

September 2008

# ENERGY MARKETS

## Analysis of More Past Mergers Could Enhance Federal Trade Commission's Efforts to Maintain Competition in the Petroleum Industry





Highlights of [GAO-08-1082](#), a report to congressional requesters

## Why GAO Did This Study

During the late 1990s, many petroleum companies merged to stay profitable while crude oil prices were low, and in recent years mergers have continued. Congress and others have concerns about the impact mergers might be having on competition in U.S. petroleum markets. The Federal Trade Commission (FTC) has the authority to maintain competition in the petroleum industry and reviews proposed mergers to determine whether they are likely to diminish competition or increase prices, among other things. GAO was asked to examine (1) mergers in the U.S. petroleum industry and changes in market concentration since 2000 and (2) the steps FTC uses to maintain competition in the U.S. petroleum industry, and the roles other federal and state agencies play in monitoring petroleum industry markets. In conducting this study, GAO worked with petroleum industry experts to delineate regional markets and to develop estimates of refinery gasoline production capacity in order to calculate market concentration. GAO used public and private data as well as interviews for its analyses.

## What GAO Recommends

To enhance FTC's effectiveness in maintaining competition in the U.S. petroleum industry, GAO is recommending that FTC (1) conduct more regular analyses of past petroleum industry mergers and (2) develop risk-based guidelines to determine when to conduct them. FTC reviewed a draft of this report and said that the recommendations were consistent with its self-evaluation initiative, and that it would consider them as part of that process.

To view the full product, including the scope and methodology, click on [GAO-08-1082](#). For more information, contact Mark Gaffigan at [gaffiganm@gao.gov](mailto:gaffiganm@gao.gov), (202) 512-3841 or Tom McCool at [mccoolt@gao.gov](mailto:mccoolt@gao.gov), (202) 512-2642.

## ENERGY MARKETS

### Analysis of More Past Mergers Could Enhance Federal Trade Commission's Efforts to Maintain Competition in the Petroleum Industry

#### What GAO Found

More than 1,000 U.S. mergers occurred in the petroleum industry between 2000 and 2007, mostly between firms involved in crude oil exploration and production. According to experts and industry officials, mergers in this segment were generally driven by the challenges associated with producing oil in extreme physical environments, such as deepwater, as well as increasing concerns about competition with national oil companies and access to oil reserves in regions of relative political instability. Industry officials from the segments of the petroleum industry that transport, refine, and sell petroleum products reported that mergers were generally driven by the desire for greater efficiency and cost savings. Despite these gains, mergers have the potential to enhance a firm's ability to exercise "market power," which potentially allows it to raise prices without being undercut by other firms. GAO measured market concentration with an index that FTC uses, where market regions with few, large firms are considered to be highly concentrated and have a greater potential for market power. Conversely, market regions with many smaller firms are considered to have low or moderate concentration and generally have less potential for firms to exercise market power. GAO found that market concentration changed little but varied by industry segment and market region. GAO found that market concentration among firms involved in crude oil exploration and production was low and stable between 2000 and 2006, while concentration among refiners was generally moderate across those years. Regarding wholesale gasoline suppliers on a state-by-state basis, 35 states were moderately concentrated in their number of wholesale gasoline suppliers in 2007, and this number was fairly stable from 2000. GAO found that the following 8 states had highly concentrated wholesale gasoline supplier markets in 2007: Alaska, Hawaii, Indiana, Kentucky, Michigan, North Dakota, Ohio, and Pennsylvania.

While FTC reviews evidence and considers a number of competitive factors to predict a merger's potential effects on competition in its analyses of proposed mergers, it does not regularly look back at past merger decisions to assess the actual effects of the merger on competition or prices after the merger has been completed. Although these reviews can be resource intensive, experts, industry participants, and FTC agree that regular retrospective reviews would allow the agency to better inform future merger reviews and to better measure its success in maintaining competition. In addition to FTC's efforts in reviewing proposed mergers, other federal agencies, including FTC, and some states also monitor aspects of petroleum industry markets. For example, the Federal Energy Regulatory Commission monitors petroleum product pipeline markets and regulates pipeline rates accordingly.

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## Abbreviations

CFTC	Commodity Futures Trading Commission
CRS	Congressional Research Service
DOJ	Department of Justice
EIA	Energy Information Administration
EPA	Environmental Protection Agency
FCC	fluid catalytic cracker
FERC	Federal Energy Regulatory Commission
FTC	Federal Trade Commission
GPRA	Government Performance and Results Act of 1993
HHI	Herfindahl-Hirschman Index
NAAG	National Association of Attorneys General
OPIS	Oil Price Information Service

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United States Government Accountability Office  
Washington, DC 20548

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September 25, 2008

The Honorable Herb Kohl  
Chairman  
Subcommittee on Antitrust, Competition Policy  
and Consumer Rights  
Committee on the Judiciary  
United States Senate

The Honorable Henry Waxman  
Chairman  
Committee on Oversight and Government Reform  
House of Representatives

The Honorable Charles E. Schumer  
Chairman  
Joint Economic Committee  
United States Congress

The Honorable Dianne Feinstein  
United States Senate

During the late 1990s, a wave of mergers swept through the petroleum industry as a number of companies combined their operations to stay profitable while crude oil prices were low. During this time, large oil companies such as Exxon and Mobil merged, as did British Petroleum and Amoco, leaving fewer major petroleum industry players. In recent years, petroleum companies have continued to merge, despite strong profits. Because the petroleum industry plays a critical role in providing the transportation fuel that moves people and products throughout the United States, and with oil prices reaching record levels, Congress and others have questioned whether more recent mergers have allowed petroleum companies to control too large a share of the markets in which they participate, thus reducing their incentive to provide competitively priced fuel.

The Federal Trade Commission (FTC) and the Department of Justice (DOJ) have the authority to enforce federal antitrust laws to generally maintain competition in all industries, including the petroleum industry. To that end, FTC and DOJ generally review proposed mergers that are likely to impact U.S. markets to determine whether they are likely to

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diminish competition or increase prices. FTC has lead responsibility for federal reviews of petroleum industry mergers, and has said publicly that it scrutinizes mergers in the energy industry more closely than those in any other industry.<sup>1</sup> In reviewing a proposed merger, FTC generally looks at the participants' market shares—the percentage of the same products that companies supply to a particular geographic market—and other factors that affect competition. FTC uses the market shares to develop an index of market concentration, where firms with large market shares are weighted more heavily. Market areas with a number of small firms would be unconcentrated or moderately concentrated, while areas with fewer large firms would be highly concentrated. Other things being equal, mergers that cause a market area to become highly concentrated potentially allow one firm, or a small group of firms, to exercise “market power” and control the market to increase consumer prices above competitive levels. On the other hand, mergers that lead to a more highly concentrated market might also improve efficiency and reduce costs, and firms may pass these savings on to consumers in the form of lower prices. Federal antitrust authorities try to predict the impact of a merger on competition, including the impact on prices, before allowing the merger to take place. After a merger is completed, an agency may review past merger decisions to monitor how well the agency achieved its goals.<sup>2</sup> In fact, federal government standards for internal control require federal agencies, including FTC and others, to establish goals and measure performance to improve management and program effectiveness.<sup>3</sup>

Antitrust enforcement agencies generally examine concentration in the petroleum industry by first defining the segment of the industry involved and then defining the geographic region where this portion of the industry operates. More specifically, the industry is divided into three segments: the crude oil exploration and production segment (upstream), the refining and marketing segment (downstream), and a segment that consists of the infrastructure used to transport crude oil and petroleum products to

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<sup>1</sup>A merger, as defined in this study, involves either the sale of all or part of the stock or assets of a company to another. FTC generally uses the term “merger” to refer to the purchase of all of the stock of one company by another company and uses the terms “asset acquisition” or “partial stock acquisition” to describe other types of transactions.

<sup>2</sup>Antitrust enforcement agencies can also challenge completed mergers if they violate antitrust laws.

<sup>3</sup>For an example of the need for internal control, see: GAO, *Financial Audit: Restated Financial Statements—Agencies' Management and Auditor Disclosures of Causes and Effects and Timely Communication to Users*, [GAO-07-91](#) (Washington, D.C.: Oct. 5, 2006).

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customers (midstream). Some companies operate in all three segments of the petroleum industry and are deemed “fully vertically integrated,” while others operate in only one or two of the industry segments and may be referred to as “independent,” among other things. Chevron is an example of a fully integrated petroleum company, with operations in all three segments, while Wawa—the convenience store chain—is an example of a firm operating in only one market segment as a downstream independent fuel retailer. A proposed merger between companies in the same industry segment and geographic market region would likely spur FTC to look at each company’s market shares and other competitive factors in that geographic market region.

In this context, we were asked to examine (1) mergers in the U.S. petroleum industry, and changes in market concentration since 2000, and (2) the steps that FTC uses to maintain competition in the U.S. petroleum industry, and the roles other federal and state agencies play in monitoring petroleum industry markets. GAO will examine the potential effect of mergers and market concentration on wholesale gasoline prices in a forthcoming report.

To examine U.S. mergers since 2000, we purchased and analyzed petroleum industry merger data from John S. Herold, Inc.<sup>4</sup> (J.S. Herold), and interviewed a number of industry experts and market participants. U.S. mergers included mergers that had a reported location in the United States or were diversified across multiple countries, but we had reasonable evidence to believe included a United States location. We decided this definition coincided with mergers that would affect U.S. markets and, hence, that FTC could potentially review. We also limited our analysis to mergers (1) that occurred between January 2000 and May 2007, (2) that had a transaction value of \$10 million or more, and (3) whose key asset was not related to natural gas or other natural gas products. In examining changes in market concentration, we focused on the upstream crude oil production segment and two downstream subsegments: gasoline refiners and wholesale gasoline suppliers. We did not examine changes in concentration in the midstream segment because of a lack of available data. We purchased data on upstream crude oil production from the *Oil and Gas Journal*, and used data from the Department of Energy’s Energy Information Administration (EIA) on downstream gasoline refining and

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<sup>4</sup>John S. Herold, Inc., is an independent research firm specializing in the energy sector that provides financial and operational data for, as well as analyses of, more than 400 oil and gas companies.



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wholesale gasoline suppliers. We worked with petroleum industry experts to define geographic market regions in order to calculate market concentration in these segments of the industry. We calculated changes in concentration in a single global market for upstream crude oil producers, seven U.S. “spot market” regions for gasoline refiners, and U.S. states for wholesale gasoline suppliers. The markets we defined were intended to provide an overview of petroleum industry concentration and would not, in many cases, correspond to geographic markets that FTC might use to inform its judgments about anticompetitive market conditions for the purposes of enforcement. We assessed the reliability of the data we collected and found it sufficiently reliable for the purposes of this report. To examine FTC’s steps for maintaining competition and other federal and state agencies’ roles, we interviewed FTC staff; reviewed official agency documents; and interviewed experts in the fields of antitrust and industrial organization, as well as petroleum industry officials. In addition, we reviewed documents and interviewed officials from other federal and state agencies that have roles in monitoring petroleum industry markets, such as the Federal Energy Regulatory Commission (FERC) and the Commodity Futures Trading Commission (CFTC), who are involved in monitoring pipeline and futures markets, respectively. See appendix I for more detailed information on our objectives, scope, and methodology. We conducted this performance audit from March 2007 to September 2008 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

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## Results in Brief

More than 1,000 U.S. mergers occurred in the petroleum industry between 2000 and 2007, and we found that market concentration changed little but varied by industry segment and market region. Most of the mergers, as well as the mergers of greatest value, occurred in the upstream segment, including 6 mergers valued at more than \$10 billion each. According to many of the experts and industry officials with whom we spoke, key drivers of upstream mergers included challenges associated with exploring and producing oil in extreme physical environments, such as deepwater, as well as concerns about competition with national oil companies and access to oil reserves in regions of political instability. Petroleum industry experts with whom we spoke noted that mergers can better position oil companies to successfully explore in extreme environments and compete in the global oil market, as well as diversify

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their exploration interests across multiple countries or regions. U.S. mergers in the midstream and downstream segments were less numerous and had lower overall transaction values than the upstream segment. Mergers in these segments were reportedly driven by the desire to improve efficiencies and reduce costs, particularly in the pipeline, refining, and marketing subsegments. Despite the gains that can result from mergers in the petroleum industry, officials and experts reported that mergers have the potential to allow companies to exercise market power and raise consumer prices. Regarding industry market concentration, concentration levels in the crude oil producing segment of the industry remained relatively low and stable between 2000 and 2006, while concentration among refiners in several regions throughout the United States also changed little but was generally moderate. Regarding wholesale gasoline suppliers on a state-by-state basis, 35 states were moderately concentrated in their number of wholesale gasoline suppliers in 2007, and this number was fairly stable from 2000. The following 8 states had a highly concentrated number of wholesale gasoline suppliers in 2007: Alaska, Hawaii, Indiana, Kentucky, Michigan, North Dakota, Ohio, and Pennsylvania.

FTC primarily reviews proposed mergers to maintain petroleum industry competition, while other federal and state agencies, including FTC, have roles in monitoring petroleum industry markets. While FTC reviews evidence and considers a number of competitive factors to predict a merger's potential effects on competition in its analysis of proposed mergers, it does not regularly look back at past merger decisions to assess the actual effects of the merger on prices—there have been only three such reviews, despite the many mergers that occurred in the petroleum industry between 2000 and 2007. Although these reviews can be resource intensive, experts, industry participants, and FTC agree that regular retrospective reviews would allow the agency to better inform future merger reviews and better measure its success in maintaining competition. However, FTC does not plan to develop guidelines for more frequently conducting these retrospective reviews and told us it has limited resources to devote to such reviews. FTC also performs supplemental activities to monitor petroleum industry markets in general—not necessarily related to mergers. For example, FTC staff told us the agency monitors wholesale gasoline prices in some locations to identify and investigate unusual price spikes. Other federal agencies also monitor petroleum industry markets; for example, FERC monitors petroleum product pipeline markets and regulates pipeline rates accordingly. Some states also monitor petroleum industry markets, although they generally do so in response to complaints from consumers, and the level of monitoring varies from state to state.

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Some states actively monitor market competition and fuel prices on a continual basis, while other states do not monitor the petroleum industry at all.

To enhance FTC's effectiveness in maintaining competition in the U.S. petroleum industry and make efficient use of FTC's resources, we are recommending in this report that FTC (1) conduct more regular retrospective analyses of past petroleum industry mergers and (2) develop risk-based guidelines to determine when to conduct these analyses given its limited resources. In general, the FTC Chairman commented that the recommendations in this report were consistent with the goals outlined in a current self-evaluation initiative, and that the agency would consider our recommendations to conduct more regular retrospective analyses of petroleum industry mergers using a risk-based approach along with other recommendations resulting from this initiative.

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## Background

In 2007, the United States produced an average of 8.5 million barrels of petroleum per day, or about 10 percent of the global average production of 84.4 million barrels per day. As a percentage of total world consumption, the United States was the largest consumer of crude oil and petroleum products in 2007, with an average consumption of 20.7 million barrels per day. According to EIA statistics, imports provide the United States with about 60 percent of its overall petroleum needs. Of the petroleum refined in the United States, approximately 46 percent is used for gasoline, primarily for use in the transportation sector. Second to gasoline, distillate fuel oil (including diesel)—which is used for a variety of heating, energy, and transportation purposes—accounts for 21 percent of petroleum refined in the United States, followed by kerosene-type jet fuel at 9 percent. The remaining 24 percent of crude is used to make other products, such as heavy fuel oil or asphalt.

Firms operating in the petroleum industry range widely, from large corporations that operate in multiple countries and across various segments of the industry, to small firms that operate exclusively in the United States or in only one segment of the industry. Companies operating in the upstream segment—which includes the exploration and production of crude oil—include fully vertically integrated companies as well as independent producers. Fully vertically integrated companies are generally large, multibillion-dollar publicly traded companies, such as Exxon Mobil. By contrast, independent producers range from extremely small, privately owned operations to multibillion-dollar publicly traded companies, such as Occidental.

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Companies operating in the midstream segment—which includes the transport of crude oil and refined petroleum products—include firms that manage pipelines, marine tankers and barges, railways, and trucks. Midstream companies also range widely in size and can include large, vertically integrated companies as well as smaller independent operators of pipelines or other modes of transportation. Pipelines are the most common, and considered the most efficient, mode of transporting crude oil and petroleum products in the United States from production points to refineries and from refineries to storage terminals. Nationwide, there are about 200,000 miles of pipeline across all 50 States, through which approximately 66 percent of petroleum products are transported.<sup>5</sup>

Companies operating in the downstream segment include firms that refine crude oil as well as firms that market refined petroleum products. Refining involves the transformation of crude oil into the various petroleum products, such as gasoline, distillate fuel oil, and jet fuel, as well as heavier products, such as asphalt. According to data from EIA, as of January 1, 2008, there were 150 operable refineries in the United States. In 2002, about 60 firms, including large, fully vertically integrated companies and independent firms, owned these refineries. For example, as of January 2007, ConocoPhillips owned 12 U.S. refineries and 19 refineries worldwide. Petroleum marketing involves purchasing refined petroleum products from refiners and selling them to wholesaler and retail firms. There are different classes of wholesale gasoline purchasers in the United States, and the prices they pay depend, in part, on the type of relationship they have with the refiners.

Given the nation's dependence on gasoline and other petroleum products, competition among petroleum industry firms has long been considered of paramount importance to the economy. In 1890, Congress passed the Sherman Act<sup>6</sup> to counter anticompetitive practices in several industries, including some of Standard Oil's practices in the petroleum industry. In 1914, Congress expanded its antitrust authority by creating FTC and enacting the Clayton Act.<sup>7</sup> As such, merger activity in all three segments of the industry and the potential for anticompetitive behavior through

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<sup>5</sup>Richard Rabinow, a report prepared for the Association of Oil Pipelines, *The Liquid Pipeline Industry in the United States: Where It's Been, Where It's Going* (2004).

<sup>6</sup>Sherman Antitrust Act, 15 U.S.C. §§ 1-7.

<sup>7</sup>Clayton Antitrust Act of 1914, 15 U.S.C. §§ 12-27, 29 U.S.C. §§ 52-53.

industry consolidation has long been the subject of interest on the part of many industry observers and government regulators.

FTC is the federal antitrust agency that is responsible for reviewing proposed mergers in the petroleum industry, with the goal of maintaining industry competition. FTC reviews mergers of firms in the petroleum industry if their operations are likely to impact U.S. markets, and the agency enforces various antitrust laws. Although FTC says that it scrutinizes mergers in the petroleum industry more than any other industry, FTC’s statutory authority to review proposed mergers in the petroleum industry is the same as in other industries. FTC has enforcement and administrative responsibilities from over 60 laws, but uses 3 statutes to guide its review of all proposed mergers—the Clayton Act, the Federal Trade Commission Act, and the Hart-Scott-Rodino Act—as outlined in table 1.

**Table 1: Federal Antitrust Statutes—Merger Enforcement**

Statute	Description
Clayton Act <sup>a</sup>	Enacted in 1914, Section 7 of the Clayton Act, 15 U.S.C. § 18, prohibits an acquisition of stock or assets by any person engaged in commerce or in any activity affecting commerce, in any section of the country, when the effect of such acquisition may be substantially to lessen competition, or tend to create a monopoly.
Hart-Scott-Rodino Act <sup>b</sup>	Enacted in 1976, Section 201 of Hart-Scott-Rodino added Section 7A to the Clayton Act, 15 U.S.C. § 18a, which established premerger notification and waiting requirements for persons making an acquisition of stock or assets. Both the parties to the acquisition and the amount of the acquisition must meet statutory threshold amounts to be subject to the premerger notification and waiting requirements. The 2001 amendments to Hart-Scott-Rodino, among other things, raised the threshold size of person and size of transaction amounts and specified that they would be adjusted annually on the basis of the prior year’s Gross National Product.
Federal Trade Commission Act <sup>c</sup>	Section 5 of the FTC Act, 15 U.S.C. § 45, prohibits unfair methods of competition in or affecting commerce and unfair or deceptive acts or practices in or affecting commerce. Generally, if an action violates Section 7 of the Clayton Act, it is also likely to violate Section 5 of the FTC Act.

Source: GAO analysis of FTC documents.

<sup>a</sup>See footnote 7 of this report.

<sup>b</sup>Hart-Scott-Rodino Antitrust Improvements Act of 1976, 15 U.S.C. § 18a.

<sup>c</sup>Federal Trade Commission Act of 1914, 15 U.S.C. §§ 41-58.

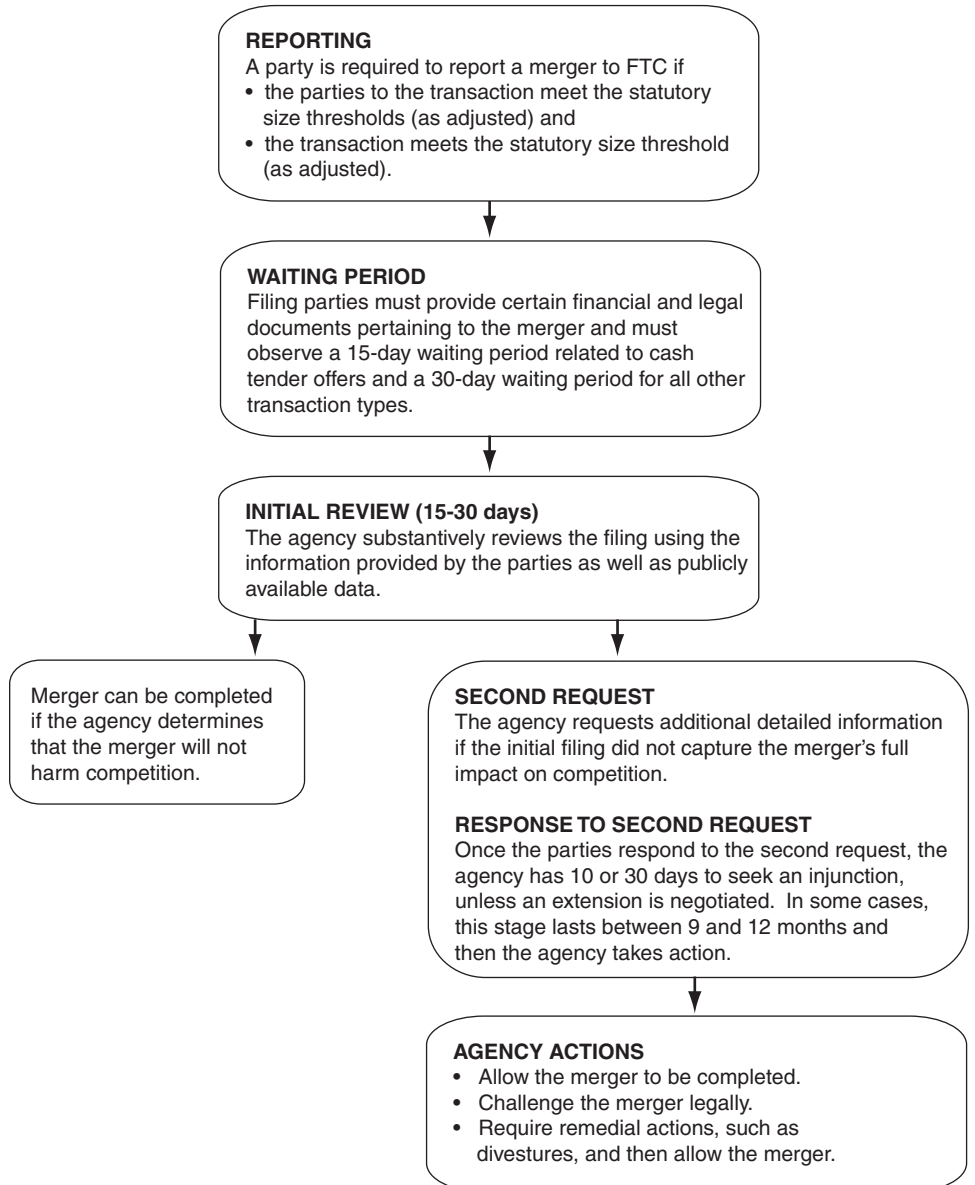
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While the three statutes help direct FTC's review of proposed mergers in all industries, Hart-Scott-Rodino provides the framework for the premerger review. Hart-Scott-Rodino requires all persons contemplating a merger valued at \$50 million or more and meeting certain other conditions to formally notify FTC and DOJ. The act imposes a 15-day waiting period for cash tender offers and a 30-day waiting period for most other transactions to allow FTC and DOJ to review the proposed merger in an effort to predict its potential effect on competition.<sup>8</sup> If the initial review does not indicate a need for further investigation, the merger can be completed. To ease compliance with Hart-Scott-Rodino, FTC and DOJ established a premerger notification program in 1978 that set a systematic process for FTC to follow in reviewing all proposed mergers and allows the agencies to avoid the difficulties and expense of challenging mergers that harm competition after they are completed. This gives them the ability to challenge proposed mergers before they are completed when remedial action would be most effective, if warranted. See figure 1 below for a summary of FTC's merger review procedures.

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<sup>8</sup>The threshold for transaction size was \$50.0 million in 2000, but changes on the basis of the prior year's Gross National Product. For 2008, the threshold was \$63.1 million. Because our review covered a range of years and the actual thresholds varied from year to year, we often refer to the 2000 baseline.

**Figure 1: FTC's Premerger Review Program**



Source: GAO analysis of FTC documents.

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FTC staff and DOJ officials told us that they divided their merger review portfolio, and that FTC handles all of the petroleum industry merger review cases because it has more expertise in that area.<sup>9</sup> FTC's merger review process is conducted by staff in various bureaus and offices throughout the agency, but mainly by the Bureau of Economics and the Bureau of Competition. The agency also has a Merger Screening Committee composed of at least the Director of the Bureau of Competition, section heads of that bureau's divisions, representatives from the Bureau of Economics, and other relevant FTC staff. The purpose of the group is to determine whether to recommend that the Chairman approve and issue a request for additional information and to decide other policy matters.

FTC often calculates market concentration as the first step in providing insight into potentially anticompetitive market conditions during merger reviews, although each review also involves examining a unique set of circumstances and competitive factors that correspond to the specific merger. In general, high levels of market concentration—a small number of firms controlling a large percentage of the product and geographic market share—have the potential to allow these firms to raise prices because the remaining firms are too few to “discipline” the market by offering lower-priced products. When firms are able to raise prices, either unilaterally or by collusion without other producers undercutting them, they are said to have market power. FTC and DOJ jointly developed merger guidelines that use the Herfindahl-Hirschman Index (HHI) as a key initial measure to evaluate market concentration. HHI is based on the market shares and number of firms that sell similar products in a given geographic market.<sup>10</sup> Calculating HHI not only requires estimating market share by firm, it also involves identifying the appropriate geographic markets in which the firms operate. Firms selling a given product may compete at the global level—in which case, the relevant geographic market includes sellers worldwide—or in regional, statewide, or smaller

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<sup>9</sup>DOJ has responsibility for investigating mergers, joint ventures, and potentially anticompetitive conduct in the oil field services and equipment industry. Companies in this industry provide services to the petroleum exploration and production industry but do not produce petroleum themselves. Examples of oil field services include the manufacture and supply of oil rigs and oil rig drilling equipment, diving support for offshore rigs, and pipeline services.

<sup>10</sup>HHI gives proportionally greater weight to firms with larger market shares. For example, if there are two firms that sell products in a market with market shares of 60 percent and 40 percent, respectively, the calculation of HHI would be  $60^2 + 40^2 = 5,200$ .



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markets. For example, FTC staff told us that they generally consider crude producers to compete globally, refiners to compete regionally, and wholesale gasoline suppliers to compete at a more local level. FTC and DOJ merger guidelines define three broad categories of market concentration as measured by HHI: an unconcentrated market has an HHI of less than 1,000; a moderately concentrated market has an HHI between 1,000 and 1,800; and a highly concentrated market has an HHI over 1,800.<sup>11</sup>

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## More than 1,000 U.S. Mergers Occurred in the Petroleum Industry between 2000 and 2007, and Market Concentration Changed Little but Varied by Market Region and Industry Segment

More than 1,000 U.S. mergers occurred in the petroleum industry between 2000 and 2007. The largest number and greatest value mergers occurred in the upstream segment, primarily due to increasingly challenging conditions for oil exploration, while midstream and downstream mergers were primarily driven by the desire to improve efficiencies and reduce costs. We also found in our analysis of the upstream crude oil production segment of the industry and the downstream refining and wholesale gasoline supply segments of the industry that, in most regions, petroleum industry market segments were moderately concentrated. Lacking data on midstream, we were not able to determine concentration in this segment of the industry.

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## Mergers in the Petroleum Industry between 2000 and 2007 Primarily Occurred in the Upstream Segment in Response to Increasingly Challenging Conditions for Oil Exploration

Between January 2000 and May 2007, 1,088 U.S. mergers occurred in the petroleum industry.<sup>12</sup> The number of mergers that occurred each year during this period<sup>13</sup> generally increased over the period, from 124 mergers in 2000 to 167 in 2006,<sup>14</sup> as shown figure 2.

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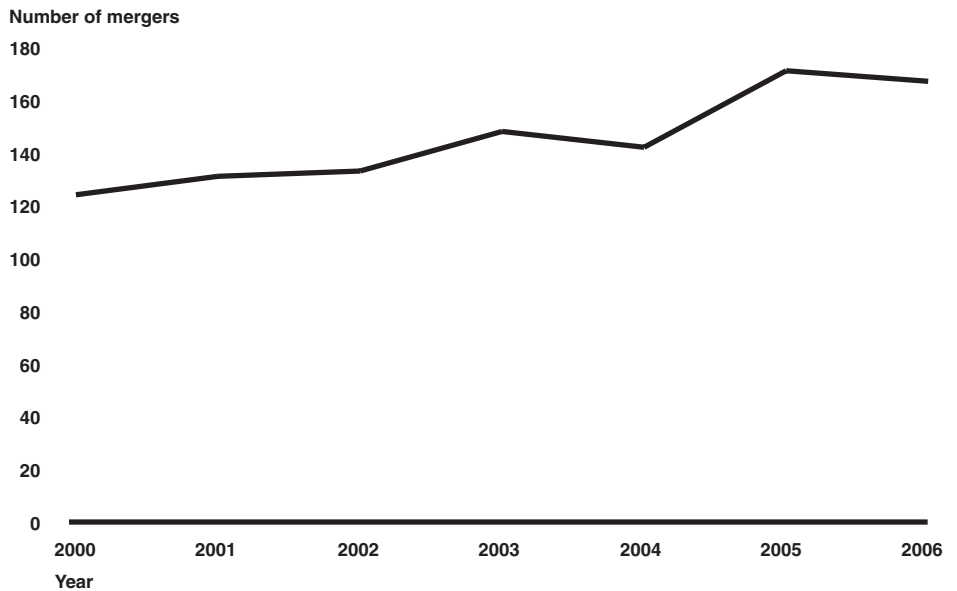
<sup>11</sup>The maximum value for HHI is 10,000, which occurs when a single market participant has 100 percent of the market share.

<sup>12</sup>As we have previously mentioned, for the purpose of this report, “U.S. mergers” includes mergers that had a reported location in the United States or were diversified across multiple countries, but that we had reasonable evidence to believe included a United States location. We decided this definition coincided with mergers that would affect U.S. markets, and, hence, FTC could potentially review. FTC staff noted that many of these mergers might not have any competitive overlap and, therefore, would not pose antitrust concerns.

<sup>13</sup>Unless otherwise noted, we use the term “this period” to refer to the January 2000 through May 2007 time frame throughout this section of the report.

<sup>14</sup>Given that our analysis included mergers through May 2007, we only show the total number of mergers for 2006.

**Figure 2: U.S. Petroleum Mergers (2000-2006)**



Source: GAO analysis of J.S. Herold data from 2000 through 2006.

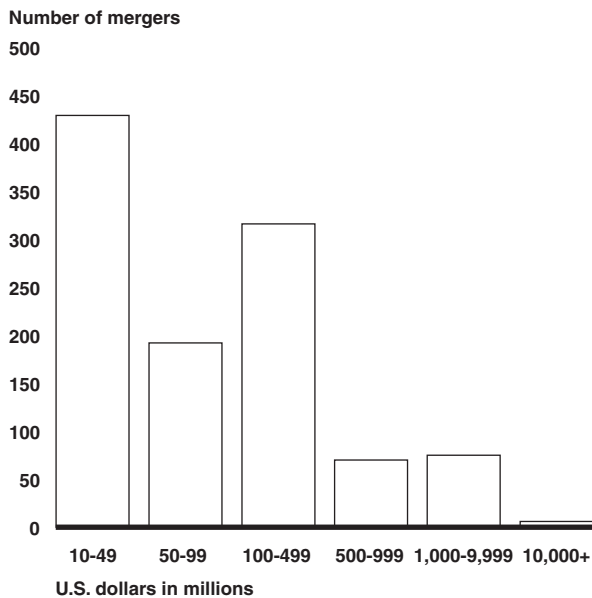
About 75 percent of these mergers were asset mergers, or mergers where one firm purchases only a portion of another firm's assets, such as Tesoro's purchase of 140 retail gasoline stations in California from USA Petroleum in early 2007. The remaining 25 percent were corporate mergers, or mergers where one firm generally acquires all of another firm's stock and assets such that the two firms become one firm. For example, in 2002, Phillips Petroleum acquired all of Conoco's stock, creating the new firm ConocoPhillips.

Reported transaction values for U.S. petroleum mergers during this period ranged widely, from \$10 million to over \$10 billion. As shown in figure 3, the greatest number of mergers during this period were valued between \$10 million and \$49 million, and between \$100 million and \$499 million, accounting for 39 percent and 29 percent of merger activity, respectively. Overall, 61 percent of mergers were valued at more than \$50 million, which is the threshold above which merging firms are required to notify FTC so that it can review them for potential anticompetitive effects.<sup>15</sup> The

<sup>15</sup>Despite the threshold for premerger notification under Hart-Scott-Rodino, FTC staff said that they can still review mergers of any size to determine whether they violate antitrust laws.

average value for mergers during this period was \$497 million, while the median value for mergers during this period was \$72 million.

**Figure 3: U.S. Petroleum Mergers, by Transaction Value (2000-2007)**



Source: GAO analysis of J.S. Herold data from January 2000 through May 2007.

Corporate mergers comprised the top 11 most valuable mergers, including 6 mergers valued at over \$10 billion each. The largest merger was the 2001 corporate merger of Chevron and Texaco; it was valued at \$45 billion. This merger and the other 5 corporate mergers that were valued at over \$10 billion during this period are highlighted in table 2.

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**Table 2: U.S. Petroleum Mergers Valued at over \$10 Billion (2000-2007)**

Dollars in billions

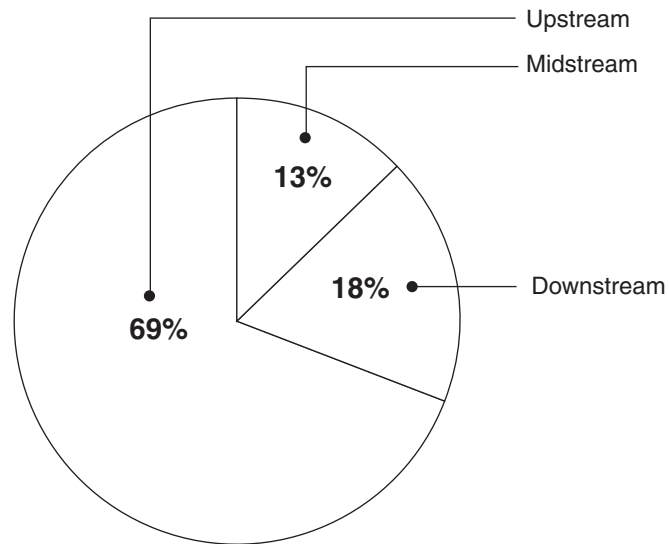
<b>Buyer</b>	<b>Seller</b>	<b>Year</b>	<b>Transaction value</b>
Chevron Corporation	Texaco, Inc.	2001	\$45
ConocoPhillips	Burlington Resources Incorporated	2006	36
Statoil ASA	Norsk Hydro ASA	2007	32
Phillips Petroleum Company	Conoco Incorporated	2002	31
Chevron Corporation	Unocal Corporation	2005	20
Anadarko Petroleum Corporation	Kerr-McGee Corporation	2006	20

Source: GAO analysis of J.S. Herold data from January 2000 through May 2007.

The upstream segment of the industry—comprised of oil exploration and production endeavors—accounted for approximately 69 percent of the 1,088 mergers. The midstream segment of the industry—mainly comprised of firms that operate pipelines and other infrastructure used to transport oil and gas—accounted for about 13 percent. The downstream segment of the industry—comprised of firms that refine crude oil and market petroleum products—accounted for 18 percent. Figure 4 highlights this distribution across the segments.

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**Figure 4: U.S. Petroleum Mergers, by Segment (2000-2007)**



Source: GAO analysis of J.S. Herold data from January 2000 through May 2007.

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## Upstream Segment

In the U.S. upstream petroleum segment, some trends were similar to those that we previously discussed for the industry overall, with the number of mergers over the period generally rising and asset mergers comprising approximately 75 percent of all mergers. Upstream mergers had the highest transaction values of the three segments, accounting for the six most valuable mergers highlighted in table 2 that exceeded \$10 billion in value. Overall, the average value for upstream mergers was \$539 million, while the median value was \$67 million.

A key reported driver of U.S. mergers in the upstream segment was the increasing challenge associated with exploring and producing oil in extreme physical environments. Industry officials at oil companies reported that reserves that can be easily and economically produced are declining, and that remaining exploration opportunities are increasingly located in physically extreme environments, making the development of new petroleum resources more costly and technologically challenging. Extreme physical environments, such as offshore oil reserves in deep water, require costly capital investments in specialized drills, pipes, and platforms equipped to operate in deep marine environments; operating costs in these environments can be 3.0 to 4.5 times higher than costs for

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typical shallow water rigs. In addition, extreme physical environments can include “nonconventional” oil reserves, such as oil sands,<sup>16</sup> that require the use of additional and expensive technologies—including additional mining and heating—to produce crude oil. Academics and industry officials reported that mergers better position oil companies to acquire capital and achieve the organizational efficiencies that help enable successful exploration and production in these environments.

Another reported driver of U.S. mergers in the upstream segment was the increasing challenge associated with reliably accessing oil reserves worldwide. As national oil companies increasingly expand their exploration efforts and contend for access to reserves in third-party countries, researchers and industry representatives reported that national firms, operating on behalf of their home country, often have access to more capital, have fewer financial constraints, and have more bargaining power via political influence. In light of these reported negotiating advantages, companies reported that being large provides them with more capital and influence with which to directly compete with the national oil companies. Representatives from oil companies also reported concerns about political uncertainties in regions where key oil reserves are located, because more than 60 percent of world oil reserves are in countries where relatively unstable political conditions could constrain oil exploration and production.<sup>17</sup> For example, in 2007, ConocoPhillips abandoned a multibillion-dollar investment in Venezuela, after a breakdown in negotiations with the government and the national oil company, PDV, resulting in a \$4.5 billion loss for the firm. In light of these concerns, academic and industry representatives reported that large firms are better positioned to diversify their exploration interests across multiple countries or regions, thereby lessening the risk their interests face in any one country.

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<sup>16</sup>While there is no universally agreed-upon definition of what is meant by conventional versus nonconventional oil, the International Energy Agency states that “conventional” sources are considered to be those that can be produced using today’s mainstream technologies, while “nonconventional” sources require more complex or more expensive technologies to extract, such as oil sands and oil shale.

<sup>17</sup>Estimates of oil reserves are based on data from *Oil and Gas Journal*, as reported in GAO, *Crude Oil: Uncertainty about Future Oil Supply Makes It Important to Develop a Strategy for Addressing a Peak and Decline in Oil Production*, [GAO-07-283](#) (Washington, D.C.: Feb. 28, 2007).

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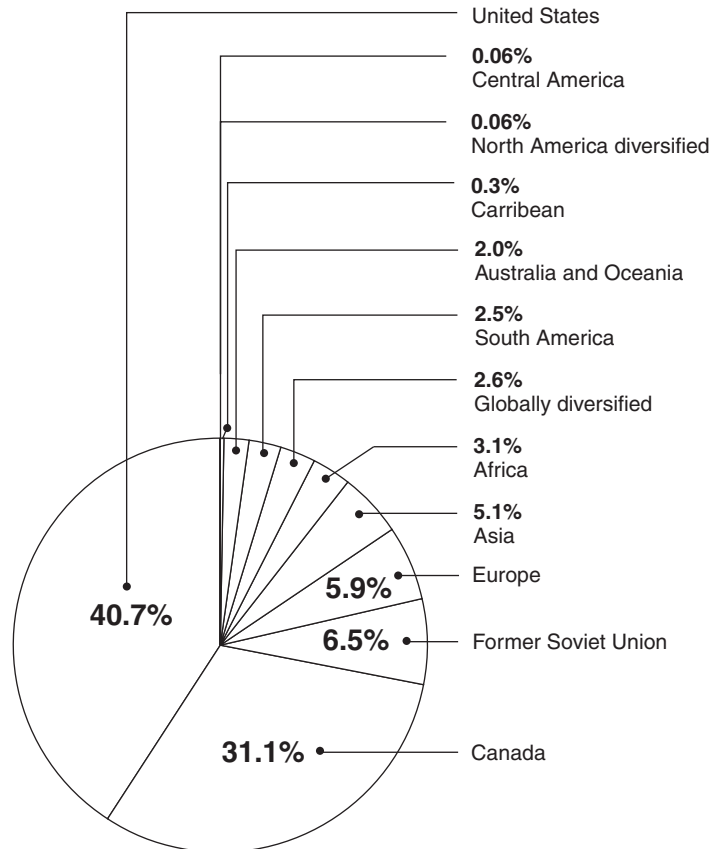
Despite these rationales, it is uncertain whether mergers have yielded the desired results in the upstream segment. One group of academic researchers reported that large, international companies have not generally expanded their exploration efforts, since exploration spending by these companies has not increased above premerger levels and some have been unable to replace their reserve assets in recent years. These researchers noted in a report on oil companies<sup>18</sup> that this may be a result of the decline in the number of accessible large oil fields that afford big companies a comparative advantage, due to the increased presence of national oil companies and the increasing restrictions on some oil assets worldwide. The report noted that smaller production companies have been able to replace their existing reserves in recent years, suggesting that large companies are not necessarily better positioned for increased exploration in the current market. Furthermore, according to industry publications, private capital is increasingly available, thereby challenging the notion that firms must be large to have access to capital for expensive exploration projects. As a result of these concerns, industry and academic experts noted that smaller participants in the upstream segment remain an effective and competitive force in developing new projects, raising questions about the viability of large oil mergers in the future.

Given that the upstream market is a global market, we also briefly examined global upstream mergers from January 2000 through May 2007. Worldwide, there were 1,722 mergers in the upstream segment during this period, the geographic distribution of which is highlighted in figure 5. As shown in the figure, U.S. mergers comprised about 41 percent of total global merger activity in the upstream segment.

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<sup>18</sup>Amy Myers-Jaffe and Ronald Soligo, *The International Oil Companies*, The James A. Baker III Institute for Public Policy (Rice University, November 2007).

**Figure 5: Percentage of Global Upstream Petroleum Mergers, by Region or Country (2000-2007)**



Source: GAO analysis of J.S. Herold data from January 2000 through May 2007.

Second to the United States, Canada had the highest number of upstream mergers, at 31 percent of total upstream merger activity. Taken together, this evidence highlights that upstream merger activity during this period was heavily concentrated in North America. According to industry reports and academic researchers, recent high levels of merger activity in Canada have been driven by strong growth in the production of crude oil from oil sands, previously considered too technically complicated and expensive, but of growing interest to oil companies given the high price of oil. This activity was also driven out of concern for reliable access to oil, since Canada is considered more politically stable than many other regions of the world with oil reserves.



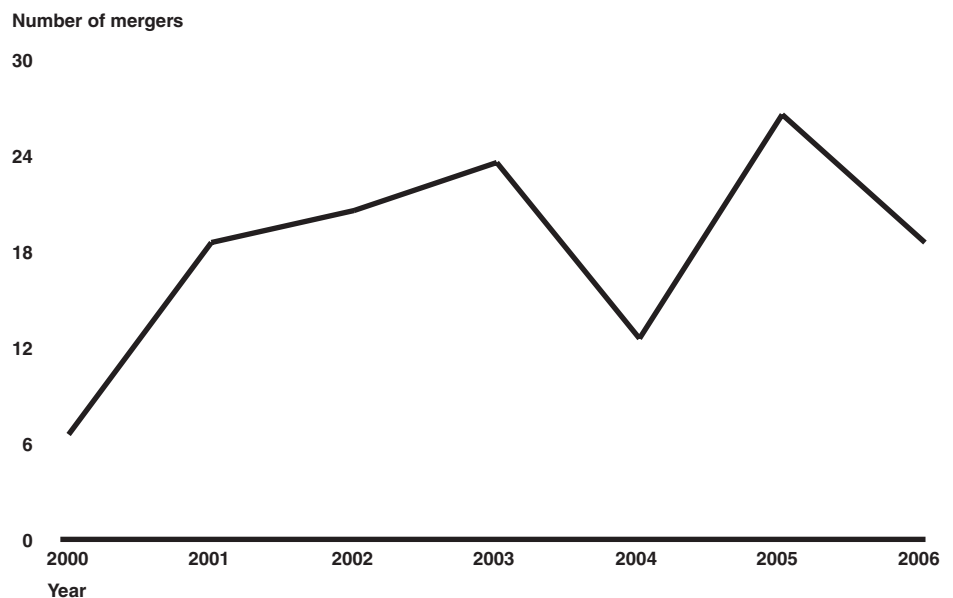
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## Midstream Segment

In the U.S. midstream petroleum segment, the number of asset mergers was slightly higher than for the industry overall, accounting for 81 percent of total U.S. midstream merger activity. Over the period, the number of midstream mergers varied somewhat, from a low in 2000 of 6 mergers, to a high in 2005 of 26 mergers (see fig. 6).

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**Figure 6: U.S. Midstream Petroleum Mergers (2000-2006)**



Source: GAO analysis of J.S. Herold data from 2000 through 2006.

The top reported transaction values for midstream mergers were the lowest of the three segments, with the most valuable midstream merger totaling \$2.8 billion, and a total of eight midstream mergers that exceeded \$1.0 billion (see table 3). Overall, the average midstream merger was valued at \$252 million, while the median value was \$92 million. Looking at the subsegment level, merger activity was split fairly evenly across the pipelines and tankers/other transportation subsegments, with pipelines accounting for 47 percent of mergers and tankers/other transportation accounting for 53 percent.

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**Table 3: Top U.S. Midstream Petroleum Mergers, by Value (2000-2007)**

Dollars in billions			
Buyer	Seller	Year	Transaction value
NuStar Energy LP	Kaneb Services LLC; Kaneb Pipeline Partners LP	2005	\$2.8
Plains All American Pipeline LP	Pacific Energy Partners LP; LB Pacific LP	2006	2.3
Enterprise Products Partners LP	Williams Companies, Inc.	2002	1.2
Kinder Morgan Energy Partners LP	GATX Corporation	2001	1.2
EPCO, Inc.	Duke Energy Corporation; ConocoPhillips	2005	1.1
Enterprise GP Holdings LP	EPCO, Inc.	2007	1.1
Borealis; Inter Pipeline Fund; Ontario Teachers Pension Plan Board; Terasen, Inc.	EnCana Corporation	2003	1.0
Williams Energy Partners LP	Williams Companies, Inc.	2002	1.0

Source: GAO analysis of J.S. Herold data from January 2000 through May 2007.

In the midstream segment, industry representatives reported that U.S. mergers have been driven in part by the desire to improve the overall financial performance of midstream operators.<sup>19</sup> According to one industry report, developments in recent years have prompted a renewed focus on risk mitigation and portfolio management in the midstream segment, thereby prompting pipeline and other midstream operators to pursue merger activity. The industry report also noted that midstream merger activity has been further encouraged by the increased involvement of investment banks and the availability of private equity in such endeavors. Furthermore, a government report noted that reduced domestic production of oil has created excess capacity for many U.S. pipelines, which, according to one firm, has prompted pipeline operators to pursue mergers as a means to remain economically viable.

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<sup>19</sup>Less information is provided on the rationale for mergers in the midstream segment, relative to the information provided for the upstream and downstream segments. This is due to a number of factors, including but not limited to the following: (1) less information was publicly available on the rationale for mergers in the midstream segment and (2) midstream operators were generally less available for interviews and comment.

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## Downstream Segment

In the U.S. downstream petroleum segment, trends generally followed those for mergers overall, with asset mergers, comprising approximately 73 percent of all downstream U.S. mergers and the annual number of mergers rising from 27 to 32 mergers from 2000 to 2006. Top transaction values for the downstream segment fell between those for the upstream and midstream segments, with the largest downstream merger valued at \$9.8 billion, for the Phillips Petroleum Company and the Tosco Corp. As shown in table 4, the top 6 downstream mergers each totaled over \$5 billion in transaction value.

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**Table 4: Top U.S. Downstream Petroleum Mergers, by Value (2000-2007)**

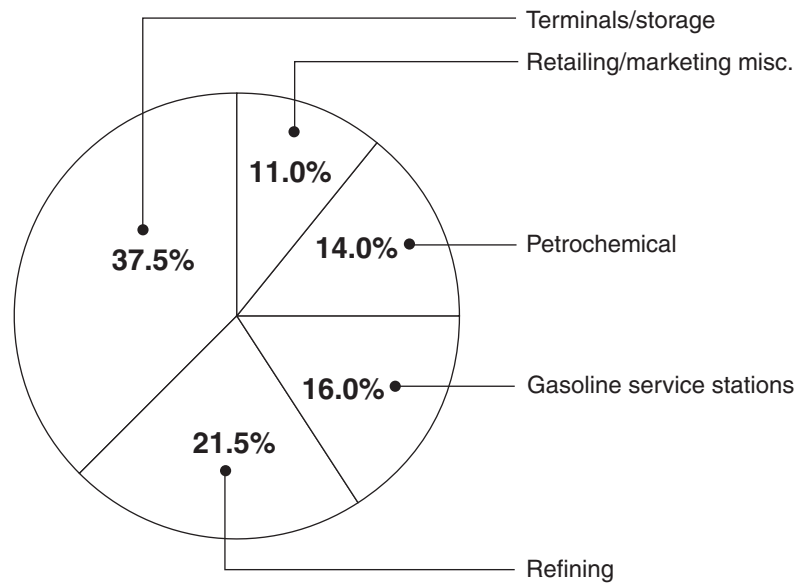
Dollars in billions

Buyer	Seller	Year	Transaction value
Phillips Petroleum Company	Tosco Corp	2001	\$9.8
Ineos Group Holdings Plc	BP plc	2005	9.0
Valero Energy Corporation	Premcor, Inc.	2005	7.6
Valero Energy Corporation	Ultramar Diamond Shamrock Corp	2001	6.4
Access Industries	Royal Dutch Shell plc; BASF Aktiengesellschaft	2005	5.7
RAG AG	EON AG	2005	5.3

Source: GAO analysis of J.S. Herold data from January 2000 through May 2007.

Looking at downstream mergers by subsegment, the terminals/storage subsegment drove the most merger activity, totaling 37.5 percent of mergers during this period (see fig. 7). Second to terminals/storage, the refining subsegment totaled 21.5 percent of all the downstream mergers that we examined, followed by mergers in the gasoline service stations subsegment at 16.0 percent.

**Figure 7: U.S. Downstream Petroleum Mergers, by Subsegment (2000-2007)**



Source: GAO analysis of J.S. Herold data from January 2000 through May 2007.

Note: The retailing/marketing – misc. and refining subsegments include gasoline wholesale suppliers, according to EIA.

In the downstream segment, industry officials reported that key drivers of U.S. mergers included a need to increase efficiencies and costs savings in the petroleum refining and marketing segments. On the refining end, industry officials reported that mergers can help achieve operational efficiencies through the integration of refinery operations and infrastructure. For example, officials reported that a larger refinery system allows firms to use feedstocks and blending stocks across refineries, which can improve efficiencies at individual refineries. In addition, industry representatives reported that purchasing crude oil for multiple facilities can allow refiners to secure volume discounts that yield cost savings. On the marketing end, industry representatives reported that mergers can better position marketers for competition through economies of scale and improved efficiencies. According to one industry official, refiners prefer larger marketers because (1) they are usually a lower credit risk than their smaller counterparts and (2) it is more efficient to sell larger volumes of fuel through fewer entities, because transaction and administrative costs can be minimized. One marketer reported that, after mergers occurred, the larger refiners made it clear that they only wanted to deal with marketers that bought fuel in quantities above a certain

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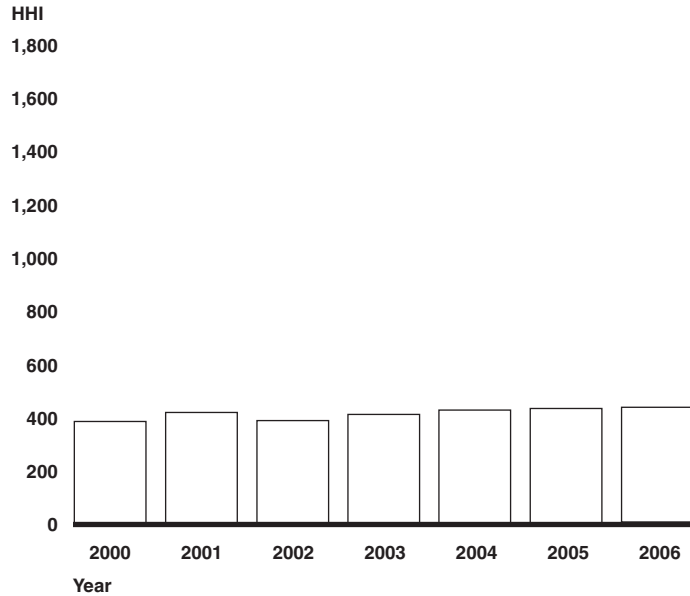
minimum. Smaller marketers that were not able to meet these minimums found it difficult to compete, and many were subsequently purchased by other marketers. In addition, some marketer representatives with whom we spoke said that they operate on slim profit margins, as little as 1 cent per gallon, and the economies of scale that can be achieved via mergers help improve profitability. Despite the gains that mergers can provide in the downstream segment, as well as in the upstream and midstream segments, policy makers and industry officials reported that mergers can also allow companies to exercise market power and reduce competition in the industry.

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### Market Concentration Changed Little, but Varied by Market Region and Industry Segment

We found that the upstream market segment for crude oil production was unconcentrated and remained so between 2000 and 2006. We looked at all the sellers that produce crude oil worldwide because the price of crude oil is set in global markets. We calculated each firm's relative market share of worldwide crude oil production and then calculated HHIs from 2000 to 2006. We found relatively unconcentrated HHIs (i.e., below 1,000 according to FTC's merger guidelines) in this segment of the industry and that these numbers remained stable over time, despite the mergers that occurred in this segment (see fig. 8). In addition, we found that individual crude suppliers throughout the world have relatively low market share compared with other suppliers worldwide. Even a relatively large producer such as Saudi Arabia had only about 13 percent of global crude production in 2006, according to our analysis of *Oil and Gas Journal* data. However, the coordination among global crude producers that are members of the Organization of the Petroleum Exporting Countries cartel can contribute to their ability to exercise market power beyond what the market concentration figures would indicate.

**Figure 8: Upstream Market Concentration, Based on Worldwide Crude Production (2000-2006)**



Source: GAO analysis of *Oil and Gas Journal* data.

Although global crude oil markets appear to be unconcentrated, in some instances smaller, landlocked refineries, such as those in Oklahoma, rely heavily on only local crude producers. Under these circumstances, the crude supplier market would be more concentrated, and there could be more potential for the crude producers to raise prices. We heard from some industry experts and one small, independent refiner that it can sometimes be difficult to purchase crude oil under these circumstances because of the limited choice of suppliers.

We found that between 2000 and 2007, in the downstream gasoline refining segment, market regions in the United States were stable and generally moderately concentrated. We analyzed concentration in what experts consider key market regions: Los Angeles, San Francisco, the Gulf Coast, New York Harbor (East Coast), Chicago, Tulsa (or the Mid-continent), and the Pacific Northwest.<sup>20</sup> Although concentration was generally moderate in

<sup>20</sup>These refining regions are based on historical groupings of U.S. refiners. FTC staff indicated that these regions would not always correspond to bulk gasoline supply markets, which would include the supply of gasoline that comes from outside refiners. See appendix II for a more detailed discussion of how we defined “spot markets” and the limitations of this approach.

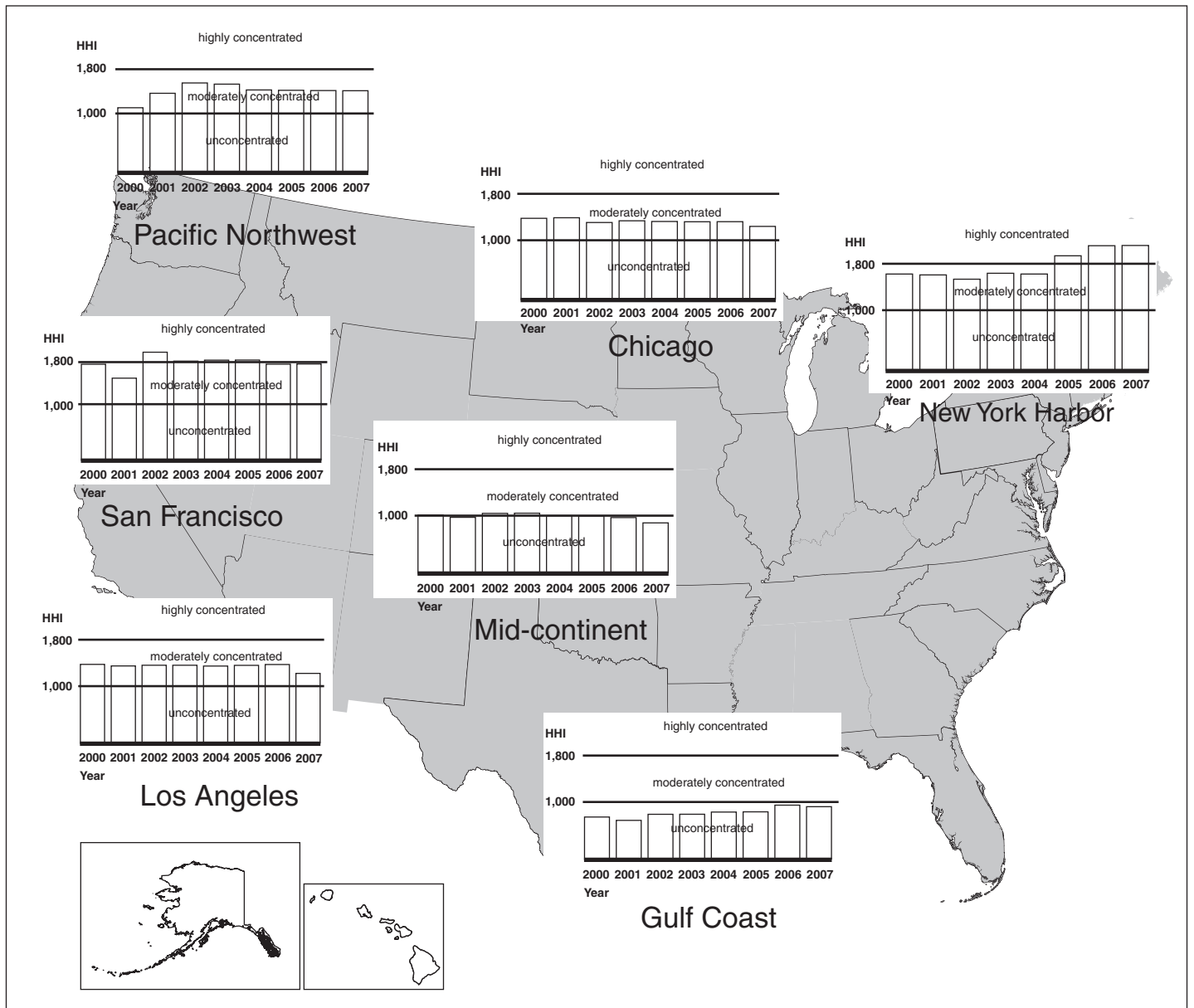
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these regions between 2000 and 2007, the New York and San Francisco regions had concentrations above or near 1,800, which FTC considers highly concentrated (see fig. 9). Petroleum industry experts consider refinery market analysis particularly important because most U.S. refiners have minimal spare capacity, and the barriers to entry for new refiners are high.<sup>21</sup>

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<sup>21</sup>Over the past 25 years, spare refinery capacity has been reduced, in part, because no new refineries have been built in the United States since the 1970s. Industry officials cited stringent environmental regulations and low expectations of profitability as the reason that they have not built any new refineries. In addition, refiners have been reluctant to invest the billions of dollars needed to build new facilities when faced with uncertain demand growth in the future. There has been, however, a steady expansion of existing refinery capacity since the 1970s. Despite these expansions, refineries often run at or near 90 percent capacity.

**Figure 9: Changes in U.S. Regional Refinery Concentration (2000 to 2007)**



Source: GAO analysis of EIA data.



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Between 2000 and 2007, the HHI for the New York Harbor region increased from 1,630 to 2,104, but because foreign and Gulf Coast refineries ship a significant amount of gasoline into the East Coast (around 60 percent of consumption), the high measure of concentration probably overstates the actual concentration for the market.<sup>22</sup> The potential for market power is likely lower than the HHI would indicate because refiners from outside of this region have the ability to challenge potentially anticompetitive behavior from local refiners over longer periods of time by providing lower-priced gasoline. Calculating HHI with these potential competing refiners included would provide a more accurate representation of concentration levels in this region.

Between 2000 and 2007, the HHI for the Chicago region went from 1,417 to 1,268, keeping it moderately concentrated throughout the period of our study. In addition, this region—which serves large parts of the Midwest, according to industry experts—also receives shipments of gasoline from the Gulf Coast via pipeline, and, according to our analysis of EIA data, shipments from outside of the region accounted for about 28 percent of the gasoline consumed in the Midwest region.<sup>23</sup> This indicates that numerous refiners outside of the Chicago region help to keep the market supplied and could provide adequate gasoline to prevent long-run price increases.

Between 2000 and 2007, the HHI for the Gulf Coast region, which includes refineries in Texas, Louisiana, and Alabama, went from 761 to 938, an increase of 177 points. This region remained unconcentrated throughout our study period and has, by far, the greatest number of refineries. As a result, the Gulf Coast region generally produces more gasoline than it uses, and about two-thirds of it is shipped outside of the region,<sup>24</sup> mostly to the Midwest and East Coast.

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<sup>22</sup>There are no reliable data sources for the size of these shipments by refinery or for the origins of imported fuel into the United States. EIA collects data on the basis of the name of the fuel shipper, which is often different than the name of the refining company in the country of origin. It was, therefore, not possible for us to accurately calculate HHIs with foreign refiners included. The 60 percent consumption rate is based on 2007 EIA data as of August 20, 2008.

<sup>23</sup>This percentage is based on 2007 EIA data as of August 20, 2008.

<sup>24</sup>This percentage is based on 2007 EIA data as of August 20, 2008.

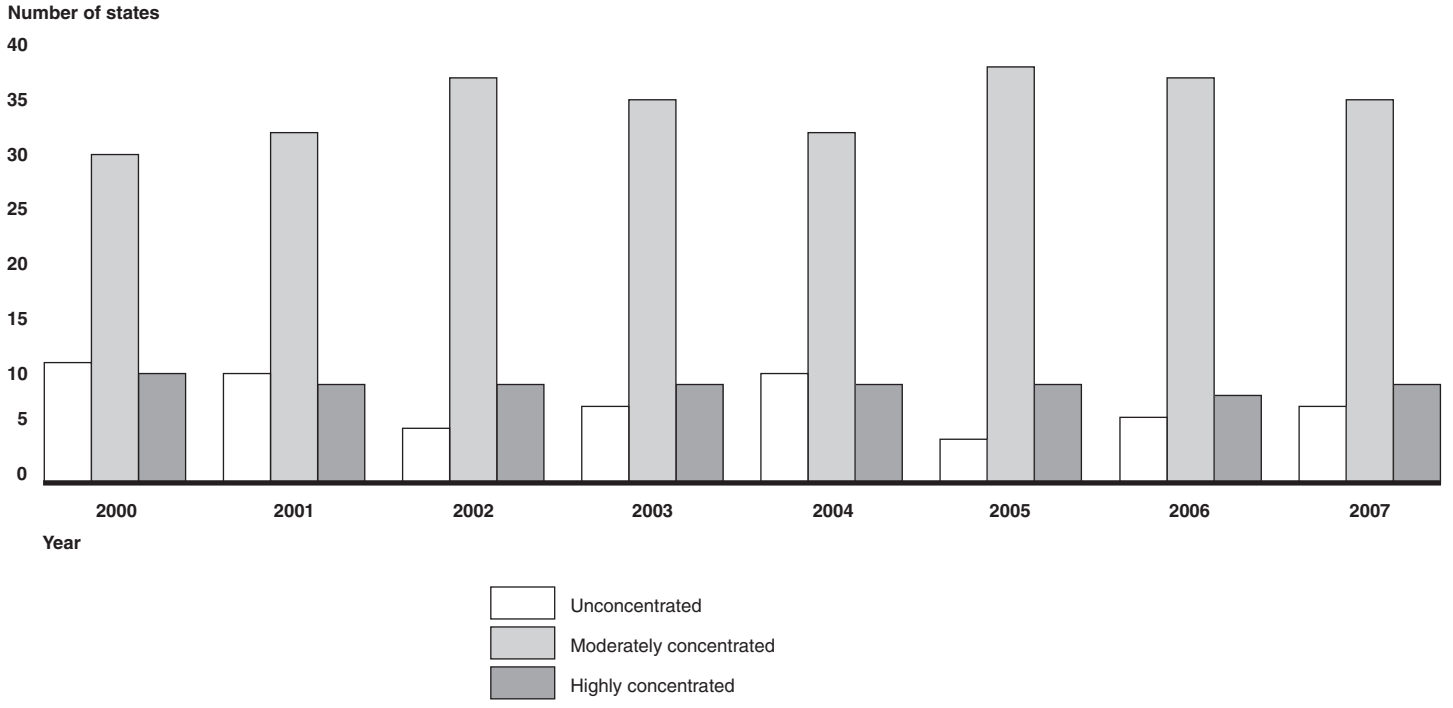
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Between 2000 and 2007, the HHI for the Mid-continent region went from 1,029 to 882, a decrease of 147 points. This region became unconcentrated during our study period. However, some experts mentioned that some Mid-continent refineries in states such as Montana, Utah, and Wyoming primarily supply only their local regions, making these regions subject to potentially more highly concentrated local market conditions rather than lower concentrated regional Mid-continent conditions.

In general, the West Coast of the United States was moderately concentrated. Between 2000 and 2007, the Pacific Northwest region was moderately concentrated, although the HHI increased 293 points, from 1,146 to 1,439. In addition, the HHI for the San Francisco region remained in “nearly” highly concentrated territory over the entire span of our study. The HHI for the Los Angeles region went from 1,460 to 1,285, keeping it firmly in the moderately concentrated range between 2000 and 2007. As is the case with the New York Harbor region, West Coast regions have some access to imported gasoline, and gasoline can also move between West Coast regions. This clearly helps to mitigate potential issues of high concentration, according to experts with whom we spoke. Imports to California markets, however, are limited by the state’s unique gasoline specifications and many refineries outside of the state are not able to produce gasoline for California.

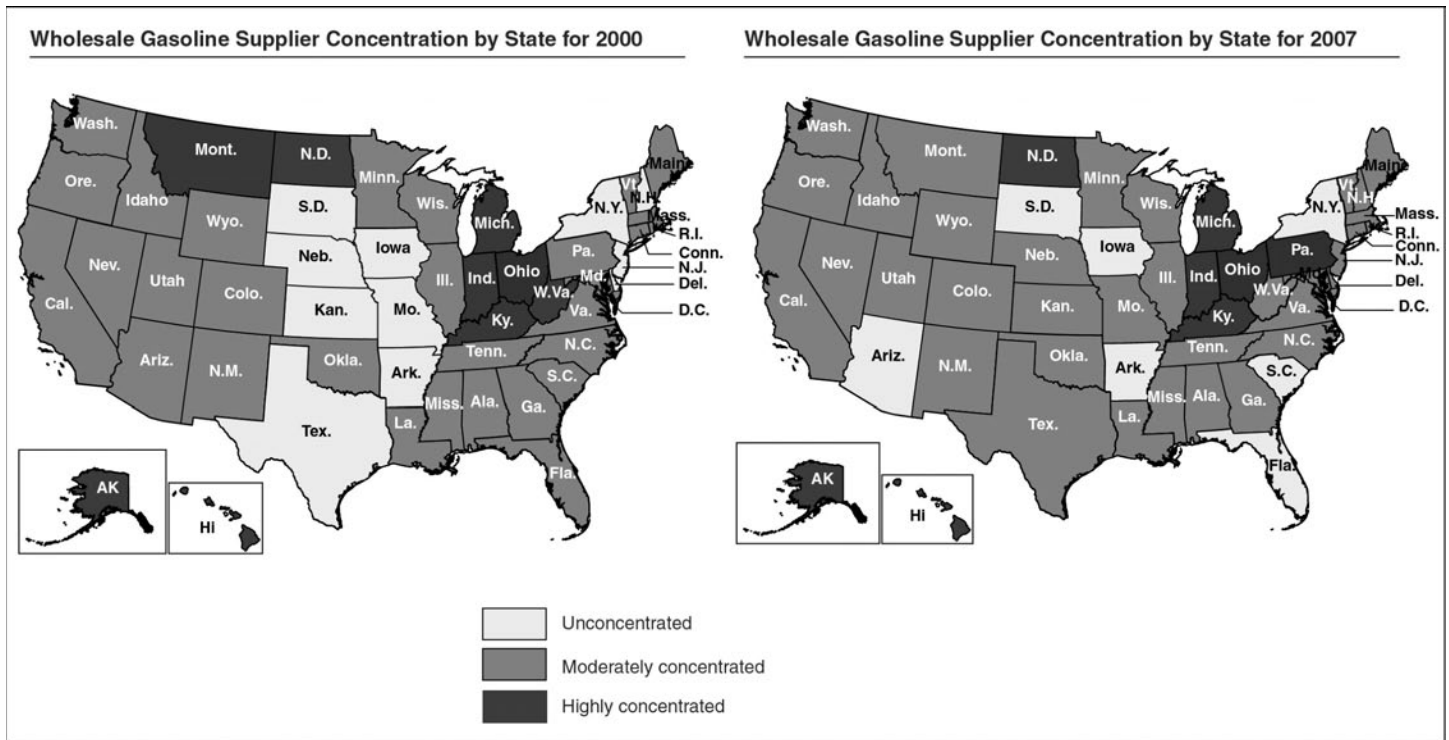
In our analysis of downstream wholesale gasoline suppliers, we found that most states had a moderately concentrated number of wholesale gasoline suppliers between 2000 and 2007. However, markets for wholesale gasoline marketing may not correspond to states; therefore, in some cases, the relevant geographic market would be either larger or smaller than state boundaries, according to some petroleum industry experts with whom we spoke. Fewer states were unconcentrated or highly concentrated, and this overall trend was fairly stable over time (see fig. 10). In addition, we found that eight states in 2007 were highly concentrated: Alaska, Hawaii, Indiana, Kentucky, Michigan, North Dakota, Ohio, and Pennsylvania (see fig. 11), although we were not able to link concentration levels to gasoline prices. To calculate these market concentrations for wholesale gasoline supply, we used EIA data that contained the gasoline volumes sold in every state, by wholesale supplier. EIA only collects these data by state.

**Figure 10: Number of States with Unconcentrated, Moderately Concentrated, or Highly Concentrated Wholesale Gasoline Supply Markets (2000-2007)**



Source: GAO analysis of EIA data.

**Figure 11: Wholesale Gasoline Supplier Concentration Levels (2000 and 2007)**



Sources: GAO analysis of EIA data; Map Resources (map).

We were not able to calculate market concentration in the midstream segment of the petroleum industry, which transports crude oil and refined products throughout the United States, because of a lack of comprehensive data on pipeline and barge ownership and associated transportation markets. In addition, many petroleum product pipelines are considered “common carriers”; therefore, they are subject to FERC rates if they cross state boundaries and state-mandated rates if they remain within state boundaries, which FERC officials told us limits the ability of pipeline owning firms to increase prices anticompetitively. However, in some cases, pipeline firms can apply for “market-based” rates, although they have to demonstrate to FERC that they ship fuel between locations where there are ample shipping alternatives. This is not very often the case, and, according to FERC officials, there are few pipeline firms that charge market-based rates as a result.

However, despite the lack of data, experts raised some important considerations regarding competition in the midstream segment. For

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example, petroleum marketers told us that in some instances, pipeline firms also own the terminals that connect to their pipelines and have the ability to set their own prices for fuel storage or other terminal-related services, potentially leaving shippers with few alternatives but to pay. In addition, according to some oil industry experts with whom we spoke, some pipeline companies are master limited partnerships—publicly traded limited partnerships, not subject to corporate income tax—which may have little interest in the long-term viability of their business, and, according to some industry experts with whom we spoke, may defer maintenance and limit increases in pipeline capacity to maximize profits in the short term. We noted in a 2007 report on energy markets that, in some states, such as Arizona, California, Colorado, and Nevada, there was a systemic lack of pipeline capacity that was insufficient in meeting increases in demand, creating conditions of higher prices and price volatility.<sup>25</sup> Like refining, midstream infrastructure often has very high barriers to entry, thereby making it difficult for new competitors to enter the market. For example, it is difficult to get regulatory permits to build or expand pipelines, and the costs can run \$1 million or more per mile, according to pipeline companies and other industry experts.

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## FTC Primarily Reviews Proposed Mergers to Maintain Petroleum Industry Competition, While FTC and Other Agencies Also Have Roles in Monitoring Petroleum Industry Markets

FTC primarily reviews proposed mergers to maintain competition in the petroleum industry, while other federal and state agencies, including FTC, have roles in monitoring petroleum industry markets. FTC does a review to predict the effects of proposed mergers on competition, but generally does not look back to evaluate the actual effects after the merger has been completed, even though experts and FTC agree that postmerger reviews would allow the agency to better inform future merger reviews and to better measure its success in maintaining competition. In addition, the agency also conducts other activities to monitor petroleum product markets, such as monitoring wholesale gasoline prices for evidence of unusual price spikes. Other federal and state agencies also have roles in monitoring petroleum industry markets.

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<sup>25</sup>GAO, *Energy Markets: Increasing Globalization of Petroleum Products Markets, Tightening Refining Demand and Supply Balance, and Other Trends Have Implications for U.S. Energy Supply, Prices, and Price Volatility*, [GAO-08-14](#) (Washington, D.C.: Dec. 20, 2007).

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## FTC Reviews Proposed Mergers, but Does Not Regularly Review the Effects of Past Merger Decisions

In reviewing proposed mergers, FTC follows guidelines that it developed jointly with DOJ for predicting the effects of mergers—including petroleum industry mergers—on competition. The unifying theme in the guidelines is that mergers should not be permitted to enhance a firm's market power or to make it easier for a firm to exercise market power. The guidelines describe the analytical process that FTC will use in determining whether to challenge a merger, and they outline five broad areas for FTC to consider: (1) defining markets and analyzing concentration, (2) predicting potential adverse effects on competition, (3) evaluating barriers to new market entrants, (4) evaluating potential gains in efficiency, and (5) giving consideration to potentially failing firms. We discuss these five areas in the following text:

*Defining markets and analyzing concentration:* FTC initially defines merging companies' markets and analyzes their market concentration. To do this, FTC first reviews merging firms' products; identifies any similar products they sell; and identifies the geographic markets in which the firms operate, which it defines as the area in which a company could monopolize the market and impose a small price increase without competing firms bringing prices back down by adding supply to the market. FTC then determines the industry market share—the percentage of products that companies supply to one geographic market area—and calculates an index of market concentration, HHI, where firms with larger market shares are weighted more heavily. If the proposed merger were to substantially raise HHI, there would be a greater likelihood that one firm, or a small group of firms, could exercise market power and increase consumer prices above competitive levels. This situation may trigger FTC to request more information from the merging firms to look more closely at several factors affecting market competition (see table 5).

**Table 5: FTC’s Concentration Guidelines for Initial Analysis of Proposed Mergers**

Postmerger HHI	Degree of market concentration	Change in HHI that would result from the proposed merger	Potential competitive consequences and likely need for further DOJ/FTC analysis
Less than 1,000	Unconcentrated	Not applicable	Ordinarily no further analysis
Between 1,000 and 1,800	Moderately concentrated	Increase <100	Ordinarily no further analysis
		Increase >100	Could raise significant competitive concerns, depending on other factors
Greater than 1,800	Highly concentrated	Increase <50	Ordinarily no further analysis
		Increase >50	Could raise significant competitive concerns, depending on other factors
		Increase >100	Likely to create or enhance market power or facilitate its exercise

Sources: FTC and DOJ.

Note: FTC staff told us that they do not ordinarily conduct further analysis in the specific HHI regions listed in this table, but they can do so if there are other factors that indicate a merger would likely harm competition.

*Predicting potential adverse effects on competition:* FTC’s second step is to predict the nature of adverse effects of a merger on competition in the petroleum industry. To do this, FTC examines whether market conditions would be conducive for firms to coordinate or to act unilaterally to raise prices. The analysis of competitive harm at the retail level might involve looking for the presence of firms with different business models than their rivals, which would indicate less likelihood for coordination. For example, FTC noted that the presence of “big-box” retailers that sell discount gasoline and groceries, such as Costco or Wal-Mart, generally boost competition because they tend to sell large volumes of fuel at lower prices than traditional service stations. FTC might allow a merger to take place in a retail market with a large number of such retailers that it would otherwise challenge in a different market.

*Evaluating barriers to entry for new market entrants:* FTC’s third step is to evaluate the barriers to market entry for potential new competitors. When FTC identifies that it is unlikely that new firms could enter a market

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in a relatively short time, they consider the market to be less competitive and, therefore, would be less likely to approve a merger. FTC staff told us the petroleum industry is generally hard to enter because of the high capital costs; for example, building a new refinery could take 6 years and cost \$10 billion, according to estimates for one proposed new facility. In general, FTC staff told us that because of factors like the high barriers to entry in the petroleum industry, they challenge mergers at lower levels of concentration than they do in other industries. As a result, the FTC staff said that they scrutinize the petroleum industry more closely than other industries, while still using the same merger review guidelines.

*Evaluating potential gains in efficiency:* FTC's fourth step is to evaluate any claims from the merging parties' that the merger would improve efficiency in the petroleum industry. For example, some mergers have the potential to make the merged firms more efficient in their daily operations by allowing them to achieve economies of scale, and this may result in lower prices for consumers. If FTC determines that a merger could result in substantial efficiency gains, it may allow a merger that would otherwise potentially harm consumers. However, the guidelines acknowledge that these efficiency gains may not be realized in the way that merging firms claim.

*Considering potential failing assets argument:* FTC's fifth step is to evaluate whether the merger will result in a firm remaining in the market that would have otherwise gone out of business. FTC would be less likely to challenge such a merger if it would allow a firm to remain a viable market participant, according to FTC staff with whom we spoke.

To determine the extent of the competitive factors that we have previously discussed, FTC staff told us they work closely with petroleum industry participants, often review thousands of pages of evidence, and work with antitrust officials in the states affected by the merger. The merger review process could last under 30 days if the agency does not request additional information from the merging parties; however the process could last 12 months or more if extensive analysis is needed and the agency issues a second request for more information, according to FTC staff. After analysis of the factors in the guidelines, FTC has three options: (1) allow the merger; (2) challenge the merger in court; or (3) allow the merger with certain remedial actions, such as requiring firms to sell off, or divest, overlapping assets that have the greatest potential to harm competition. For example, in the petroleum industry, this might mean requiring one of the merging firms to sell a product terminal in an area where the merging partner owns one.



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According to FTC data, between 2000 and 2007, there were 360 mergers in the petroleum industry that were required to file with the agency.<sup>26</sup> After reviewing these proposed mergers, FTC opened investigations in 64 mergers and issued second requests in 24 of them. FTC allowed 9 mergers to proceed with remedial actions, while the threat of agency challenges led to the abandonment of 5 of them. FTC allowed the rest to proceed without modification. To make these decisions, FTC performed prospective merger reviews to predict the effects of the mergers before they were completed. However, we found that after reviewing proposed mergers, FTC does not regularly look back at past decisions to determine the actual effects of the merger on competition or prices. In 2004, we reported that FTC had released its first retrospective review<sup>27</sup> of any kind for approved mergers in the petroleum industry.<sup>28</sup> FTC has since released two additional retrospective reviews of petroleum industry mergers. The first one, in 2004, was of a 1998 joint venture between Marathon Oil Company and Ashland Incorporated; the second one, in 2005, was of a 1999 acquisition of Ultramar Diamond Shamrock Corporation by Marathon Ashland Petroleum; and the third one, in 2007, was of the 1997 acquisition of Thrifty Oil Company by ARCO. According to its published reports on these studies, FTC chose to review these mergers because evidence suggested there was a chance that they might have led to higher gasoline prices in areas affected by the mergers. None of the studies found that the mergers had any adverse effects on gasoline prices, although FTC indicated that the studies provided important lessons that would inform their future merger review work.

A number of petroleum industry experts, industry participants, and FTC all view retrospective merger reviews as a potentially valuable part of FTC's efforts to maintain competition in the petroleum industry. An FTC commissioner, who is now the FTC Chairman, noted in a 2006 article that without retrospective reviews, it is rarely possible to determine whether the assumptions and hypotheses that motivated a merger review decision

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<sup>26</sup>These data reflect the increasing merger value thresholds for filings required under Hart-Scott-Rodino.

<sup>27</sup>We define "retrospective review" to be a quantitative post merger analysis to determine the effects on price or competition, if any, resulting from a completed merger.

<sup>28</sup>GAO, *Energy Markets: Effects of Mergers and Market Concentration in the U.S. Petroleum Industry*, [GAO-04-96](#) (Washington, D.C.: May 17, 2004), 130.

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were sound.<sup>29</sup> Some experts also noted that examining mergers retrospectively can provide valuable insights that FTC can apply during subsequent merger reviews. Specifically, retrospective reviews bring to light any effects that do not occur as predicted. For example, a study that FTC published in 1999 looked back at a number of cases where it had required divestitures in a variety of industries and found that only three-quarters of divestitures succeeded to some degree, which would leave fewer competitors than predicted and potentially harm competition. In addition, as noted in FTC and DOJ's Merger Guidelines, efficiency gains that could mitigate the harmful effects of a merger may not always be realized. Retrospective reviews would allow FTC to identify such situations, and this could help inform the agency's future merger reviews.

FTC staff told us that if they find anticompetitive behavior in retrospective reviews, they have the ability to pursue corrective action to reintroduce competition into the market. For example, FTC has the power to pursue actions, such as forced divestitures or conduct-based remedies, to bring competition back into the market place. In fact, FTC has identified anticompetitive behavior in retrospective merger reviews it conducted in other industries and has taken corrective actions. In 2005, FTC, using results from a retrospective review of a hospital merger in suburban Chicago, found that the merged hospital used market power to set prices in an anticompetitive manner.<sup>30</sup> Using these findings, FTC filed suit and the courts issued numerous cease-and-desist orders to the hospitals, which brought price competition back into the healthcare market according to FTC staff.

In addition, some experts with whom we spoke said that retrospective merger reviews would allow FTC to better measure the success of its merger review program. The Government Performance and Results Act of 1993 (GPRA)<sup>31</sup> emphasizes that agencies need to establish and measure performance toward results-oriented goals, which in FTC's case means that the agency should not measure success by how many mergers it reviews, but rather by whether merger reviews achieved the goal of

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<sup>29</sup>William Kovacic, "Using Ex Post Evaluations to Improve the Performance of Competition Policy Authorities," *The Journal of Corporation Law* (Winter 2006).

<sup>30</sup>Federal Trade Commission, *In the Matter of Evanston Northwestern Healthcare Corporation*, Docket 9315. In 2007, FTC affirmed the 2005 ruling by an administrative law judge finding that the merger was anticompetitive and violated antitrust law.

<sup>31</sup>Government Performance and Results Act of 1993, Pub. L. No. 103-62.

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maintaining competition.<sup>32</sup> Currently, FTC's key measure of its merger review performance is to determine the number and the value of potentially anticompetitive mergers that it successfully challenged. However, this measure does not involve an evaluation of mergers that ended up being harmful, but that the agency did not challenge after predicting they would be harmless. In addition, in cases where mergers proceed with remedial actions, FTC's key performance measure indicates a successful outcome, even though remedial actions, such as divestitures, may not always succeed. Using retrospective merger reviews to look at the actual effects of completed mergers on competition would better show whether the program achieved the goal of maintaining competition.

However, FTC does not have—and does not plan to develop—formal guidelines or criteria on how often retrospective reviews should occur or how to conduct them, instead the agency relies on an informal approach. For example, staff reported that in the past two retrospective reviews, staff chose to review completed mergers that FTC subjected to careful antitrust investigation, but did not challenge; otherwise, there are no defined guidelines. In the absence of regular retrospective reviews, FTC may not be able to regularly apply lessons learned from past merger decisions to future reviews, assess the performance of its merger review program, or take remedial actions in instances where completed mergers ended up harming competition. FTC staff cited a lack of time and resources as the primary challenge to its ability to conduct retrospective reviews. Specifically, staff reported that it was difficult to devote the time and staff resources required to conduct these types of reviews, and stated that retrospective reviews of mergers in the petroleum industry are important, yet lower priority, compared with other mission-central activities, such as premerger reviews. In addition, according to economists with whom we spoke, developing the statistical models needed to conduct retrospective reviews is complex and time consuming. They indicated that there are numerous factors affecting the price of gasoline that must be controlled for in order to attribute any changes in price to a particular merger. Nonetheless, we have reported in prior work that agencies with limited resources can implement risk-based guidelines to selectively look

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<sup>32</sup>Enacted in 1993, GPRA is designed to inform congressional and executive decision making by providing objective information on the effectiveness and efficiency of federal programs and spending. GPRA requires agencies to measure performance toward the achievement of annual goals and report on their progress in annual program performance reports.

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back at agency decisions.<sup>33</sup> Risk-based guidelines provide criteria for taking action based on the likelihood that agency goals were not met. These would allow FTC to selectively use resources to evaluate past merger decisions in circumstances where it deems there is greater likelihood, and hence risk, that the goal of maintaining competition was not met.

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### FTC Performs Other Supplemental Activities to Monitor Petroleum Industry Markets

In addition to its efforts to maintain competition through merger review, FTC also performs other activities to monitor petroleum markets, including monitoring fuel prices, conducting special investigations, and engaging in consumer protection activities. FTC implemented a price-monitoring program in 2002 for wholesale and retail prices of gasoline in an effort to identify possible anticompetitive activities and determine whether a law enforcement investigation was warranted. The program tracks retail gasoline and diesel prices in 360 cities across the nation and wholesale prices in 20 major urban areas. FTC's Bureau of Economics staff receives daily data from the Oil Price Information Service (OPIS), receives weekly information from the Department of Energy's public Gas Price Hotline, and reviews other relevant information that might be reported to FTC directly by the public or other federal or state government entities. FTC uses a statistical model to determine whether current retail and wholesale prices each week are consistent with historical patterns and to alert FTC staff when gasoline prices are out of expected ranges for that region. Staff can then conduct more in-depth analyses to determine whether there are violations of antitrust laws. Since its establishment in 2002, the price-monitoring program has not identified any price anomalies that would violate the antitrust laws; it attributes most price anomalies to refinery or pipeline outages or changes in air quality standards. FTC staff reported that outside economists and FTC staff reviewed the program's methodology and found it to be effective.

FTC's staff indicated that they also conduct special investigations of the petroleum industry when warranted. Occasionally, such investigations are requested by Congress. For example, in 2006, the agency published a congressionally mandated report entitled *Investigation of Gasoline Price Manipulation and Post Katrina Gasoline Price Increase* that evaluated price anomalies after Hurricanes Katrina and Rita. This investigation did

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<sup>33</sup>GAO, *Utility Oversight: Recent Changes in Law Call for Improved Vigilance by FERC*, [GAO-08-289](#) (Washington, D.C.: Feb. 25, 2008).

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not find evidence of anticompetitive behavior in any of the industry segments during or after the disruptions. The agency also completed an investigation into gasoline and diesel prices in the Pacific Northwest in 2006 and 2007 that found prices appeared to be consistent with ordinary market conditions. In addition to their special investigations, the agency also publishes various reports on the petroleum industry that are, mainly, agency-driven. For example, in 2004, FTC published a report on mergers and its antitrust enforcement activities in the petroleum industry.<sup>34</sup> Furthermore, the Commission's Bureau of Consumer Protection has brought actions to protect consumers from false or unsubstantiated advertising claims regarding the effectiveness or energy-saving of fuels or automotive products.

In addition, on August 13, 2008, FTC issued a proposed rule that would make it unlawful for any person to engage in fraudulent or deceptive acts in connection with the purchase or sale of crude oil, gasoline, or petroleum distillates to manipulate wholesale petroleum markets. Therefore, fraudulent or deceptive acts—including false reporting to private reporting services or misleading announcements by refineries, pipelines, or investment banks—may be covered by the proposed rule. However, it is not yet clear how this rule will impact FTC's enforcement or monitoring in petroleum industry markets.

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## Other Federal and State Agencies Also Monitor Petroleum Industry Markets

Besides FTC, other federal agencies have a role in monitoring petroleum industry markets. Table 6 provides general examples of three federal agencies' responsibilities regarding petroleum markets. Some states are also involved in monitoring petroleum markets that affect their constituents.

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<sup>34</sup>Federal Trade Commission, *The Petroleum Industry: Mergers, Structural Change, and Antitrust Enforcement, An FTC Staff Study* (August 2004).

**Table 6: Other Federal Agencies That Monitor Petroleum Industry Markets and Examples of Their Roles**

Federal agency	Examples of roles in monitoring petroleum industry markets
Federal Energy Regulatory Commission	Determines pipeline shipping rates by regulating the terms of contracts for pipelines to create open access to all parties
Commodity Futures Trading Commission	Monitors futures markets to encourage their competitiveness and efficiency and to protect market participants against fraud, manipulation, and abusive trading practices
Energy Information Administration	Collects, analyzes, and forecasts petroleum data to allow for market monitoring, to promote sound policy making, and to create efficient energy markets

Source: GAO analysis of agency documents.

FERC has a role in monitoring and regulating petroleum industry markets at the midstream level—where crude oil and petroleum products are transported—by ensuring that all parties have access to common-carrier pipelines.<sup>35</sup> While FERC does not proactively monitor pipeline markets, it regulates the open access to pipelines by determining and enforcing tariffs—that is, the rates charged and the terms under which shippers send their products through the pipelines and the rules governing pipeline access. According to FERC officials, pipeline companies establish their initial rates either (1) by filing an application with FERC requesting a rate based on the total cost-of-service for the pipeline or (2) by proving to FERC that shippers have agreed to pay another proposed rate. As we have previously discussed, FERC also allows some pipelines to charge market-based rates in regions where it deems there is adequate competition. FTC still has the authority to enforce antitrust legislation and review mergers to maintain competition in this segment of the industry. In some instances, FERC can also intervene to prevent potentially anticompetitive behavior. For example, FERC officials cited an instance where a pipeline company denied access to a crude oil producer who wanted to ship high sulfur crude oil out of the Gulf Coast. The pipeline company said that it did not want to have high sulfur crude contaminating its pipeline, although the shipper alleged that the pipeline company was acting in collusion with a

<sup>35</sup>Common-carrier pipelines allow access to any potential fuel shipper. FERC does not have the authority to regulate privately owned pipelines.

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rival crude oil producer by restricting access to the pipeline. After receiving the complaint, FERC officials worked with the parties to resolve the matter.

The Commodity Futures Trading Commission (CFTC) monitors futures markets to ensure competitiveness and efficiency, and protects market participants against fraud, manipulation, and abusive trading practices.<sup>36</sup> Participants in futures markets, such as the New York Mercantile Exchange, often use futures contracts,<sup>37</sup> which contribute to the smooth functioning of petroleum product markets throughout the United States. Buyers and sellers in the futures markets primarily enter into futures contracts to lock in prices on volatile goods or to speculate rather than to exchange physical goods, which is the primary activity of the spot markets.

CFTC has several divisions that monitor and enforce competition in the futures markets. The Division of Enforcement investigates and prosecutes alleged violations of the Commodity Exchange Act and Commission regulations. One example of market manipulation in the crude oil markets occurred in 2003, when one company attempted to manipulate the spot market price of West Texas Intermediate crude oil. The case was brought by CFTC and settled in 2007 for a \$1 million civil penalty. In addition, CFTC has created advisory committees to provide input and make recommendations to the Commission on a variety of regulatory and market issues that affect the integrity and competitiveness of U.S. markets. These committees include an Energy Markets Advisory Committee that was created in 2008 to advise CFTC on important new developments in energy markets that may raise new regulatory issues, and on the appropriate regulatory response to protect market competition, increase efficiency, and create opportunities in the futures markets.

The Department of Energy's EIA also has a role in analyzing and monitoring petroleum industry markets. Specifically, EIA collects, analyzes, and forecasts data on the supply, demand, and prices of crude oil

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<sup>36</sup>For more information, see GAO, *Commodity Futures Trading Commission: Trends in Energy Derivatives Markets Raise Questions about CFTC's Oversight*, GAO-08-25 (Washington, D.C.: Oct. 19, 2007).

<sup>37</sup>A futures contract is a financial contract in which a buyer and seller agree to buy or sell a commodity, such as crude oil, in the future for a particular price. Almost all futures contracts change ownership without the actual physical delivery of the commodity.

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and petroleum products, including inventory levels, refining capacity and utilization rates, and product movements into and within the United States. EIA's reports are prepared independently of Administration policy, and EIA does not provide conclusions or recommendations in its analyses. FTC relies on EIA's comprehensive and independent data and several state agencies with whom we spoke use these data to review mergers, conduct market concentration analysis, and analyze wholesale and retail gasoline markets. For example, FTC uses EIA data to support enforcement action cases and, in 2007, 33 cases were pursued, the highest number of cases in the last 5 years.<sup>38</sup>

In addition to the agencies that monitor petroleum industry markets, the Environmental Protection Agency (EPA) also has a role in helping to maintain the flow of petroleum products during emergency supply crises by providing waivers for refineries to allow them to sell products that would not normally meet environmental standards. For example, after supply disruptions resulting from Hurricanes Katrina and Rita, EPA indicated that it met with local market participants and, following review of the market circumstances, granted waivers on environmental quality specifications. According to EPA, this ensured there were no regulatory obstacles to providing an adequate supply of gasoline and diesel to the affected regions.

Most states do not proactively monitor petroleum industry markets, although the level of monitoring varies from state to state, according to the National Association of Attorneys General (NAAG). Some states do not monitor fuel prices or other aspects of the petroleum industry at all, while other states actively monitor market structure or fuel prices on a continual basis.<sup>39</sup> Financial, political, and other factors may be the reason for whether and how actively states monitor petroleum industry markets. State agency officials with whom we spoke described a number of steps they can take in monitoring their petroleum industry markets.

First, some states collect and analyze data on the industry—especially at the gasoline wholesale and retail levels. For example, after Hurricane Katrina, according to the Pennsylvania Office of Attorney General, the

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<sup>38</sup>FTC staff indicated that they obtain permission from private firms before using data reported to EIA for law enforcement purposes.

<sup>39</sup>States can monitor petroleum markets through their state energy commissions or through their state attorneys general offices.



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state decided to monitor retail gasoline prices during that period of reduced gasoline supply. The state ended up bringing charges against retailers that were allegedly setting unfair prices. States may also enact legislation to make it mandatory for companies to provide data on wholesale gasoline sales. For example, Maine implemented a statute called the Petroleum Market Share Act, which requires petroleum wholesalers and refiners to provide annual reports to the attorney general who uses this information to calculate market concentration for fuel suppliers, ensuring that the state has historical data to proactively track market concentrations. Second, states may enact legislation to prosecute unfair practices that lead to very high prices, that is, “price gouging.” According to a study by the Congressional Research Service (CRS),<sup>40</sup> at least 28 states, the District of Columbia, and 2 U.S. territories have some form of price gouging legislation, although several states we spoke with said it was generally difficult to prove that unfair pricing had occurred. Currently, there is no federal price gouging law, but the 110th Congress has proposed several bills that address the issue. Third, most of the states we contacted also develop gasoline pricing reports to inform the public of the changes in the petroleum industry. For example, the state of Washington published a comprehensive interagency report in 2008 to address how gasoline prices have increased over the years and identified in a comparative analysis the different components contributing to the rising prices. Finally, several states often collaborate with FTC on merger reviews because they have local knowledge of the companies and provide expertise that federal agencies may lack. For example, the California Attorney General has worked cooperatively with FTC to review a number of mergers, including large mergers such as the Exxon Mobil merger, and provided legal and technical expertise on the California market, such as knowledge of the intricacies of California pipelines. Overall, states are interested in improving their monitoring of petroleum industry markets in their areas, according to NAAG.

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## Conclusions

Because there are few substitutes for transportation fuels such as gasoline, consumers have little choice but to pay higher prices when they rise. As a result, consumers want assurance that the prices they pay are determined in a competitive and fair marketplace. FTC plays a key role in maintaining petroleum industry competition and in assuring the public

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<sup>40</sup>Angie A. Welborn and Aaron M. Flynn, *Gasoline Price Increases: Federal and State Authority to Limit “Price Gouging,”* CRS Report for Congress (May 18, 2006).

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that mergers have not led to unfair price increases. Maintaining competition in the petroleum industry requires FTC to fully understand the effects of its merger decisions on competition and fuel prices. While FTC considers the potential effects of mergers during its proposed merger review, the agency does not routinely look back to determine whether the actual effects of the merger reflect what the agency predicted. It is possible that the actual effects of a completed merger could be different and not realized until much later. Without more regular retrospective reviews, the agency does not know whether a completed merger contributed to fuel price increases or decreases or whether the merger improved or harmed competition. In addition, FTC cannot apply lessons learned to future merger reviews and is unable to effectively monitor its own performance in delivering the intended result of “maintained” competition. We believe, along with the experts with whom we spoke, including those at FTC, that regular retrospective analyses would help the agency better understand the actual impacts of mergers. While not all completed mergers would likely warrant retrospective reviews, an approach that uses risk-based guidelines would allow the agency to selectively review key mergers with the goal of maintaining competition in the petroleum industry.

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## Recommendations for Executive Action

To enhance FTC’s effectiveness in maintaining competition in the U.S. petroleum industry, and to make efficient use of FTC’s resources, we recommend that the FTC Chairman lead efforts to (1) conduct more regular retrospective analyses of past petroleum industry mergers and (2) develop risk-based guidelines to determine when to conduct them.

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## Agency Comments

We provided a copy of our draft report to FTC for its review and comment. FTC’s Chairman provided written comments, which are reproduced in appendix III, along with our responses. In general, the Chairman commented that the recommendations in this report were consistent with the goals outlined in FTC’s current self-evaluation initiative, and that FTC would consider our recommendations to conduct more regular retrospective analyses of petroleum industry mergers using a risk-based approach along with other recommendations resulting from this initiative. The Chairman also noted that analyzing market concentration is just the starting point in FTC’s antitrust analysis, and emphasized that each merger involves a unique set of facts and other competitive factors that the agency considers. He also noted the difficulties in delineating geographic antitrust markets, and we responded to each of these concerns in appendix III. We

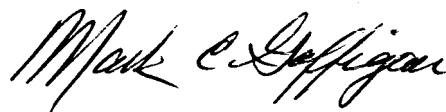
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clarified other material in this report in response to technical comments by the Chairman as appropriate.

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We are sending copies of this report to interested congressional committees and the FTC Chairman. Copies of this report will be made available to others upon request. In addition, this report is available at no charge on the GAO Web site at <http://www.gao.gov>.

If you or your staffs have any questions about this report, please contact us at (202) 512-3841, [gaffiganm@gao.gov](mailto:gaffiganm@gao.gov), or (202) 512-2642, [mccoolt@gao.gov](mailto:mccoolt@gao.gov). Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this report. GAO staff who made major contributions to this report are listed in appendix IV.



Mark E. Gaffigan  
Director, Natural Resources and Environment



Thomas McCool  
Director, Center for Economics  
Applied Research and Methods

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# Appendix I: Objectives, Scope, and Methodology

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The objectives of this report were to examine (1) mergers in the U.S. petroleum industry and changes in market concentration since 2000 and (2) the steps that the Federal Trade Commission (FTC) uses to maintain competition in the U.S. petroleum industry, and the roles other federal and state agencies play in monitoring petroleum industry markets.

To examine U.S. petroleum industry mergers since 2000, we primarily used merger data that we purchased from John S. Herold, Inc. (J.S. Herold), an independent research and consulting firm that collects data and conducts analyses for the energy sector. J.S. Herold collects information on all publicly announced mergers in the petroleum industry and records key financial and operational data about these mergers in a large database. Prior to purchasing information from this database, we assessed the reliability of these data and found them sufficiently reliable for the purposes of this report. The data purchased from J.S. Herold included extensive information on all petroleum industry mergers from 1991 through 2007, including but not limited to, company names, locations, merger values, and key assets involved in the mergers. The J.S. Herold data were limited to mergers that exceeded \$10 million in value, and we limited our review to mergers that were principally located in the United States or that we had reason to believe involved U.S. locations.<sup>1</sup> In addition, we excluded mergers whose main asset was natural gas or a natural gas product as well as mergers that occurred before 2000. For the remaining data, we conducted a variety of analyses to better understand merger activity. These analyses included, but were not limited to, evaluating the number, type, and transaction value of mergers over time as well as evaluating the distribution of mergers across industry segments and subsegments. To better understand and contextualize the results of our analysis of the J.S. Herold data, we also reviewed industry journal articles and conducted interviews with industry officials and experts to better interpret merger activity over time.

To examine the rationale for petroleum industry mergers since 2000, we conducted interviews with various representatives from all three segments of the petroleum industry. For information on the upstream segment, we interviewed representatives from large, vertically integrated oil companies as well as a smaller, independent exploration and production company. For information on the midstream segment, we primarily relied on

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<sup>1</sup>In support of our analysis of the upstream segment, we conducted one analysis of global petroleum industry mergers that exceeded \$10 million in value.

industry publications because midstream operators—including pipeline and tanker operators—were less available for interviews or comment. For information on the downstream segment, we interviewed representatives from vertically integrated companies. In addition, we interviewed a number of other firms operating in the downstream segment, including refiners, marketers, and retailers of petroleum. To better contextualize the information provided in these interviews, we also conducted a literature search of articles that addressed rationales for petroleum industry mergers from 2000 through 2007. Lastly, we interviewed a number of experts—including academics specializing in the petroleum industry or antitrust matters as well as industry representatives—for additional context and information on recent merger activity.

To calculate market concentrations (HHI) at the upstream level, we purchased data from the *Oil and Gas Journal* containing crude oil production information for the 100 largest international companies between 2000 and 2006. These data included state-owned oil companies, such as those in Iran and Saudi Arabia. After conducting data reliability assessments, such as looking for out-of-range and missing values, we found these data to be sufficiently reliable for our use in calculating upstream HHI. We used a single global market to calculate HHI in this segment because, according to experts with whom we spoke, crude oil prices are set on world markets.

Because of the lack of readily accessible data on the midstream petroleum industry, which simultaneously includes the pipeline, barge, and trucking industries, we were not able to calculate HHI in this segment.

To calculate HHI for the refining segment we defined geographic markets (see app. II for more details on how we defined geographic markets), and then estimated the gasoline production capacity of United States refineries by using annual data from EIA that contained capacity information for refineries in the United States and the Caribbean. After conducting data reliability assessments, such as looking for out-of-range and missing values, we found these data to be sufficiently reliable for our use in calculating HHI.

After discussions with the Department of Energy's Energy Information Administration (EIA), we chose to look specifically at the capacity of the following three units that account for most gasoline production capacity at U.S. refiners:

1. Catalytic reformer
2. Fluid catalytic cracker
3. Alkylation unit

Because, according to EIA, two of these three units do not exclusively contribute to gasoline capacity, we had to adjust their output values in the data. For example, according to EIA estimates, only about 65 percent of fluid catalytic cracker (FCC) output is likely to contribute to gasoline capacity, while 90 percent of a catalytic reformer's output is likely to contribute to gasoline capacity. These values can vary from refinery to refinery, but they were sufficient for our purposes.<sup>2</sup> For most refineries, we followed EIA's guidance and multiplied the capacity of the catalytic reformer by 0.9, the capacity of FCC by 0.65, and the capacity of the alkylation unit by 1.0.<sup>3</sup> By summing these three values, we were able to estimate the relative gasoline production capacity of each refinery.<sup>4 5</sup>

EIA completed the HHI calculations for wholesale gasoline suppliers at the state level for us, due to the proprietary nature of these data. EIA used its prime supplier data to make these calculations, which contain the gasoline

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<sup>2</sup>These calculations did not take into account a refinery's ability to produce gasoline blends designed to meet specific regional air quality requirements, such as those in states like California.

<sup>3</sup>Our capacity data used "barrels per stream day," which reflects the number of barrels processed in a refinery on an average day when it is in operation.

<sup>4</sup>In general, if a refinery did not have one of these three units, we did not assign it any gasoline production capacity. Refineries without one of these units most likely do not produce any gasoline (i.e., asphalt refineries). However, there are some older refineries that use hydrocrackers to produce gasoline, rather than the more common FCC. We worked with EIA to identify these and then used data from company publications to account for the gasoline production capacity of these refineries. We did not include capacities from the isomerization units or cokers because, according to our discussion with EIA officials, these units feed into reformers and FCCs, which we capture in our approach.

<sup>5</sup>According to EIA, our capacity estimates are more relative than actual because we were not able to account for the light components (hydrocarbons with four to six carbon atoms) that make up a portion of blended gasoline depending on the fuel's vapor pressure and octane requirements. Therefore, a refinery's actual gasoline capacity will be slightly more than our estimates. However, the capacities of refineries relative to one another will not be significantly affected because we treated all of the refineries the same by not including the light components, and the estimates will be accurate for the purposes of calculating HHI. EIA agreed that our overall approach is better than using total operable, or operating, capacity to estimate refinery gasoline production.

volumes sold in every state by wholesale supplier.<sup>6</sup> After discussions with EIA officials, we found these data to be sufficiently reliable for EIA to calculate HHI for us.

To examine FTC's processes for ensuring competition in the petroleum industry, we interviewed FTC staff on several occasions regarding their merger review procedures. In addition, we asked FTC staff a series of questions in writing, and they provided us with detailed written responses. We also analyzed a number of official agency documents. Finally, we interviewed experts in the fields of antitrust and industrial organization, and petroleum industry officials who provided us with comments on FTC's merger review procedures.

To identify federal and state agencies' role in monitoring petroleum industry markets, we conducted interviews and reviewed studies and reports from several federal and state agencies. We chose certain federal agencies to be studied on the basis of their regulatory involvement with the various segments of the petroleum industry. We contacted the Federal Energy Regulatory Commission, Commodity and Futures Trading Commission, Environmental Protection Agency, Department of Transportation, Department of Energy, EIA, and Federal Maritime Commission because of their potential involvement in monitoring petroleum industry markets. We reviewed the federal agency Web sites, press releases, and reports published by these agencies before the interviews to understand their role in monitoring the petroleum industry markets and whether they would be good resources for further exploration. We conducted interviews with several federal officials from the aforementioned federal agencies. The questions were tailored to effectively obtain the information necessary to understand their involvement in monitoring.

To identify state agencies' role in monitoring petroleum industry markets, we conducted interviews and reviewed studies and reports from several state attorneys general and energy-specific agencies. We chose the states to be studied on the basis of whether we thought they (1) had significant

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<sup>6</sup>Fuel "exchanges" are not included in the wholesale supply data. During an exchange, fuel is sold under a different brand than where it originated. Exchanges allow refiners to have retail locations where they do not have any refining presence. These volumes are recorded as being sold by the original producer. For example, if ConocoPhillips were to agree to sell fuel to Chevron dealers who rebrand the fuel as Chevron, the prime supply data would still list the fuel sale under the name ConocoPhillips.

crude oil extraction and production; (2) had numerous refineries; (3) had isolated markets; (4) had coastal port terminals; and (5) were, according to expert opinion, progressive or proactive, or both, in monitoring competition in the segment of the petroleum industry active in their state. We also wanted to make sure that we had adequate geographic coverage of the country. The selected state attorneys general were from Alaska, California, Connecticut, Louisiana, Maine, New York, Pennsylvania, Texas, and the state of Washington. During the interviews with the selected states, we conducted a snowball sample where we asked our many interviewees if they knew of other states that had proactive market monitoring. We also asked if their state had an energy commission or another authority to monitor the petroleum industry. We also interviewed an official with the National Association of Attorneys General (NAAG), who catalogues information on individual state roles in monitoring petroleum industry competition. Before each interview, we reviewed the state agency Web sites, press releases, and reports published by the agencies and developed semistructured questions that addressed monitoring petroleum industry markets.

We conducted this performance audit from March 2007 to September 2008 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.



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# Appendix II: Defining Geographic Refinery Markets

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To define geographic refinery regions for the purposes of calculating HHI, we collaborated with staff from the Oil Price Information Service (OPIS), EIA, and FTC who had expertise on petroleum product markets, and who helped us to assign individual refineries to market regions.

Our methodology used “spot markets” as the basis for defining geographic refinery regions. Spot markets reflect the historical grouping of U.S. refineries into seven refining centers. Energy traders consider gasoline available for delivery at these refining spot markets in order to price gasoline that is bought and sold at the wholesale level, and gasoline production in these refining groups drives prices on the spot markets. The seven spot markets in the United States, which we used as our refinery regions, are in Los Angeles, San Francisco, the Gulf Coast, New York Harbor, Chicago, Tulsa (or Mid-continent), and the Pacific Northwest. Most refineries in each region are able to supply gasoline to the larger geographic region that surrounds them, which also includes areas to which they are linked via pipeline.<sup>1</sup> In addition, gasoline can flow between regions, although, according to experts with whom we spoke, under normal market conditions (i.e., absent a supply disruption, such as a hurricane) refiners are usually unable to ship gasoline to other regions in short notice to discipline the market because of the following reasons:

- Gasoline specifications in one region may not be suitable for other regions.
- Many refiners operate at near maximum capacity and may not have the ability to increase production to meet additional demand in other markets.
- Transportation options between regions may be nonexistent or too costly to ensure a profit with only small price differentials between gasoline in each region.
- When pipelines are present, it may not be feasible to use them because of the following:

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<sup>1</sup>A refinery’s ability to serve a spot market is based on its ability to supply fuel to the market in 7 to 10 days and to do so with a profit margin of less than 5 cents per gallon, according to one OPIS official. FTC staff told us that their market definitions for antitrust enforcement usually involve profit margins of 1 to 2 cents per gallon, and longer supply windows, usually 1 to 2 years.

- The refinery may not have a link to the pipeline.
- The refinery may not have the rights to an adequate allocation of pipeline space.
- It may take too long for gasoline shipped via pipeline to arrive in another region, and experts with whom we spoke said that the industry is reluctant to respond to what it often perceives as temporary price increases.

Despite these factors that support using spot markets as the basis for geographic refinery regions, there are still limitations. For example, according to experts, there are certain areas of the country where isolated refiners cannot send gasoline to any of the seven spot market centers and end up selling it locally, which suggests that there are, in addition to the seven spot markets, other smaller local refinery markets. Experts from EIA, FTC, and OPIS, mentioned that refineries in states like Alaska and Hawaii primarily supply their local regions, making them more subject to local market conditions, rather than larger regional factors. As a result, we removed these refineries from our calculations.<sup>2</sup> In a number of cases, we counted a refinery in two spot markets. For example, according to the experts with whom we spoke, refineries in Bakersfield, California, can supply either the San Francisco region or the Los Angeles region.<sup>3</sup> However, according to one OPIS official, gasoline suppliers still tend to predict their future fuel costs based on prices in one of the seven regional spot markets that we described, even though the fuel they buy may come only from a local refinery. In addition, FTC staff indicated that for merger review purposes, they would define more specific geographic markets, often using private company data, although they indicated that the markets we defined here are still useful for looking at U.S. refinery market concentration more broadly.

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<sup>2</sup>We also removed from our calculations refineries in Kentucky, Montana, Nevada, and West Virginia that, according to the experts, only supplied their local regions.

<sup>3</sup>In addition, some refineries in the Pacific Northwest can also produce gasoline that meets California specifications, and it is periodically shipped to either California market. We included these refineries in the California regions where appropriate. Also, we included a number of Mid-continent refineries in the Pacific Northwest region if they were also able to ship gasoline to that region. We also included some Texas refineries in the Mid-continent market if they had access to the Magellan pipeline. We made the above inclusions on the basis of comments from EIA and FTC.

# Appendix III: Comments from the Federal Trade Commission

Note: GAO comments supplementing those in the report text appear at the end of this appendix.



THE CHAIRMAN

FEDERAL TRADE COMMISSION  
WASHINGTON, D.C. 20580

September 17, 2008

Mr. Mark E. Gaffigan  
Director, Natural Resources and Environment  
United States Government Accountability Office  
Washington, D.C. 20548

Mr. Thomas McCool  
Director, Center for Economics  
Applied Research and Methods  
United States Government Accountability Office  
Washington, D.C. 20548

Dear Messrs. Gaffigan and McCool:

The Federal Trade Commission (“FTC” or “Commission”) is grateful for the opportunity to comment on the draft report submitted by the Government Accountability Office (“GAO”) to the Commission on September 2, 2008, and entitled: *Energy Markets: Analysis of More Past Mergers Could Enhance Federal Trade Commission’s Efforts to Maintain Competition in the Petroleum Industry* (GAO-08-1082) (“Report”). The Report discusses market concentration in various segments of the petroleum industry from 2000 to 2007 and the steps the FTC takes to maintain competition in the petroleum industry.<sup>1</sup>

<sup>1</sup> Law enforcement involving both merger and non-merger cases is a key component of the FTC’s program to maintain competition in the petroleum industry. The FTC carefully analyzes proposed mergers, reviewing all pertinent facets of the relevant petroleum markets, and challenges transactions that likely would substantially reduce competition or result in higher prices. Similarly, the FTC focuses on anticompetitive conduct and other activities involving pricing and competition in the petroleum industries. All told, in the past year, between 125 and 150 FTC staff members – attorneys, economists, paralegals, research analysts, and others – have worked on matters involving antitrust and pricing issues in the oil and natural gas sector. Most notably, in the past year, two transactions were abandoned – one after the Commission challenged the proposed acquisition in court, and the other during the Commission’s investigation. See *FTC v. Equitable Resources, Inc., Dominion Resources, Inc. et al.*, Civ. Action No. 07-cv-490 (W.D. Pa.), *vacated as moot* (3d Cir. Feb. 5, 2008) (parties advised the FTC that they were abandoning the transaction), available at <http://www.ftc.gov/os/caselist/0610140/080303order.pdf>; Marathon Oil Co/CITGO, File No. 0810052, available at

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Mr. Thomas McCool

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The Commission staff has been pleased to work with GAO staff conducting this review since March 2007, by providing information and discussing the processes that the Commission uses in reviewing mergers and acquisitions in the petroleum industry.<sup>2</sup> The Commission believes that the Report will add to the understanding of the complex petroleum industry and the Commission's role in enforcing the antitrust laws related to mergers in that industry. Finally, as discussed in more detail below, the Commission thinks that GAO's recommendation that the FTC conduct regular reviews of some past petroleum mergers using risk-based criteria is consistent with the Commission's self-evaluation initiative currently underway in connection with the upcoming 100<sup>th</sup> anniversary of the Commission's creation. The Commission provides below more detailed comments on the draft Report.<sup>3</sup>

#### I. COMMENTS ON THE GAO REPORT

##### Description of the Petroleum Industry and Mergers in the Petroleum Industry

GAO's purpose in looking at the industry was to describe the general competitive status of the petroleum industry for the period 2000-2007. The Report describes segments of the petroleum industry and concludes that concentration has not changed significantly during the period January 2000-May 2007.

Concentration is just the starting point for the Commission's antitrust analysis of a merger or acquisition. The Commission notes that when it describes a petroleum market for antitrust law enforcement purposes, the Herfindahl-Hirschman Index ("HHI") numbers must relate to a relevant antitrust market. HHI numbers that do not describe relevant antitrust markets have little competitive significance. Even in properly delineated antitrust markets, the Commission would look beyond the HHI numbers to the competitive behavior of the participants in a given market and several other factors, including, but not limited to, barriers to entry and product differentiation, in order to determine whether the antitrust laws have been violated. As modern District Court and Court of Appeals decisions have emphasized, using HHI numbers

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[http://www.ftc.gov/os/closings/staff/0810052marathonclosingletter\\_steptoe.pdf](http://www.ftc.gov/os/closings/staff/0810052marathonclosingletter_steptoe.pdf). The Commission last year sought unsuccessfully to block a merger involving New Mexico refining. *Federal Trade Commission v. Foster et al.*, No. Civ. 07-352 JB/ACT (D.N.M. May 29, 2007), available at 2007 WL 1793441. The Commission also recently concluded an investigation into gasoline and diesel prices in the Pacific Northwest, and the agency continues its Gasoline and Diesel Price Monitoring Project (discussed in more detail below). The Commission fully expects to maintain its intensive antitrust scrutiny of the energy sector.

<sup>2</sup> For this letter, we will use the term "merger" to include both stock and asset acquisitions, as GAO did in its Report.

<sup>3</sup> The Commission's staff has already provided technical comments to GAO staff on the draft Report.

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See comment 1.

alone to assess the competitiveness of a petroleum market sector provides a one-dimensional view rather than the multifaceted picture required for a thorough analysis of competitive conditions in a market. Before the Commission could draw any conclusions about the competitive effects of a particular merger, the law would also require the Commission to examine, among other things, the barriers to entry, the relationship of the players in a given market, and how closely the merging parties' products or services can substitute for one another. Accordingly, the Report's utility as a guide to conducting an antitrust assessment of a specific market or transaction is constrained.

Description of the FTC's Processes in Reviewing Petroleum Mergers and Monitoring the Industry

See comment 2.

The Report describes five steps that the FTC takes in reviewing petroleum mergers: (1) defining markets and analyzing competition; (2) predicting potential adverse effects on competition; (3) evaluating barriers to entry for new market entrants; (4) evaluating potential gains in efficiency; and (5) considering potential failing assets. The Report does not make clear that each merger involves a unique set of facts particular to that transaction, or that the factors to be analyzed in an antitrust evaluation of a merger – market concentration, barriers to entry, efficiencies, etc. – may vary in relative significance in each case. For example, the Report uses the HHI extensively to describe the markets and the first step of the FTC analysis. This measure of concentration is used only very initially in the antitrust analysis of a merger and may not play a determinative role in the final analysis. See, e.g., *Commentary on the Merger Guidelines 2* (Mar. 2006), available at <http://www.ftc.gov/os/2006/03/CommentaryontheHorizontalMergerGuidelinesMarch2006.pdf>.

See comment 3.

For example, the Report identifies seven U.S. "spot market" regions in which to evaluate changes in concentration. As the Report correctly notes, these regions do not correspond to properly delineated antitrust geographic markets. In other words, the refining regions described in the Report should not be read to suggest that one of these regions is more or less likely to include the indicia required to demonstrate that any potential merger may have adverse competitive effects. Significantly, the refiners GAO associates with the New York region do not include a large number of actual and potential suppliers of bulk gasoline shipments that would affect the NY Harbor spot price data used in the Report. Moreover, although GAO also identifies states as geographic markets for wholesale supply, relevant wholesale markets are unlikely to conform with state boundaries. In some situations, wholesale markets may consist of only a part of a state; in other cases, they may consist of at least parts of more than one state.

See comment 1.

To the extent that appropriate product and geographic markets are defined, other factors significant to competitive outcomes seem to be ignored if the analysis relies too heavily on simple concentration measures. For example, despite a seemingly significant market share based on a first-cut HHI measurement, a competitor that cannot expand its output in response to a price increase may have very limited significance as a constraining factor in the market. In this case, the HHI may severely understate a merger's competitive significance. On the other hand, consider a market that allows quick and easy access by suppliers from outside the market;

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players that have a very small market share but an ability to provide additional product in response to a price increase could have a significant effect in constraining the behavior of market participants. In yet another scenario, a merger between parties with significant shares could pose little antitrust concern where the products offered by each firm are highly differentiated from each other. Market differentiation affects the ability of one firm to substitute its product for another in a given market. This condition would mitigate concern arising from a simple calculation of market shares in an undifferentiated market. In sum, HHIs or other arithmetic measures of market concentration may end up playing minor roles in the overall analysis in such instances.

Generally, steps 4 and 5 as described in the GAO Report (efficiencies and failing assets) are defenses that the merging parties raise in response to evidence that suggests that the merger may be anticompetitive. For example, if the FTC is convinced that efficiencies produced by the merger outweigh its potential harm, or if the acquirer provides the least anticompetitive acquisition of a failing firm that would prevent its assets from exiting the market, these factors may shift the balance in determining whether the merger would potentially violate the antitrust laws.

Other Considerations

Footnote 15 to GAO's draft Report mentions that the FTC can – and does – challenge mergers that are not subject to the Hart-Scott-Rodino (“HSR”) Act's filing requirements. This point deserves greater emphasis, because some large transactions can escape the HSR filing requirements because of the structure of the transaction. In addition, the FTC sometimes investigates mergers between firms that operate in different, but related, segments of the industry. This concept also is not captured in GAO's analysis of the market segments.

The Gasoline and Diesel Price Monitoring Project

The Report also recognizes that the Commission staff monitors petroleum industry markets. The methodology that the staff uses in the Gasoline and Diesel Price Monitoring Project was extensively reviewed by FTC staff (including the Director of the Bureau of Economics) and by several outside economists, as noted in staff's written response to GAO questions on that Project.

Retrospective Reviews of Petroleum Mergers

Since 2004, the Commission staff has released publicly three retrospective reviews of petroleum mergers.<sup>4</sup> FTC staff chose to review the 1998 joint venture between Marathon and

<sup>4</sup> Taylor *et al.*, *Vertical Relationships and Competition in Retail Gasoline Markets*, FTC Bureau of Economics Working Paper No. 291 (2007) (ARCO-Thrifty), available at <http://www.ftc.gov/be/workingpapers/wp291.pdf>; Simpson *et al.*, *Michigan Gasoline Pricing*

See comment 1.

See comment 1.

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Ashland, the 1999 acquisition of Ultramar Diamond Shamrock by Marathon Ashland Petroleum, and the 1997 acquisition of Thrifty Oil Company by ARCO. FTC staff chose to review these acquisitions because these transactions' structural impact suggested the potential for significant competitive concerns or because commenters suggested that they possibly had led to higher gasoline prices in the geographic areas affected by the mergers. The studies found, however, that none of the mergers had any adverse effect on gasoline prices.

The Report notes that not all consummated mergers would likely warrant retrospective reviews. We agree. As discussed below, the Commission's current self-evaluative initiatives cover not only petroleum mergers but all of the Commission's activities.

## II. THE FTC'S CONTINUING AND EVOLVING HISTORY OF SELF-EVALUATION

### The Commission's Self-evaluative Initiatives

The Commission is first and foremost a law enforcement agency. Its primary task is to enforce the laws with respect to both competition and consumer protection. The Commission also recognizes that the design and implementation of future law enforcement efforts can benefit substantially from efforts to evaluate past enforcement decisions. As indicated below, the Commission actively seeks to achieve a sensible balance in the allocation of its resources between law enforcement and other activities, including retrospectives as part of its self-evaluation process.

Beyond the three Bureau of Economics retrospectives on the petroleum industry mentioned above, the Commission has a longstanding history of evaluating its activities, particularly with respect to antitrust law enforcement in the merger area.<sup>5</sup> For example, in 1999 the Commission authorized release of the staff report, *A Study of the Commission's Divestiture Process*, which examined Commission orders issued from 1990 to 1994 that required divestiture to remedy the anticompetitive effects resulting from a merger. The study recommended a number of changes in the FTC's divestiture process and divestiture order provisions. Following this effort, the Commission continued to examine merger remedies and to adjust its policies

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and the Marathon-Ashland and Ultramar Diamond Shamrock Transaction, FTC Bureau of Economics Working Paper No. 278 (2005), available at <http://www.ftc.gov/bc/workingpapers/wp278.pdf>; Taylor et al., *The Economic Effects of the Marathon-Ashland Joint Venture: The Importance of Industry Supply Shocks and Vertical Market Structure* (rev'd 2004), FTC Bureau of Economics Working Paper No. 270, available at <http://www.ftc.gov/bc/workingpapers/wp270.pdf>.

<sup>5</sup> See William E. Kovacic, *Using Ex Post Evaluations to Improve the Performance of Competition Policy Authorities*, 31 J. Corp. L. 503, 522-30 (2006) (describing various FTC evaluation initiatives over the past 30 years).

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accordingly.<sup>6</sup> The Commission conducted retrospectives of the hospital industry to determine whether the harms alleged to arise from certain transactions came to fruition when the FTC did not obtain the relief it sought. The amount of effort and expertise that the Commission has devoted to evaluations of its actions has increased over time.

Recently, the Commission has provided additional stimulus for putting evaluation into its decision-making processes. On June 18, 2008, the Commission formally announced the agency's latest self-evaluative initiative.<sup>7</sup> A two-day roundtable entitled *The FTC at 100: Into Our Second Century* was held on July 29-30, 2008. This ongoing Commission self-assessment will focus on six general questions: (1) When we ask how well the Commission is carrying out its responsibilities, by what criteria should we assess its work? (2) What techniques should we use to measure the agency's success in meeting these normative criteria? (3) What resources – personnel, facilities, equipment – will the FTC need to perform its duties in the future? (4) What methods should the FTC use to select its strategy for exercising its powers? (5) How can the FTC strengthen its processes for implementing its programs? (6) How can the FTC better fulfill its duties by improving links with other governmental bodies and nongovernment organizations? This fall, the Commission plans to hold additional roundtable discussions within the United States and overseas.<sup>8</sup> Among other ends, this initiative seeks to identify the best techniques for evaluation and ensure that the Commission incorporates them into its competition program.

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<sup>6</sup> See, e.g., Richard G. Parker and David A. Balto, *The Evolving Approach to Merger Remedies* (May 2000), available at <http://www.ftc.gov/speeches/other/remedies.shtm>; Robert Pitofsky, *The Nature and Limits of Restructuring in Merger Review*, Prepared Remarks before Cutting Edge Antitrust Conference (Feb. 17, 2000), available at <http://www.ftc.gov/speeches/pitofsky.restruct.htm>. These and other Commission self-evaluations of merger remedies led to the 2003 release of the Statement of the Federal Trade Commission's Bureau of Competition on Negotiating Merger Remedies, available at <http://www.ftc.gov/bc/bestpractices030401.htm>.

<sup>7</sup> William E. Kovacic, Chairman, Federal Trade Commission, "The Federal Trade Commission at 100: Into Our Second Century," before the 21<sup>st</sup> Annual Western Conference of the Rutgers University Center for Research in Regulated Industries, Monterey, California. A copy of this speech is enclosed with this letter, available at <http://www.ftc.gov/speeches/kovacic/080618ftcat100.pdf>.

<sup>8</sup> Information concerning the Roundtables on *The FTC at 100: Into Our Second Century* is available at <http://www.ftc.gov/ftc/workshops/ftc100/index.shtm>.



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**Appendix III: Comments from the Federal  
Trade Commission**

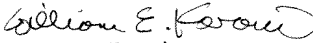
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Mr. Thomas McCool

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The Commission will consider GAO's recommendations along with other recommendations, including those resulting from the current self-evaluations. The Commission anticipates that the ongoing self-assessment will provide the framework for, among other things, evaluating past mergers in the petroleum industry and in other industries.

By direction of the Commission.

  
William E. Kovacic  
Chairman

See comment 4.

Enclosure

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The following are GAO's comments on the Federal Trade Commission's letter dated September 17, 2008.

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## GAO Comments

1. The FTC Chairman commented that HHI concentration numbers are just the starting point for merger antitrust analysis and noted that FTC considers other competitive factors when examining a merger. We agree with these points and note that we calculated petroleum industry market HHIs to shed light on the general level of concentration in the petroleum industry, not to conduct an antitrust analysis regarding specific mergers or market regions or to provide a guide for conducting antitrust assessments. Such analysis would have involved looking at other competitive factors as noted in the Chairman's letter, such as barriers to entry or examining mergers between firms that operate in different, but related, segments of the industry, which was beyond the scope our work. Nonetheless, we believe that concentration analysis for broader regions, which may not exactly correspond to antitrust markets, is useful for assessing regional concentration in the same way that national-level indicators of unemployment or Gross Domestic Product growth are useful in examining the economic health of the country. Our report, therefore, indicates that there are regions that may have more or less *potential* for firms to exercise market power, and we did not draw further conclusions about the impact of market concentration on competition in any given region. In addition, FTC conducted concentration analysis with similar market definitions for such purposes in its 2004 report on competition in the petroleum industry.<sup>1</sup> We made no changes to the report for this comment.
2. The FTC Chairman commented that each merger involves analyzing a unique set of facts, such as examining barriers to entry or efficiency gains. We agree that each merger inevitably involves a unique set of circumstances and correspondingly unique considerations. We added language to the report to clarify this point.
3. The FTC Chairman commented on the difficulties of delineating geographic antitrust markets and noted, in this regard, that we did not include a large number of suppliers that could affect the New York Harbor refining market. We recognize the difficulty of delineating markets and understand that the use of spot markets for evaluating

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<sup>1</sup>Federal Trade Commission, *The Petroleum Industry: Mergers, Structural Change, and Antitrust Enforcement, An FTC Staff Study* (August 2004).

market concentration in the refining subsegment includes a number of limitations, most notably that spot market regions do not necessarily correspond to geographic regions that could be used as antitrust markets. On the basis of our consultations with experts at OPIS, EIA, and the Chairman's own experts at FTC, and for the reasons highlighted in appendix II, we decided that spot market HHIs were appropriate for analysis of the general state of concentration in the refining industry. We also recognize that there are other factors, in addition to market concentration, that are important in evaluating the competitive conditions in a given market. In our reporting of spot market concentrations we presented other factors that were unique to each spot market, including—for example, in the New York market—the sizable shipments of gasoline into this market from foreign and Gulf Coast refineries. Since the draft report already noted these limitations, which were raised by the FTC Chairman, we made no change for this comment.

4. The announcement of FTC's self-evaluation initiative, *The FTC at 100: Into Our Second Century*, which FTC enclosed with this letter, can be found at: <http://www.ftc.gov/speeches/kovacik/080618ftcat100.pdf>.

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# Appendix IV: GAO Contacts and Staff Acknowledgments

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## GAO Contacts

Mark Gaffigan, (202) 512-3841 or [gaffiganm@gao.gov](mailto:gaffiganm@gao.gov); Thomas McCool, (202) 512-2642 or [mccoolt@gao.gov](mailto:mccoolt@gao.gov)

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## Staff Acknowledgments

In addition to the individuals named above, Godwin Agbara (Assistant Director), Daniel Haas (Assistant Director), John Karikari (Assistant Director), Michael Kendix, Christopher Klisch, Robert Marek, Micah McMillan, Mark Metcalfe, Michelle Munn, Bintou Njie, Alison O'Neill, Frank Rusco, Rebecca Sandulli, Jeremy Sebest, and Barbara Timmerman made important contributions to this report.

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