PARKS PATON HOEPFL & BROWN

ENERGY INVESTMENT BANKING, LP

# MUSINGS FROM THE OIL PATCH

**March 4, 2008**

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Managing Director

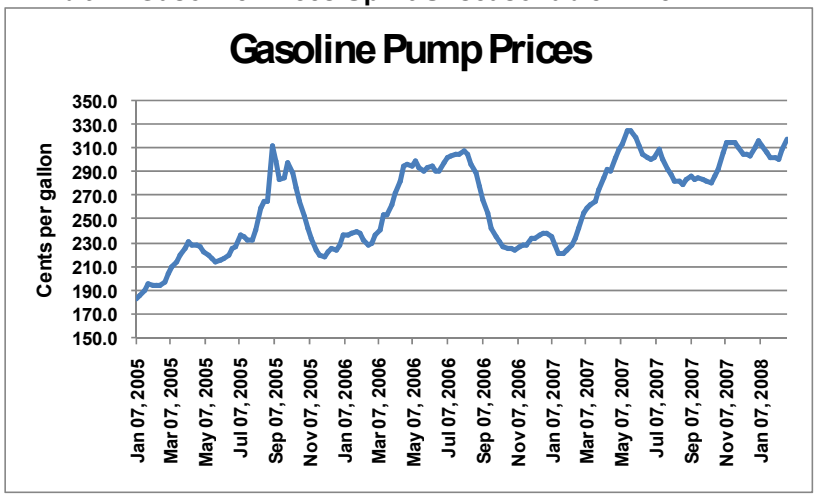
**Note**: *Musings from the Oil Patch reflects an eclectic collection of stories and analyses dealing with issues and developments within the energy industry that I feel have potentially significant implications for executives operating oilfield service companies. The newsletter currently anticipates a semi-monthly publishing schedule, but periodically the event and news flow may dictate a more frequent schedule. As always, I welcome your comments and observations.* Allen Brooks

## How Healthy Is The Domestic Petroleum Market?

**Rising crude oil prices have also propelled gasoline prices to near record high levels**

If you judged the health of the U.S. petroleum market merely by price – things would appear to be rosy. Crude oil prices last week soared through the $100 per barrel mark and intraday came within a hair of exceeding the inflation-adjusted peak price of $103.76 in the spring of 1980 during the Iranian hostage situation. Rising crude oil prices have also propelled gasoline and heating oil prices to near record high prices.

**Exhibit 1. Gasoline Prices Up At Unseasonable Time**



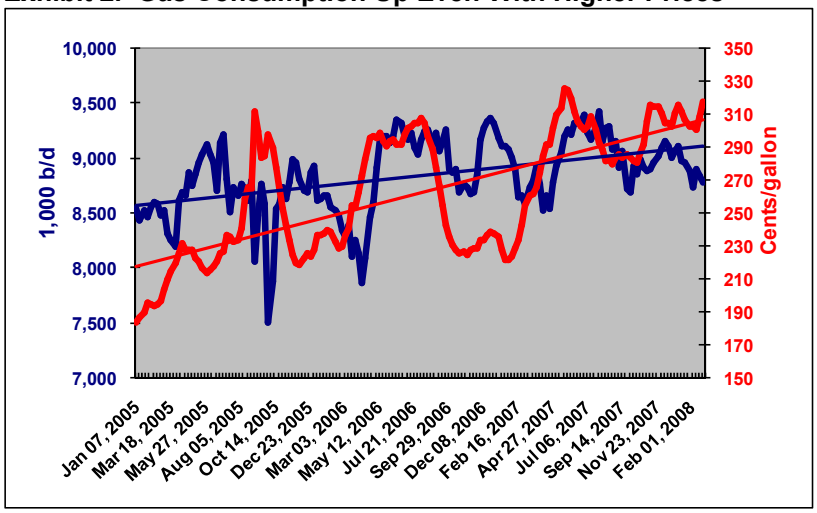

**Source: EIA, PPHB**

However, while oil prices have been climbing, underlying U.S. petroleum product demand trends appear to be reflecting an entirely different outlook. Gasoline demand for the week of February 22 was

**The recent gasoline peak demand week was at Christmas-time last year**

below the recent peak demand total of 9,155,000 barrels per day for the 11th straight week. The recent gasoline peak demand week was at Christmas-time last year. Yes, driving often declines at the start of a new year following the holiday season. Clearly there also was some extremely bad weather impacting different parts of the country that limited citizen mobility. Regardless, though, the underlying trend in gasoline consumption has not been healthy, especially if stronger demand is needed to support current high prices.

**Exhibit 2. Gas Consumption Up Even With Higher Prices**



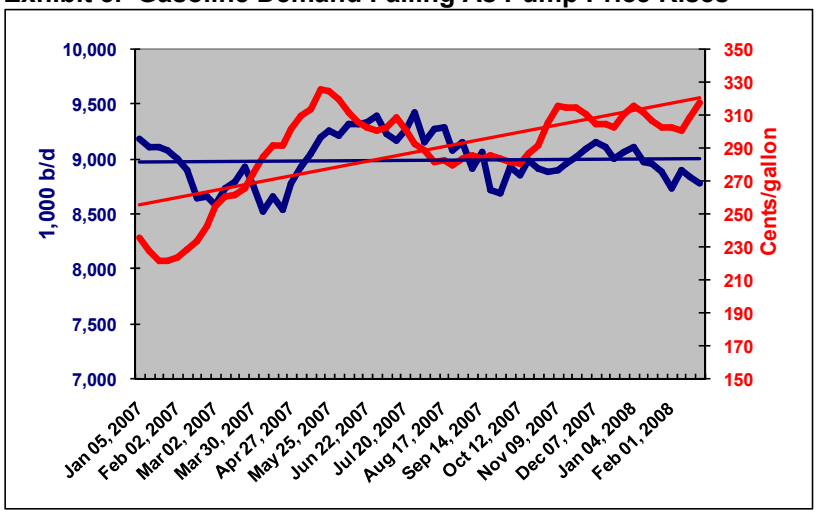

**Source: EIA, PPHB**

**If one looks at the average price for a gallon of gasoline during this same period it is remarkable how steeply the slope of price increases has been, yet how little gasoline demand has fallen**

When we examine what has happened to gasoline demand since the beginning of 2005, we find an interesting pattern. There has been an increase in demand over the entire time period. However, in recent weeks, or at least since last fall, gasoline demand has been trending lower. On the other hand, if one looks at the average price for a gallon of gasoline during this same period it is remarkable how steeply the slope of price increases has been, yet how little gasoline demand has fallen. Are current higher gasoline prices having an impact on consumption? Is the drop in gasoline consumption merely the tip of the iceberg of demand fall-off yet to come?

What is particularly telling is to examine the trend in gasoline consumption over the past year. After bottoming out in February/March of 2007, gasoline consumption rose during the summer reflecting the traditional demand uptick associated with the summer travel period. However, at the same time, the average price for a gallon of gasoline began its traditional seasonal climb.

**Exhibit 3. Gasoline Demand Falling As Pump Price Rises**

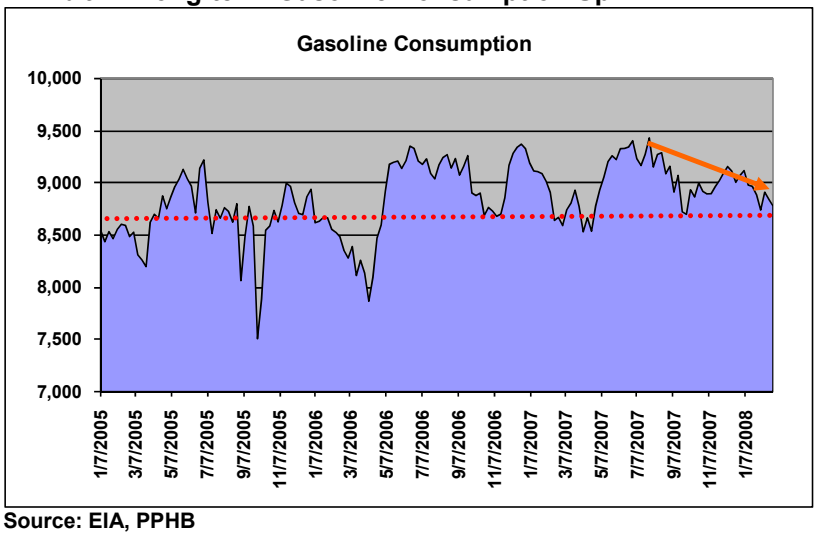



Source: EIA, PPHB

**During this climb in pump prices, demand for gasoline has been in a steady decline**

Gasoline prices peaked about Memorial Day at $3.25 per gallon. After backing off to a low of around $2.80 in early fall, gasoline prices have since risen on the back of the rise in crude oil prices to where the latest weekly gasoline price data show it only 7¢ per gallon below last year's peak. During this climb in pump prices, demand for gasoline has been in a steady decline.

**Exhibit 4. Long-term Gasoline Consumption Up**




Source: EIA, PPHB

**Since gasoline demand peaked in July 2007, it has been consistently trending down**

This story is more vividly shown by the chart in Exhibit 4. Today's gasoline demand is about where it was at the end of last summer. But equally impressive is that gasoline demand is where it was during most of the three-month time period of February to April of last year, or the two-month period of late October to early November 2006. As shown on the chart, since gasoline demand peaked in July 2007, it has been consistently trending down. This coincides with the sharp escalation in gasoline prices.

**What does a $100+ per barrel oil price signal for the future for gasoline prices?**

The big question for the gasoline market is what does a $100+ per barrel oil price signal for the future for gasoline prices? A possible answer may have emerged last week during a press conference at the White House. In that exchange, a reporter, Peter Maer of CBS News, asked President Bush about gasoline prices and his advice for the average American. The answer brought back many memories of the trials and tribulations of being a president. The transcript of the exchange was as follows:

Q: What's your advice to the average American who is hurting now, facing the prospect of $4 a gallon gasoline, a lot of people facing –

Mr. Bush: Wait, what did you just say? You're predicting $4 a gallon gasoline?

Q: A number of analysts are predicting –

Mr. Bush: Oh yeah?

Q: - $4 a gallon gasoline this spring when they reformulate.

Mr. Bush: That's interesting. I hadn't heard that.

**The media was quick to point out that California already has markets with $4 a gallon gasoline prices**

The media has tried to make a lot about this exchange to show how out of touch the President is with current economic conditions, especially since there was a front page story in *The New York Times* the day before the press conference about the impact that the rising cost of gasoline was having on average Americans. In typical Washington media relations fashion, the following day, Gordon Johndroe, the President's spokesman attempted to clarify what President Bush was trying to say. According to Mr. Johndroe, "But the President's point was that neither his advisors nor Energy Department analysts are at this point forecasting $4 a gallon gasoline." The media was quick to point out that California already has markets with $4 a gallon gasoline prices.

**President George H.W. Bush went to a grocery store during his last presidential campaign in 1992 where he encountered the ubiquitous optical scanner at the checkout counter**

The exchange between President Bush and the CBS reporter brought forth memories of other social and economic disconnect experiences former presidents faced as they left office. The first memory was of President Bush's father, President George H.W. Bush, going to a grocery store during his last presidential campaign in 1992 where he encountered the ubiquitous optical scanner at the checkout counter. Having never seen one before, he was amazed. That just goes to show you what happens when you don't do the family shopping for years.

**Mr. Eisenhower never had to make a phone call himself**

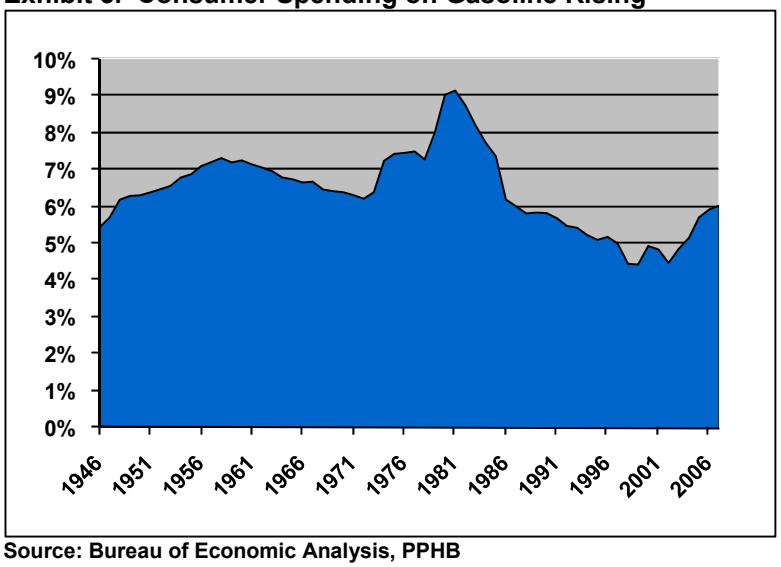
The other presidential encounter with the modern world was when President Dwight D. Eisenhower, just out of office, needed to make a phone call. Because of his extended military service and tenure as president of Columbia University before serving eight years as president of the United States, Mr. Eisenhower never had to make a phone call himself. During his time of service others handled the task of placing phone calls, so when the dial phone established itself

as the traditional phone, Mr. Eisenhower had to learn to operate the phone himself after leaving office and retiring to his farm in Gettysburg, Pennsylvania. This is referred to as cultural shock.

**When we look at the long-term trend in the percentage of personal disposable income spent on energy there is a disturbing new uptrend underway that began about the turn of the century**

For most of last year, investment analysts and economists talked about how resilient the American consumer was in the face of high and rising oil and gasoline prices. As late as last Friday morning, when the government released its latest economic data detailing personal income and spending patterns, investor focus remained almost exclusively on the headline figure showing a sequential monthly increase in January's personal consumption expenditures of 0.4% for the month. Yet when we look at the long-term trend in the percentage of personal disposable income spent on energy there is a disturbing new uptrend underway that began about the turn of the century.

**Exhibit 5. Consumer Spending on Gasoline Rising**




**Source: Bureau of Economic Analysis, PPHB**

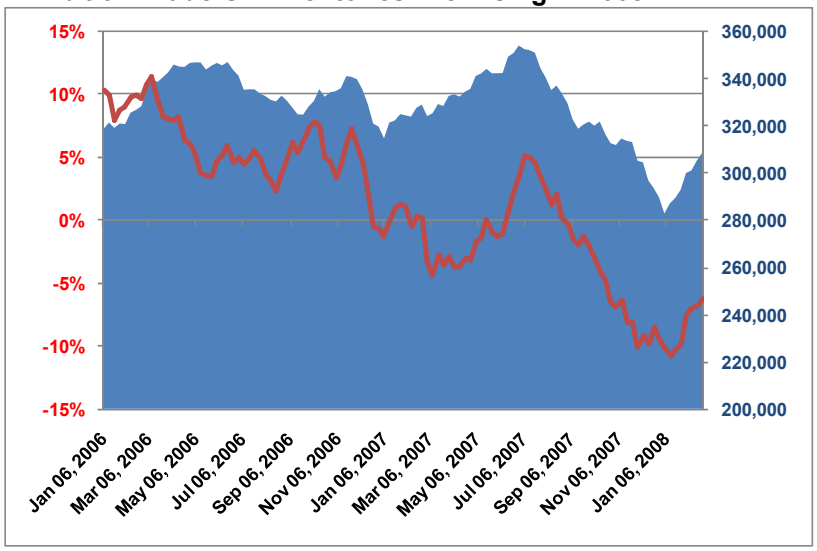
**During the post-war period and through most of the 1950s as American lifestyles changed and energy prices were relatively low, citizens spent more of their income each year on energy**

Exhibit 5 shows the pattern of personal consumption expenditures dedicated to energy by Americans since the end of World War II. During the post-war period and through most of the 1950s as American lifestyles changed and energy prices were relatively low, citizens spent more of their income each year on energy. What that spending reflected was the flood of consumer household appliances and new, modern conveniences and larger automobiles that eased everyday life. Washers, dryers, freezers, vacuums and TVs, especially the newly introduced color TVs, began to populate America's households as citizens embraced the "good life." Big automobiles with fins and V8 engines also débuted, along with the completion of the interstate highway system begun by President Eisenhower. With the U.S. still an exporter of crude oil, and oil prices remaining low, consumers were little concerned about purchasing all these personal comforts, even if it meant spending slightly more of one's budget.

**Since 2002, when consumer spending on energy averaged about 4.5%, we have witnessed a steady rise in the percentage of personal consumption expenditures dedicated to energy outlays up to 6.1% last year**

From the start of the 1960s, with the exception of the 1973-1986 period dominated by OPEC, Americans consistently and progressively reduced the percentage of their income spent on energy until the end of the century. In the first couple of years of the new decade, we see the spending percentage bouncing around the 4.5% level. Since 2002, when consumer spending on energy averaged about 4.5%, we have witnessed a steady rise in the percentage of personal consumption expenditures dedicated to energy outlays up to 6.1% last year. Baring an unanticipated collapse in energy prices this year, we are probably headed for another increase in the percentage of consumers' incomes dedicated to energy, marking the sixth consecutive year of increased expenditures. This year's energy spending rise will have a greater impact on consumer budgets because food prices are climbing, too, and the economists favorite measure of inflation – core – is also rising at a pace exceeding the rate Federal Reserve officials find acceptable.

**Exhibit 6. Crude Oil Inventories Are Rising In 2008**




**Source: EIA, PPHB**

**How long can oil prices stay strong?**

While the weakness in gasoline demand has been quite evident, although not receiving a lot of media attention, there has also been a rise in crude oil inventories this year, again a major change in a longer term trend. After declining for the last six months of 2007, crude oil inventories, excluding crude oil in the Strategic Petroleum Storage facility, have risen every week in 2007. The trend is shown in Exhibit 6 by both the trend in absolute inventories and the pattern in the year-over-year change in weekly crude oil inventory figures. With gasoline demand down and gasoline inventories rising along with crude oil inventories, one has to believe that U.S. petroleum demand is at best flat and more likely falling. How long can oil prices stay strong?

# Wind Power Shows Its Limitations and Challenges

**The amount of wind-generated power dropped by more than 80%**

A cold front moved through North Texas late Tuesday afternoon last week and lowered wind speeds right at the time when electric power demand started rising. The amount of wind-generated power dropped by more than 80%, going from 1,700 megawatts to 300 megawatts in three hours according to the Electric Reliability Council of Texas (ERCOT) that operates much of the state's power grid. Normally this would not be a significant problem for ERCOT. However, the loss of the wind power was complicated by several traditional electric power generating plants failing to provide the amount of energy they told ERCOT they would generate.

**These industrial users shut down about 1,100 megawatts**

Faced with a potentially serious power shortage, ERCOT activated its emergency plan that requires large industrial users on short notice to stop using power so it would be available to the rest of the power grid. These large users get a favorable price on their power in return for agreeing to allow themselves to be interrupted. These industrial users shut down about 1,100 megawatts. ERCOT operates one of the most sophisticated systems for having large power customers voluntarily cut back their usage during times of peak demand. It has added a second tier of demand-response customers this year that can turn down their power usage with a 10 minute warning.

**Luminant, formerly TXU, the Dallas-based power plant operator, volunteered that one of its plants took longer than expected to respond to ERCOT's call for more power**

What happened last week highlights an important issue that should be considered when looking at the role wind power may eventually play in this country's mix of energy sources for powering our economy. Luminant, formerly TXU, the Dallas-based power plant operator, volunteered that one of its plants took longer than expected to respond to ERCOT's call for more power. According to ERCOT there were other operators who also failed to respond as quickly as anticipated, but their names have not been disclosed while an investigation is underway, the results of which will be passed on to the Texas Public Utility Commission.

**Wind could account for 20% of the nation's power supply if better wind forecasting systems are developed and power grids are expanded to connect with primarily rural areas where wind resources are the strongest**

As you would expect the wind power industry was quick to defend itself. Rob Gramlich, policy director for the American Wind Energy Association, pointed out that the news accounts of the problem failed to mention the complexity of the problem or blamed it entirely on wind. As Mr. Gramlich pointed out, "No generation system operates flawlessly all the time, which is why we need to have well-equipped system operators that can address system shortfalls." The industry association anticipates and believes that wind could account for 20% of the nation's power supply if better wind forecasting systems are developed and power grids are expanded to connect with primarily rural areas where wind resources are the strongest. But as Mr. Gramlich also said, "Wind, like all generation technology, is best used as part of a diverse portfolio of sources."

Wind power is a popular alternative energy source since it emits no greenhouse gases, although it has been known to attract critics for

**As wind power begins to account for a greater role in the country's power supply, we need to examine how well backstopped that power supply is with other non-interruptible supply**

its visual pollution. Wind power has been growing rapidly in recent years, up 45% in 2007. Texas leads the country in the amount of installed wind power with 4,300 megawatts. The growth in Texas has been helped by its favorable winds, especially in the largely rural and agricultural area of West Texas. Its growth has also been encouraged by a mandate that a certain percentage of the state's power supply should eventually come from wind. California with 2,400 megawatts of installed wind power ranks second behind Texas. As wind power begins to account for a greater role in the country's power supply, we need to examine how well backstopped that power supply is with other non-interruptible supply and/or a fine-tuned system to shed industrial power load freeing supply up for higher priority users on the grid.

## It's The Economy, Stupid: Then Again, Maybe It's Not

**With prices establishing themselves above $100 per barrel yet domestic petroleum demand growth slowing or ceasing, one has to wonder why the disconnect?**

Crude oil future prices have soared to new nominal record levels, but not quite yet surpassing the questionable "inflation-adjusted" peak price of 1980. With prices establishing themselves above $100 per barrel while domestic petroleum demand growth is sagging, one has to wonder why the disconnect? "It's the economy, stupid." That was the message James Carville, the campaign strategist for Bill Clinton, developed during the 1992 presidential election campaign in 1992 that helped win the presidency for the Arkansas governor. The U.S. economy was struggling at the time and Mr. Clinton's opponent, President George H.W. Bush, appeared not to have any solution for the problems. While Mr. Clinton didn't have any great economic plans, either, he capitalized on the social ills that came from the economic downturn to win the White House.

Today, the U.S. economy is struggling with a myriad of problems, most of which stem from the credit markets and the housing bubble. In attempting to head off these problems from infiltrating the rest of the economy, we have seen the Federal Reserve aggressively act to cut short term interest rates in an effort to provide more liquidity for the capital markets. We have also seen the U.S. government respond to the economic turmoil with a $150+ billion economic stimulation package designed to put spending money in the hands of consumers, who will presumably rush to the malls to snap up goods that are sitting on shelves and thus pump up the domestic economy.

**One theory suggests that the economic problems of the United States are limited primarily to our country and therefore should not significantly impact economic growth in the rest of the world**

Despite Friday the stock market had begun a recovery as investors began to believe that these actions, along with sustained economic growth in most foreign markets, would keep the U.S. economy from falling into a recession. Two theories seem to be at work. One suggests that the economic problems of the United States are limited primarily to our country and therefore should not significantly impact economic growth in the rest of the world. Even if 2008's economic growth in Asia and China, in particular, slows somewhat, their growth rates are so many times the U.S. economic growth rate that global growth will remain quite healthy. This theory is referred to as the "decoupling" view because it is based on the view that

global economic activity is not tied as closely to U.S. economic activity as in the past.

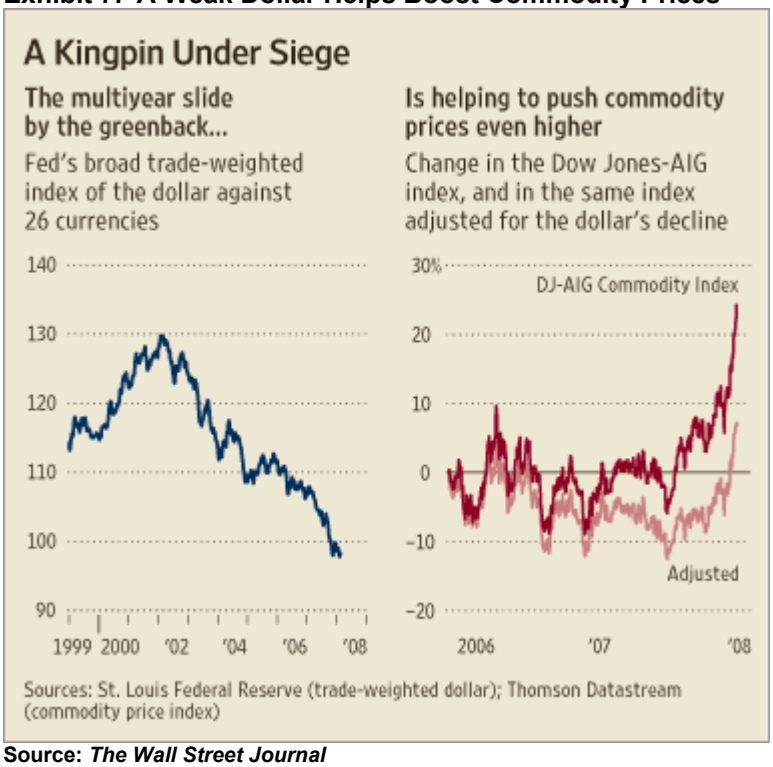
**The actions of the Federal Reserve and U.S. government are destined to bake in a substantially higher rate of inflation in future economic activity**

The second theory is that the actions of the Federal Reserve and U.S. government are destined to bake in a substantially higher rate of inflation in future economic activity. This aspect hurts the value of fixed income investments and, coupled with the unknowable risks in financial markets due to the credit market debacle that has generated significant losses in equities, is driving investors to seek other investment homes for their cash. Due to credit market turmoil, even once staid and safe money market funds and municipal bonds are no longer as attractive alternatives as in the past.

**The weakening U.S. dollar has also played a role in the explosion underway in the commodity markets**

The higher future inflation view has evolved from the U.S. dollar weakness compared to most of the other major currencies in the world such as the Euro, the British pound and the Japanese yen. Even minor currencies such as the Canadian dollar and currencies linked to the U.S. dollar such as the Chinese renminbi have also strengthened. The weakening U.S. dollar has also played a role in the explosion underway in the commodity markets – both hard and soft commodities.

**Exhibit 7. A Weak Dollar Helps Boost Commodity Prices**



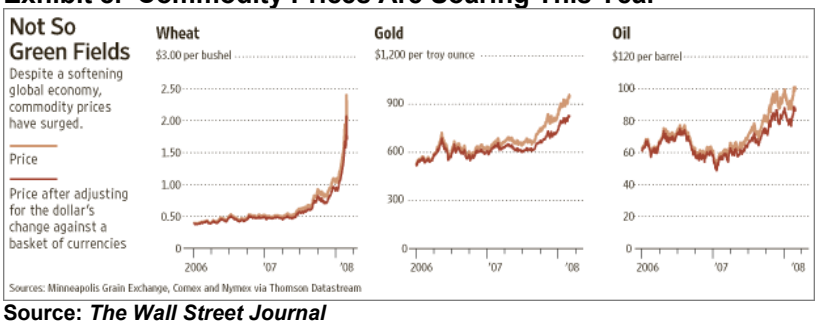

**Source:** ***The Wall Street Journal***

The rise in commodity prices appears to be the result of the intersection between these two primary financial theories as the weaker dollar forces sellers of commodities to seek higher prices to offset the decline in the purchasing power of the U.S. dollars they

**The decoupling theory suggests that global demand for commodities, especially industrial commodities, will remain strong sending their prices higher**

receive. On the other hand, the decoupling theory suggests that global demand for commodities, especially industrial commodities, will remain strong sending their prices higher in response. Higher input prices, such as for petroleum and fertilizer, and rising living standards in developing economies is helping to send agricultural commodity prices soaring. In fact, last week, Former Federal Reserve Chairman Alan Greenspan in comments in a speech in Dubai said that the oil boom will go on "forever" as unrelenting demand will drive oil prices higher.

**Exhibit 8. Commodity Prices Are Soaring This Year**




**Source:** ***The Wall Street Journal***

An additional aspect of the rise in commodity prices is the growing influence of financial players in the commodity markets. According to the Futures Industry Association, the number of agricultural contracts has increased by 32% from a year ago, followed by a 29.7% rise in industrial metals contracts and a 28.6% jump in energy contracts. Changes in the internal workings of the commodity markets and the introduction of new financial products making it easier for investors to play in the commodities markets are responsible for this trading increase.

**Commodities ETFs now hold about $30 billion in assets, up 90% from a year ago**

Exchange-traded funds (ETFs) that allow investors to buy and sell individual commodities or baskets of commodities like ordinary stocks and bonds have gained tremendous investor interest lately. According to State Street Global Advisors, commodities ETFs now hold about $30 billion in assets, up 90% from a year ago. A major contributor to this growth has been the structural changes in commodities trading. The primary change has been the shift to electronic trading that has encouraged increased participation from hedge funds that now can trade online, rather than having to rely on brokers in the trading pits of the various commodity exchanges. According to Tim Evans of Citigroup (C-NYSE), 91% of all trading in NYMEX crude oil contracts is done electronically.

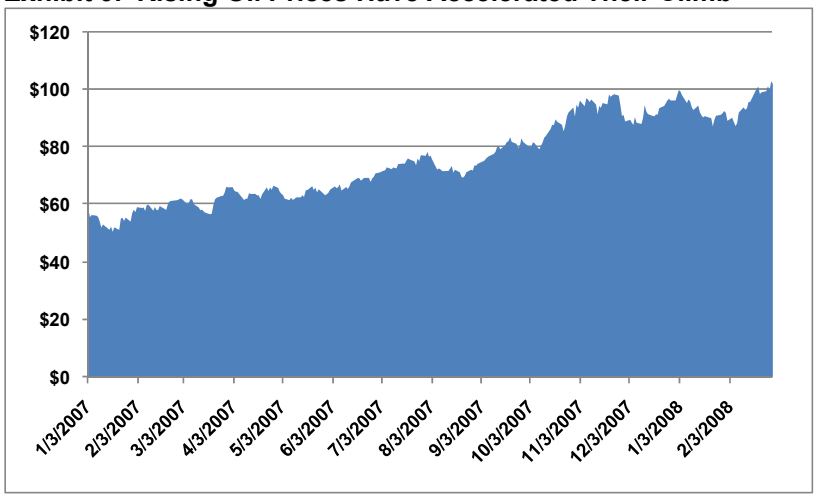
While the move by institutional and hedge fund investors into commodities initially focused on petroleum products, their interest has broaden to include the full range of metals and agricultural commodities. Part of the reason for the explosion in interest has been the development of commodity index funds, which track the movement of the broad range of commodities that is appealing to investors who want to gain exposure to this asset class of

**Commodity-index investors now account for about a quarter of all the outstanding bets in the commodity markets**

investments without having to develop particular commodity expertise. Commodity-index investors now account for about a quarter of all the outstanding bets in the commodity markets. For example, according to a review of the Commodity Futures Trading Commission prepared by Barclay's Capital, commodity index funds hold 31% of the all the open contracts for wheat and 23% of soybean contracts.

The explosion of financial investors in the commodity markets has disrupted the normal use of these markets by traditional commodity players. For example, producers and grain silo operators often have used futures to hedge their exposure to fluctuating commodity prices by betting that prices will fall. However, they have been burned when sharp rallies ensue causing these business users to suffer large losses.

**Exhibit 9. Rising Oil Prices Have Accelerated Their Climb**




**Source: EIA, NYMEX, PPHB**

**Financial investors in the petroleum market have been decried by OPEC oil ministers for their undue influence on crude oil prices**

Financial investors in the petroleum market have been decried by OPEC oil ministers for their undue influence on crude oil prices. While the oil ministers examine the underlying trends in global oil supply and demand to understand how much oil they need to supply to the market, they have been bombarded by rising oil prices caused by the trading of paper barrels. OPEC oil ministers have repeatedly said they feel comfortable with their view that oil markets are adequately supplied, only to see crude oil prices continuing to climb to lofty levels.

**Will the top price be $105, $120 or $150 per barrel? Strong investment cases can be made to support any of those target prices**

Last Friday morning, crude oil traded at $103.05 per barrel, about $0.70 short of the inflation-adjusted record price attained in 1980 during the Iranian hostage crisis. Where, and when, crude oil prices top out is impossible to determine because the momentum of commodity markets has a life all its own. Will the top price be $105, $120 or $150 per barrel? Strong investment cases can be made to support any of those target prices. However, weakening petroleum demand in the United States, lowered 2008 economic expectations

for Europe and a reduced economic forecast for China's growth suggest that the pressure for lower rather than higher oil prices should be the controlling force at work in today's commodity markets. When the change in direction comes, the pain is likely to be severe.

## World's 20 Worst Dictators Control Less Oil This Year

**We measure their influence in two ways – the estimated amount of crude oil reserves their country controls and the volume of oil they produce**

*Parade* magazine recently published its list of the world's 10 worst dictators in their Feb. 17, 2008 edition. They expand their list to the top 20 worst dictators on their web site, www.Parade.com. As we did last year, we took a look to see how influential this group of wonderful world leaders was in the global energy market. We measure their influence in two ways – the estimated amount of crude oil reserves their country controls and the volume of oil they produce. While we are interested in the absolute totals, we are more concerned with the percentage of the world's total these countries represent. The latest oil reserve and production figures available are for 2006 and are reported by BP plc (BP-NYSE) and the U.S. State Department.

The list of the top dictators changes each year based on *Parade's* interpretation of the ratings from a number of human rights sources. These sources include: Amnesty International; Human Rights Watch; Reporters Without Borders; and the U.S. State Department. Two of the top ten dictators are recent additions having previously resided in the next lower level. Those new entrants were Pervez Musharraf of Pakistan at number eight, up from 15$^{th}$ place last year and 17$^{th}$ place the prior year, and Isayas Afewerki of Eritrea at number ten, up from 13$^{th}$ place in the prior two years. In both cases, these changes had little impact on the volume of oil reserves and production under the control of the worst dictators because Pakistan barely registers on these measures and Eritrea has no oil. However, these new entrants did displace other dictators whose countries do have oil reserves and production.

**The countries run by the top 20 dictators control 477 billion barrels of crude oil reserves, 39.5% of the world's estimated reserves**

The bottom line of this exercise is that the countries run by the top 20 dictators control 477 billion barrels of crude oil reserves, 39.5% of the world's estimated reserves. The 20 countries produced just over 23 million barrels per day (mmbd) of oil, which accounted for 28.2% of the 81.7 mmbd of global production in 2006. The amount of reserves controlled by these dictators fell by 5.9 percentage points from last year's survey. Their control over global oil production declined by a greater amount, from 40.4% to 28.2%. That drop was not due to growth of global production as it only increased by 0.7% between 2005 and 2006.

**Exhibit 10. World's 20 Worst Dictators Hold Major Oil Reserves**

| 2008 Rank | 2007 Rank | 2006 Rank | Dictator | Country | Billion Bbls 2006 Oil Reserves | % of Total | Kb/d 2006 Production | R/P Ratio |
|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 2 | Kim Jong-IL | North Korea | | | | |
| 2 | 1 | 1 | Omar Al-Bashir | Sudan | 6.4 | 0.5 | 397 | 44.2 |
| 3 | 6 | 3 | Than Shwe | Burma (Mayanmar) | 0.0 | * | 23 | nm |
| 4 | 5 | 7 | King Abdullah | Saudi Arabia | 264.3 | 22.0 | 10,859 | 66.7 |
| 5 | 4 | 6 | Hu Jintao | China | 16.3 | 1.3 | 3,684 | 12.1 |
| 6 | 7 | 4 | Robert Mugabe | Zimbabwe | | | | |
| 7 | 3 | 3 | Sayyid Ali Khamenei | Iran | 137.5 | 11.4 | 4,343 | 86.7 |
| 8 | 15 | 17 | Pervez Musharraf | Pakistan | 0.0 | * | 66 | nm |
| 9 | 8 | 5 | Islam Karimov | Uzbekistan | 0.6 | * | 125 | 13.0 |
| 10 | 13 | 13 | Isayas Afewerki | Eritrea | | | | |
| 11 | 9 | 11 | Muammar al-Qaddafi | Libya | 41.5 | 3.4 | 1,835 | 61.9 |
| 12 | 10 | 16 | Bashar al-Assad | Syria | 3.0 | 0.2 | 417 | 19.7 |
| 13 | 11 | 10 | Teodoro Obiang Nguema | Equatorial Guinea | 1.8 | 0.1 | 358 | 13.8 |
| 14 | 12 | 12 | King Mswati III | Equatorial Swaziland | | | | |
| 15 | 17 | 18 | Meles Zesarwi | Ethiopia | | | | |
| 16 | 14 | 14 | Aleksandr Lukashenka | Belarus | 0.0 | * | 35 | nm |
| 17 | 18 | U | Hosni Mubarak | Egypt | 3.7 | 0.3 | 678 | 15.0 |
| 18 | U | U | Raúl Castro | Cuba | 1.0 | * | 75 | nm |
| 19 | 16 | U | Choummaly Sayasone | Laos | | | | |
| 20 | U | U | Idriss Déby | Chad | 0.9 | 0.1 | 153 | 16.1 |
| | | | **Total** | | 477.0 | 39.5 | 23,048 | |
| | | | **World** | | 1,208.2 | 100.0 | 81,663 | 40.5 |

Note: * is less than 0.1%; U represents unranked; nm is not meaningful

**Source: Parade Magazine, Feb. 17, 2008; BP; U.S. State Dept.; PPHB**

**The principle reason for the significant drop in global reserves and production accounted for by this year's list of dictators was the exclusion of Vladimir Putin of Russia**

When you look at the list of dictators (Exhibit 10), one sees pretty much the same list of national leaders as last year. The principle reason for the significant drop in global reserves and production accounted for by this year's list of dictators was the exclusion of Vladimir Putin of Russia. In examining last year's table of leaders, Mr. Putin was in 20th place having not attained a top 20 ranking the prior year. For whatever reason, this year Mr. Putin was not ranked as highly as the other dictators. We doubt that Mr. Putin's not making the list was due to the impending change in government, but rather that the other dictators were worse. We were amazed, however, to see that Raúl Castro of Cuba made this year's list given that his brother, Fidel Castro, who recently ceded power to his brother, was not on any recent list. We were not aware that there was much difference in ruthlessness between the two brothers.

Besides Raúl Castro, the other new entrant on this year's list is Idriss Déby of Chad. Combined, Cuba and Chad have minor volumes of reserves and very small production, totaling 1.9 billion barrels and 228,000 barrels per day. These volumes pale in comparison to the loss of Russia's 74.4 billion barrels of reserves and 9.55 mmbd of production from the list. From the perspective of natural resource dictators, we would argue that Mr. Putin should continue to be included in the list as Russia continues to consolidate its control over oil and gas resources and production. In addition, Russia has been using aggressively its oil and gas resources to influence national policy of neighboring countries with which it has petroleum supply arrangements. Even with the upcoming Russian election that will install Mr. Putin's handpicked successor who in turn will appoint Mr. Putin as the country's prime minister, the use of hydrocarbon nationalism will remain a key tenant of that country's foreign policy. While this policy may not translate strictly into human-rights abuses, it will certainly impact the level of suffering others may feel.

**The use of hydrocarbon nationalism will remain a key tenant of Russia's foreign policy**

**The primary countries that control substantial volumes of oil and gas resources and production and that are run by some of the world's worst dictators will not likely change any time in the foreseeable future**

At the end of the day, this list of the 20 worst dictators hasn't changed materially over the past several years. It still contains a group of leaders that have control over a meaningful amount of the world's hydrocarbon reserves and crude oil production. Had Mr. Putin continued on the list of 20 dictators, this group of leaders' control over global oil and gas markets would not have changed materially between this year and last. Will their impact change in the future? On the surface, if Russia returns to the list there will be a large nominal change. However, the primary countries that control substantial volumes of oil and gas resources and production and that are run by some of the world's worst dictators will not likely change any time in the foreseeable future. As long as the United States must continue to import almost half our oil supply, we are destined to have to deal with this list of unsavory leaders. Which presidential candidate will be best able to deal with these leaders should be a consideration in our upcoming vote this November.

## Global Shipping Declared Bigger Polluter

**There was an interactive map that was designed to show the impact of human activity on the globes oceans**

Several days ago, an article in the Environment Section of *The New York Times* highlighted new research on our oceans. There was an interactive map that was designed to show the impact of human activity on the globe's oceans. That map was based on input from 17 sets of data including some of the factors listed below. These specific data series were also displayed on the interactive map. They included:

- **Shipping** – showing the routes of 3,374 ships for the one year period starting October 2004 that accounted for 11% of the marine fleet;
- **Temperature** – plotted sea surface temperatures and highlights increases in the number of temperature anomalies over the past two decades;
- **Invasive Species** – showing the location of marine organisms that have attacked coastal areas and which come courtesy of ballast water and /or the hulls of ships;
- **Ultraviolet Light** – displayed incidents of abnormally high ultraviolet light compared to monthly averages during the period 1996-2004;
- **Acidification** – showing estimates of decreases in the aragonite saturation state linked to increases in ocean acidity since 1870 and reflects increases in absorption of carbon dioxide.

We were particularly interested in the map of the shipping routes, which showed almost a total solid red color covering the Atlantic Ocean and very solid red color over the Pacific Ocean. There were areas along the coast of a number of the continents that were solid red in color reflecting a significant number of ship routes. This map highlights the historic importance of the global shipping industry in economic activity, but also it shows the impact of the shipping industry on global climate change.

**The report says that the pollution volume related to ocean shipping is three times greater than previously thought**

About two weeks before the map and news story appeared we read an article by the environmental editor of *The Guardian* paper from the UK based on a leaked UN report detailing the amount of pollution emitted by the shipping industry. The report says that the pollution volume related to ocean shipping is three times greater than previously thought. The report calculates that annual emissions from the world's merchant fleet have already reached 1.12 billion tons of carbon dioxide ($CO_2$), or nearly 4.5% of all global emissions of this main greenhouse gas.

Up until now, the UN's Intergovernmental Panel on Climate Change (IPCC) has estimated shipping emissions to be a maximum of 400 million tons annually, or about one-third of the new estimate. The new draft report was prepared by a group of international scientists utilizing better data and a more sophisticated measure. They used data collected from the oil and shipping industries for the International Maritime Organization (IMO), which is tasked by the UN with monitoring pollution from ships. The more troubling aspect of the report is its forecast that this pollution is set to rise by a further 30% per year by 2020.

**The aviation industry is responsible for only about 650 million tons of $CO_2$ emissions a year, or just over half the estimated emissions of the shipping industry**

The importance of the shipping industry in the global climate change debate cannot be underestimated. Based on this new study's data, the shipping industry will become one of the largest single sources of manmade $CO_2$ behind cars, housing, agriculture and industry. Equally important, the aviation industry, which has been under attack for its role in global pollution that it has failed to address, is responsible for only about 650 million tons of $CO_2$ emissions a year, or just over half the estimated emissions of the shipping industry.

Earlier in 2007, a study issued by the International Council on Clean Transportation (ICCT) said that the ocean shipping industry was a major source of sulfur dioxide ($SO_2$). In fact, the ICCT study said that shipping created more $SO_2$ than all the world's cars, trucks and buses combined. It also suggested the shipping industry emits more greenhouse gas $CO_2$ than many industrialized nations.

**"This is a clear failure of the system. The shipping industry has so far escaped publicity. It has been left out of the climate change discussion."**

Alan Lloyd, the ICCT's president and former secretary of California's Environmental Protection Agency said, "Air pollution from diesel trucks and buses in Europe, Japan and the US has declined steadily for over a decade. At the same time, air pollution from international ships is rising virtually unchecked." This sentiment was echoed by Dr. Rajendra Pachauri, chairman of the IPCC, when he commented on the leaked UN study, "This is a clear failure of the system. The shipping industry has so far escaped publicity. It has been left out of the climate change discussion. I hope [shipping emissions] will be included in the next UN agreement. It would be a cop-out if it was not. It tells me that we have been ineffective at tracking climate change so far."

These comments are putting pressure on nations to increase their efforts to control greenhouse gas emissions coming from the international transportation businesses. We have seen the countries

bordering the North Sea and California require ships entering their waters to burn cleaner fuels. The restrictions against dirty diesel and bunker fuels are starting to expand around the world. In 2006, Intertanko, the organization of the world's largest tanker operators, proposed that all ocean-going ships switch to marine distillate fuels containing 1% or less sulfur by 2010 and less than 0.5% by 2015. That proposal was supported by the U.S., Norway, Sweden and the Netherlands, but opposed strongly by Greece.

**Draft amendments to revise the MARPOL regulations on the prevention of air pollution from ocean-going ships were agreed to by the IMO Sub-Committee on Bulk Liquids and Gases**

Just recently, draft amendments to revise the MARPOL regulations on the prevention of air pollution from ocean-going ships were agreed to by the IMO Sub-Committee on Bulk Liquids and Gases when it met in early February. These amendments will be submitted to the Marine Environment Protection Committee (MEPC), which meets during the first week of April. The press release announcing these developments pointed out that there were a number of options still open for discussion, but that the committee anticipates approving a set of amendments that will go before MEPC 58 to be held in early October. The amendments approved would then enter into force, under the tacit acceptance procedure, 16 months later, in March 2010, or on a date to be decided by the MEPC.

The work of the subcommittee was designed to reduce the six options on emission standards, dates of implementation and areas of application to three. Those three options are as follows:

- Option 1 – Global
  1.00% (10,000 ppm) fuel standard applied globally in 2012
  0.50% (5,000 ppm) fuel standard applied globally in 2015

- Option 2 – Global/Regional
  Global cap remains unchanged at 4.50% (45,000 ppm)
  Emission Control Areas require 0.10% (1,000 ppm) standard in 2012

- Option 3 - Global/Regional with Micro-Areas
  Global cap is lowered to 3.00% (30,000 ppm) in 2012
  Emission Control Area standard lowered to 1.00% (10,000 ppm) in 2010
  Emission Control Area standard lowered to 0.50% (5,000 ppm) in 2015

  *Micro-Emission Control Areas may be established at a distance of no more than 24 nautical miles from the baseline with a 0.10% (1,000 ppm) standard. The IMO must approve the establishment of the areas, but the decision is based on a related set of criteria. Additionally, the parts per million (ppm) standards refer to maximum sulfur content limits for fuel. The dates are proposed and subject to approval or change by the committee.*

Both the IMO and Intertanko are concerned about two aspects

**One is the availability of the required fuel in sufficient quantities so as not to destroy shipping economics**

stemming from these new rules. One is the availability of the required fuel in sufficient quantities so as not to destroy shipping economics or causing ships to have to stop traveling because they cannot secure the required fuel to enter emission control areas. The second issue is how to phase in the rules for engines for new ships and what to do about pre-2000 built ships and engines.

**All the options it has considered would require significant changes in product output from many refineries around the world**

On the first point, the IMO points out that all the options it has considered would require significant changes in product output from many refineries around the world. Additionally, for those refineries that might have to make modifications in order to produce the new compliant fuel, the change might represent an unprecedented single step adjustment compared to changes that have driven global fuel markets in the past decade.

The IMO committee has developed a three-tiered structure calling for tighter nitrogen oxide ($NO_x$) emission standards for new engines depending on the date of their installation. The Tier I regulations represent the existing standard. Tier II would impact engines installed after January 1, 2011, and requires a reduction from the Tier I standard by between 15.5% and 21.8%. Tier III would impact new engines after January 1, 2016, and would require an 80% reduction from Tier I standards. The IMO pointed out that Japanese engine manufacturers are already developing advanced engine treatment systems to meet the proposed Tier III standard.

**What are emerging from these reports and IMO actions are tighter emission regulations for the global shipping industry**

It seems that what are emerging from these reports and IMO actions are tighter emission regulations for the global shipping industry. These changes will impact shippers, ship owners, government regulators and the oil industry. The cost of operating ships will rise, not only due to the cost of cleaner fuels, but the increased maintenance for engines required. It also will make ship owners subject to potentially greater penalties. The cost to build new ships will rise as the new engines and emission control systems cost more than existing equipment.

For shippers, they will face higher costs passed on from the ship owners, but they will need to scrutinize the quality of their ship owners to make sure they will and can comply with the new rules and regulations and that their ships are of a quality that they can actually deliver the shipper's goods on time. Government regulators will eventually have new and more regulations to enforce. And the oil industry will face the need to upgrade refineries to produce the cleaner fuel. What we don't know is how much more difficult making the fuel will be and whether there will be a reduced output from each barrel of crude oil fed into the refinery.

**The only group happy about the UN study is the aviation industry**

Probably the only group happy about the UN study is the aviation industry. For a while at least, they will no longer be the target of environmentalists, yielding that honor to the shipping industry. Does that mean that environmentalists will be absolved from flying on private airplanes?

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