

America's Oil and Natural Gas Industry  
**The Facts About Oil Industry Mergers,  
Market Power and Fuel Prices: An API Primer**

August 2008

The oil and natural gas industry recognizes the concerns across the country over the higher energy costs American consumers and businesses have been facing this year. It is also aware of the assertion that the consolidation that has occurred in the industry over the last decade has led to higher energy prices. This primer attempts to address those concerns and offers the proper context in which to view both energy prices and company mergers.

## Table of Contents

Background	Page 1
The Myth of “Big Oil”	Page 2
2006 Largest Oil and Gas Companies	Page 3
Crude Prices Explain Gasoline Prices	Page 4
FTC Finds Firms Behave Competitively	Page 5
Refineries Not Highly Concentrated	Page 6
Return on Investment for U.S. Refining and S&P Industrials	Page 7
Profitability of U.S. Refining and Foreign Refining	Page 8
Number of Refineries Decline but Capacity Expands	Page 9
Net Income and Investment by Top Energy Companies	Page 10
Index of Inventory Levels to Sales	Page 11
Global Market for Crude and Refined Products	Page 12
Regulator Investigations	Page 13
A Dozen Facts You Should Know	Page 14
Genealogy of Major U.S. Oil and Gas Producers	Page 15-16
Genealogy of Major U.S. Refiners	Page 17-18
References	Page 19

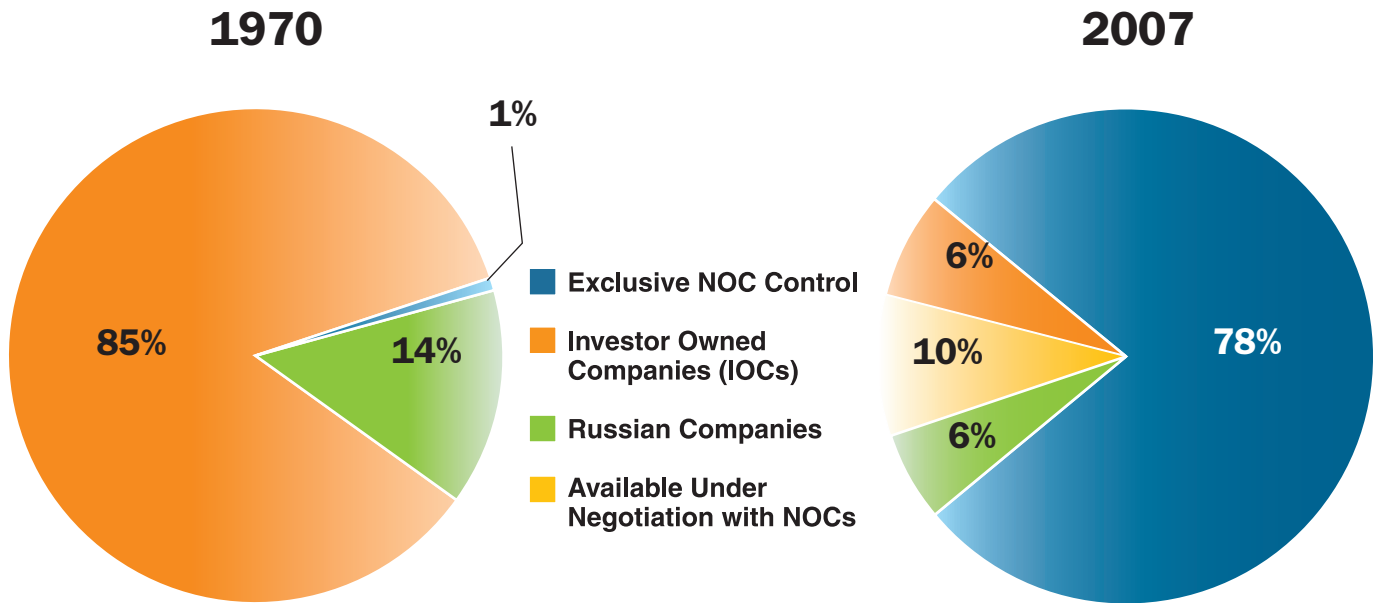
# Background

The Federal Trade Commission (FTC) plays two principle roles in the oversight of the oil industry. First and foremost, the commission scrutinizes any proposed oil merger, acquisition or consolidation. Oil industry mergers occur only after careful FTC scrutiny into whether the consolidation would unduly reduce competition in the market. As part of its antitrust oversight role, the FTC has required divestitures and even challenged proposed oil company consolidation, at lower levels of concentration than in any other industry.

In addition to its role as chief antitrust regulator of the oil industry, the FTC also plays a major role in consumer protection. It has conducted hundreds of exhaustive investigations into price increases in recent years. None of these probes found evidence of collusion or market manipulation. Also as part of its role as a consumer watchdog, the FTC conducts continuous monitoring of gasoline markets for potential anticompetitive conduct. To quote the FTC: *“In no other industry does the FTC maintain a price monitoring project such as its project to monitor retail gasoline and diesel prices.”* (FTC 2005, p.i.)

## The Myth of “Big Oil” (As a Percent of Proven Reserves)

### National Oil Companies (NOCs) Increasingly Control the World’s Oil Reserves



Source: PFC Energy

### In terms of market power, investor-owned international oil companies (IOCs) own just six percent of the world’s oil reserves.

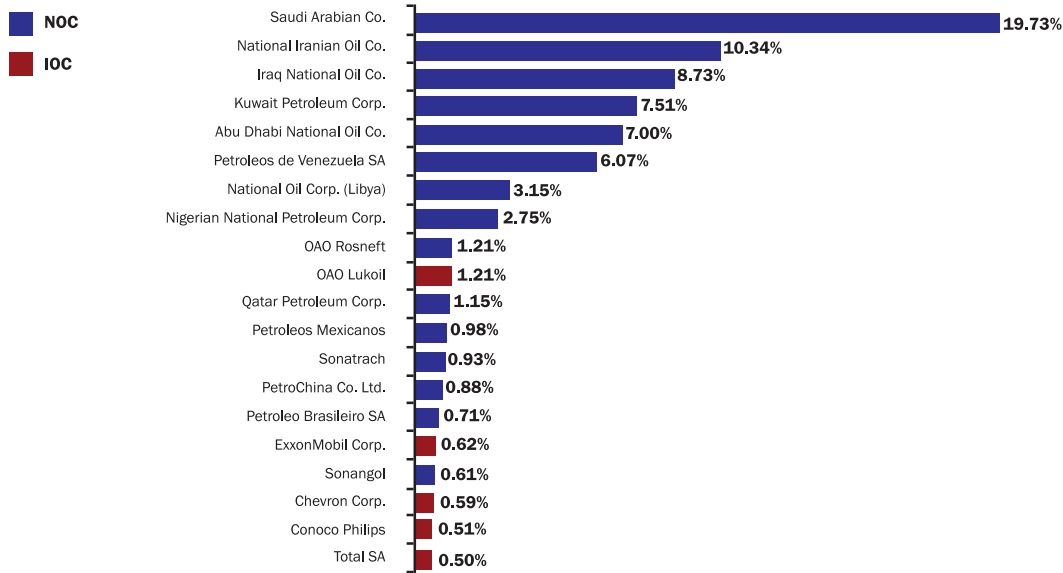
It is important to understand how the energy world has changed. Forty years ago, world oil reserves were largely the domain of the investor-owned, international oil companies (IOC), based principally in the United States. Most people today assume international oil companies are little changed from decades ago, still sitting astride the bulk of these world oil reserves. That is no longer the case. Today, world oil reserves are 80 percent owned by the national oil companies of foreign governments, many formed during the past 30 years. Only six percent of worldwide oil reserves are now held by investor-owned oil companies.

Faced with such competition, the investor-owned oil companies have scaled up within this new world – principally through mergers and acquisitions – by creating ever larger efficiencies, greater technological and project management prowess, and substantially broader competitive access to capital markets.

America’s Oil and Natural Gas Industry  
[The Facts About Oil Industry Mergers, Market Power and Fuel Prices: An API Primer](#)

August 2008

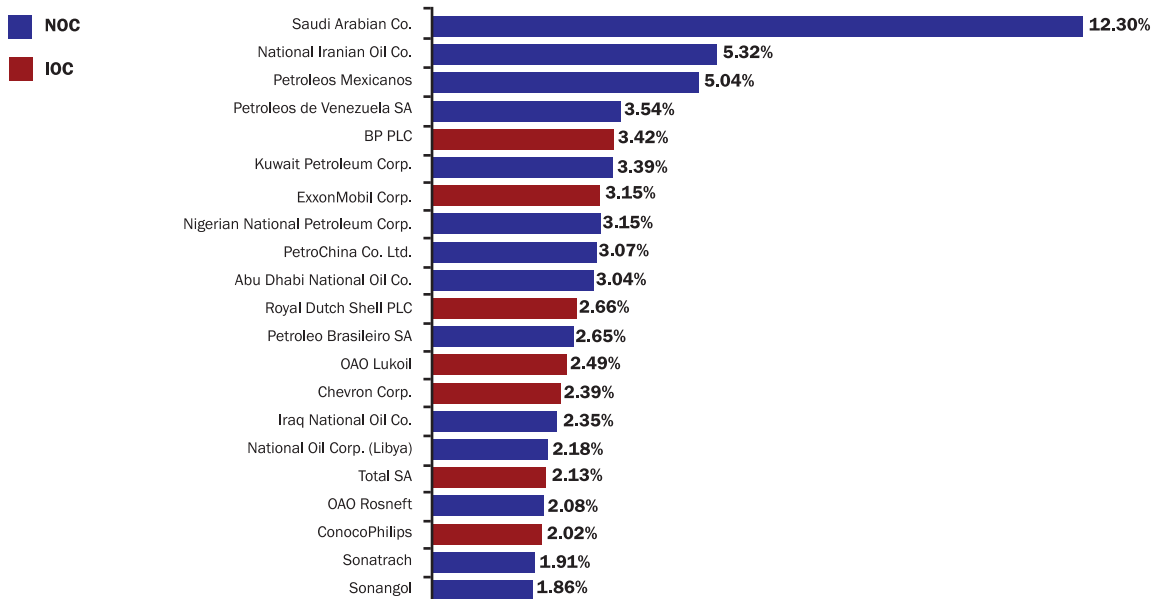
## 2006 Largest Oil and Gas Companies (percent of worldwide reserves)



Source: World reserves of 1.3 trillion barrels as of January 1, 2007 according to *Oil and Gas Journal* December 24, 2007  
 Leading companies: *Oil and Gas Journal* September 17, 2007

Even the largest U.S. based international investor-owned company accounts for just a small fraction of the world's oil reserves and production. This limits U.S. oil and natural gas companies' influence on world crude oil prices. According to the Federal Trade Commission, ***"mergers of private oil companies have not significantly affected worldwide concentration in crude oil. This is important because crude oil prices are the chief determinant of gasoline prices."*** (FTC 2004, p.1)

## 2006 Largest Oil and Gas Companies (percent of worldwide production)

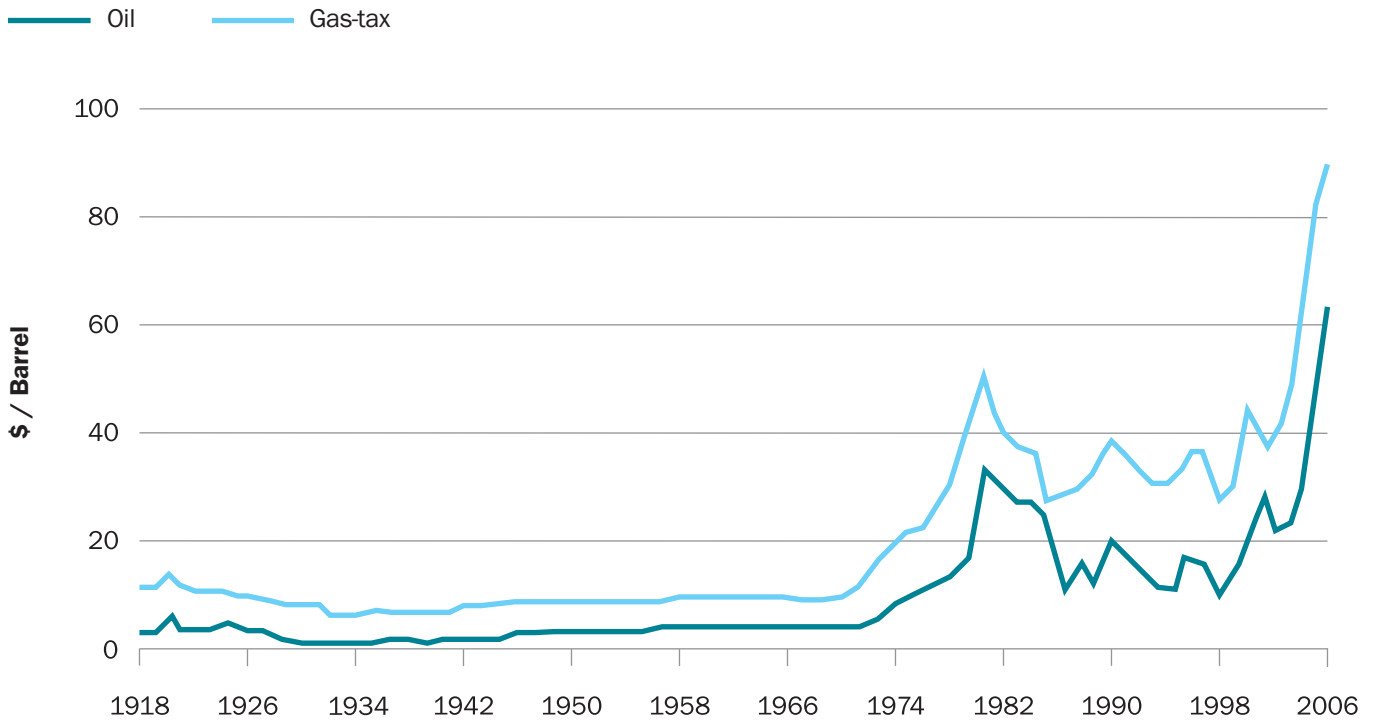


Source: Estimated world total of 72.4 million barrels a day in 2007 according to *Oil and Gas Journal* December 24, 2007  
 Leading companies: *Oil and Gas Journal* September 17, 2007

America's Oil and Natural Gas Industry  
 The Facts About Oil Industry Mergers, Market Power and Fuel Prices:  
 An API Primer

August 2008

## Refinery Crude Oil Acquisition Price and Gasoline Price Less Tax (1918–2006, September)



**Notes:** 2006 price is weighted average through September; oil values prior to 1947 are U.S. wellhead prices.

**Sources:** API, 1959, *Petroleum Facts and Figures*, *Petroleum Databook* (2005), and EIA/DOE, *Monthly Energy Annual*.

## Movements in crude oil markets explain almost all of the change in gasoline prices since 1918.

Historical analysis shows that changes in crude oil prices explain about 97 percent of the variation in the pre-tax price of gasoline between 1918 and 2006. Over that period, a \$1 per barrel increase in the crude oil price consistently generated an increase in the gasoline price of about 2.5 cents. Between January 1999 and summer 2006, crude oil prices more than quadrupled from \$15.50 per barrel to over \$65 per barrel. Based on the historical pattern, gasoline prices would

be expected to increase by more than \$1.15 per gallon in the same period. The actual increase in gasoline prices was slightly lower than this forecast amount. In addition, a small percentage of the increased cost of gasoline can be attributed to higher refiners' costs to purchase electric power, inorganic chemicals, and organic chemicals. These costs rose by 20 percent, 25 percent, and 45 percent, respectively, from 2000 to 2005.

Source: Dahl, April 2007

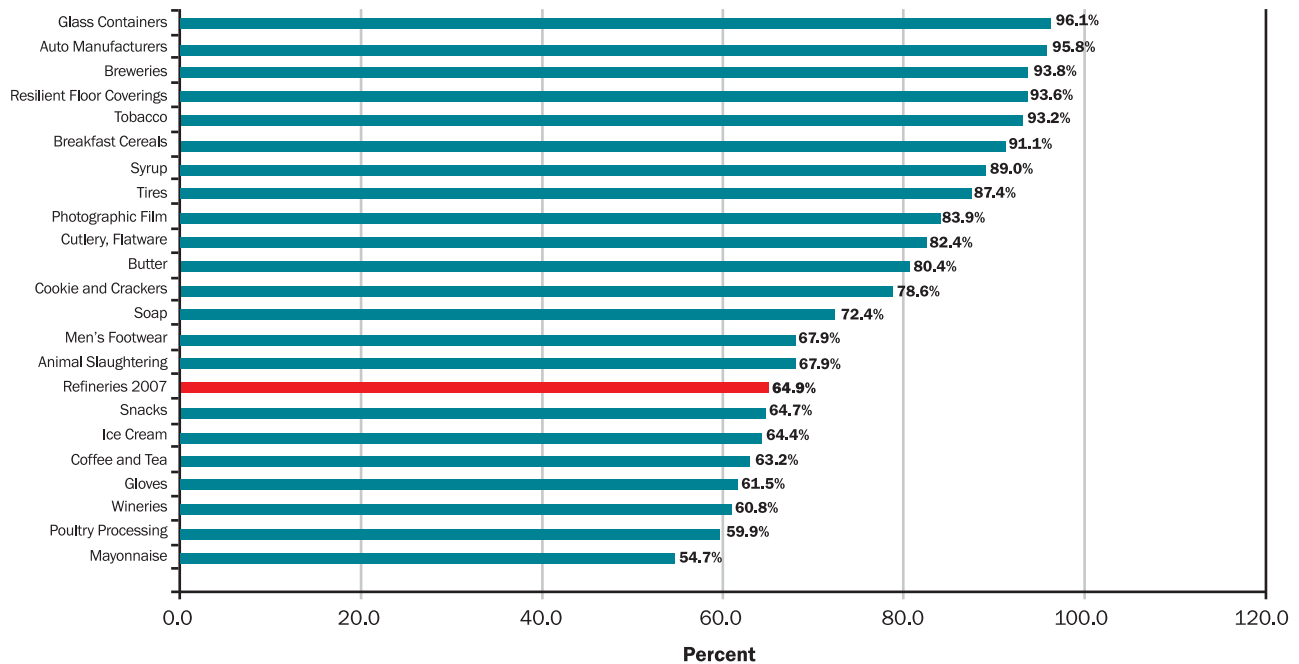


The perception that mergers increased the market power of refineries is not supported by the evidence. In fact, concentration has remained low to moderate and vertical integration has been decreasing, according to the FTC.

The oil industry is becoming less vertically integrated. According to the FTC (2004), the share of U.S. refining capacity owned by independent refiners with no production operations was eight percent in 1990. By 2007, the share was over 21 percent.

Moreover, a 2006 FTC investigation found “no evidence indicating that refiners make product output decisions to affect the market price of gasoline. Instead, the evidence indicated the refiners responded to market prices by trying to produce as much higher-valued products as possible...The evidence collected in this investigation indicated that firms behave competitively.”

## Eight Firm Concentration (2002) – Percent of Market Composed of the Eight Largest Firms



Source: Energy Information Administration for Refineries 2008, adjusted for sale of Krotz Springs from Valero to Alon. U.S. Department of Commerce for all others.

## Many other industries are more highly concentrated than the refining industry.

The refining industry is not highly concentrated due to mergers as some have claimed. If one compares the share of the industry attributed to the largest eight firms, one can see that there are many other consumer industries with a higher share of their industry's total (concentration) than the refining industry. The U.S. Commerce Department maintains four- and eight-firm concentration ratios for all major industries. The above chart lists the eight-firm shares for selected consumer industries for 2002 – the latest data available. The refinery figure for 2008 is from the Energy Information Administration, adjusted for the sale of Krotz Springs from Valero to Alon.

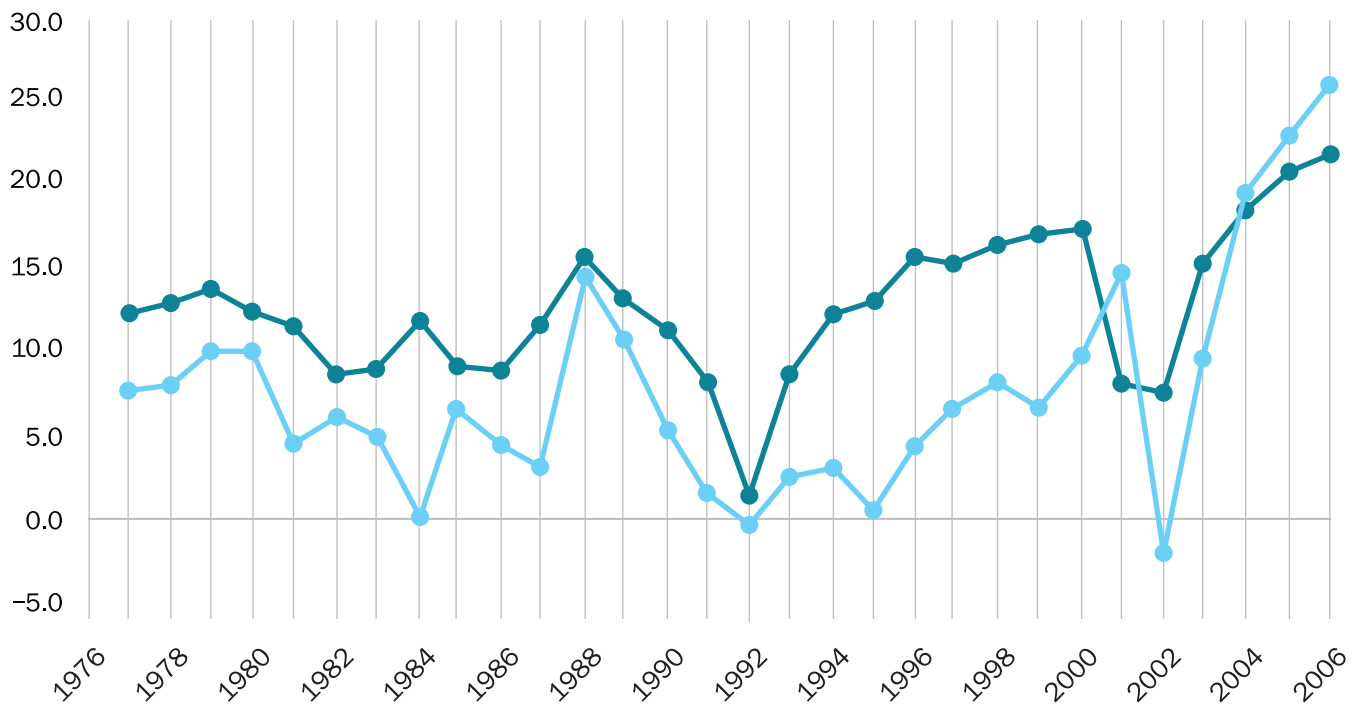
In 2008 the eight largest refiners comprised 64.9 percent of total U.S. refining capacity. The share data for other industries is the share of value of shipments that the eight largest companies comprise. The Commerce Department's share for refining was 63.5 percent in 2002. Data for 2008 was used instead of 2002 to reflect any merger activity that occurred between 2002 and 2008.

America's Oil and Natural Gas Industry  
[The Facts About Oil Industry Mergers, Market Power and Fuel Prices: An API Primer](#)

August 2008

## Return on Investment (net income/net investment in place)

● S&P Industrials    ● U.S. Refining

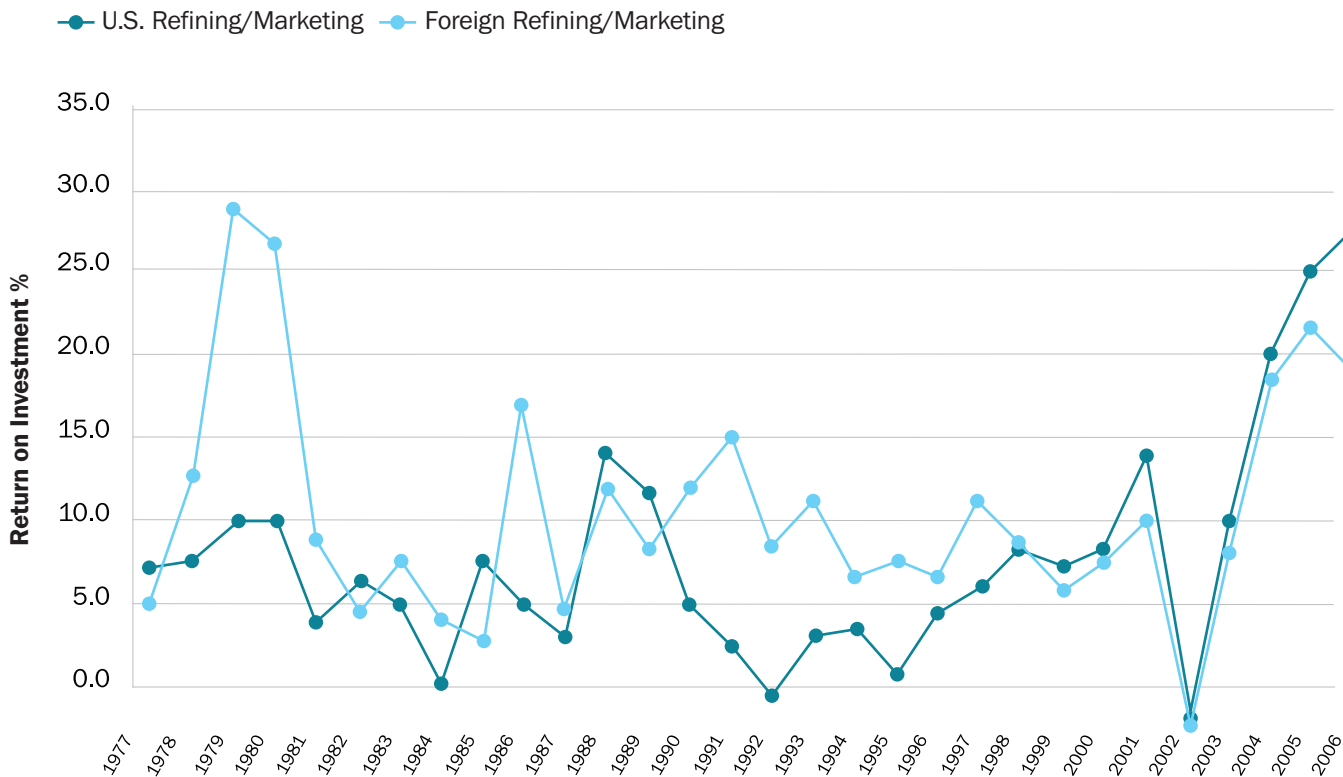


Source: EIA, *Performance Profiles of Major Energy Producers*, various issues and 2006 S&P figure compiled by PWC from Compustat data.

The magnitude of refiner earnings is often exaggerated. From 1977 to 2006, the rate of return on investment in U.S. refining averaged 7.7 percent. This compares unfavorably with returns over the same period of 12.5 percent for the S&P 500 industrials.

For many years, the rate of return on investment in U.S. refining lagged behind the returns for the S&P Industrial average. It is only in recent years that refiners have enjoyed higher average earnings. Refiners need to continually invest, and do so even when earnings are lower.

## Return on Investment for U.S. and Foreign Refining/Marketing (1977–2006)



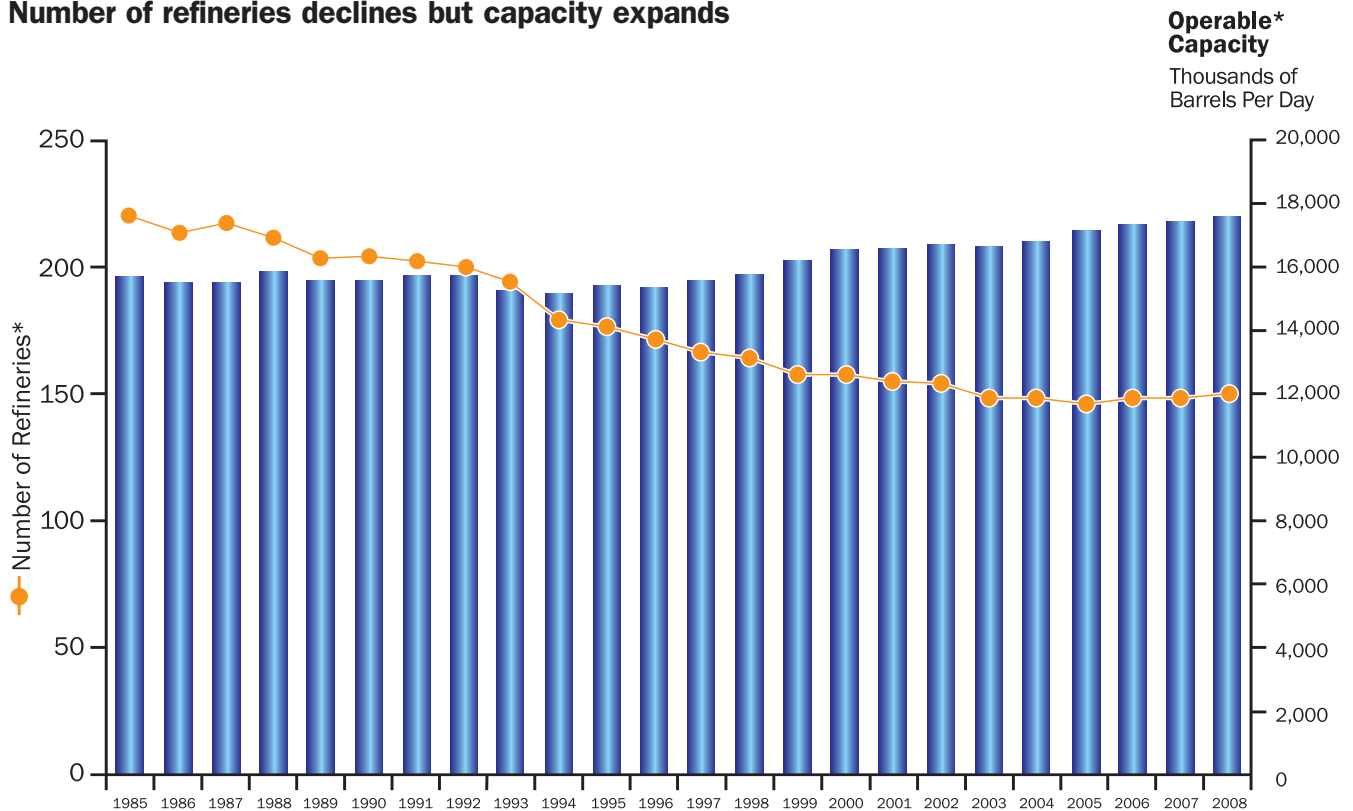
Source: EIA, Performance Profiles of Major Energy Producers.

## No evidence is found for the claim that U.S. refining is more profitable than foreign refining.

Some make the claim that U.S. refineries are more profitable than foreign refineries to bolster their belief that the U.S. refinery industry has too much market power. In fact, their rates of return on investment averaged 7.6 percent from 1977 to 2006, compared with 10.4 percent internationally.

This pattern does not support the argument that refiners were able to abuse their market power in the U.S. U.S. refineries are the most complex in the world because they need to meet some of the most stringent clean fuels standards.

## Number of refineries declines but capacity expands



\*Operable as of January 1st  
Source: DOE

Those who persistently accuse the industry of holding back supplies overlook the fact that over the past 10 years, existing refineries have expanded capacity by the equivalent of building 10 new refineries.

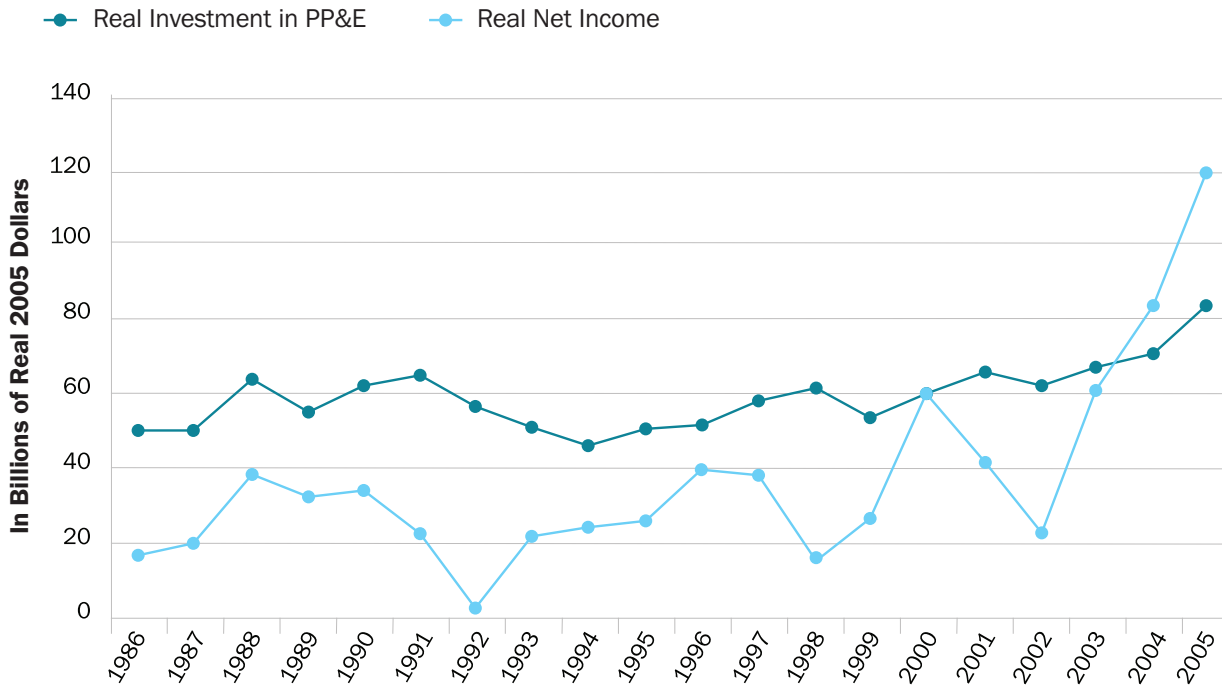
Since 1985, U.S. refining capacity has increased by 12 percent even though there are 73 fewer refineries. Because the infrastructure to bring crude in and get products out is in place, it is more cost effective to add on to a refinery than to build a new one. The elimination of subsidies under the government price and allocation controls in 1981 led to the closure of many smaller, less efficient refineries throughout the 1980s and 1990s.

According to the U.S. Energy Information Administration, current domestic refinery expansion plans will boost domestic refining capacity by another 800,000 per day by 2010, the equivalent of four new refineries. Moreover, a number of refinery modification or expansions have been announced to handle increased processing of heavier crude oils, including oil derived from Canadian oil sands. This additional crude from Canada – a reliable, nearby source – should enhance our domestic energy security.

America's Oil and Natural Gas Industry  
The Facts About Oil Industry Mergers, Market Power and Fuel Prices:  
An API Primer

August 2008

## Net Income and Investment in Property, Plant and Equipment of Top Energy Companies\* (1986–2005)



**Note:** Investment in PP&E taken from cash flows and excludes acquisitions and mergers. **Source:** EIA/DOE [www.eia.doe.gov/emeu/finance/frsdata.html](http://www.eia.doe.gov/emeu/finance/frsdata.html).

\*In 2006 these companies accounted for about 44 percent of total U.S. crude and NGL production, 43 percent of natural gas production, 81 percent of U.S. refining capacity and 3 percent of U.S. electricity.

The refining industry's investment in new capacity has been consistent with historical trends and prudent business practice. There is no evidence that investment has been purposely delayed in order to increase gasoline prices and industry earnings.

Investment in capital-intensive industries does not directly track changes in earnings or prices. Analysis of historical data shows that annual investment in refining capacity is more stable than earnings, with changes in earnings causing a change in investment that is spread over three years. The pattern is similar in the durable goods sector where earnings increased almost 75 percent in

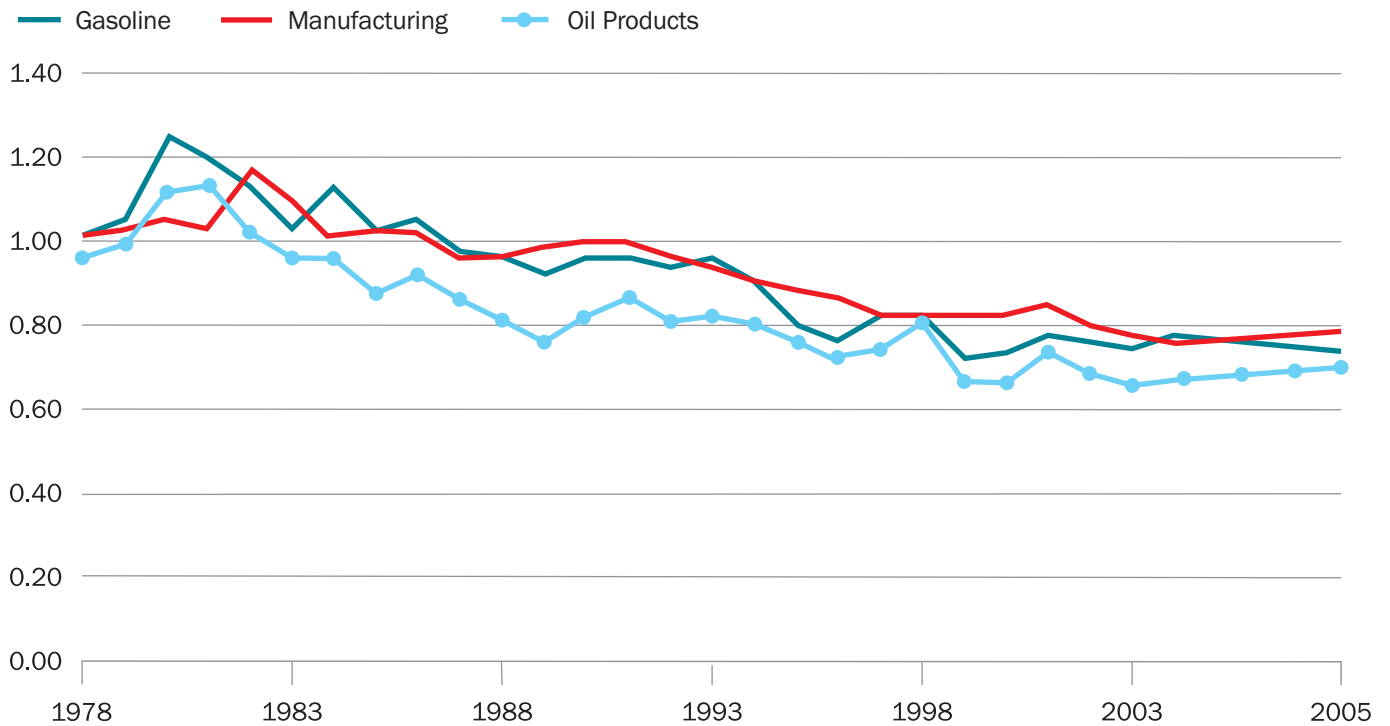
2004, while plant and equipment investment increased less than one percent. The refining industry follows prudent business practice by adding capacity incrementally, allowing time to gauge the long-term market response to higher prices. Refinery utilization rates in 1999 to 2006 were in the healthy 90-95 percent range, but were not generally higher than in 1992-1998.

Source: Dahl, April 2007

America's Oil and Natural Gas Industry  
 The Facts About Oil Industry Mergers, Market Power and Fuel Prices:  
 An API Primer

August 2008

## Index of Inventory Levels to Sales for Gasoline, Oil Products and Manufacturing (1978–2005)



Sources: Manufacturing inventories and sales from the *Economic Report of the President*. Gasoline stocks and sales from the *EIA/DOE Annual Energy Review*.

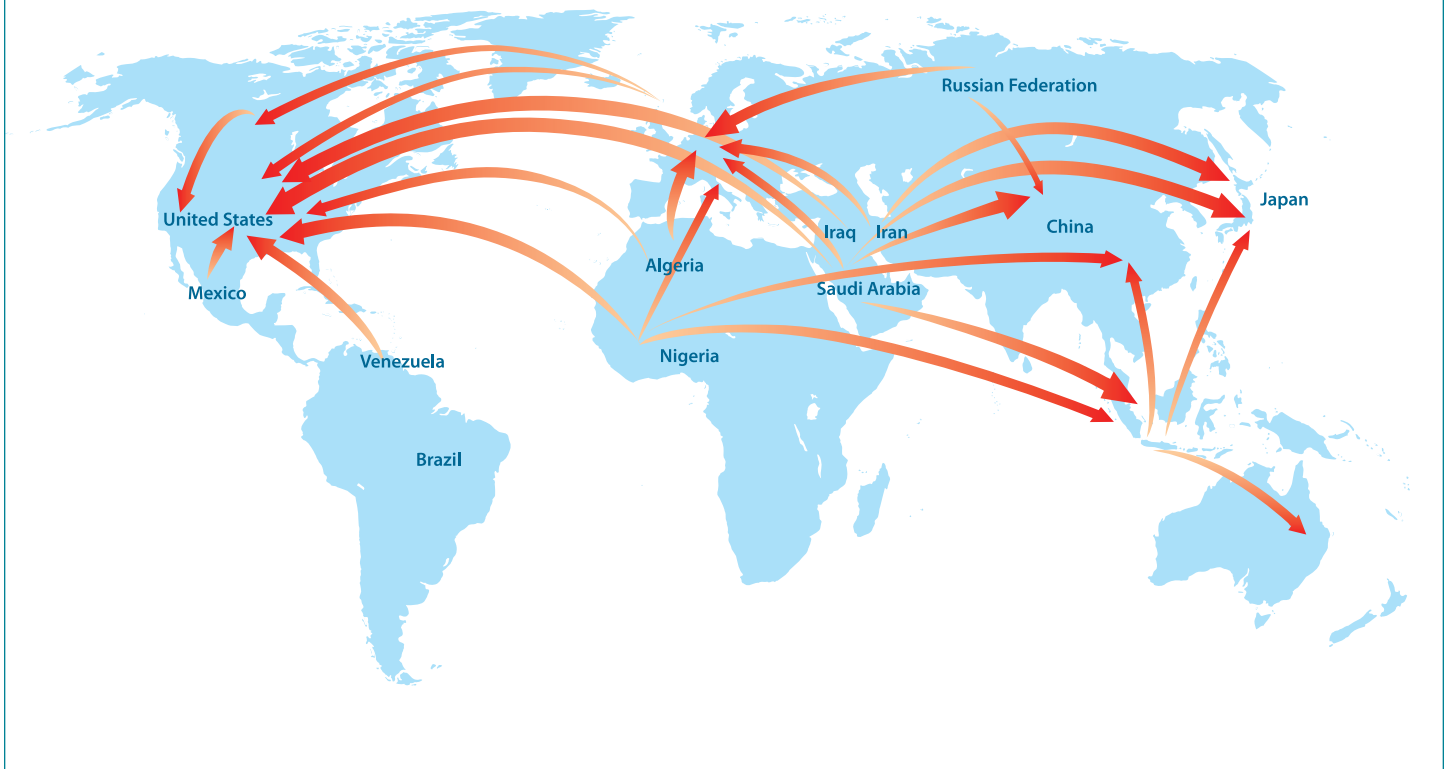
## Lower gasoline inventories have not increased price volatility.

Some have claimed that oil companies have held lower levels of gasoline inventories in an effort to promote price volatility. The ratio between gasoline inventories and gasoline sales has fallen steadily since 1980. But the magnitude and pattern of this decline has been essentially the same in the gasoline industry as for the entire manufacturing sector, suggesting that what is responsible is

continuous improvement in business practices rather than factors that are unique to the oil industry. Gasoline prices were less volatile between 1999 and 2006 than between 1979 and 1992, when inventory levels were substantially higher. The evidence suggests that it is not inventory levels, but volatile crude oil prices, that largely explain gasoline price volatility.

Source: Dahl, April 2007

## The Global Market Flows for Crude and Refined Products



U.S. refiners cannot control the U.S. gasoline market. Trade and pricing patterns indicate that arbitrage moderates inconsistencies between U.S. and foreign markets.

We are in a global market for both crude and refined products. Increasing imports and highly correlated profit margins between Europe and the East Coast imply the existence of a robust arbitrage market across the Atlantic. In the Pacific, where

differences in product specifications might be thought to reduce arbitrage opportunities, Asian refiners also act as a moderating influence by providing surplus product to U.S. markets as blending stocks.

Source: Dahl, April 2007



## Repeated investigations by the FTC have never found any evidence of collusion between companies within the industry.

Many government investigations have determined that increases in gasoline prices were the result of market-related factors. The FTC, in a spring 2006 report on its investigation into gasoline price increases and potential price gouging in the aftermath of Hurricane Katrina, said it found “no evidence to suggest that refiners Manipulated prices through any means” and “no evidence to suggest that refinery expansion decisions over the past 20 years resulted from either unilateral or coordinated attempts to manipulate prices.” The FTC also said it found “no evidence to suggest that petroleum pipeline companies made rate or expansion decisions in order to manipulate

gasoline prices” and “no evidence to suggest that oil companies reduced inventory” to manipulate prices. The FTC report did find 15 examples of pricing that might fit a definition of “price gouging” proposed in Congress, but it said none of these instances led to higher prices. “Other factors such as regional or local market trends... appeared to explain these firms' prices in nearly all cases,” the report said.

**“Federal gasoline price gouging legislation, in addition to being difficult to enforce, could cause more problems for consumers than it solves. Competitive market forces should be allowed to determine the price of gasoline drivers pay at the pump.”**

– FTC’s Spring 2006 Report

America’s Oil and Natural Gas Industry  
[The Facts About Oil Industry Mergers, Market Power and Fuel Prices:  
An API Primer](#)

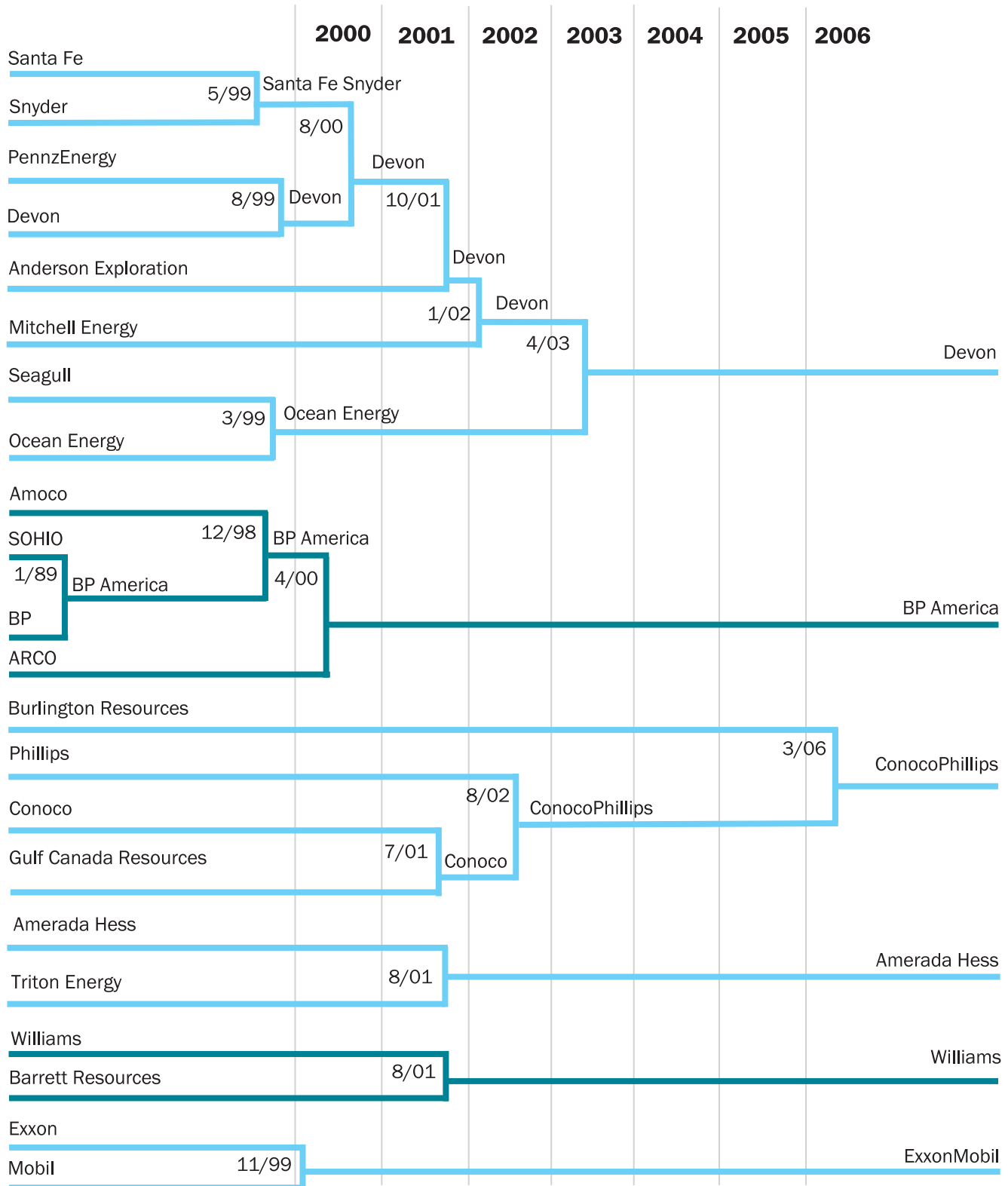
August 2008

# A Dozen Facts You Should Know About Antitrust and the U.S. Oil Industry (June 2007)

By Timothy J. Muris (Former Chairman of the FTC, 2001-2004) and Richard G. Parker (Former Chairman of the FTC, Bureau of Competition, 1999-2001). Both currently in private practice at O'Melveny & Myers.

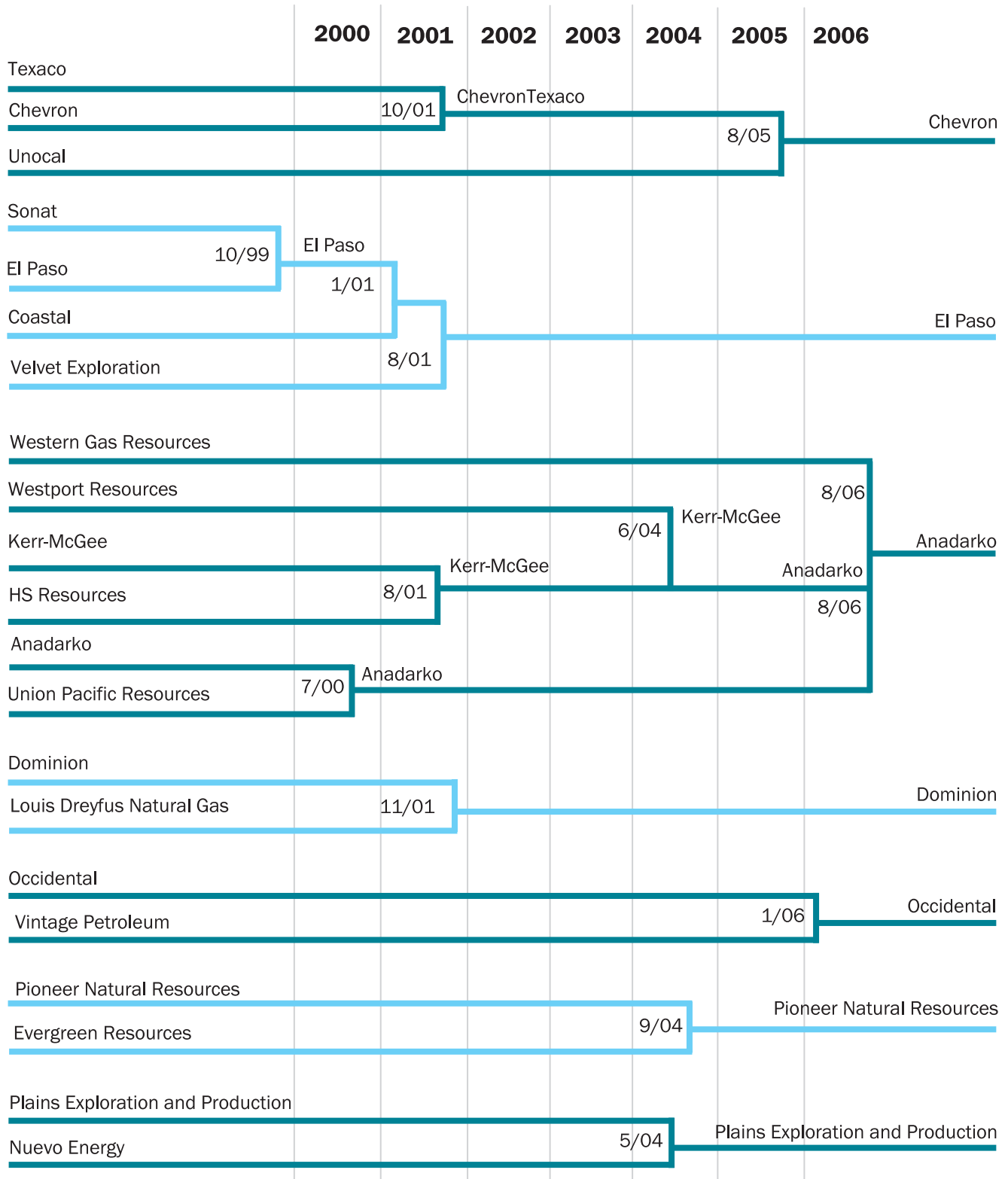
- Fact 1:** Economic learning and antitrust enforcement have evolved: We now know that big is no longer necessarily bad.
- Fact 2:** The antitrust authorities scrutinize the petroleum industry more closely than any other.
- Fact 3:** The American petroleum industry is NOT highly concentrated.
- Fact 4:** Refiners have expanded domestic and global capacity significantly.
- Fact 5:** Refineries operate at or near their practical maximum utilization rates.
- Fact 6:** Inventory practices have reduced costs and benefited consumers.
- Fact 7:** The profitability of the petroleum industry is commensurate with other industries over the long run.
- Fact 8:** The FTC applies tougher standards to mergers in the oil industry than to mergers elsewhere.
- Fact 9:** Empirical analyses of the price effects of oil mergers provide no basis for applying more stringent merger standards.
- Fact 10:** Market forces provide the most effective mechanism for quickly and efficiently alleviating price spikes.
- Fact 11:** Price-gouging legislation would harm, rather than benefit, consumers.
- Fact 12:** There are constructive legislative alternatives that will benefit consumers.

## Genealogy of Major U.S. Oil and Gas Producers (Page 1 of 2)



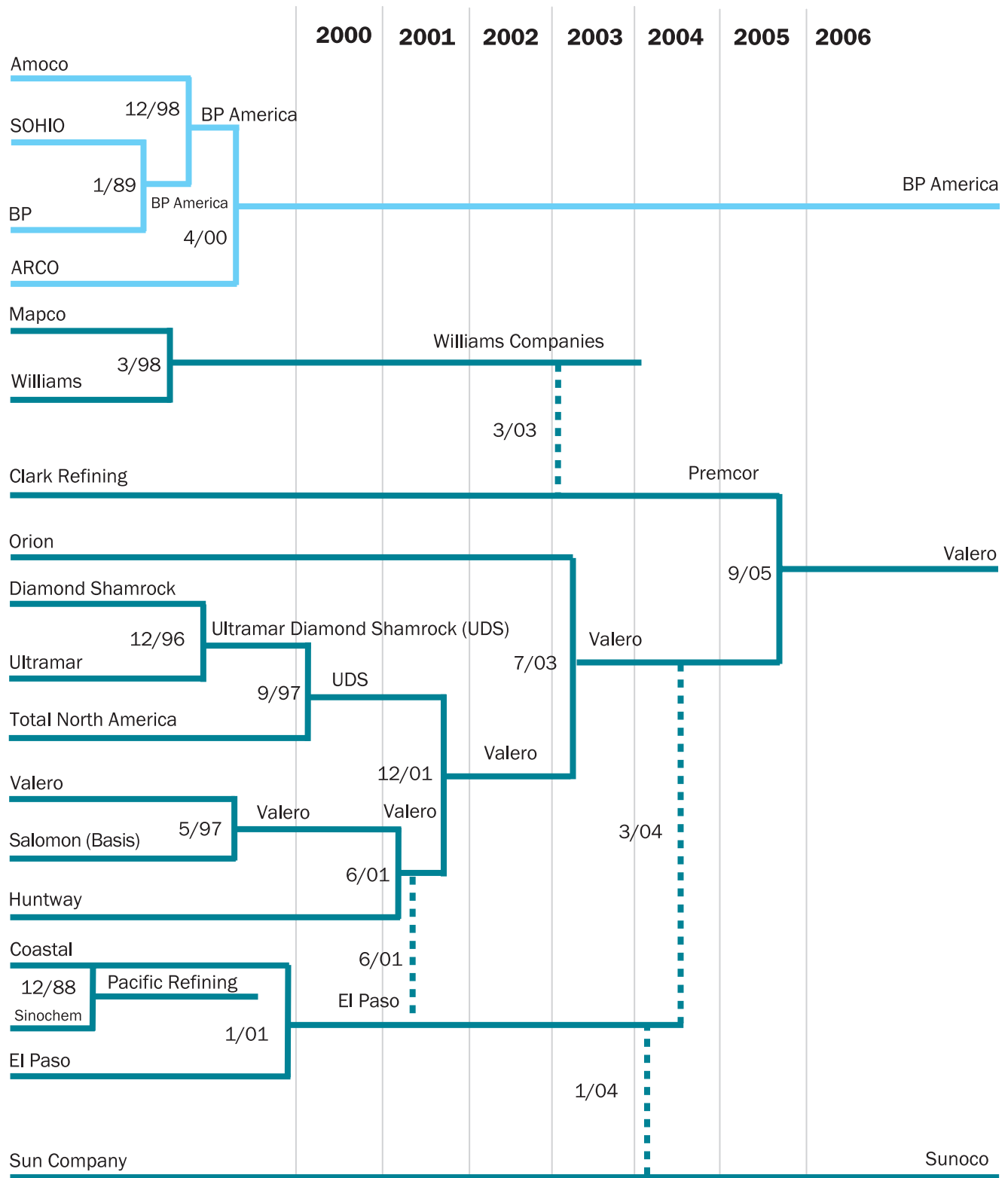
Sources: For additional details about these mergers and acquisitions see Energy Information Agency, "Mergers and Acquisitions," <http://www.eia.doe.gov/emeu/finance/mergers/summary.html>.

**Genealogy of Major U.S. Oil and Gas Producers (Page 2 of 2)**



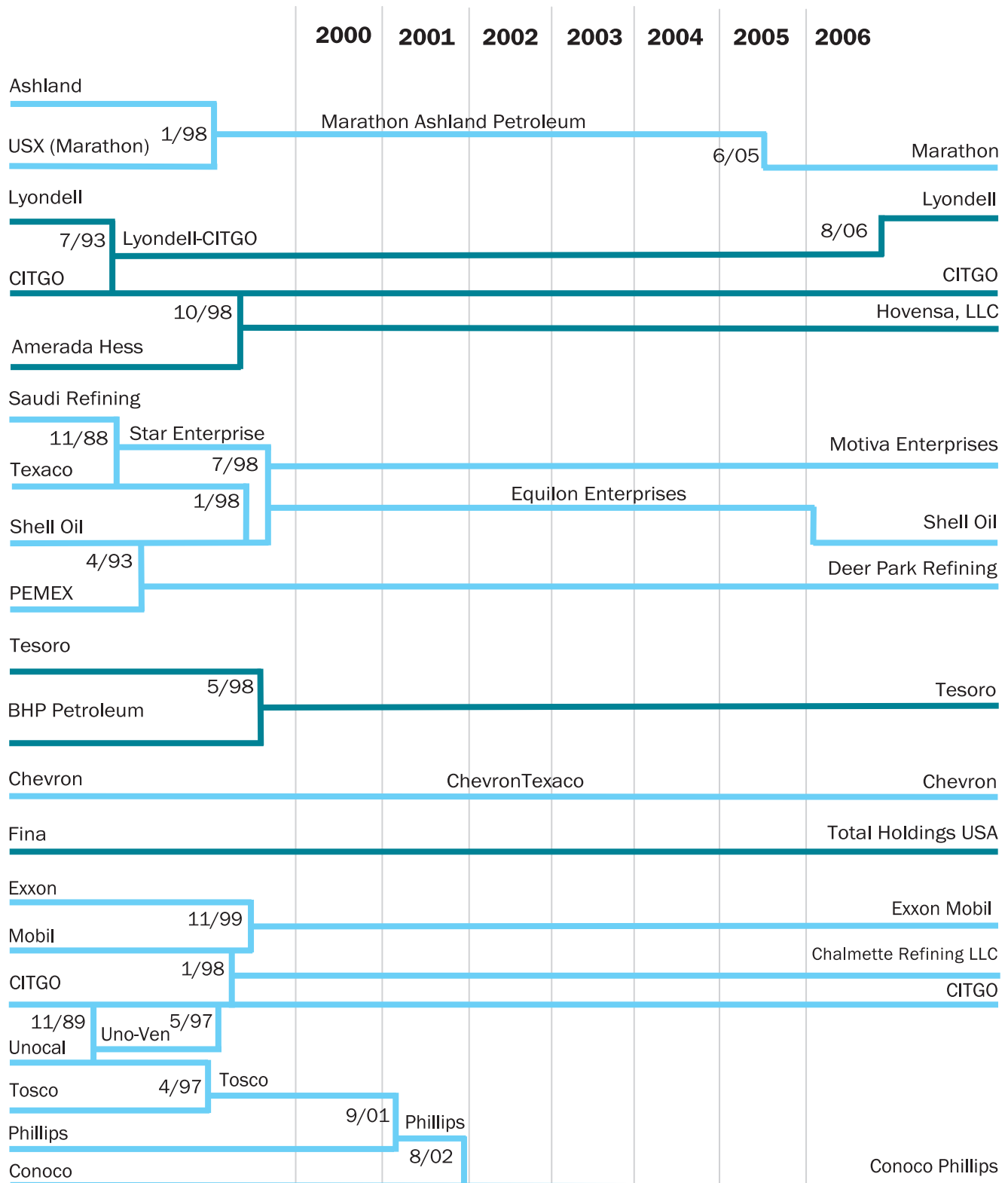
Sources: For additional details about these mergers and acquisitions see Energy Information Agency, "Mergers and Acquisitions," <http://www.eia.doe.gov/emeu/finance/mergers/summary.html>.

## Genealogy of Major U.S. Refiners (Page 1 of 2)



Sources: For additional details about these mergers and acquisitions see Energy Information Agency, "Mergers and Acquisitions," <http://www.eia.doe.gov/emeu/finance/mergers/summary.html>.

**Genealogy of Major U.S. Refiners (Page 2 of 2)**



Sources: For additional details about these mergers and acquisitions see Energy Information Agency, "Mergers and Acquisitions," <http://www.eia.doe.gov/emeu/finance/mergers/summary.html>.

## References

Dahl, Carol (2007) "What Goes Down Must Come Up, A Review of the Factors Behind Increasing Gasoline Prices, 1999-2006." Colorado School of Mines, Golden, CO, April. This research supported by API.

Muris, Timothy J. and Parker, Richard G. (2007) "A Dozen Facts You Should Know About Antitrust and the Oil Industry." Washington, DC, June.

U.S. Federal Trade Commission (FTC) (2005) "Gasoline Price Changes: The Dynamics of Supply, Demand, and Competition." Washington, DC, June.

U.S. Federal Trade Commission (FTC) (2006) "Investigation of Gasoline Price Manipulation and Post-Katrina Gasoline Price Increases." Washington, DC, Spring.

U.S. Federal Trade Commission (FTC) (2004) "The Petroleum Industry: Mergers, Structural Change, and Antitrust Enforcement." Washington, DC, August.

U.S. Federal Trade Commission (FTC) (2007) "Report on Spring/Summer 2006 Nationwide Gasoline Price Increases." Washington, DC, August.

U.S. Federal Trade Commission (FTC) (2004) "Statement of Federal Trade Commission Chairman Timothy J. Muris on the GAO Study on 1990s Oil Mergers and Concentration Released Today." Washington, DC, May 27.

U.S. Government Accountability Office (GAO) (2004) "Energy Markets: Effects of Mergers and Market Concentration in the US Petroleum Industry." Washington, DC, May.

FOR MORE INFORMATION PLEASE VISIT

[www.energytomorrow.org](http://www.energytomorrow.org)

[www.api.org](http://www.api.org)

