Consumer Federation of America
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BIG OIL v. ETHANOL:
THE CONSUMER STAKE IN EXPANDING THE PRODUCTION OF LIQUID FUELS

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BIG OIL'S WAR ON ETHANOL

American gasoline consumers will not be surprised in the next couple of weeks when oil companies report their financial results for the first half of 2007. They have seen the reality at the pump – record prices which inevitably lead to record profits. Consumers may be a bit surprised to find out that the primary cause of this summer's huge run up in gasoline prices is not OPEC or the price of crude oil, but a shortage of refinery capacity to produce gasoline and other fuels. They may also be taken aback by the brazen attempt of the oil industry to prevent policymakers in Washington from doing anything about the problem. Having systematically failed to increase their refining capacity to meet growing and expected demand, the major oil companies have now declared war on a key policy that can help alleviate the shortage – the expanded production of alternative transportation fuels, particularly biofuels, like ethanol.

To keep the refining market tight and gasoline prices and profits high, Big Oil is now threatening to scale back modest plans to expand refining capacity. The headline in a recent front page *New York Times* story says it all – "Oil Industry Says Biofuel Push May Keep Gas Prices High: Ethanol Seen as Deterrent to Expanding Refiners." The article described the threat as follows:

> In hearings before Congress last year oil executives outlined plans to increase fuel production by expanding existing refineries. Those plans would add capacity of 1.6 million to 1.8 million barrels over the next five years, for an increase of 10 percent, according to the National Petrochemical and Refiners Association.
>
> But those plans have since been scaled back to more than one million barrels per day, according to the Energy Information Administration, an arm of the federal government.[1]

[1] Jad Wouawad, "Oil Industry Says Biofuels May Keep Gas Prices High: Ethanol Seen as Deterrent to Expanding Refineries," *New York Times*, May 24, 2007, p. A1.

The irony of this excuse to break their commitment to build more capacity is palpable. First, even the addition of 1.6 to 1.8 million barrels a day of refinery capacity would not come close to being sufficient to alleviating the pressure on the refining sector, which has been created by a decade of deliberate under-investment in refining capacity. Second, those commitments were made in 2006, when gasoline prices were actually much lower than 2007 and the problem in the refining sector was not as clearly evident to the public. One would think that an even larger commitment, as opposed to a cutback, is in order this year. Third the scaling back of plans preceded the actual adoption of any policy to expand ethanol production, which suggests that the promises by the oil industry in 2006 were political theater intended to alleviate political pressures on oil companies, not the market pressures on consumers.

Keeping the refining sector tight is not the only way Big Oil battles against ethanol. The oil companies have substantial market power over the distribution of alternative fuels, as a *Wall Street Journal* headline pointed out: "Fill Up With Ethanol? One Big Obstacle is Big Oil."

> Yet so far, only a tiny fraction of U.S. service stations let a driver fill up with ethanol. There are a number of reasons, but one big one is resistance from oil companies…
>
> Oil companies lose sales every time a driver chooses E85, and they employ a variety of tactics that keep the fuel out of stations that bear the company name. For instance, franchises sometimes are required to purchase all the fuel they sell from the oil company…
>
> Contract sometimes limit advertising of E85 and restrict the use of credit cards to apply for it. Some require that any E85 pump be on a separate island, no under the main canopy.[2]

In spite of these threats, the Senate has voted to institute programs to triple the production of biofuels by 2022.[3] This would add the equivalent of 2.3 million barrels a day of refining capacity to the nation's liquid fuel supply. The Senate also adopted increases in the fuel economy standard for cars and light trucks to 35 miles per gallon by 2020. This would cut consumption by almost an additional 2 million barrels per day. Combined, these two programs are exactly what the President called for in the State of the Union address, when he asked for 20 in 10 – a twenty percent reduction in oil consumption in 10 years.[4]

The reaction of the oil companies to the ethanol policy suggests that it could pose a challenge to their market power. If so, consumers have a huge stake in the outcome of this struggle. The stakes for consumers in Big Oil's battle against biofuels is measured not only in prices at the pump, but in the broader problems that the nation's "oil addiction" causes

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[2] Laura Meckler, "Fill Up with Ethanol? One Obstacle is Big Oil: Rules Keep a Key Fuel Out of Some stations; Car Makers Push Back," *Wall Street Journal,* April 2, 2007, p. A1.

[3] The Senate passed H.R. 6.

[4] Available at www.whitehouse.gov/stateoftheunion/2007/initiative/neergy.html, p. 2.

including dependence on oil imports and global warming.[5] This paper reviews the serious problems in the petroleum refining sector and examines some of the key aspects of expanding ethanol production with an eye toward assessing the potential impact on consumers.

The oil industry threats to offset increases in ethanol production with cutbacks in refinery expansion plans and policies to restrict ethanol distribution are serious and demonstrate their unchallenged market power and their ability to limit competition which could help consumers obtain lower prices for gasoline and diesel fuel. Refining and wholesale markets have become so highly concentrated as a result of the merger wave of the past decade that the companies do not behave in a competitive fashion.[6] Eighty percent of refining markets and 90 percent of wholesale markets in America are concentrated, according to the *Guidelines* used by the Department of Justice (DOJ) and the Federal Trade Commission (FTC).[7] Big Oil has the market power to impede the growth of ethanol or to make the consumer pay the price in the Washington D.C. and on Main Street.

THE REFINERY BOTTLENECK

The problem that regulators and policy analysts have been exploring in the refining sector for over half a decade has finally broken into the popular press. The problem in the refining sector was succinctly summarized in the *New York Times*

> Refineries are a choke point in the nation's supply of fuel. Because they have not invested enough in refineries to increase gasoline supplies, oil companies have been unable to meet the country's growing demand in recent years. That has forced them to rely on imports, which are more expensive than fuel refined domestically…
>
> Until the mid-1990s, the United States had significant spare refining capacity. But because of consolidation in the industry, the number of refineries decline while unprofitable operations were shut. As demand, grew however, and capacity remained flat, the picture changed. In recent years, refineries in the United States have been running at or close to full capacity.
>
> Domestic refineries can now process about 17.5 million barrels of crude oil each day, much of it imported. But with consumption no close to about 21 million barrels a day, more imports of refined products are also needed.

The problem of the refinery bottleneck was identified as a key ingredient as early as the Midwest price spike of 2000. As the FTC report put it

[5] Responses to opinion polls exhibit this broad range of concerns with 82% expressing concern about gasoline prices, 74% concerned about oil import dependence and 61% concerned about global warming.

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

[7] U.S. General Accounting Office, *Energy Markets: Effects of Mergers and Market Concentration in the U.S. Petroleum Industry* (2004) [hereinafter Energy Markets].

> The spike appears to have been caused by a mixture of structural and operating decisions made previously (high capacity utilization, low inventory levels, the choice of ethanol as an oxygenate), unexpected occurrences (pipeline breaks, production difficulties), errors by refiners in forecasting industry supply (misestimating supply, slow reactions), and decisions by firms to maximize their profits (curtailing production, keeping available supply off the market). The damage was ultimately limited by the ability of the industry to respond to the price spike within three or four weeks with increased supply of products. However, if the problem was short-term, so too was the resolution, and similar price spikes are capable of replication. Unless gasoline demand abates or refining capacity grows, price spikes are likely to occur in the future in the Midwest and other areas of the country.[8]

Refinery capacity did not grow sufficiently and gasoline demand did not abate, leading to not just repeated price spikes, but a continuing upward price spiral. A 2003 Rand Corporation study identified a fundamental structural change in the refining sector brought about by strategic actions of the merging oil companies. The Rand study reaffirmed the importance of the decisions to restrict supply. It pointed to a change in attitude in the industry, wherein "[i]ncreasing capacity and output to gain market share or to offset the cost of regulatory upgrades is now frowned upon."[9] In its place we find a "more discriminating approach to investment and supplying the market that emphasized maximizing margins and returns on investment rather than product output or market share."[10] The central tactic is to allow markets to become tight by "relying on . . . existing plant and equipment to the greatest possible extent, even if that ultimately meant curtailing output of certain refined product."[11]

> [Indeed, many RAND discussants] openly questioned the once-universal imperative of a refinery not "going short" – that is not having enough product to meet market demand. Rather than investing in and operating refineries to ensure that markets are fully supplied all the time, refiners suggested that they were focusing first on ensuring that their branded retailers are adequately supplied by curtailing sales to wholesale markets if needed.[12]

The RAND study drew a direct link between long-term structural changes and the behavioral changes in the industry, drawing the connection between business strategies to increase profitability and pricing volatility. It issued the same warning that the FTC had offered two years earlier:

> For operating companies, the elimination of excess capacity represents a significant business accomplishment: low profits in the 1980s and 1990s were blamed in part on overcapacity in the sector. Since the mid-1990s, economic performance industry-wide has recovered and reached record levels in 2001. On the other hand, for consumers, the elimination of spare capacity generates

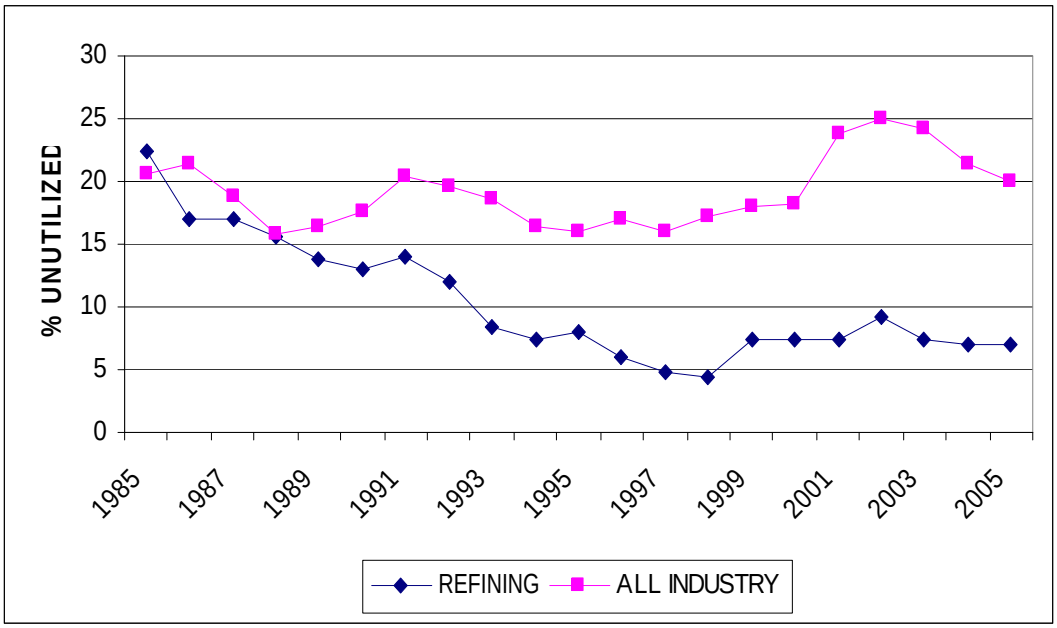
[8] Federal Trade Commission, *Midwest Gasoline Price Investigation* (Mar. 29, 2001), p. i-4.
[9] Peterson & Mahnovski, *supra* note 47, at 16.
[10] *Id.* at 42.
[11] *Id.* at 17.
[12] *Id.* at 17.

upward pressure on prices at the pump and produces short-term market vulnerabilities. Disruptions in refinery operations resulting from scheduled maintenance and overhauls or unscheduled breakdowns are more likely to lead to acute (i.e., measured in weeks) supply shortfalls and price spikes.[13]

The last couple of years have shown that the problem is not merely acute; it is chronic. By tightening the refining market through mergers and shuttering of facilities, the industry changed the structure, conduct, and performance of the sector. The most critical element in the market structure is the lack of spare refining capacity. As long as capacity is tight, each of the members of the oligopoly (shared monopoly) knows that their product will be demanded, in spite of rising prices. Exhibit 1 compares the spare capacity in the refining sector to

Exhibit 1:

Spare Capacity in Refining v. All Industry



Source: Calculated from Board of Governors of the Federal Reserve System, Federal *Reserve Statistical Release, Industrial Production and Capacity Utilization;* Energy Information Administration, U.S. Department of Energy, *U.S. Percent Utilization of Refinery Operable Capacity*.

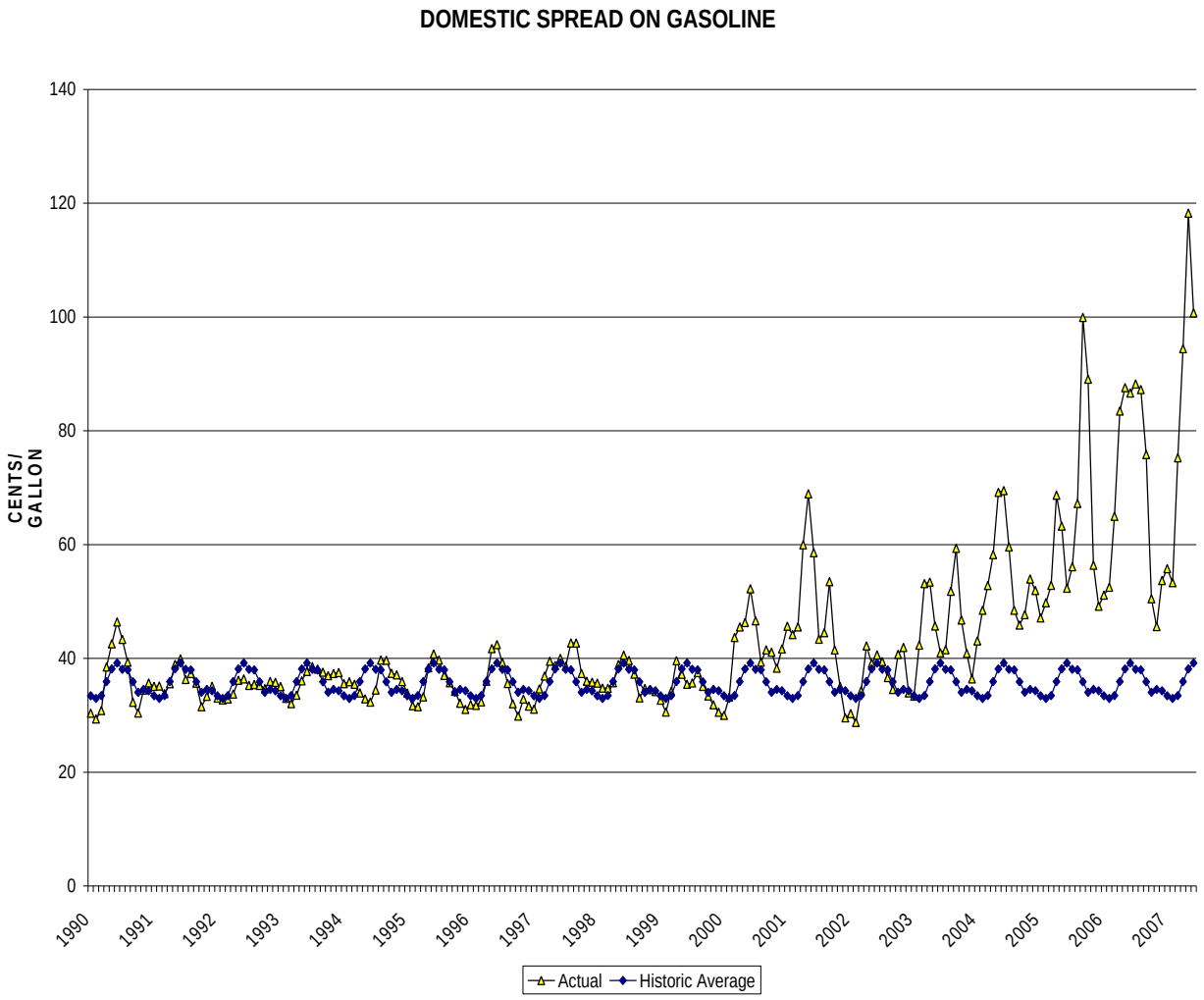
manufacturing in general. In competitive industries, each supplier carries spare capacity in case of surges in demand or accidents. They do not risk going short because raising prices or turning consumers away will cause them to lose their business. Because the petroleum refining sector is concentrated with inadequate competition and high barriers to the entry of new competitors, "going short" simply results in the uniform increase of prices.

The most obvious effect of the tightening of refinery capacity and the change in behavior has been a dramatic increase in the share of refining costs and profits in the pump

[13] *Id.* at xvi.

price of gasoline. This change is captured in the "domestic spread" (see Exhibit 2). The domestic spread is the retail price of gasoline at the pump minus crude oil costs and taxes. It

Exhibit 2:



Source: Mark Cooper, Mark Cooper Record Prices: Record Oil company Profits: The Failure of Antitrust Enforcement to Protect American Energy Consumers (September 2004), at 21-28, based on Energy Information Administration data available at http://www.eia.doe.gov/oil_gas/petroleum/info_glance/petroleum.html

isolates the share of the pump price that goes to domestic refining and marketing, with refining taking the lion's share. Since 2000, when the first price spike took place, the increase in the domestic spread compared to the late 1990s has been about $390 billion. Over the first six months of 2007, the increase in the domestic spread compared to the 1990s has raised the price of gasoline to consumers by about $28 billion. In other words, for consumers the stakes in creating more competition are clearly huge.

The problem that the tight refining market in the U.S. creates goes beyond simply driving up the price of gasoline. The U.S. is such a huge consumer of gasoline – one-quarter of the total consumed in the world – that the high refining margins in the U.S. have begun to influence the price of crude oil. When the domestic spread increases, it means that U.S. refiners have increased their take of the final retail price. OPEC, a rent seeking cartel, is shown that there is more that can be extracted from U.S. consumers and react by seeking to rebalance the division of the rents – that is finding ways to increase the price of their crude oil. A *Wall Street Journal* story, published the day after the *New York Times* story on the refining problem, made this point.

> Two years ago when gasoline prices in the U.S. surged to the then-lofty level of $2 a gallon, the Organization of Petroleum Exporting Countries sprang into action, seeking to provide relief by pledging to boost oil production.
>
> Now with gasoline topping an average of $3.20 a gallon nationwide, OPEC officials say they see no reason to open the oil spigot.
>
> OPEC's new attitude reflects a tug of war in the global oil patch over how the profits from a barrel of oil are divided up between the world's producers – which develop oil deposits and pump oil and its refiners – who process it into fuels like gasoline.
>
> In recent years, the balance in the world's oil-supply system has sifted, giving the refining industry more power and more profit…
>
> Privately, OPEC members are irked that U.S. refining margins – the profit refiners make in turning crude into gasoline and other products – have soared in recent months…
>
> OPEC officials say that if they pump more oil and depress world oil prices, U.S. gasoline prices might remain high, and the result would be even wider refining margins. In essence, OPEC would be putting more money into the pockets of refiners while its own revenue would be hurt by declining crude prices.[14]

The Department of Energy also noted that price setting was taking place in the tight U.S. market. Things have gotten so bad in the U.S. gasoline market that even the Energy Information Administration, in one of its weekly reports recognized that the tight U.S. gasoline market may be "pulling up" the price of crude. "In other words, if U.S. gasoline markets are tight, they may 'pull up' crude oil prices to a degree, given that tight downstream capacity makes each gallon of product produced that much more valuable, increasing the value of the crude used to produce the refined product."[15]

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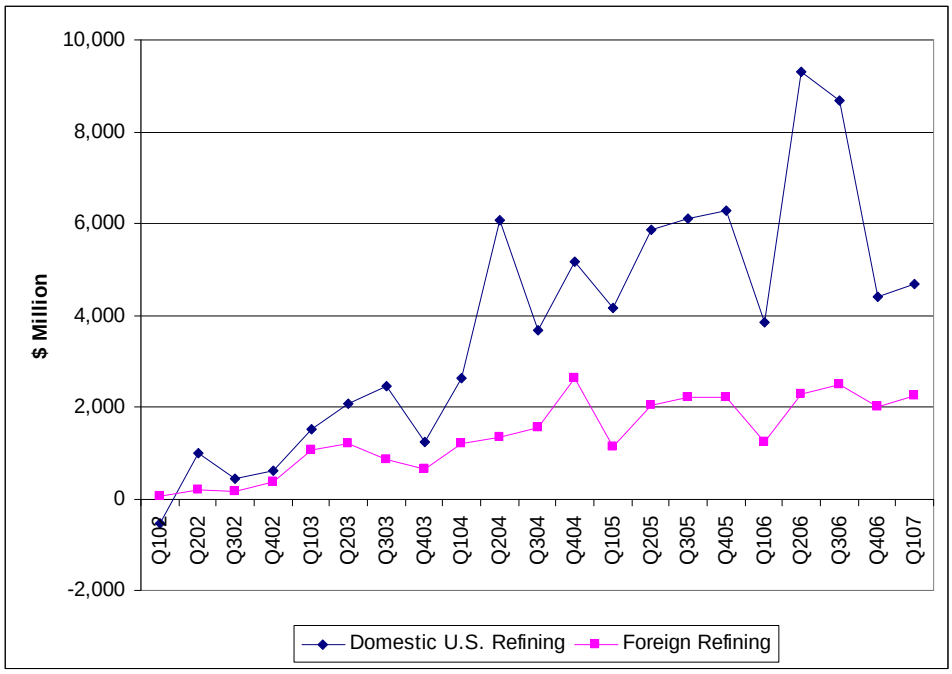
[14] Bhusahn Behree and Ana Campoy, "Why OPEC Idles as Gas Prices Reach New Higher: Cartel Balmes Refiners, Cites Flush Oil Supplies, Tug of War Over Profits," *Wall Street Journal*, May 25, 2007.

[15] Energy Information Administration, *This Week in Petroleum*, May 3, 2006, p. 2

The fact that U.S. refiners are taking a larger share of the rents or profits is highlighted by the much higher margins being earned on U.S. refining compared to the rest of the world, The *Wall Street Journal Noted*, "Lately American refiners have made a pre-tax profit of roughly $30 on each barrel of oil they use to produce gasoline, more than three times the margin in Singapore, a major Asian refining center."[16] This gap has been growing over the past half decade, as can be seen by comparing the income the U.S. majors earn on their U.S. refineries to the income they earn on their non-U.S. refineries (see Exhibit 3). The gap has

Exhibit 3:

Net Income in Domestic v. Foreign Refineries Owned by Major Oil Companies



Source: Energy Information Administration, Selected Financial and Operating Data for a Consistent Set of Major Energy Companies: First Quarter 2002 (Q102) Through Fourth Quarter 2006 (Q107)

been growing steadily as the industry tightened the screws on the U.S. refining market. The difference has everything to do with the lack of competition in the US versus greater competition in foreign markets.

THE ETHANOL CHALLENGE TO BIG OIL'S MARKET POWER

The reaction of Big Oil to public policies to promote increased biofuel production and use clearly indicates that the oil companies do not want competition to undercut the tight market they have helped to create and maintain in the U.S. gasoline market. An examination of the

[16] Bhusahn Behree and Ana Campoy, "Why OPEC Idles as Gas Prices Reach New Higher: Cartel Balmes Refiners, Cites Flush Oil Supplies, Tug of War Over Profits," *Wall Street Journal*, May 25, 2007.

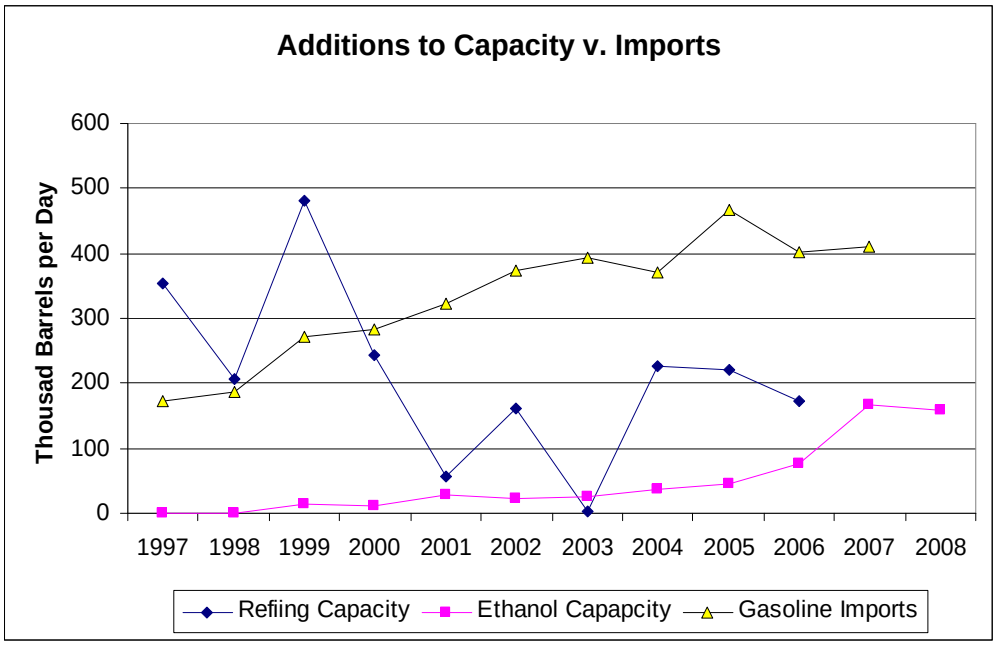
key market structural characteristics of the refining sector suggests that this is very much the case.

Production Capacity

Exhibits 4 and 5 include the key factors identified above in the long creation of the strategic bottleneck that underlies Big Oil's market power.

Exhibit 4 plots additions to refining capacity and imports, along with additions to ethanol capacity. The central refining sector feature underlying the recent run up in the domestic spread is evident. As *The New York Times* reported, "Because they have not invested enough in refineries to increase gasoline supplies, oil companies have been unable to meet the country's growing demand in recent years. That has forced them to rely on imports, which are more expensive than fuel refined domestically."[17] Note the growth of ethanol capacity. As an incremental source of supply it has been increasing steadily. By 2006 ethanol capacity equaled about half of the incremental refining capacity added in that year. Planned capacity additions in 2007 and 2008 would equal additions to refining capacity in 2006.

Exhibit 4:

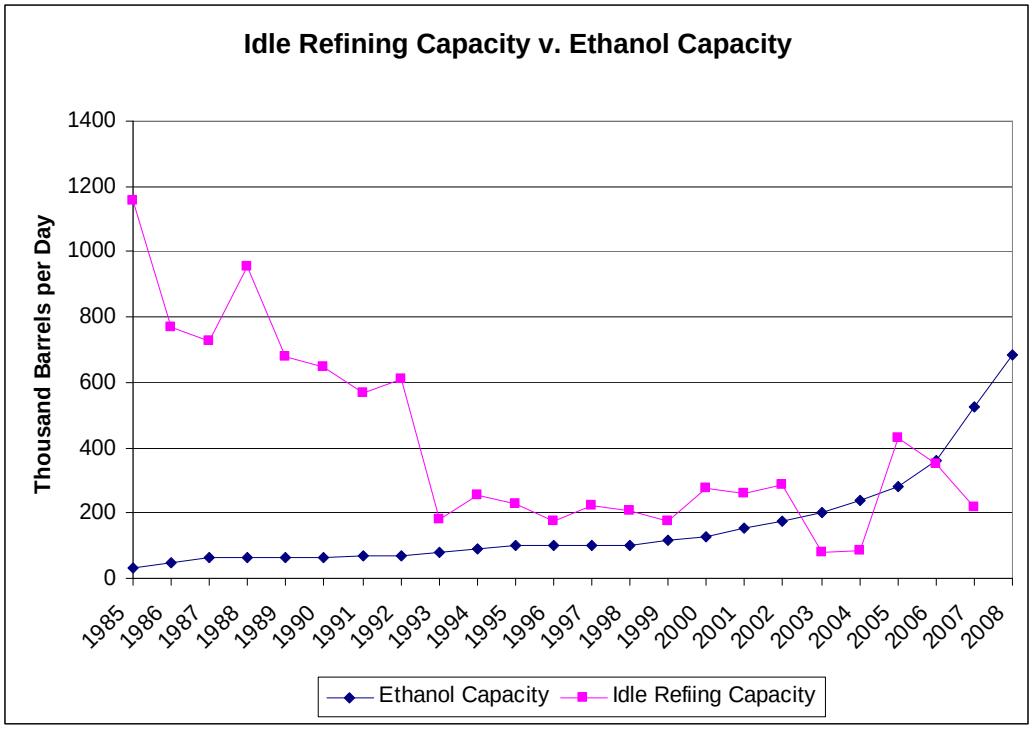


Sources: Renewable Fuels Association, *Annual Reports,* various years; Energy Information Administration data available at http://www.eia.doe.gov/oil_gas/petroleum/info_glance/petroleum.html

[17] Jad Wouawad, "Oil Industry Says Biofuels May Keep Gas Prices High: Ethanol Seen as Deterrent to Expanding Refineries," *New York Times*, May 24, 2007, p. A1.

Exhibit 5 compares spare capacity in the refining sector with ethanol production capacity. Again, the strategic variable underlying the creation of the refining sector bottleneck is evident. According to *The New York Times*, "Until the mid-1990s, the United States had significant spare refining capacity. But because of consolidation in the industry, the number of refineries declined while unprofitable operations were shut. As demand, grew however, and capacity remained flat, the picture changed. In recent years, refineries in the United States have been running at or close to full capacity."[18] Again, note the strong growth of ethanol capacity in 2006 and the even stronger projected growth in 2007-2008. Ethanol capacity equaled spare petroleum refinery capacity in 2006. The growth in 2007-2008 would result in ethanol capacity exceeding spare capacity in the refining sector by a substantial amount.

Exhibit 5



Sources: Renewable Fuels Association, *Annual Reports,* various years; Energy Information Administration data available at http://www.eia.doe.gov/oil_gas/petroleum/info_glance/petroleum.html

Combining these factors, ethanol production certainly appears to pose a competitive threat to Big Oil's long term strategy of keeping the refining sector tight to maximize profits. This threat to Big Oil's market power comes at the very beginning of the major build up in biofuel production that President Bush and the Senate have called for.

[18] Jad Wouawad, "Oil Industry Says Biofuels May Keep Gas Prices High: Ethanol Seen as Deterrent to Expanding Refineries," *New York Times*, May 24, 2007, p. A1.

Market Structure

The dramatic expansion of ethanol production capacity has been achieved in a pro-competitive fashion (see Exhibit 6). In 2002, the market was moderately concentrated Herfindahl-Hirschman Index of 1670. There were about 60 producers of ethanol and the top four firms had a combined market share of 50 percent. By 2007, the market had become unconcentrated (HHI=524). There were almost 100 producers of ethanol with the top four firms having a 32 percent market share. Planned additions in 2007 would deconcentrate the ethanol market even further, adding over 60 producers and driving the HHI in to range of 230, while the share of the top 4 firms would decline to about 20 percent.

Exhibit 6: Market Structural Characteristics of Ethanol Production

	Year-End 2002	**Year-End 2006**	**Projected Year-End 2007**
Number of Producers	60	93	159
4 Firm Concentration Ratio	50%	32%	22%
HHI	1670	524	233

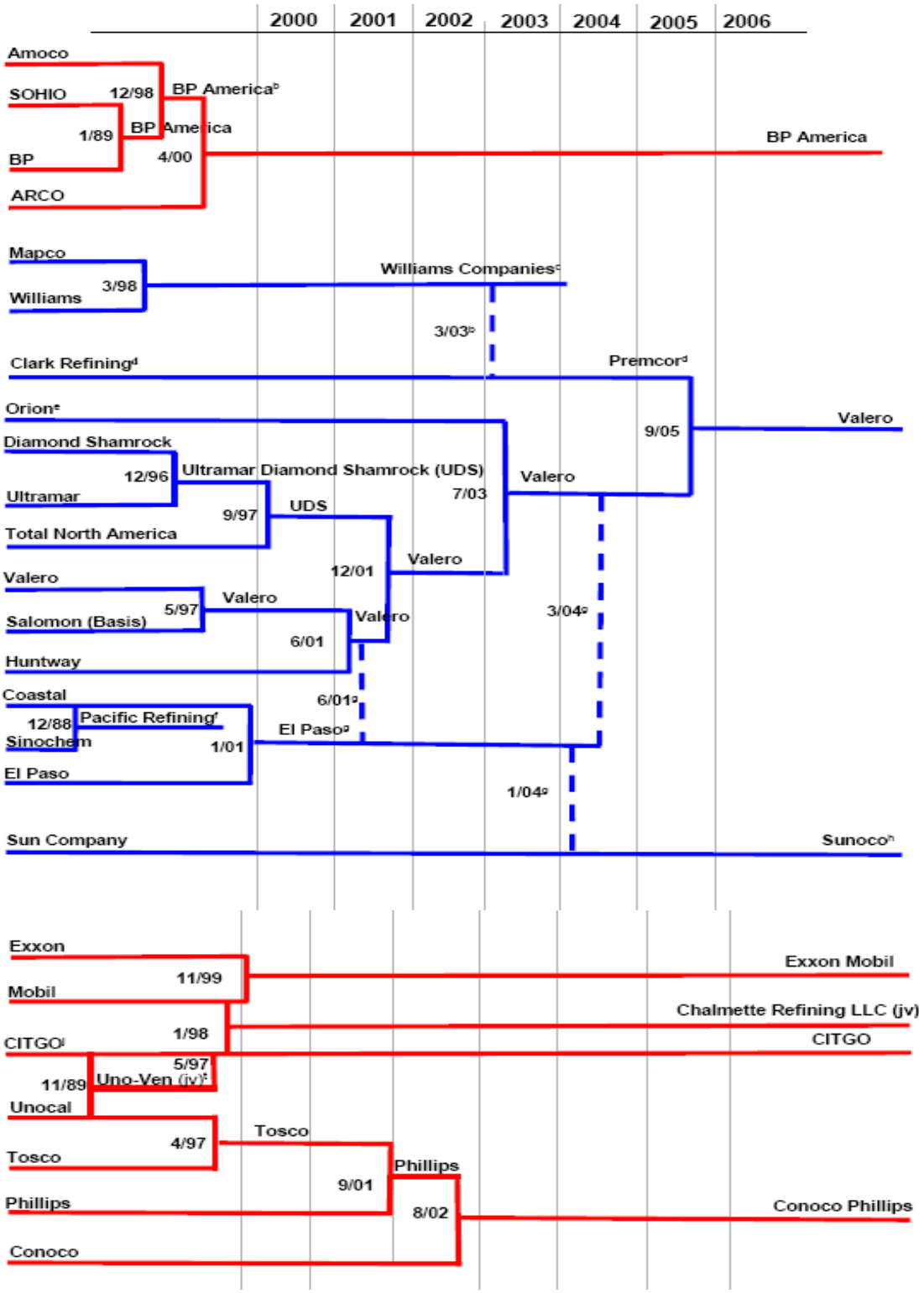
Source: Renewable Fuels Association: *Annual Reports.*

The market structure in ethanol has become atomistically competitive. The contrast between the deconcentration and new entry into the ethanol sector and the concentration and exit in the refining sector could not be greater (see Exhibit 7). Over the past decade, the number of major refiners has shrunk from 25 to 7. Price competition among refiners is rare. Virtually every refinery region and wholesale market has become concentrated, with many highly concentrated (HHI above 1800).

PRICE IMPACTS

Because the effect of the expansion of ethanol production is structural, it is difficult to predict what the ultimate impact will be. Simply calculating the cost of ethanol compared to the cost of gasoline misses the point because alleviating the market structural upward pressures on prices is much more important.

Exhibit 7: Mergers have severely Reduced the number of Refiners



Source: http://tonto.eia.doe.gov/FTPROOT/financial/mergers/dwnstream.pdf

For the past decade or so the central dynamic in the gasoline-ethanol rivalry has been dominated by requirements to blend oxygenates to lower environmental impact of gasoline and a large tax credit offered to refiners to induce them to use ethanol. This was particularly evident in 2006 as Big Oil abandoned MTBE as an oxygenate and switched *en masse*, putting great pressure on the supply of ethanol. Before the surge in demand for ethanol as an oxygenate, ethanol was priced below gasoline. As supply caught up with demand, prices declined and ethanol was again priced below gasoline. Going forward, however, the price dynamic changes to a broader issue of ethanol becoming blended widely for conventional engines and available for E85 uses.

A recent article *Ethanol Producer Magazine* described the price history as follows:

> When the magnitude of ethanol demand is relatively close to ethanol production capacity and import volumes, ethanol prices have tended to closely track gasoline prices and the spread is constant. When demand increases relative to supply, ethanol prices will increase relative to gasoline prices and the spread will increase. A clear example of this took place during the spring of 2006 as ethanol demand surpassed production capacity and prices needed to increase high enough to attract imports….
>
> The opposite took place in the spring of 2005 when ethanol supplies were increased in anticipation of Atlanta switching to E10. When the switch didn't occur, the resulting oversupply depressed prices and the spread went into negative territory for several months.[19]

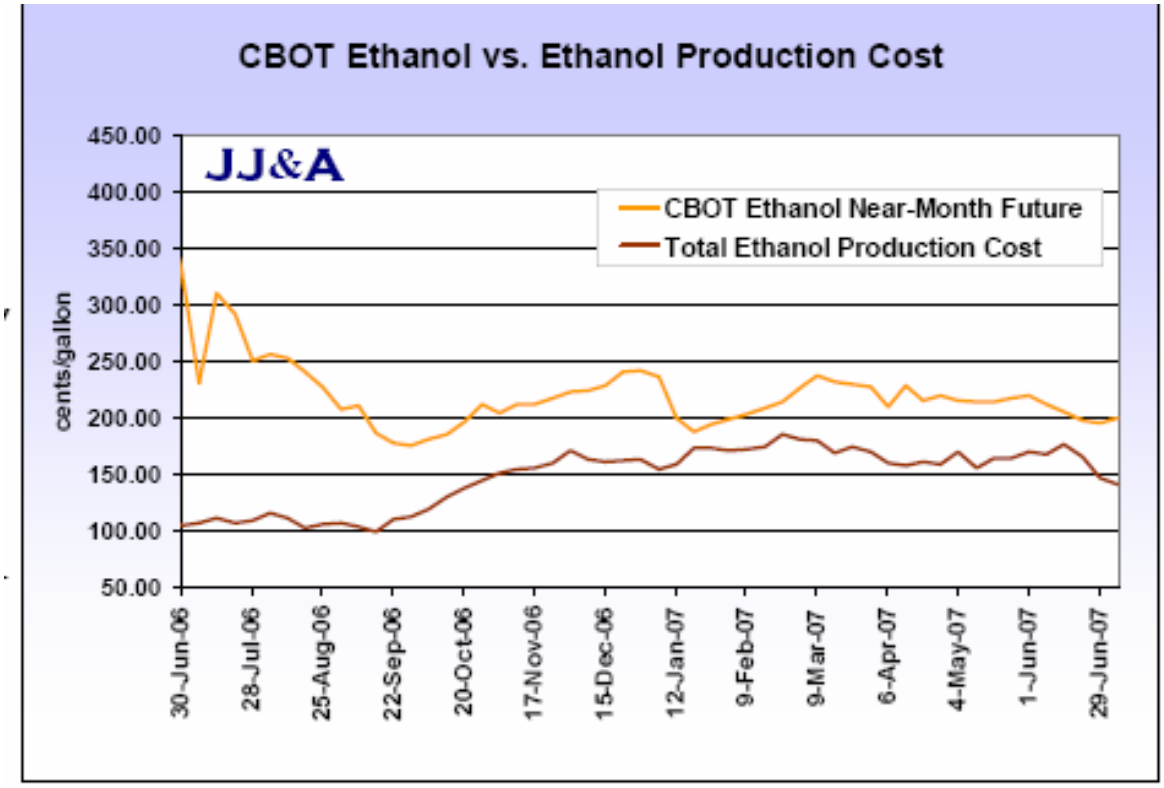
Going forward, the addition of capacity discussed above suggests, as the analysis put it "from the spring of 2007 through at least the end of 2008, ethanol supply capacity will significantly exceed demand."[20]

Over the past year, as oil company refining margins have been soaring, ethanol margins have declined dramatically and stabilized (see Exhibit 8). This is consistent with competitive behavior and new entry into the industry. The dynamic process in a competitive market works to keep supplies adequate.

> The decline in the spread is expected to continue until the absolute price of ethanol drops low enough to persuade ethanol producers to reduce operating rates and balance the market. The resulting underutilized production capacity will act as a weight on ethanol prices. Producers will try to bring it back on line, causing an oversupply that will lower prices. It's expected the ethanol

[19] Logan Caldwell, "The Changing Ethanol Market: Implications for Stakeholders," *Ethanol Producer Magazine,"* July 2007, available at: http://www.ethanolproducer.com/article-print.jsp?article_id=3104
[20] Id.

Exhibit 8:



Source: JJ&A Fuels, Blendstock Report, July 6, 2007, p. 7.

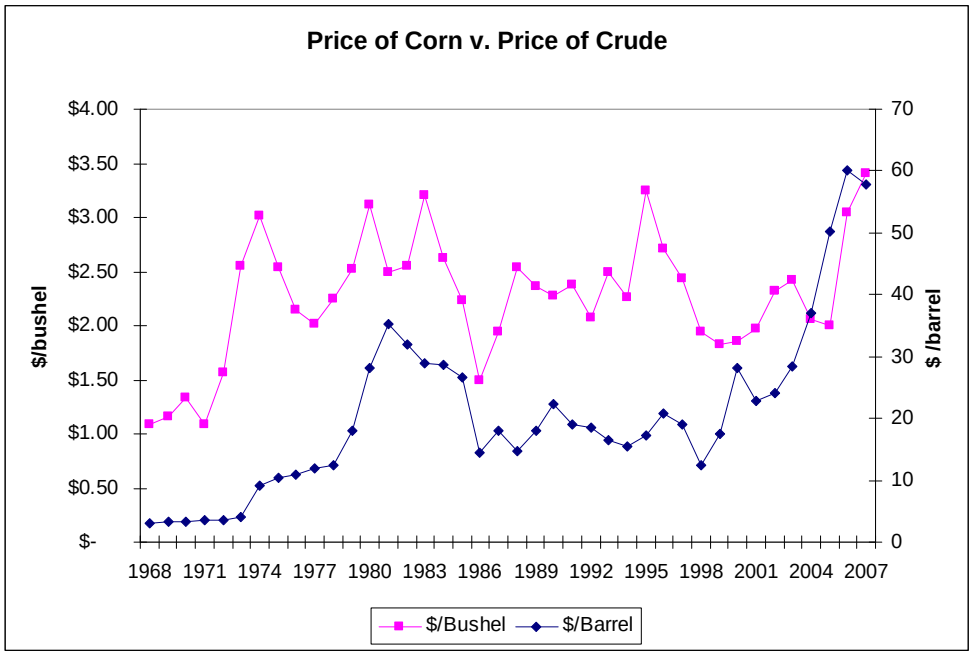
> market will ultimately come back into balance as a result of higher demand created by gasoline blenders increasing their use of ethanol as it becomes an "irresistible" blendstock from an economic point of view.
>
> The floor price of ethanol is likely to be set by the variable cost of producing the incremental gallon of ethanol…When an ethanol producer has an opportunity to sell more ethanol, the rational decision is to produce and sell when the price is greater than the cost it takes to produce. Conversely, if the price offered is less than the variable cost, the producer is better off declining the sale and not producing.[21]

The variable price floor for ethanol is defined should be defined the price of corn. However, "Historically, ethanol prices haven't tracked corn prices… As the excess production capacity increases, ethanol prices will continue to trend downward until they begin to parallel, or correlate with, corn prices. Prices will continue to trend with corn until ethanol supply and demand comes back into a semblance of balance."[22]

[21] Id.
[22] Id.

The observation that ethanol and corn prices have not tracked and the hope that expanding ethanol and biofuel production will discipline the market power of oil companies and lead to lower gasoline prices may strike some as odd, particularly in light of concerns that effort to use ethanol to reduce oil consumption and import dependence will raise food prices.[23] Historically the relationship has run in the opposite direction – high energy prices cause higher food prices (see Exhibit 9). The relationship is moderate, accounting for about one-third of the variation in corn prices. The relationship reflects the fact that corn production is intensive in the use of liquid fuels and natural gas, whose price tends to track the price of crude.

Exhibit 9:



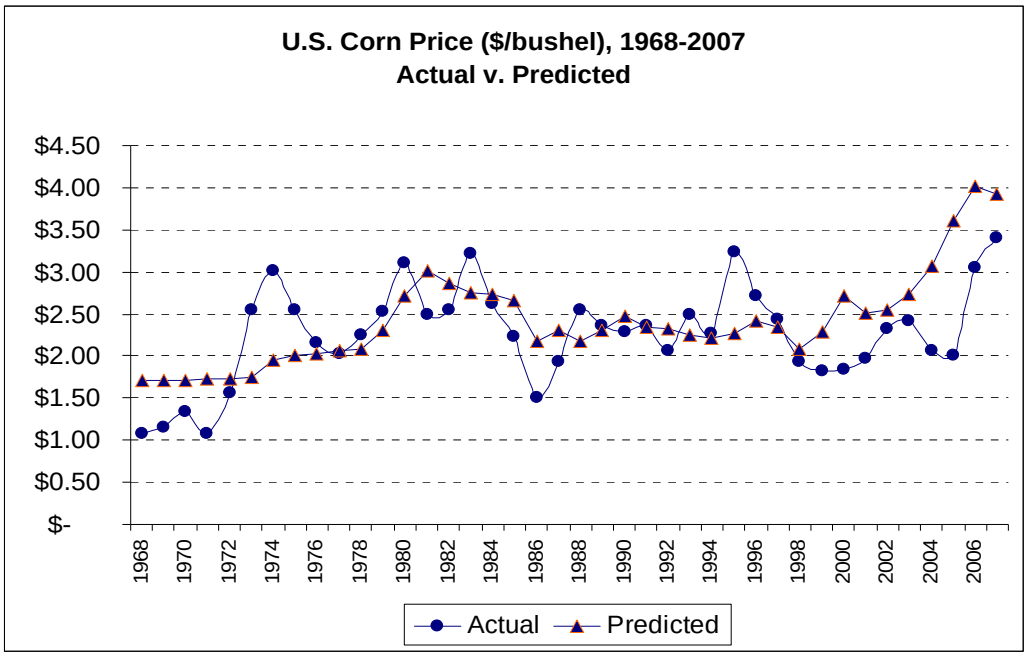
Sources: U.S. Department of Agriculture, Corn Price Average, 1950-2007; Energy Information Administration data available at http://www.eia.doe.gov/oil_gas/petroleum/info_glance/petroleum.html

Based on the historical relationship between crude prices and corn prices, current prices for corn are lower than one would predict. (see Exhibit 10)

Many factors will affect the relationship between food prices and ethanol production, above all the extent to which cellulosic feed stocks replace food feed stocks as the source of raw material for ethanol production. To the extent that ethanol production mitigates domestic refining market power, the historic-corn crude price relationship will cushion the impact that ethanol production has on food prices.

[23] Id.

Exhibit 10:



Sources: U.S. Department of Agriculture, Corn Price Average, 1950-2007; Energy Information Administration data available at http://www.eia.doe.gov/oil_gas/petroleum/info_glance/petroleum.html

CONCLUSION

Big Oil has reacted aggressively against the expansion of ethanol production, suggesting that it perceives the growth of biofuels as an independent, competitive threat to its market power in refining and gasoline marketing. This paper explored the market fundamentals that underlay Big Oil's reaction to policies to expand ethanol production. We find that, at the critical margins of spare capacity, the expansion of ethanol capacity could pose a real threat to the tight market situation that Big Oil has created by steadily under-investing in refining capacity. The vigorously competitive ethanol sector is set to undergo a dramatic expansion, which could alter the extremely tight supply-demand balance that has afflicted gasoline consumers for the past seven years. While there are many other aspects of the expansion of ethanol that deserve close attention – such as non-food feed stocks and land management issues[24] – on the market structural potential for ethanol to be a game changer, consumers have a large stake in the outcome of the war being waged by Big Oil against ethanol. Supporting increased competition in the automobile fuels market will help discipline a market dominated by a handful of multinational oil companies that are extracting monopoly profits from US gasoline consumers.

[24] Natural Resources Defense Council, *Getting Biofuels Right: Eight Steps for Reaping Real Environmental Benefits from Biofuels* (May 2007).