Exhibit 16 to Plaintiff's
Memorandum of Points and Authorities
in Support of Its Motion for Temporary
Restraining Order and Preliminary
Injunction
(PX01341)
Part 3 of 5

undue emphasis on market share and concentration statistics—determines whether the Agency will challenge a particular merger. As discussed in section 1.521 of the Guidelines, historical market shares may not reflect a firm's future competitive significance.

Boeing–McDonnell Douglas **(FTC 1997)** The Boeing Co., the world's largest producer of large commercial aircraft with 60% of that market, proposed to acquire McDonnell Douglas Corp., which through Douglas Aircraft had a share of nearly 5% in that market. Airbus S.A.S. was the only other significant rival, and obstacles to entry were exceptionally high. Although McDonnell Douglas was not a failing firm, staff determined that McDonnell Douglas' significance as an independent supplier of commercial aircraft had deteriorated to the point that it was no longer a competitive constraint on the pricing of Boeing and Airbus for large commercial aircraft. Many purchasers of aircraft indicated that McDonnell Douglas' prospects for future aircraft sales were close to zero. McDonnell Douglas' decline in competitive significance stemmed from the fact that it had not made the continuing investments in new aircraft technology necessary to compete successfully against Boeing and Airbus. Staff's investigation failed to turn up any evidence that this situation could be expected to be reversed. The Commission closed the investigation without taking any action.

Indeed, market concentration may be unimportant under a unilateral effects theory of competitive harm. As discussed in more detail in Chapter 2's discussion of Unilateral Effects, the question in a unilateral effects analysis is whether the merged firm likely would exercise market power absent any coordinated response from rival market incumbents. The concentration of the remainder of the market often has little impact on the answer to that question.

2. The Potential Adverse Competitive Effects of Mergers

Section 2 of the Guidelines identifies two broad analytical frameworks for assessing whether a merger between rival firms may substantially lessen competition: "coordinated interaction" and "unilateral effects." A horizontal merger is likely to lessen competition substantially through coordinated interaction if it creates a likelihood that, after the merger, competitors would coordinate their pricing or other competitive actions, or would coordinate them more completely or successfully than before the merger. A merger is likely to lessen competition substantially through unilateral effects if it creates a likelihood that the merged firm, without any coordination with non-merging rivals, would raise its price or otherwise exercise market power to a greater degree than before the merger.

Normally, the likely effects of a merger within a particular market are best characterized as either coordinated or unilateral, but it is possible to have both sorts of competitive effects within a single relevant market. This possibility may be most likely if the coordinated and unilateral effects relate to different dimensions of competition or would manifest themselves at different times.

Although these two broad analytical frameworks provide guidance on how the Agencies analyze competitive effects, the particular labels are not the focus. What matters is not the label applied to a competitive effects analysis, but rather whether the analysis is clearly articulated and grounded in both sound economics and the facts of the particular case. These frameworks embrace every competitive effect of any form of horizontal merger. The Agencies do not recognize or apply narrow readings of the Guidelines that could cause anticompetitive transactions to fall outside of, or fall within a perceived gap between, the coordinated and unilateral effects frameworks.

In evaluating the likely competitive effects of a proposed merger, the Agencies assess the full range of qualitative and quantitative evidence obtained from the merging parties, their competitors, their customers, and a variety of other sources. By carefully evaluating this evidence, the Agencies gain an understanding of the setting in which the proposed merger would occur and how best to analyze competition. This understanding draws heavily on the qualitative evidence from documents and first-hand observations of the industry by customers and other market participants. In some cases, this understanding is enhanced significantly by quantitative analyses of various sorts. One type of quantitative analysis is, as explained in Chapter 1, the "natural experiment" in which variation in market structure (e.g., from past mergers) can be empirically related to changes in market performance.

The Agencies examine whatever evidence is available and apply whatever tools of economics would be productive in an effort to arrive at the most reliable assessment of the likely effects of proposed mergers. Because the facts of merger investigations commonly are complex, some bits of evidence may appear inconsistent with the Agencies' ultimate assessments. The Agencies challenge a merger if the weight of the evidence establishes a likelihood that the merger would be anticompetitive. The type of evidence that is most telling varies from one merger to the next, as do the most productive tools of economics.

In assessing a merger between rival sellers, the Agencies consider whether buyers are likely able to defeat any attempts by sellers after the merger to exercise market power. Large buyers rarely can negate the likelihood that an otherwise anticompetitive merger between sellers would harm at least some buyers. Most markets with large buyers also have other buyers against which market power can be exercised even if some large buyers could protect themselves. Moreover, even very large buyers may be unable to thwart the exercise of market power.

Although they generally focus on the likely effects of proposed mergers on prices paid by consumers, the Agencies also evaluate the effects of mergers in other dimensions of competition. The Agencies may find that a proposed merger would be likely to cause significant anticompetitive effects with respect to innovation or some other form of non-price rivalry. Such effects may occur in addition to, or instead of, price effects.

The sections that follow address in greater detail the Agencies' application of the Guidelines' coordinated interaction and unilateral effects frameworks.

Coordinated Interaction

A horizontal merger changes an industry's structure by removing a competitor and combining its assets with those of the acquiring firm. Such a merger may change the competitive environment in such a way that the remaining firms—both the newly merged entity and its competitors—would engage in some form of coordination on price, output, capacity, or other dimensions of competition. The coordinated effects section of the Guidelines addresses this potential competitive concern. In particular, the Agencies seek to identify those mergers that are likely either to increase the likelihood of coordination among firms in the relevant market when no coordination existed prior to the merger, or to increase the likelihood that any existing coordinated interaction among the remaining firms in the relevant market would be more successful, complete, or sustainable.

A merger could reduce competition substantially through coordinated interaction and run afoul of section 7 of the Clayton Act without an agreement or conspiracy within the meaning of the Sherman Act. Even if a merger is likely to result in coordinated interaction, or more successful coordinated interaction, and violates section 7 of the Clayton Act, that coordination, depending on the circumstances, may not constitute a violation of the Sherman Act. As section 2.1 of the Guidelines states, coordinated interaction "includes tacit or express collusion, and may or may not be lawful in and of itself."

Most mergers have no material effect on the potential for coordination. Some may even lessen the likelihood of coordination. To identify those mergers that enhance the likelihood or effectiveness of coordination, the Agencies typically evaluate whether the industry in which the merger would occur is one that is conducive to coordinated behavior by the market participants. The Agencies also evaluate how the merger changes the environment to determine whether the merger would make it more likely that firms successfully coordinate.

In conducting this analysis, the Agencies attempt to identify the factors that constrain rivals' ability to coordinate their actions before the merger. The Agencies also consider whether the merger would sufficiently alter competitive conditions such that the remaining rivals after the merger would be significantly more likely to overcome any pre-existing obstacles to coordination. Thus, the Agencies not only assess whether the market conditions for viable coordination are present, but also ascertain specifically whether and how the merger would affect market conditions to make successful coordination after the merger significantly more likely. This analysis includes an assessment of whether a merger is likely to foster a set of common incentives among remaining rivals, as well as to foster their ability to coordinate successfully on price, output, or other dimensions of competition.

Successful coordination typically requires rivals (1) to reach terms of coordination that are profitable to each of the participants in the coordinating group, (2) to have a means to detect deviations that would undermine the coordinated interaction, and (3) to have the ability to punish deviating firms, so as to restore the coordinated status quo and diminish the risk of deviations. Guidelines § 2.1. Punishment may be possible, for example, through strategic price-cutting to the deviating rival's customers, so as effectively to erase the rival's profits from its deviation and make the rival less likely to "cheat" again. Coordination on prices tends to be easier the more transparent are rivals' prices, and coordination through allocation of customers tends to be easier the more transparent are the identities of particular customers' suppliers. It may be relatively more difficult for firms to coordinate on multiple dimensions of competition in markets with complex product characteristics or terms of trade. Such complexity, however, may not affect the ability to coordinate in particular ways, such as through customer allocation. Under Guidelines analysis, likely coordination need not be perfect. To the contrary, the Agencies assess whether, for example, it is likely that coordinated interaction will be sufficiently successful following the merger to result in anticompetitive effects.

LaFarge–Blue Circle **(FTC 2001)** A merger of LaFarge S.A. and Blue Circle Industries PLC raised coordinated interaction concerns in several relevant markets, including that for cement in the Great Lakes region. In that market, the merger would have created a firm with a combined market share exceeding 40% and a market in which the top four firms would control approximately 90% of the supply. The post-merger HHI would have been greater than 3,000, with a change in the HHI of over 1,000. Cement is widely viewed as a homogeneous, highly standardized commodity product over which producers compete principally on price. Industry practice was that suppliers informed customers of price increases months before they were to take effect, making prices across rival suppliers relatively transparent.

Sales transactions tended to be frequent, regular, and relatively small. These factors heightened concern that, after the merger, incumbents were not only likely to coordinate profitably on price terms, but also that the firms would have little incentive to deviate from the consensus price. That possibility existed because the profit to be gained from deviation would be less than the potential losses that would result if rivals retaliated. The Commission challenged the merger, resolving it by a consent order that required, among other things, divestiture of cement-related assets in the Great Lakes region.

R.J. Reynolds–British American **(FTC 2004)** In a merger of the second- and third-largest marketers of cigarettes, R.J. Reynolds Tobacco Holdings, Inc. proposed to acquire Brown & Williamson Tobacco Corporation from British American Tobacco plc. Within the market for all cigarettes, the merger would have increased the HHI from 2,735 to 3,113. The Commission assessed whether the cigarette market was susceptible to coordinated interaction. Concluding that "the market for cigarettes is subject to many complexities, continual changes, and uncertainties that would severely complicate the tasks of reaching and monitoring a consensus," the Commission closed the investigation without challenging the merger. The Commission's closing statement points to the high degree of differentiation among cigarette brands, as well as sizable variation in firm sizes, product portfolios, and market positions among the manufacturers as factors that created different incentives for the different manufacturers to participate in future coordination. These factors made future coordination more difficult to manage and therefore unlikely.

Both RJR and Brown & Williamson had portfolios of cigarette brands that included a smaller proportion of strong premium brands and a larger proportion of vulnerable and declining discount brands than the other major cigarette competitors. At the time of the merger, both companies were investing in growing a smaller number of premium equity brands to maintain sales and market share. There was uncertainty about the results of these strategic changes. The Commission concluded that uncertainties of these types greatly increased the difficulty of engaging in coordinated behavior. The Commission also noted that competition in the market was driven by discount brands and by equity investment in select premium brands among the four leading rivals, and there was little evidence that Brown & Williamson's continued autonomy was critical to the preservation of either form of competition. Brown & Williamson had been reducing, not increasing, its commitment in the discount segment, and was a very small factor in equity brands.

The Commission also described variations in the marketing environment for cigarettes from state to state and between rural and urban areas. These variations made it more difficult and costly for firms to monitor their rival's activities and added to the complexity of coordination.

Coordination that reduces competition and consumer welfare could be accomplished using many alternative mechanisms. Coordinated interaction can occur on one or more competitive dimensions, such as price, output, capacity, customers served, territories served, and new product introduction. Coordination on price and coordination on output are essentially equivalent in their effects. When rivals successfully coordinate to restrict output, price rises. Similarly, when rivals successfully coordinate on price—that is, they maintain price above the level it would be absent the coordination—the rate of output declines because consumers buy fewer units.

Coordination on either price or output may pose difficulties that can be avoided by coordinating on customers or territories served. Rivals may coordinate on the specific customers with which each does business, or on the general types of customers with which they seek to do business. They also may coordinate on the particular geographic areas in which they operate or concentrate their efforts. Coordination also can occur with respect to aspects of rivalry, such as new product introduction. Rivals are likely to adopt the form of coordination for which it is easiest to spot deviations from the agreed terms of coordination and easiest to punish firms that deviate from those terms. Industry-specific factors thus are likely to influence firms' choices on how to coordinate their activities.

Concentration

The number of rival firms remaining after a merger, their market shares, and market concentration are relevant factors in determining the effect of a merger on the likelihood of coordinated interaction. The presence of many competitors tends to make it more difficult to achieve and sustain coordination on competitive terms and also reduces the incentive to participate in coordination. Guidelines § 2.0. The Guidelines' market share and concentration thresholds reflect this reality.

The Agencies do not automatically conclude that a merger is likely to lead to coordination simply because the merger increases concentration above a certain level or reduces the number of remaining firms below a certain level. Although the Agencies recently have challenged mergers when four or more competitors would have remained in the market, *see, e.g.*, *LaFarge–Blue Circle*, described above, when the evidence does not show that the merger will change the likelihood of coordination among the market participants or of other anticompetitive effects, the Agencies regularly close merger investigations, including those involving markets that would have fewer than four firms.

As discussed in Chapter 1, enforcement data released by the Agencies show that market shares and concentration alone are not good predictors of enforcement challenges, except at high levels. Market shares and concentration nevertheless are important in the Agencies' evaluation of the likely competitive effects of a merger. Investigations are almost always closed when concentration levels are below the thresholds set forth in section 1.51 of the Guidelines. In addition, the larger the market shares of the merging firms, and the higher the market concentration after the merger, the more disposed are the Agencies to concluding that significant anticompetitive effects are likely.

Additional Market Characteristics Relevant to Competitive Analysis

Section 2.1 of the Guidelines sets forth several general market characteristics that may be relevant to the analysis of the likelihood of coordinated interaction following a merger: "the availability of key information concerning market conditions, transactions and individual competitors; the extent of firm and product heterogeneity; pricing or market practices typically employed by firms in the market; the characteristics of buyers and sellers; and the characteristics of typical transactions." Section 2.11 of the Guidelines states that the ability of firms to reach terms of coordination "may be facilitated by product or firm homogeneity and by existing practices among firms, practices not necessarily themselves antitrust violations, such as standardization of pricing or product variables on which firms could compete." Further, "[k]ey information about rival firms and the market may also facilitate reaching terms of coordination." *Id.*

These market characteristics may illuminate the degree of transparency and complexity in the competitive environment. The existence or absence of any particular characteristic (e.g., product homogeneity or transparency in prices) in a relevant market, however, is neither a necessary nor a sufficient basis for the Agencies to determine whether successful coordination is likely following a merger. In other words, these factors are not simply put on the left or right side of a ledger and balanced against one another. Rather, the Agencies identify the specific factors relevant to the particular mechanism for coordination being assessed and focus on how those factors affect whether the merger would alter the likelihood of successful coordination.

Formica–International Paper **(DOJ 1999)** Formica Corp. and International Paper Co. were two producers of high-pressure laminates used to make durable surfaces such as countertops, work surfaces, doors, and other interior building products. Formica sought to acquire the high-pressure laminates business of International Paper Co. There were just four competitors in the United States, and the acquisition of International Paper Co.'s business would have given Formica and its largest remaining competitor almost 90% of total sales between them. The market appeared to have been performing reasonably competitively, but the Department was concerned that two dominant competitors would coordinate pricing and output after the acquisition.

One reason for this concern was that the small competitors remaining after the merger had relatively high costs and were unable to expand output significantly, so they would not have been able to undermine that coordination. In addition, the Department concluded that International Paper, with significant excess capacity, had the ability to undermine coordination and had done so. The Department also found that major competitors had very good information on each others' pricing and would be able to detect deviations from coordinated price levels. After the Department announced its intention to challenge the merger, the parties abandoned the deal.

Although coordination may be less likely the greater the extent of product heterogeneity, mergers in markets with differentiated products nonetheless can facilitate coordination. Although a merger resulting in closer portfolio conformity may prompt more intense, head-to-head competition among rivals that benefits consumers, an enhanced mutual understanding of the production and marketing variables that each rival faces also may result. Better mutual understanding can increase the ability to coordinate successfully, thus diminishing the benefits to consumers that the more intense competition otherwise would have provided. Sellers of differentiated products also may coordinate in non-price dimensions of competition by limiting their product portfolios, thereby limiting the extent of competition between the products of rival sellers. They also may coordinate on customers or territories rather than on prices.

Diageo–Vivendi **(FTC 2001)** The Commission challenged a merger between Diageo plc and Vivendi Universal S.A., competitors in the manufacture and sale of premium rum—a product that is heterogeneous as to brand name and the type of rum, e.g., light or gold, flavored or unflavored—on the grounds, among others, that the transaction was likely to lead to coordinated interaction among premium rum rivals. Diageo, which owned the Malibu Rum brand with about an 8% share, was seeking to acquire Seagram's, which marketed Captain Morgan Original Spiced Rum and Captain Morgan Parrot Bay Rum brands and had about a 33% share. Bacardi USA, with its Bacardi Light and Bacardi Limon brands, was the largest competitor with about a 54% share. Thus, after the acquisition, Diageo and Bacardi USA would have had a combined share of about 95% in the U.S. premium rum market.

Significant differentiation among major brands of rum reduces the closeness of substitution among them. Nonetheless, the Commission had reason to believe that the acquisition would increase the likelihood and extent of coordinated interaction to raise prices. Having a single owner of both the Seagram's rum products and the Malibu brand created the substantial concern that coordination that was not profitable for Bacardi and Seagram's before the merger likely would have become profitable after the merger. Although a smaller rival before the merger, Diageo's Malibu imposed a significant competitive constraint on Seagram's and Bacardi. The Commission challenged the merger and agreed to a settlement with the parties that required Diageo to divest its worldwide Malibu rum business to a third party.

Role of Evidence of Past Coordination

Facts showing that rivals in the relevant market have coordinated in the past are probative of whether a market is conducive to coordination. Guidelines § 2.1. Such facts are probative because they demonstrate the feasibility of coordination under past market conditions. Other things being equal, the removal of a firm via merger, in a market in which incumbents already have engaged in coordinated behavior, generally raises the risk that future coordination would be more successful, durable, or complete. Accordingly, the Agencies investigate whether the relevant market at issue has experienced such behavior and, if so, whether market conditions that existed when the coordination took place—and thus were conducive to coordination—are still in place. A past history of coordination found unlawful can provide strong evidence of the potential for coordination after a merger.

***Air Products–L'Air Liquide* (FTC 2000)** Two of the four largest industrial gas suppliers, Air Products and Chemicals, Inc. and L'Air Liquide S.A., proposed acquisitions that would result in splitting between them the assets of a third large rival, The BOC Group plc. The proposed asset split would have resulted in three remaining industrial gas suppliers that were nearly the same in size, cost structure, and geographic service areas. Products involved in the asset split included bulk liquid oxygen, bulk liquid nitrogen, and bulk liquid argon (together referred to as atmospheric gases), various electronic specialty gases, and helium—each of which is a homogeneous product. Bulk liquid oxygen and nitrogen trade in regional markets, and the transactions would have affected multiple regional areas. In these areas, the four largest producers accounted for between 70% and 100% of the markets. The four suppliers also accounted for about 90% of the national market for bulk liquid argon.

The staff found evidence of past coordination. In 1991, the four major industrial air gas suppliers pled guilty in Canada to a charge of conspiring to eliminate competition for a wide range of industrial gases, including bulk liquid oxygen, nitrogen, and argon. Industrial gas technology is well-established, market institutions in the U.S. were similar to those in Canada, and nothing had changed significantly during the intervening period to suggest that coordination had become more difficult or less likely.

Other evidence also indicated that the markets were susceptible to coordinated behavior: firms announced price changes publicly, and industry-wide price increases tended to follow such announcements; a number of joint ventures, swap agreements, and other relationships among the suppliers provided opportunities for information sharing; and incumbents tended not to bid aggressively for rivals' current customers. Neither fringe expansion nor new entry was likely to defeat future coordination. Staff concluded that the proposed asset split would likely enable the remaining firms to engage in coordination more effectively. The parties abandoned the proposed transactions.

***Suiza–Broughton* (DOJ 1999)** Suiza Foods Corp. and Broughton Foods Co. proposed to merge. Broughton owned the Southern Belle dairy in Somerset, Kentucky, and Suiza operated several dairies in Kentucky, including the Flav-O-Rich dairy in London, Kentucky. Six years earlier, when Flav-O-Rich and Southern Belle were independently owned, both pleaded guilty to criminal charges of rigging bids in the sale of milk to schools. The Department found that the proposed merger would have reduced from three to two the number of dairies competing to supply milk to thirty-two school districts in South Central Kentucky, including many that had been victimized by the prior bid rigging. The Department challenged the merger on the basis that it likely would lead to coordinated anticompetitive effects, and the demonstrated ability of these particular dairies to coordinate was a significant factor in the Department's decision. The Department's complaint was resolved by a consent decree requiring divestiture of the Southern Belle Dairy.

***Degussa–DuPont* (FTC 1998)** Degussa Aktiengesellschaft, a producer of hydrogen peroxide, proposed to acquire rival E.I. du

Pont de Nemours & Co.'s hydrogen peroxide manufacturing assets. The Commission found that the relevant U.S. market was conducive to coordinated interaction based on evidence that showed, among other things, high concentration levels, product homogeneity, and the ready availability of reliable competitive information. Moreover, the same firms that would have been the leading U.S. producers after the merger had recently been found to have engaged in market division in Europe for several years. The Commission identified this history of collusion as a factor supporting its conclusion that the proposed transaction likely would result in anticompetitive effects from coordinated interaction. Under the terms of a consent agreement to resolve these competitive concerns, the acquirer was permitted to purchase one plant but not the entirety of the seller's hydrogen peroxide manufacturing assets.

Even when firms have no prior record of antitrust violations, evidence that firms have coordinated at least partially on competitive terms suggests that market characteristics are conducive to coordination.

Rhodia–Albright & Wilson **(FTC 2000)** Rhodia entered into an agreement to acquire Albright & Wilson PLC, a wholly owned subsidiary of Donau Chemie AG. The merging firms were industrial phosphoric acid producers. The Commission developed evidence that the market was highly concentrated, that the relevant product was homogenous, and that timely competitive intelligence was readily available—all conditions that are generally conducive to coordination. Incumbent marketing strategies suggested a tendency to curb aggressive price competition and suggested a lack of competition.

The Commission found that industrial phosphoric acid pricing, unlike the pricing of other similar chemical products, had not historically responded significantly to changes in the rate of capacity utilization among producers. In most chemical product markets, when capacity utilization declines, prices often decline as well. In this market, however, during periods of decline in capacity utilization among industrial phosphoric acid producers, prices often remained relatively stable. All of these factors established that the relevant market—even before the proposed merger—was performing in a manner consistent with coordination. The Commission entered into a consent order requiring, among other things, divestiture of phosphoric acid assets.

When investigating mergers in industries characterized by collusive behavior or previous coordinated interaction, the Agencies focus on how the mergers affect the likelihood of successful coordination in the future. In some instances, a simple reduction in the number of firms may increase the likelihood of effective coordinated interaction. Evidence of past coordination is less probative if the conduct preceded significant changes in the competitive environment that made coordination more difficult or otherwise less likely. Such changes might include, for example, entry, changes in the manufacturing processes of some competitors, or changes in the characteristics in the relevant product itself. Events such as these may have altered the incumbents' incentives or ability to coordinate successfully.

Although a history of past collusion may be probative as to whether the market currently is conducive to coordination, the converse is not necessarily true, i.e., a lack of evidence of past coordination does not imply that future coordination is unlikely. When the Agencies conclude that previous episodes of coordinated interaction are not probative in the context of current market conditions—or when they find no evidence that rivals coordinated in the past—an important focus of the investigation becomes whether the merger is likely to cause the relevant market to change from one in which coordination did not occur to one in which such coordination is likely.

Premdor–Masonite **(DOJ 2001)** Premdor Inc. sought to acquire (from International Paper Co.) Masonite Corp., one of two large producers of "interior molded doorskins," which form the front and back of "interior molded doors." Interior molded doors provide much the same appearance as solid wood doors but at a much lower cost, and Premdor was the world's largest producer. Premdor also held a substantial equity stake in a firm that supplied some of its doorskins. The vast majority of doorskins, however, were produced by Masonite and by a third party that was also Premdor's only large rival in the sale of interior molded doors. The Department concluded that the upstream and downstream markets for interior molded doorskins and interior molded doors were highly concentrated and that the proposed acquisition would have removed significant impediments to coordination.

The Department found that the most significant impediment to upstream coordination was Premdor's ability, in the event of an upstream price increase, to expand production of doorskins, both for its own use and for sale to other door producers. The proposed acquisition, however, would have eliminated Premdor's incentive to undermine upstream coordination. The Department also found that a significant impediment to downstream coordination was Masonite's incentive and ability to support output increases by smaller downstream competitors. The proposed acquisition, however, would have eliminated Masonite's incentive to do so.

Finally, the Department found that the acquisition would have facilitated coordination by bringing the cost structures of the principal competitors into alignment, both upstream and downstream, and by making it easier to monitor departures from any coordination. The Department's challenge of the acquisition was resolved by a consent decree requiring, among other things, divestiture of a Masonite manufacturing facility.

Maverick and Capacity Factors in Coordination

A merger may make coordination more likely or more effective when it involves the acquisition of a firm or asset that is competitively unique. In this regard, section 2.12 of the Guidelines addresses the acquisition of "maverick" firms, i.e., "firms that have a greater economic incentive to deviate from the terms of coordination than do most of their rivals (e.g., firms that are unusually disruptive and competitive influences in the market)." If the acquired firm is a maverick, its acquisition may make coordination more likely because the nature and intensity of competition may change significantly as a result of the merger. In such a case, the Agency's investigation examines whether the acquired firm has behaved as a maverick and whether the incentives that are expected to guide the merged firm's behavior likely would be different.

Similarly, a merger might lead to anticompetitive coordination if assets that might constrain coordination are acquired by one of a limited number of larger incumbents. For example, coordination could result if, prior to the acquisition, the capacity of fringe firms to expand output was sufficient to defeat the larger firms' attempts to coordinate price, but the acquisition would shift enough of the fringe capacity to a major firm (or otherwise eliminate it as a competitive threat) so that insufficient fringe capacity would remain to undermine a coordinated price increase.

Arch Coal–Triton **(FTC 2004)** The Commission challenged Arch Coal, Inc.'s acquisition of Triton Coal Co., LLC's North Rochelle mine in the Southern Powder River Basin of Wyoming ("SPRB"). Prior to the acquisition, three large companies—Arch, Kennecott, and Peabody (the "Big Three")—owned a large majority of SPRB mining capacity. The remaining capacity, including the North Rochelle mine, was owned by fringe companies with smaller market shares. The Commission's competitive concern was that, by transferring ownership of the North Rochelle mine from the fringe to a member of the Big Three, the acquisition would significantly reduce the supply elasticity of the fringe and increase the likelihood of coordination to reduce Big Three output. As a result of the reduction in fringe supply elasticity, a given reduction in output by the Big Three would be more profitable to each member of that group after the acquisition than would have been the case before the acquisition. Mine operators had, in the past, announced their future intentions with regard to production and had publicly encouraged "production discipline." The court denied the Commission's preliminary injunction request and, after further investigation, the Commission decided not to pursue further administrative litigation.

UPM–MACtac **(DOJ 2003)** UPM-Kymmene Oyj sought to acquire (from Bemis Co.) Morgan Adhesives Co. ("MACtac"). Three firms—MACtac, UPM's Raflatac, Inc. subsidiary, and Avery Dennison Corp.—were the only large producers of paper pressure-sensitive labelstock, which is used by "converters" to make paper self-adhesive labels for a range of consumer and commercial applications. The Department found that the proposed acquisition would result in UPM and Avery controlling over 70% of sales in the relevant market, and in smaller rivals having insufficient capacity to undermine a price increase by UPM and Avery. Prior to the announcement of its proposed acquisition of MACtac, UPM and Avery had exchanged communications about their mutual concerns regarding intense price competition, and there was evidence that they had reached an understanding to hold the line on further price cuts. MACtac, however, was not a party to this understanding, and it had both substantial excess capacity and the incentive to expand sales by cutting price.

The Department concluded that the proposed acquisition would eliminate the threat to coordination from MACtac and that no other competitor posed such a threat. Also significant was the fact that UPM was a major input supplier for Avery both because this relationship created opportunities for communication between the two and because it made possible mutual threats that could be used to induce or enforce coordination. The Department, therefore, concluded that Avery and UPM would be likely to coordinate after the acquisition and challenged the transaction on that basis. After trial, the district court enjoined the consummation of the acquisition.

Unilateral Effects

Section 2.2 of the Guidelines states that "merging firms may find it profitable to alter their behavior unilaterally following the acquisition by elevating price and suppressing output." The manner in which a horizontal merger may generate unilateral competitive effects is straightforward: By eliminating competition between the merging firms, a merger gives the merged firm incentives different from those of the merging firms. The simplest unilateral effect arises from merger to monopoly, which eliminates all competition in the relevant market. Since the issuance of the Guidelines in 1992, a substantial proportion of the Agencies' merger challenges have been predicated at least in part on a conclusion that the proposed mergers were likely to generate anticompetitive unilateral effects.

Section 2.2 of the Guidelines explains: "Unilateral competitive effects can arise in a variety of different settings. In each setting, particular other factors describing the relevant market affect the likelihood of unilateral competitive effects. The settings differ by the primary characteristics that distinguish firms and shape the nature of their competition." Section 2.2 does not articulate, much less detail, every particular unilateral effects analysis the Agencies may apply.

The Agencies' analysis of unilateral competitive effects draws on many models developed by economists. The simplest is the model of monopoly, which applies to a merger involving the only two competitors in the relevant market. One step removed from monopoly is the dominant firm model. That model posits that all competitors but one in an industry act as a "competitive fringe," which can economically satisfy only part of total market demand. The remaining competitor acts as a monopolist with respect to the portion of total industry demand that the competitive fringe does not elect to supply. This model might apply, for example, in a homogeneous product industry in which the fringe competitors are unable to expand output significantly.

In other models, two or more competitors interact strategically. These models differ with respect to how competitors interact. In the Bertrand model, for example, competitors interact in the choice of the prices they charge. Similar to the Bertrand model are auction models, in which firms interact by bidding. There are many auction models with many different bidding procedures. In the Cournot model, competitors interact in the choice of the quantities they sell. And in bargaining models, competitors interact through their choices of terms on which they will deal with their customers.

Formal economic modeling can be useful in interpreting the available data (even with natural experiments). One type of modeling the Agencies use is "merger simulation," which "calibrates" a model to match quantitative aspects (e.g., demand elasticities) of the industry in which the merger occurs and uses the calibrated model to predict the outcome of the competitive process after the merger. Merger simulation can be a useful tool in determining whether unilateral effects are likely to constitute a substantial lessening of competition when a particular model mentioned above fits the facts of the industry under review and suitable data can be found to calibrate the model. The fit of a model is evaluated on the basis of the totality of the evidence.

Section 2.2 of the Guidelines does not establish a special safe harbor applicable to the Agencies' consideration of possible unilateral effects. Section 2.2.1 provides that significant unilateral effects are likely with differentiated products when the combined market share of the merging firms exceeds 35% and other market characteristics indicate that market share is a reasonable proxy for the relative appeal of the merging products as second choices as well as first choices. Section 2.2.2 provides that significant unilateral effects are likely with undifferentiated products when the combined market share of the merging firms exceeds 35% and other market characteristics indicate that non-merging firms would not expand output sufficiently to frustrate an effort to reduce total market output.

As an empirical matter, the unilateral effects challenges made by the Agencies nearly always have involved combined shares greater than 35%. Nevertheless, the Agencies may challenge mergers when the combined share falls below 35% if the analysis of the mergers' particular unilateral competitive effects indicates that they would be likely substantially to lessen competition. Combined shares less than 35% may be sufficiently high to produce a substantial unilateral anticompetitive effect if the products are differentiated and the merging products are especially close substitutes or if the product is undifferentiated and the non-merging firms are capacity constrained.

Unilateral Effects from Merger to Monopoly

The Agencies are likely to challenge a proposed merger of the only two firms in a relevant market. The case against such a merger would rest upon the simplest of all unilateral effects models. Relatively few mergers to monopoly are proposed. Some proposed mergers affecting many markets would have resulted in monopolies in one or more of these markets.

Franklin Electric–United Dominion **(DOJ 2000)** Subsidiaries of Franklin Electric Co. and United Dominion Industries were the only two domestic producers of submersible turbine pumps used for pumping gasoline from underground storage tanks at retail stations. The parent companies entered into a joint venture agreement that would have combined those subsidiaries. The Department found that entry was difficult and that other pumps, including foreign-produced pumps, were not good substitutes. Hence, the Department concluded that the formation of the joint venture likely would create a monopoly and thus give rise to a significant unilateral anticompetitive effect. After trial, the district court granted the Department's motion for a permanent injunction.

Glaxo Wellcome–SmithKline Beecham **(FTC 2000)** When Glaxo Wellcome plc and SmithKline Beecham plc proposed to merge, each manufactured and marketed numerous pharmaceutical products. For most products, the transaction raised no significant competition issues, but it did raise concerns in several product lines. Among them was the market for research, development, manufacture, and sale of second generation oral and intravenous antiviral drugs used in the treatment of herpes. Glaxo Wellcome's Valtrex and SmithKline Beecham's Famvir were the only such drugs sold in the United States. Having concern both for the market for currently approved drugs and the market for new competing drugs, the Commission alleged that the merger would have prompted a unilateral increase in prices and reduction in innovation in this monopolized market. The matter was resolved by a consent order, pursuant to which the merged firm was required, among other things, to divest SmithKline's Famvir-related assets.

Suiza–Broughton **(DOJ 1999)** Suiza Foods Corp. and Broughton Foods Co. competed in the sale of milk to school districts, which procured the milk through annual contracts entered into after taking bids. The Department found that competition for each of the school districts was entirely separate from the others, so each constituted a separate geographic market. The Department sought to enjoin the proposed merger of the two companies after finding that it threatened competition in 55 school districts in south central Kentucky and would have created a monopoly in 23 of those districts. The matter was resolved by a consent order, pursuant to which the merged firm was required to divest the dairy in Kentucky owned by Broughton.

Unilateral Effects Relating to Capacity and Output for Homogeneous Products

In markets for homogeneous products, the Agencies consider whether proposed mergers would, once consummated, likely provide the incentive to restrict capacity or output significantly and thereby drive up prices.

Georgia-Pacific–Fort James **(DOJ 2000)** Georgia-Pacific Corp. and Fort James Corp. were the two largest producers in the United States of "away-from-home" tissue products (i.e., paper napkins, towels, and toilet tissue used in commercial establishments). These products are produced in a two-stage process, the first stage of which is the production of massive parent rolls, which also are used to make at-home tissue products. Georgia-Pacific's proposed acquisition of Fort James would have increased Georgia-Pacific's share of North American parent roll capacity to 36%. Investigation revealed that the industry was operating at nearly full capacity, that capacity could not be quickly expanded, and that demand was relatively inelastic. These factors combined to create a danger that, after the merger, Georgia-Pacific would act as a dominant firm by restricting production of parent rolls and thereby forcing up prices for away-from-home tissue products. Merger simulation indicated that the acquisition would cause a significant price increase. The Department's challenge to the acquisition was settled by a consent decree requiring the divestiture of Georgia-Pacific's away-from-home tissue business.

Unilateral Effects Relating to the Pricing of Differentiated Products

In analyzing a merger of two producers of differentiated consumer products, the Agencies examine whether the merger will alter the merged firm's incentives in a way that leads to higher prices. The seller of a differentiated consumer product raises price above marginal cost to the point at which the profit gain from higher prices is balanced by the loss in sales. Merging two sellers of competing differentiated products may create an incentive for the merged firm to increase the price of either or both products because some of the sales lost as a result of the increase in the price of either of the two products would be "recaptured" by the other.

As section 2.21 of the Guidelines explains, what matters in determining the unilateral effect of a differentiated products merger is whether "a significant share of sales in the market [is] accounted for by consumers who regard the products of the merging firms as their first and second choices." Consumers typically differ widely with respect to both their most preferred products and their second choices. If a significant share of consumers view the products combined by the merger as their first and second choices, the merger may result in a significant unilateral effect.

In all merger cases, the Agencies focus on the particular competitive relationship between the merging firms, and for mergers involving differentiated products, the "diversion ratios" between products combined by the merger are of particular importance. An increase in the price of a differentiated product causes a decrease in the quantity sold for that product and an increase in the quantities sold of products to which consumers switch. The diversion ratio from one product to another is the proportion of the decrease in the quantity of the first product purchased resulting from a small increase in its price that is accounted for by the increase in quantity purchased for the other product. In general, for any two products brought under common control by a transaction, the higher the diversion ratios, the more likely is significant harm to competition.

A merger may produce significant unilateral effects even though a large majority of the substitution away from each merging product goes to non-merging products. The products of the merging firms need only be sufficiently close to each other (that is, have sufficiently high diversion ratios) that recapturing the portion of the lost sales indicated by the diversion ratios provides a significant incentive to raise prices. Significant unilateral effects are unlikely if the diversion ratios between pairs of products brought together by a merger are sufficiently low.

A merger may produce significant unilateral effects even though a non-merging product is the "closest" substitute for every merging product in the sense that the largest diversion ratio for every product of the merged firm is to a non-merging firm's product. The unilateral effects of a merger of differentiated consumer products are largely determined by the diversion ratios between pairs of products combined by the merger, and the diversion ratios between those products and the products of non-merging firms have at most a secondary effect.

In ascertaining the competitive relationships in mergers involving differentiated products, the Agencies look to both qualitative and quantitative evidence bearing on the intensity or nature of competition. The Agencies make use of any available data that can shed light on diversion ratios, and when possible estimate them using statistical methods. Often, however, the available data are insufficient for reliable estimation of the diversion ratios. The absence of data suitable for such estimation does not preclude a challenge to a merger. The Agencies also rely on traditional sources of evidence, including documentary and testimonial evidence from market participants. Even when the Agencies estimate diversion ratios, documentary and testimonial evidence typically are used to corroborate the estimates.

General Electric–Agfa NDT **(FTC 2003)** General Electric Co. proposed to acquire Agfa NDT Inc. from Agfa-Gevaert N.V. Through their subsidiaries, the firms were the two largest suppliers of ultrasonic non-destructive testing ("NDT") equipment in the United States. NDT equipment is used to inspect the structure and tolerance of materials without damaging them or impairing their future usefulness. Manufacturers and end users in a variety of industries use ultrasonic NDT equipment for quality control and safety purposes. Unilateral concerns arose in three relevant product markets: portable flaw detectors, corrosion thickness gauges, and precision thickness gauges. In each of these markets, the merging parties were the two largest firms, and the combined firm would have had a market share of greater than 70% in each of the markets. Documents and testimonial evidence indicated that the rivalry between GE and Agfa was particularly close, and that, for a wide variety of industry participants, the products of the two firms were their first and second choices. The evidence also showed that the two firms frequently were head-to-head rivals and that this competition benefitted consumers through aggressive price competition and innovation. Evidence also suggested that the remaining fringe manufacturers would not be able to constrain a unilateral price increase by the merged firm. The Commission obtained a consent order requiring divestiture of GE's NDT business.

In many matters involving differentiated consumer products, the Agencies have analyzed price and quantity data generated at the point of sale, particularly by scanners at supermarket checkouts, to assess the likely effect of the merger on prices.

Nestle–Dreyer's **(FTC 2003)** Nestle Holdings, Inc., proposed to merge with Dreyer's Grand Ice Cream, Inc. The firms were rivals in the sale of "superpremium ice cream." Compared to premium and non-premium ice cream, superpremium ice cream contains more butterfat, less air, and more costly ingredients, and sells at a substantially higher price. Nestle sold the Haagen-Dazs brand in competition with the Dreyer's Dreamery, Godiva, and Starbucks brands. Together Nestle and Dreyer's accounted for about 55% of superpremium ice cream sales, and Unilever, through its Ben & Jerry's brand, accounted for nearly all of the rest. Commission staff developed evidence showing that the merger was likely to result in unilateral anticompetitive effects, reflecting the close rivalry between the merging firms. Dreyer's recently had expanded on a large scale into superpremium ice cream production and increased its share in this relatively mature market to above 20%. Analysis suggested that, by expanding, Dreyer's induced increased competition from incumbent superpremium firms. Econometric analysis showed that the diversion ratios between the Nestle and Dreyer's superpremium brands were sufficient to make a significant unilateral price increase by the merged firm likely. The diversion ratios with Unilever's superpremium brands also were high. The analysis implied that the merged firm would be likely to raise its prices anticompetitively and that Unilever would also likely raise its Ben & Jerry's prices in the post-merger environment. The Commission entered into a consent agreement with the merging firms requiring divestiture of two brands and key distribution assets.

General Mills-Pillsbury **(FTC 2001)** General Mills, Inc.'s proposed purchase of The Pillsbury Co. from Diageo plc, involved the sale of some of the most widely recognized food products in the United States. Most of the products involved in the transaction did not raise antitrust concerns, but there were overlaps of potential concern in a handful of product lines, including flour. The Pillsbury and General Mills (Gold Medal) brands were the only two national flour brands, and after the merger General Mills would account for over half of total U.S. retail flour sales. Private label sales comprised less than 25% of sales nationwide, with the balance accounted for by numerous regional firms. Evidence tended to indicate that regional brands were not a significant constraint on General Mills and Pillsbury. The regional brands generally were highly differentiated, specialty brands and were not viewed as close substitutes for the more commodity-like General Mills and Pillsbury brands. The degree of constraint provided by private label brands was mixed, with some evidence suggesting that private label brands were a significant constraint but other evidence suggesting otherwise.

Commission staff used scanner data to estimate demand elasticities. Because the strength of private label and regional flour brands varied across geographic regions, staff estimated elasticities for groups of markets defined according to the presence of regional brands. The cross-price elasticities between Gold Medal and Pillsbury brands and between these brands and private label and regional brands differed across regions. For example, the results suggested that Gold Medal and Pillsbury were the closest substitutes in some markets, while private label alternatives were an equally close substitute in other markets. Some regional brands also were found to be relatively close substitutes for Gold Medal and Pillsbury, while others were not. Commission staff used the estimated elasticities to simulate the expected price effect from the merger using the Bertrand model. The results suggested that the merging parties would raise their prices more than 10% even in markets where private label and regional brands were estimated to be equally close substitutes for Gold Medal and Pillsbury.

Commission staff also examined whether pricing for flour varied across markets in relation to the amount of competition from private label or other brands. In particular, staff compared prices in geographic markets that were supplied predominantly by Gold Medal and private label, with prices in markets where Pillsbury or another brand was also strong. The results indicated that Pillsbury generally played an important role in constraining Gold Medal prices. These results were consistent with the elasticity results discussed above, and both suggested that the proposed merger would lead to price increases for flour. The parties resolved the competitive concerns in this market by selling Pillsbury's product line. No Commission action was taken.

Kimberly-Clark-Scott **(DOJ 1995)** Kimberly-Clark Corp. and Scott Paper Co. were two of the nation's leading producers of consumer paper products when they announced their intention to merge. In facial tissue, Kimberly-Clark and Scott, together with Procter & Gamble, accounted for nearly 90% of all sales, and Kimberly-Clark's Kleenex brand itself accounted for over half of sales. By estimating the relevant demand elasticities using scanner data, the Department determined that Scott's facial tissue products, which were "value" products (sold at relatively low prices) and accounted for only 7% of sales, imposed a significant constraint on Kimberly-Clark's prices. Likewise, in baby wipes, in which Kimberly-Clark and Scott's brands together accounted for approximately 56% of sales, the Department's analysis indicated that each was the other's most significant competitive constraint. Hence, the Department concluded that acquiring Scott's facial tissue and baby wipes businesses likely would give Kimberly-Clark an incentive to increase prices significantly for the merging brands. The Department's challenge to the proposed merger was settled by a consent decree requiring the divestiture of assets relating to facial tissue and baby wipes.

Interstate Bakeries–Continental **(DOJ 1995)** The Department undertook significant analysis of scanner data in evaluating Interstate Bakeries Corp.'s purchase of Continental Baking Co. from Ralston Purina Co. At the time, Continental, with its Wonder brand, was the largest baker of fresh bread in the United States, and Interstate was the third-largest. The Department's investigation focused on white pan bread. White pan bread is the primary sandwich and toasting bread in the United States, and market participants viewed it as a highly differentiated product. Price differences were a clear indication of consumer preference for premium brands over supermarket private label brands; the price of the premium brands was at least twice the price of the private label products. Econometric evidence confirmed that there was only limited competitive interaction between premium and private label brands. Marketing, econometric, and other evidence also indicated that there were significant preferences among individual premium brands. The Department's investigation focused on five metropolitan areas (Chicago, Milwaukee, Central Illinois, Los Angeles, and San Diego) in which Continental and Interstate had the two largest-selling premium brands, or two of the three largest-selling brands.

Econometric analysis determined that there were substantial cross-elasticities of demand between the Continental and Interstate brands of white pan bread, consistent with a likelihood of significant unilateral anticompetitive effects following the merger. The Department used the estimated cross elasticities in a Bertrand merger simulation, which predicted that the merger was likely to result in price increases of 5–10% for those brands. The Bertrand model was considered reliable for several reasons, including that it accurately predicted pre-merger price-cost margins. In addition, retailers marked up every wholesale price by the same percentage, so estimated retail-level demand elasticities were the same as those at the wholesale level. The Department concluded that the proposed acquisition likely would result in significant price increases for premium white pan bread in five metropolitan areas. The Department's challenge to the proposed merger was settled by a consent decree requiring divestiture of brands and related assets in the five metropolitan areas.

The Agencies challenge only a tiny fraction of proposed mergers. (In fiscal years 1999–2003, over 14,000 transactions were notified to the Agencies under HSR; the Agencies collectively challenged fewer than 200.) The following matters illustrate, for differentiated consumer products, the sort of evidence that has formed the basis of decisions not to challenge particular transactions.

Fortune Brands–Allied Domecq **(FTC 2005)** Fortune Brands, Inc., owner of the Knob Creek brand of bourbon, proposed to acquire Allied Domecq's Maker's Mark brand of bourbon. Commission staff analyzed whether the acquisition would create or enhance unilateral market power for premium bourbon. Staff analysis of information discovered in the investigation suggested that several other large whiskey brands, including bourbons, competed strongly with Maker's Mark and with Knob Creek. Econometric analysis of retail scanner pricing data indicated substantial cross-price elasticities among the several whiskey brands. Using these cross-price elasticities staff estimated the diversion ratios involving Maker's Mark and Knob Creek. The results showed that, in the event of a Maker's Mark price increase, very few of the sales lost would go to Knob Creek. The analysis also found no support for the proposition that Maker's Mark would receive a substantial proportion of the substitution away from Knob Creek in the event of an increase in the price of the latter. The staff closed the investigation.

Maybelline–Cosmair **(DOJ 1996)** The Department investigated and decided not to challenge the proposed merger of Maybelline, Inc., a leading U.S. cosmetics company, and Cosmair, Inc., the U.S. subsidiary of French cosmetics giant L'Oreal S.A. Maybelline and L'Oreal were leading brands, and both were sold almost exclusively through mass-market outlets. Although the merger involved many products, the investigation focused largely on mascara, in which Maybelline had the leading share among brands sold through mass-market outlets, and L'Oreal ranked third. They combined to account for 52% of sales. Some evidence suggested that the images associated with the merging brands were quite different, and demand estimation was employed to determine whether there was substantial direct competition between them.

As in many other investigations involving differentiated consumer products, the Department relied on weekly data generated by scanners at the point of retail sale. Estimated demand elasticities were used to simulate the effects of the proposed merger using the Bertrand model. The analysis indicated that a significant anticompetitive effect was not likely, and the Department decided not to challenge the proposed merger.

Although the Agencies commonly use scanner data in analyzing the likely competitive effects of mergers involving differentiated products, such data do not exist for many such products. When scanner data do not exist, if feasible, it may be useful to conduct a consumer survey.

Vail Resorts–Ralston Resorts **(DOJ 1997)** Vail Resorts, Inc. and Ralston Resorts, Inc. were the two largest owner-operators of ski resorts in Colorado. In 1996, Vail proposed to acquire three ski areas operated by Ralston, which would have given Vail control of five ski areas in the "front range" area west of Denver, accounting for 38–50% of front range skier-days. Relying in part on a survey of skiers, the Department found that the Vail and Ralston facilities were close, premium-quality competitors and that skiers were likely to switch from one to the other on the basis of small changes in price, whereas consumers were much less likely to switch to several other resorts considered to be of lesser quality.

Bertrand merger simulation based on the survey data suggested the merger likely would cause a significant increase in lift-ticket prices at the acquiring firm's resorts. The Department therefore challenged the merger. The merger simulation also indicated that divestiture of Ralston's Arapahoe Basin resort would substantially prevent price increases, and that remedy was implemented through a consent decree.

Before challenging a merger involving differentiated consumer products, the Agencies consider the possibility of product repositioning by non-merging firms in accord with section 2.212 of the Guidelines. Consideration of repositioning closely parallels the consideration of entry, discussed below, and also focuses on timeliness, likelihood, and sufficiency. The Agencies rarely find evidence that repositioning would be sufficient to prevent or reverse what otherwise would be significant anticompetitive unilateral effects from a differentiated products merger. Repositioning of a differentiated product entails altering consumers' perceptions instead of, or in addition to, altering its physical properties. The former can be difficult, especially with well-established brands, and expensive efforts at doing so typically pose a significant risk of failure and thus may not be undertaken.

Unilateral Effects Relating to Auctions

In some markets, buyers conduct formal auctions to select suppliers and set prices. In such markets, the Agencies account for the fact that competition takes place through an auction. To an extent, the effects of a merger may depend on the specific auction format employed, and the Agencies also account for the specific format of the auction. The basic effects of mergers, however, may be quite similar in different auction formats.

Procurement through an auction tends to be simple for a homogeneous industrial product.

Cargill–Akzo Nobel **(DOJ 1997)** Cargill, Inc. proposed to acquire the western hemisphere salt-producing assets of Akzo Nobel, N.V. Cargill and Akzo Nobel were two of only four competitors engaged in the production of rock salt used for de-icing purposes in an area of the United States centered on the eastern portion of Lake Erie, and de-icing salt was sold primarily to government agencies through formal sealed bid auctions. To gauge the likely unilateral effect of the merger, the Department conducted an econometric analysis of data on winning bids in the area of interest and found that bids had been significantly lower when there were four bids than when there were three. Partly on the strength of that evidence, the Department challenged the merger on the basis of a likely unilateral price increase, and the case was settled by a consent decree requiring divestitures.

Procurement using an auction is also observed with more complex and customized products. With customized products, arbitrage between customers is likely to be infeasible, and the Agencies have sometimes found that there was a separate competition in each auction because vendors tailored their prices and other terms to the particular situation of each customer.

Chicago Bridge–Pitt-Des Moines **(FTC 2005)** The Commission issued an administrative ruling that the consummated acquisition by Chicago Bridge & Iron Co. of certain assets from Pitt-Des Moines, Inc., violated section 7 of the Clayton Act and section 5 of the FTC Act. The companies designed, engineered, and built storage tanks for liquified natural gas ("LNG"), liquified petroleum gas ("LPG"), and liquid atmospheric gases such as nitrogen, oxygen, and argon ("LIN/LOX"); they also designed, engineered, and built thermal vacuum chambers ("TVC"). It was uncontested that each of these "field-erected" products was a distinct relevant market. The Commission found that, in all four markets, respondents were each other's closest pre-acquisition rival and that together they largely had dominated sales since 1990. Field-erected tanks for LNG, LPG, and LIN/LOX, and TVCs are custom-made to suit each purchaser's needs, and customers place great emphasis upon a supplier's reputation for quality and service.

For each of the relevant products, customers generally seek competitive bids from several suppliers. Customers in the tank markets use a second round of bidding to negotiate price, and sometimes inform bidders of the existence of competition to reduce the prices that are bid. TVC customers select one bidder with which to negotiate a best and final offer, or they negotiate such offers from multiple bidders. Chicago Bridge exerted substantial competitive pressure on Pitt-Des Moines, and vice-versa. The companies closely monitored each other's activities, and customers frequently were able to play one firm against the other in order to obtain lower prices. Although other firms sometimes were awarded bids, the Commission found that most pre-merger competition was between Chicago Bridge and Pitt-Des Moines.

The bidding evidence also showed that the markets were not characterized by easy entry and expansion and that Chicago Bridge and Pitt-Des Moines would have continued to dominate the competition for years. The Commission considered specific instances of bidding by entrants into the relevant markets but concluded that these instances of bidding did not demonstrate that the entrants would be able to gain enough market share to affect prices and provide sufficient competition to replace the competition that was lost through the merger. In most instances, entrants' bids were rejected because the entrants lacked requisite reputation and experience. To remedy the transaction's anticompetitive effects, the Commission ordered Chicago Bridge, among other things, to reorganize its business into two stand-alone divisions, and divest one of them.

Metso Oyj–Svedala **(FTC 2001)** In a merger involving producers of rock-crushing equipment, Metso Oyj proposed acquiring Svedala Industri AB. Rock-crushing equipment is used in mining and aggregate production to make small rocks out of big rocks. Rock-crushing equipment includes cone crushers, jaw crushers, primary gyratory crushers, and grinding mills. Each of these types of equipment was determined to be a separate relevant product market. In some of these markets, Metso and Svedala were the largest and second largest competitors, and the combined firm would have had a market share many times higher than any other competitor. Competition in these markets was analyzed in an auction model. Metso and Svedala regularly bid against each other for rock-crushing equipment sales in each of the relevant markets. By eliminating competition between these two leading suppliers, the proposed acquisition would have allowed Metso to raise prices unilaterally for certain bids and to reduce innovation. The Commission resolved the competitive concerns by requiring divestitures in the relevant markets of concern.

Ingersoll-Dresser–Flowserve **(DOJ 2001)** Flowserve Corp. proposed to acquire Ingersoll-Dresser Pump Co. These companies were two of the largest U.S. manufacturers of specialized, highly engineered pumps used in oil refining ("API 610 pumps") and electrical generation facilities ("power plant pumps"), and only two other suppliers competed to sell these pumps in the United States. These pumps are procured through formal sealed-bid auctions and then manufactured to meet the buyers' specifications. The Department found that each of these auctions was an entirely separate competition, and therefore each constituted a distinct relevant market. The Department also found that there were only four competitors in these markets and concluded that the merger likely would cause the remaining competitors unilaterally to increase their bids significantly. Each competitor would realize that eliminating a bidder in these auctions would increase the probability of winning the auction associated with any given bid. The Department's challenge to the acquisition was settled by a consent decree requiring divestiture of Flowserve brands as well as manufacturing and repair facilities.

The procurement process for many complex products tends to be rather involved, and competition may occur in several distinct stages with extensive discussions between buyer and seller at such stages. The Agencies have often found that such competition could be understood in terms of an auction model with the procurement process working much like multiple rounds of bidding in an oral auction.

Arch Wireless–Metrocall **(DOJ 2004)** The Department investigated and decided not to challenge the proposed acquisition of Metrocall Holdings, Inc. by Arch Wireless, Inc. The two firms were the two largest providers of paging services in the United States. The Department focused on possible unilateral anticompetitive effects in the sale of one-way paging services to businesses in many individual metropolitan areas within the United States. In these areas, the combined firm would have accounted for a share of all pager units in service from less than 15% to over 80%. Because many paging customers had switched to other technologies, such as cellular or PCS telephony, the Department focused on the customers least likely to switch, notably many hospitals and emergency "first responders."

The Department observed that the competition at any one hospital was separate from the competition at any other, and that each hospital paid a price determined by that hospital's particular needs and the local rivalry among alternative technologies. This suggested that competition was best analyzed as an oral auction. The Department ultimately concluded that the merger likely would not substantially lessen competition primarily because most customers have sufficient alternatives to Arch and Metrocall. These alternatives included other paging providers, self-provision of paging services, and emerging technologies, such as wireless local area networks. Although some customers may not have sufficient alternatives, the Department concluded that service providers competing for their business would not be able to identify such customers and therefore likely would act as if they faced substantial competition.

Quest Diagnostics–Unilab **(FTC 2003)** Quest Diagnostics, Inc. and Unilab Corp. were the two leading providers of clinical laboratory testing services to physician groups in Northern California, with a combined market share of approximately 70% (the next largest competitor had approximately 4%). Delivery of health care in California was distinguished by high penetration by managed care organizations, which often delegated the financial risk for providing health care services to physician groups. Independent physician associations ("IPAs") in Northern California that assumed the financial risk for laboratory services, generally under a capitated arrangement, constituted a significant category of purchasers of laboratory services. IPA arrangements with the laboratories typically consisted of exclusive or semi-exclusive contracts, pursuant to which the physician group paid the laboratory a set amount per month for each patient affiliated with the prepaid health plans.

An auction model best represented competition for these capitated contracts with the IPAs. Quest and Unilab were the first- and second-lowest bidders for a substantial portion of these contracts, and thus the merger was likely to cause prices to rise to the constraining level of the next-lowest-price seller. The Commission resolved by consent agreement its concern that the merger was likely to result in anticompetitive effects. Pursuant to the consent agreement, the Commission ordered, among other things, that the merged firm divest assets used to provide clinical laboratory testing services to physician groups in Northern California.

Unilateral Effects Relating to Bargaining

In some markets, individual sellers negotiate with individual buyers on a transaction-by-transaction basis to determine prices and other terms of trade. The merger of competing sellers in such markets may enhance the ability of the combined seller to bargain for a more favorable result. That may be most apt to occur if, before the merger, the buyer viewed a bargain with either of the two merging parties as significantly better than a bargain with any other seller. In that event, the merger could cause the buyer to be willing to accept worse terms from the merged seller rather than to strike no bargain at all. That willingness normally would cause a bargain to be struck on terms less favorable for the buyer.

Aspen Technology–Hyprotech **(FTC 2004)** The Commission challenged the consummated acquisition by Aspen Technology, Inc. of Hyprotech, Ltd. Prior to the acquisition, they were two of the three significant vendors of process engineering simulation software. This software is used in the petroleum, chemical, and pharmaceutical industries to design new, and model existing, processes to produce intermediate and finished products. The combined firm accounted for between 67% and 82% of various process engineering simulation software markets, and a single other firm made virtually all other sales. The Commission's complaint alleged that the transaction may have allowed AspenTech unilaterally to exercise market power in seven global markets.

The firms' software offerings were differentiated in their respective capabilities and in how well they met customers' needs and equipment. Evidence showed that AspenTech and Hyprotech were the two closest competitors on price and on innovation in each of the markets. Evidence also showed that, prior to the merger, AspenTech and Hyprotech discounted prices to win or maintain customers, and that, due to the merger, customers would no longer be able to obtain a lower price from AspenTech by threatening to switch to Hyprotech. The third firm in the market was declining and represented a less credible threat for customers to use in price negotiations. This suggested that competition was best analyzed in a bargaining framework. Staff concluded that the transaction would have allowed AspenTech to profit by unilaterally raising prices and reducing innovation because a significant portion of the sales that may otherwise have been lost to the other merging partner as a consequence of such actions would be retained because of the acquisition. The Commission resolved these competitive concerns by issuing a consent order requiring divestiture of certain process engineering simulation software assets.

The Agencies have used bargaining theory to analyze the effects of hospital mergers on the prices they charge managed care organizations ("MCOs"). MCOs market health care plans in which subscribers' health care costs are, in whole or in part, paid for directly by the plan or reimbursed after being paid by the subscriber. MCOs negotiate with health care providers, especially hospitals, the charges they or their subscribers pay. A subscriber's out-of-pocket costs of using a particular hospital depends significantly on whether that subscriber's plan has contracted with that hospital and on what terms.

To market a plan successfully in a given area, an MCO seeks to contract on favorable terms with a wide array of hospitals so that the hospitals preferred by many potential subscribers are available to them on favorable terms. Subscribers are attracted to a plan by the ability to get care from providers they prefer on favorable terms resulting from the MCO having negotiated discounts off the providers' usual rates. The strength of a hospital's bargaining position with respect to MCOs is determined in large part by the proximity of other hospitals offering a similar or broader package of services with a similar or higher perceived quality. For example, close head-to-head competition between two hospitals allows an MCO credibly to threaten both that it will contract with, and steer its patients to, only the other. The elimination of such competition through a merger, therefore, can enable the hospitals to negotiate higher prices.

Carilion–Centra **(FTC 2005)** The Commission investigated a consummated joint venture between Carilion Health System, the largest hospital system in southwest Virginia, and Centra Health, Inc. Carilion owns and operates two large hospitals in Roanoke, Virginia, while Centra owns two hospitals in Lynchburg, Virginia. Prior to the transaction, Carilion also was the sole owner of a small community hospital located in Bedford County, halfway between Roanoke and Lynchburg, about 30 miles from each city. In connection with the joint venture transaction, Carilion sold half of its interest in Bedford to Centra, so that the two hospital systems each had a 50% interest in the Bedford facility.

The joint venture partners, Carilion and Centra, were the two largest hospital competitors in the Bedford area prior to the joint venture. Staff examined whether the joint venture would result in an increase in prices in Bedford County as a result of reduced competition between Carilion and Centra to attract Bedford area patients. Staff found that, after the creation of the joint venture, the Bedford hospital negotiated its prices separately from the Carilion or Centra systems and that Bedford prices either declined substantially or remained roughly the same. Staff closed the investigation.

Slidell Memorial–Tenet **(FTC 2003)** Tenet Health Care Systems, which operated NorthShore Regional Medical Center in Slidell, Louisiana, proposed to acquire Slidell Memorial Hospital. The transaction would have combined the only full-service acute care hospitals in Slidell. Evidence suggested to Commission staff that Slidell residents and their employers demanded health insurance plans that included either Slidell Memorial or NorthShore Regional as network participants, and that a nearby small surgical hospital and cardiac specialty hospital were inadequate substitutes because they were not full-service hospitals.

If Tenet purchased Slidell Memorial, health insurance companies would face the choice either of meeting Tenet's price terms, or, alternatively, excluding both NorthShore Regional and Slidell Memorial from their provider networks. The latter action would likely make the health plan far less marketable, particularly to employers and their employees who desire access to a Slidell hospital. In addition, a health plan that did not include these hospitals could offer services only from physicians willing and able to treat the plan's patients at hospitals located outside of Slidell. Information received from local employers, residents, and health insurance plans suggested to Commission staff that health insurance companies would be unlikely to risk losing NorthShore Regional, Slidell Memorial, and the physician base of the hospitals, and instead likely would agree to a price increase. Commission staff set forth its competition analysis in public comments to the Louisiana Attorney General, subsequent to which local citizens, prior to conclusion of the Commission's investigation, voted to reject the proposed acquisition. The deal was never consummated.

Rite Aid–Revco **(FTC 1996)** The nation's two largest retail drug store chains, Rite Aid Corp. and Revco D.S., Inc., sought to merge. The firms competed with each other in many local markets, including in 15 metropolitan areas in which the merged firm would have had more than 35% of the retail pharmacies. Commission staff analyzed the merger's effect on retail sales made through pharmacy benefit plans. Pharmacy benefit managers ("PBMs") contract with multiple pharmacy firms to form networks offering pharmacy benefits as part of health insurance coverage. Pharmacy networks often include a high percentage of local pharmacies because access to many participating pharmacies is often important to plan enrollees.

Rite Aid and Revco each offered a significant portion of the broad local coverage