influences, economics dictates that when supplies for any object are greater than the relative demand, prices will decline. For years, retailers have been constant advocates for more plentiful and fungible motor fuel supplies. NACS led the charge to stop the further proliferation of boutique fuels because the resulting patchwork of fuel regulations inhibited the efficient distribution of fuels to market, thereby increasing costs. There are several examples in which additional supplies have mitigated increasing prices. Three such examples include:

- When the fuel additive MTBE was removed from the gasoline pool in the spring of 2006 and the reformulated gasoline markets on the eastern seaboard had to switch to ethanol, there was not enough supply in that particular market at that particular time and ethanol prices spiked to more than $200 per barrel on the spot market. An influx of Midwestern and Brazilian ethanol offset the supply shortage and prices came back down.
- In the aftermath of Hurricanes Katrina and Rita, the Environmental Protection Agency utilized its newly authorize authority to waive certain regulations concerning on-road diesel fuel. This successfully increased supplies and mitigated price spikes, keeping America's trucks on the road.
- Also in the aftermath of Hurricanes Katrina and Rita, the rapid escalation of retail gasoline prices resulted in a substantial increase of imported gasoline from Europe and other locations. The surge in imports helped balance supplies with demand and put downward pressure on retail prices.

If substantial inventories of additional crude oil were brought onto the market, despite the non-commercial activities in the commodities exchanges, I believe that prices would begin to withdraw from their highs. Furthermore, if additional supplies were to have a dampening effect on prices, it is conceivable that non-commercial investors would begin to transfer their capital away from the crude oil commodities market and invest in markets with more favorable economic indicators for long-term return.

The United States Congress must consider opportunities to increase the physical supply of transportation fuels. The Energy Independence and Security Act of 2007 created a bold program to require the use of 36 billion gallons of renewable fuels. This is a component of the solution, but even with revolutionary developments in the production of these renewable fuels, petroleum-based fuels will continue to be the primary energy source for the United States for the foreseeable future and policies must not discount this fact.

The market will respond to additional supplies of transportation fuels, but it will respond more quickly to additional supplies of transportation fuels which are compatible with the existing distribution infrastructure. The more investment required to accommodate a new fuel product, the slower and more costly will be its adoption by the market. Congress would do its constituents a great service by focusing its efforts on promoting the availability of fungible and compatible transportation fuels. This can be and should be done concurrently with efforts to develop and market the next generation of energy sources.

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RESPONSES OF SARAH EMERSON TO QUESTIONS FROM SENATOR BINGAMAN

*Question 1.* Do you disagree that increased market participation of institutional investors and increased volatility of oil prices are correlated?

Answer. No, I agree that the increased market participation of institutional investors has contributed to crude oil price strength in the futures markets. Under a strict definition of price volatility (frequency of price changes), I am not certain that the institutional investors have specifically influenced volatility.

*Question 2.* You note that "the physical oil market has not discouraged or disciplined investors . . . " I agree with this statement, and believe that OPEC has failed to calm markets to the maximum extent of its ability. Could you talk to us about why OPEC might not be making a concerted effort to calm markets, as it has done in the past?

Answer. OPEC's ability to calm markets is limited by all the other bullish factors affecting price. With tight capacity all through the supply chain, any disruption or event related to oil markets is interpreted in a bullish manner. OPEC adding crude to the market to soften prices does not have the significant impact it had back in the 1980s and 1990s when spare capacity in the supply chain made the entire market more sensitive to supply increases. In other words, from a supply/demand point

of view, there was more downside price risk in the past than there is today. So, for OPEC to calm the markets today they would have to embark on a significant campaign to soften markets, raising production significantly and discounting their prices. At this point, there is not enough consensus in OPEC to embark on this campaign. That lack of consensus is in part because OPEC is worried about a recession in the US and more broadly in the rest of the world. They don't want to add crude to the market if demand is slowing down. I think it is clear that there are differences of opinion within OPEC as to the optimal price level. Some countries are very concerned that the high prices will destroy demand. Other countries with more pressing fiscal requirements are less concerned about the long term impact on demand and alternative fuels of high prices. The other point to keep in mind is that the majority of OPEC crude oil is medium sour quality and yet the growth in demand is in clean sweet transport fuels, so additional OPEC crude does not provide a substitute for WTI which is a light sweet crude oil. As a result, additional OPEC crude is helpful to the degree that it can go through the sophisticated refiners of the world to make the clean petroleum products. That's not to say additional OPEC crude isn't helpful, it just has more of an arm's length impact on light sweet oil prices on the futures exchanges.

*Question 3.* You refer to government policy as an unknown variable that will affect future oil prices. Is it reasonable to predict that government policy success in reducing U.S. oil demand—reaching what Mr. Book referred to as our "peak appetite for oil"—would lead to downward pressure on oil prices?

Answer. To the degree that we can slow our demand growth for transportation fuels, we would remove a significant component of global oil demand growth (not withstanding the current slowdown in economic growth and oil demand). Oil demand growth would be concentrated in Asia and the Middle East. Oil prices would be weaker than if we did nothing and our economy would be more insulated from oil prices.

*Question 4.* How long do you see this strong relationship between the dollar and the price for oil remaining in tact? And, is it safe to say that this relationship would not be as strong without the proliferation of institutional investors in the oil market?

Answer. I do not have any idea how long this will last, but as the Fed continues to lower interest rates and the US economy slows, it is hard to see any reason for the dollar to strengthen, so I believe we are stuck in the current mutually-reinforcing situation between the weak dollar and strong oil for some time to come.

*Question 5.* Historically, we've become accustomed to thinking of high oil prices causing recessions. It seems that this time, we might well be seeing a recession that—through a weak dollar and weak financial markets—is causing high oil prices. In your opinion, would a more healthy U.S. economy, with a stronger currency and a lower risk of inflation, likely result in lower oil prices?

Answer. Absolutely, we are at today's situation in part because our economy is suffering in so many different ways. A healthy economy and a stronger dollar might remove this investor desire to hedge against inflation by buying commodities.

RESPONSES OF SARAH EMERSON TO QUESTIONS FROM SENATOR DOMENICI

*Question 1.* As you know, China is experiencing double-digit gross domestic product growth on a consistent basis. The 2004 economic surge in that country brought on a tangible significant rise in oil consumption at a pace unexpected by oil producers. What impact has this economic growth had on the price of global commodities . . . specifically oil?

Answer. China's oil demand growth has been striking, although it has moderated from 2004 levels. That growth coupled with China's building and filing its own SPR has absolutely contributed to strong demand for oil, but we have seen other periods in history when global oil demand has grown faster than the last couple of years and prices have not risen this high. China is a medium sized piece of the puzzle. There are many other factors that are also contributing to the strong oil prices.

*Question 2.* To what extent is the falling value of the U.S. dollar contributing to keeping the price of crude oil high?

Answer. I believe this has been a significant factor since late summer/early fall 2007 and continues to be a factor which keeps institutional investors interested in commodities (inc. oil) and will continue to do so for the foreseeable future.

*Question 3.* What would be the likely effects on the U.S. economy and financial markets if the crude oil transactions took placed in a different currency?

Answer. This would add one more layer of complexity to pricing and given the weak dollar would most likely increase the cost of oil to Americans because, in essence, we would have to buy euros (or Yen, etc) to buy oil and our realized price

would reflect not only the cost of the oil but the cost of the euro. On the other hand, this would also increase the cost of oil to everyone else in the world who has been buying cheap dollars to buy oil. To the degree that higher costs accelerate a slowdown in oil consumption elsewhere, oil prices might actually drop in the global market. This could yield benefits for the American economy. But this is a truly complicated question. Defining the overall impact on the US economy is difficult.

*Question 4.* To what extent are Japan and Europe, countries with major currencies, protected from increases in the price of oil, and is this protection likely to result in major changes in competitiveness that might damage the U.S. economy?

Answer. Any country, against whose currency the dollar weakens, benefits when they buy a dollar denominated good such as oil. So, they absolutely benefit from having currencies stronger than the dollar and this must enhance their competitiveness. On the other hand, US exports are cheaper and that enhances our competitiveness. Again it is difficult to define the overall impact of stronger currencies in other countries.

RESPONSES OF SARAH EMERSON TO QUESTIONS FROM SENATOR TESTER

*Question 1.* If speculation is found to be artificially inflating the price of oil, what can we do to reduce this? In your opinion, is the CFTC sufficiently capable both of regulating all markets on which oil futures are traded to ensure speculation is not affecting the price of oil and of acting quickly and effectively when problems arise?

Answer. I do not have enough knowledge of the CFTC's activities, structure or mandate to comment on their capabilities.

*Question 2.* Oil has become essential to our everyday lives, our economy and our security. Should national security concerns be considered in how oil is regulated and managed? Do you have any concerns with oil becoming the new gold?

Answer. I do not equate oil with gold. Oil is a strategic commodity that has a significant impact on the everyday lives of every American. Gold is not. But, I do see the desire to "hold" oil as a hedge against inflation as an interesting new development. I do think the U.S. must think of oil in terms of its national economic security. This means thinking more boldly about conservation and alternative fuels, and it means having a more defined use of the SPR. It also means looking more closely at how these financial markets for oil are regulated. I believe in unregulated markets and in free and unfettered trade, but oil is special. The oil markets need widely set boundaries so that they do not become a hazard to the economy.

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[Responses to the following questions were not received at the time the hearing went to press:]

QUESTIONS FOR JAMES BURKHARD FROM SENATOR BINGAMAN

*Question 1.* Do you disagree that increased market participation of institutional investors and increased volatility of oil prices are correlated?

*Question 2.* How long do you see this strong relationship between the dollar and the price for oil remaining in tact? And, is it safe to say that this relationship would not be as strong without the proliferation of institutional investors in the oil market?

*Question 3.* Historically, we've become accustomed to thinking of high oil prices causing recessions. It seems that this time, we might well be seeing a recession that—through a weak dollar and weak financial markets—is causing high oil prices. In your opinion, would a more healthy U.S. economy, with a stronger currency and a lower risk of inflation, likely result in lower oil prices?

QUESTIONS FOR JAMES BURKHARD FROM SENATOR DOMENICI

*Question 1.* Is there any benefit to the market for allowing non-commercial investors (speculators) to participate?

*Question 2.* Does the trading of oil derivatives benefit the American consumer and the economy? If so, how?

QUESTIONS FOR JAMES BURKHARD FROM SENATOR TESTER

*Question 1.* In your testimony, you stated that oil is becoming the new gold. I would like to know whether commodities that are essential to our economy and national security should be open to speculators. I understand that they bring liquidity to the market and allow for the reallocation of risk, however are there other mecha-

nisms that could be used to effectively manage the oil futures market without placing the price of oil at the whim of speculators and hedge fund managers?

*Question 2.* What can be done to protect our economy and our country from an over investment in oil? Is there a possibility of over investment or speculation leading to an unsustainable oil bubble?

*Question 3.* If speculation is found to be artificially inflating the price of oil, what can we do to reduce this? In your opinion, is the CFTC sufficiently capable both of regulating all markets on which oil futures are traded to ensure speculation is not affecting the price of oil and of acting quickly and effectively when problems arise?

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