

## **Empirical Analyses of Potential Compet**

the overall assessment of the likely impact of the merger on competition,<sup>3</sup> since the ultimate decision as to whether or not to challenge a merger necessarily involves a compounding of the probabilities that the conclusions of each of steps 1-5 is correct.

A great deal of evidence of a number of kinds is collected and assessed in a merger investigation. The parties to the proposed merger typically provide a voluminous amount of their business documents.<sup>4</sup> Other parties, *e.g.*, competitors to the merging parties and customers, may also supply some of their business documents. The parties to the merger, and sometimes other parties, provide data of various kinds (including financial data, and transactions data).<sup>5</sup> Many industry participants (such as the parties to the merger, competitors, customers, distributors, and third party “experts”) are interviewed, often extensively. Some interviews are conducted via deposition, under oath. A merger investigation involves extensive analyses of all this information, generally over a period of a number of months.

The first step in merger analysis is the delineation of the relevant product market (“product market definition”). The analysis of market definition outlined in the *Guidelines* is to find the smallest set of products, including the products of the parties to the proposed merger, that a monopolist would need to control to profitably increase prices a small but significant amount above competitive levels.<sup>6</sup> It is important to note, however, that concluding that a hypothetical monopolist would find it profitable to raise prices post-merger does not imply that the merger is anticompetitive. More analysis is needed to determine whether the merged firm (unless it is a 2-to-1 merger, protected from entry and without substantial efficiencies) could raise prices unilaterally or whether the merger would facilitate coordination among the remaining firms.

Although the *Guidelines*’ analysis for market definition seemingly poses a simple question amenable to economic analysis (*e.g.*, estimate demand and costs facing the hypothetical monopolist and estimate the hypothetical monopoly price), the evidence available in an investigation, although extensive, generally does not have data suitable for precise econometric estimation. In many cases, determining the precise contours of the market is complicated. Often, there are not black and white lines delineating what is in the relevant market and what is excluded from the market. In such circumstances, conducting “sensitivity tests” by analyzing the competitive effects of the transaction under alternative plausible market definitions allows us to determine the extent to which the end result of the analysis is dependent on the exact contours of the market defined. At minimum the presence of these other competitors must be accounted for in conducting the analyses of potential competitive effects of a merger.

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<sup>3</sup> In addition, the different steps are usually analyzed concurrently. That is, if there are plausible markets where competitive effects might occur, the analysis of potential competitive effects in those markets will be analyzed at the same time as analysis of whether those markets are sustainable occurs.

<sup>4</sup> Typically, at least dozens, if not hundreds of boxes of documents, the boxes being the size of the typical copier paper box containing several reams of copier paper.

<sup>5</sup> The transactions data supplied in the cruises investigation involved over 100 gigabytes of data.

<sup>6</sup> This price increase is generally referred to as a “SSNIP” (small but significant non-transitory increase in price). A similar analysis is done to determine the relevant geographic market definition.

Whether a hypothetical monopolist would likely be able profitably to raise prices by a SSNIP depends on the reactions of customers to such a price increase (i.e. the volume that would be lost due to customers either switching to other products or simply purchasing less), the size of the price increase, and the profit margin of the hypothetical monopolist. The analysis compares the increased profits from the price increase on customers who remain with the lost profits from customers who switch to other products or purchase less volume. A SSNIP would be profitable for a hypothetical monopolist if the former is greater than the latter. The typical approach to implement the *Guidelines*' analysis is to conduct "Critical Loss" analysis.<sup>7</sup> Briefly, this is a three-step analysis. First, we assess likely customer reactions to a SSNIP and in particular, to obtain an estimate of the likely *actual loss* from a SSNIP. Second, we assess how much sales would the hypothetical monopolist have to lose such that there would be no increased profits from the price increase. This value is often refe

estimation frequently is not possible. Thus the typical quantitative analyses employed include a wide range of methodologies from cross-tabs to simple regressions that provide us information about the likely magnitude of own- and cross-price elasticities.

A particularly useful type of analysis, where possible, is analyses of “natural experiments.” Natural experiments are events that provide relatively stark changes in relative prices or changes in the number of competitors over time or over space. For example, although we might not have data suitable for estimating demand, we might obtain useful evidence bearing on whether widgets and gadgets are in the same market if during the period of data there have been substantial relative changes in the prices of the two products. Another way to conceptualize the hypothetical monopolist analysis is to try to determine whether competition between a particular set of products or producers significantly impacts the price of those products. Thus a potential “natural experiment” to analyze this issue might exist if during the time period for which we have data there is a new supplier of widgets. If a careful analysis of data and available evidence shows that prices for widgets fell significantly and that this appeared to be not a transitory phenomenon,<sup>10</sup> such an analysis would indicate that gadgets are not “the” constraint on widget prices. This result would be consistent with widgets being a relevant market. Yet another example involves situations where there are a varying number of competitors over geographic markets for the same product, and a careful analysis of prices across the markets may be able to show whether or not the number of competitors has a significant impact on price.

After the market is defined, the next step is to determine if there could be anticompetitive effects after the merger. As a first step, we measure market shares and concentration in the relevant market. This provides a screening device to assess whether further analysis is required. If the level and change in concentration is “low,” the merger is unlikely to result in competitive effects.<sup>11</sup> It is well accepted in economics (and antitrust enforcement) that an increase in concentration in a relatively concentrated market does not “prove” that a merger would be likely to be anticompetitive. Rather, a conclusion that a merger is likely to be anticompetitive requires a theory of anticompetitive effects of the merger that is thoroughly based in all the relevant facts and institutions of the industry setting.

There are two principal types of anticompetitive theories that are typically considered in a merger analysis: unilateral effects and coordinated interaction. In unilateral theories, the merged entity has the ability to profitably and unilaterally increase its prices, which requires that it does not lose enough sales to make the price increase unprofitable. Among the theories that may be applicable for assessment of potential unilateral anticompetitive effects arising from a merger are differentiated Bertrand oligopoly, or auction models with a merger of the two lowest cost bidders. In coordinated interaction theories, the merger results in an increased likelihood that the remaining firms can coordinate their actions to reduce competition or in a decreased likelihood that any existing coordination would break down. This reduction in competition may come from the firms now being able to explicitly collude, but more likely would come from the merger

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<sup>10</sup> Being “careful” in this context requires the analyst to determine whether there are other factors that may have been important factors in driving widget prices down.

<sup>11</sup> The *Guidelines* specify thresholds for HHIs, but for more than a decade the actual enforcement thresholds have generally been significantly higher.

changing the incentive and ability of the competitors



### **III. Overview of the Cruise Ships Investigation**

On November 20, 2001, Royal Caribbean Cruises and P&O Princess Cruises announced a friendly merger. Less than a month later, on December 16, 2001, Carnival Cruises made a hostile bid for P&O Princess Cruises. At the time that the proposed mergers were announced, Carnival (which sailed under the Carnival, Holland America, Cunard, Seaborn and Windstar brands) was the largest cruise ship company in the world. Royal Caribbean, which sailed under the Royal Caribbean and the Celebrity brands, was the second largest cruise ship company in the world. P&O Princess (which sailed under the Princess, P&O Cruises, AIDA, A'ROSA, and Swan Hellenic brands) was the third largest cruise ship company in the world. The other major cruise ship company was Star Cruises, which sailed under the Norwegian, Star and Orient brands. The Federal Trade Commission investigated both proposed mergers to determine whether either deal would likely be anticompetitive, through higher prices, decreased capacity, or other potential anticompetitive effects.

its decisions. There was an extensive statement by the majority Commissioners<sup>17</sup>, dissenting statements by the minority Commissioners,<sup>18</sup> a speech by the head of the Bureau of Competition (the legal bureau at the FTC that handles antitrust cases) explaining his decision to recommend not challenging the mergers,<sup>19</sup> and a presentation to the American Bar Association Mergers Acquisition Committee of the Antitrust Section by the FTC head economist explaining some of the relevant economic analysis.<sup>20</sup>



we conducted to assess the relevant market in this matter. Section VI - VIII fill discusses the potential theories of competitive harm from the merger and the analyses we conducted to assess these theories. Specifically, Section VI discusses the competitive effects analyses associated

15%, Star 10%, and the other cruise lines a combined 23%. Since the merger investigation ended, Star has announced the purchase of two former mothballed ocean liners, which it plans to refurbish for its Norwegian Cruise Lines subsidiary.<sup>27</sup>

Different cruise lines focus on passengers from different geographic areas, and we will refer to cruise lines based on the where the majority of passengers live as opposed to where the ships sail. However, North Americans often sail on European lines, and Europeans often sail on North American lines. In addition, ships from North American lines will sail in Europe during part of the year, and ships from European lines will sail in North America for part of the year. The market shares for North American firms (based only on the lower berth capacity of their North American lines), are Carnival (Carnival and Holland America lines) 35%, Royal

Buying a cruise can be a complicated purchase. Cruise lines often bundle related

market definition analysis is fundamentally an empirical economic analysis involving demand elasticities and costs. As described above, the market definition analysis asks whether a hypothetical monopolist controlling all cruise ships could profitably raise prices a small but significant, non-transitory amount, to at least some identifiable set of consumers.<sup>30</sup> This analysis requires assessing the likely actual loss from a small but significant (say 5%), non-transitory price increase and whether this exceeds the Critical Loss.

As discussed above, the Critical Loss value is determined by the variable margins in the industry (assuming that variable margins are approximately constant in the relevant range). High margin industries have a smaller critical loss than low margin industries because each lost sale represents more lost profits. Once the decision has been made for a cruise ship to sail, the margins in the cruise ship industry are very high since most of the costs at that point are fixed. Furthermore, since the cruise ship makes money on complementary goods and services once the person is on board, the margins are effectively even lower (some would even argue that the margins are negative).<sup>31</sup> Therefore, only a relatively small number of consumers would need to be lost for a price increase to be unprofitable. This does not mean by itself that the market is broader than cruise ships – rather one still must analyze what the actual loss is likely to be.

This is a very complex industry with many prices. Prices vary across time and across types of accommodations, itinerary, type of ship, and other factors. Quantities are also complex in that there are different types of berths, ships and itineraries. Thus, estimating demand elasticities would, at best, be highly problematic. We also had only a few years of data.



to this issue. However, we did find research that demonstrated that a monopolist using yield management would likely generate higher total

characteristics, which would be a necessary (but not sufficient) condition for a viable price discrimination market.

As we will explain below, identifying a viable price discrimination segment would not, itself, provide a viable theory of anticompetitive effects of either proposed merger, since we did not have a merger to monopoly, and the facts rejected a dominant firm theory. Nonetheless, because a hypothetical monopolist using yield management could increase its profits over competition, we concluded, following a modification of the *Guidelines*' market definition analysis, that cruise lines were a relevant product market. Put differently for those not





In the short run, the output restriction would require a reduction in passengers (for at least

of confidential data showed that this would not be a profitable strategy. Furthermore, competing firms with ships in the foreign markets could reposition their ships to the North American market, making the capacity shift by the merged entity even more unprofitable.

For *future* capacity reduction theories, a very important fact was that industry participants already had commitments to future capacity that would very substantially increase industry capacity (a large number of ships are on order that will be delivered between now and the end of 2005). There was no viable theory by which the merged entity had the ability and incentive to meaningfully impact industry capacity for at least several years. We also conducted financial analyses of the profitability of adding new ships for the merged entity to assess its incentives to reduce capacity in the future. These are discussed in Section VIII. These analyses assumed that prices would fall as new ships were built (based on our estimates of price elasticity) so that one of the costs of building new ships was the lower profits on existing ships. Even after the current ships on order are delivered, the analyses showed that the merged entity would find it profitable to keep building new ships. In addition, various industry participants, large and small, continued to announce commitments to new capacity during and after the investigation.

Finally, we assessed whether the merging pa

offset the losses from running a ship with empty cabins. As a result, the incentives to increase prices unilaterally as a result of a differentiated products theory may not exist.<sup>50</sup>

**A. Current State of Competition in the Cruise Industry**

Cruise lines market, sell, and price to effectively sell out the ship. This goal is largely achieved, even when substantial increments of capacity are added in a short period of time. In addition, the cruise industry has been expanding rapidly for a nu

extent of competition and to look closely at whether conditions were conducive to coordination and whether the merger was likely to change the nature of competition in the market.

## **B. Likelihood of Price Coordination: Complexity, Transparency and Incentives**

A coordinated interaction theory that involved increasing prices is complicated by the fact that a theoretical monopolist would not find it profitable to increase prices across the board. Therefore, a coordinated interaction theory involving prices would require price discrimination as well. As described in the section on market definition, a great deal of effort was made attempting to determine if there was some class of consumers that, after the merger, could be the focus of a targeted price increase. However, a theory of coordinated interaction with price discrimination adds to the complication of achieving consensus as to whom and how prices would increase, of detecting deviations, and of designing a viable and credible punishment mechanism.

As part of our investigation, we considered whether our detailed analyses of transactions-level data indicated that the cruise industry was conducive to price coordination or that there was any evidence of current coordination on price to some group of customers. The goal of these analyses was to determine the following: (1) the complexity of pricing, (2) the transparency of pricing, and (3) the commonality of the cruise lines' incentives. Several specific analyses were performed including an analysis of the relationship of prices and sales over the booking cycle of specific competing head-to-head cruises, an analysis of the extent that the pattern of prices and sales differs significantly across similar cruises, an analysis of the distribution of discounts on similar cruises, and an analysis of whether there are groups of passengers for whom pricing patterns differed in a way that suggesting less elastic demand.

### **1. Complexity**

Reaching consensus on prices in this industry would not be an easy task due to the complexity of pricing. At any point in time there are a large number of cruise prices. Individual sailings open up for sale twelve to eighteen months before the ship departs. The four major cruise companies have a combined 75 ships in their six North American brands: Carnival, Holland America, Royal Caribbean, Celebrity, Princess and Norwegian. If each ship were sailing seven-day voyages, each ship would have 50 to 75 voyages with tickets available at any given time. Conservatively, that would be 3,750 voyages.<sup>56</sup> Each ship has ten to twenty different cabin types, in four major categories – interior, ocean view, balcony and suites. Conservatively, that leads to 37,500 different products for sale at any given time. However, there is at least twice that number of prices, since the cruise lines have both individual and group prices for almost all cruises. At a minimum, there are 75,000 prices at any given time before we discuss discounting. The cruise lines often offer targeted discounts to past passengers or passengers from certain localities, and often give special deals to select travel agencies. The cruise lines also often use upgrades as a form of discounting. Many passengers buy their plane tickets through the cruise lines that purchase blocks of seats from the airlines. Since the cruise line often “charge” significantly above or below their negotiated price with the airlines (in terms

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<sup>56</sup> The average voyage length for sailings in our data is just under 7 days, with 52% of cruises 7 days, 31% less than 7 days, and 17% over 7 days.

of the implicit airline price in a bundled offering), the prices that the cruise lines charge for the airfare allows them to increase or decrease the effective prices of the cruise for passengers flying from every different airport. In effect, this could lead to almost 200 times as many prices on any given day.<sup>57</sup>

Any coordinated interaction theory would need some way to reduce the complexity of this large set of prices, both in reaching consensus on what the collusive prices should be, and in monitoring them to detect cheating. We thus looked at whether there were systematic relationships in pricing that might reduce the number of prices about which consensus regarding coordination would be necessary. One possibility was to find groups of prices that were highly correlated. For example, if there were fixed premiums for different categories of interior cabins across sailings, then the firms would only need to coordinate one price for interior cabins. While the premiums for higher quality cabin categories were fairly consistent in the brochure prices, for the sailings that we analyzed, there was considerable variation in relative transactions prices across types of berths. Another possible example would be if consecutive sailings could be combined to reduce the number of prices. However, demand for cruises is highly variable from week to week.

We also consider whether for a particular cabin category there would be a single price (perhaps the “early” price) that could be the subject of coordination. For this to be feasible, there would have to be fairly standard pattern to prices of the booking cycle. To assess whether such patterns existed, we conducted a number of analyses of the relationship between early and later transactions prices. First, we considered whether prices tended to fall through the booking cycle. While it might seem likely, *a priori*, that transactions prices fall over the booking cycle, this is not generally true. Although on average across all cruises in a given season later prices are lower than earlier prices, on any given cruise, transactions prices can fall or rise, or go up and down through the booking cycle. This is shown in Figure 1, which is just one example of the lack of a consistent pattern of prices through the booking cycle.<sup>58</sup> Thus, yield management in the cruise line industry is much more complex than starting with high prices and if necessary lowering them through the booking cycle to eventually fill up the ship. While most sailings had lower average prices later in the booking cycle, the distribution of discounts and premiums also varied dramatically. As demonstrated in Figure 1, prices late in the booking cycle ranged from 55% below the early prices to 35% above the early prices.

## 2. Transparency

Cruise ship transactions prices are not available on computer reservation systems. With the large number of prices at any given time, it would be extremely difficult for cruise lines to track them all. Furthermore, while some prices are visible to competitors, such as brochure

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<sup>57</sup> The Travelocity website will give prices for cruises and airfare from 189 different airports in the United States and Canada.

<sup>58</sup> Since we are limited to presenting public information, these figures are from David Scheffman’s presentation to the ABA M&A Committee on November 21, 2002 (<http://www.abanet.org/antitrust/committees/clayton/programs.html>). The entire presentation is available at <http://www.ftc.gov/be/hilites/ftcbeababrownbag.pdf>, where larger color versions of these charts are available.

prices or prices at internet travel agents, there are many other prices that are not easily accessible. Therefore, unless the prices that are not transparent are highly correlated with some transparent price, overall prices will not be transparent. For example, if average prices were consistently a fixed discount off of brochure prices, then a competitor would only need to know the brochure price. However, our analyses did not support this type of relationship between various types of prices.

Lack of transparency would make detection of cheating difficult. At first glance, it would appear that prices in the cruise industry are transparent. Each firm publishes brochures listing prices for the various types of cabins for the various itineraries it plans to sail. However, most passengers do not pay these prices. Furthermore, many passengers will buy a bundle that includes airfare or land-based add-ons which may or may not be priced in the brochure. The cruise line can set the price of the air add-on to raise or lower the effective price of the cruise. Many passengers also receive free upgrades, which is another way for cruise lines to discount prices on higher quality cabins. Another complicating factor is that discounts on group sales are not always transparent. Furthermore, it is possible for travel agents, which sell most tickets, to rebate a portion of their commission to close a sale. Therefore, a firm may not be able to determine whether a competitor is cheating or a travel agent has reduced the effective price on its competitors cruise. The cruise lines do expend significant effort to track at least some prices of their competitors for particular sailings. They will receive information from travel agents telling them about specials being offered by competing cruise lines and they will also do some of their own research on pricing through mock bookings. This data collection, however, only gives them sporadic information on pricing about a subset of cabins and price offerings. The information is not consistently used to respond to the pricing of competitors but appears to be a piece of information used by the cruise lines to understand the pattern of bookings that they are observing for particular sailings.

### **3. Incentives**

The various cruise lines would have different incentives to participate in any collusive equilibrium. One reason is that the products offered by the various cruise lines are differentiated in many ways, such as in the quality and configuration of their ships and the itineraries that they sail. These differences will make it much more difficult for the firms to agree on which prices to increase since each firm will differ in the fraction of customers of any given type. For example, 46% of Princess' cabins are balcony cabins while only 20% of Carnival's cabins are balcony cabins. These differences give each firm different incentives and reduce the likelihood that they would be able to reach consensus on how to change prices.

Variability of demand also creates differences in the incentives of cruise lines. This raises another difficulty in reaching consensus since any collusive agreement would need to decide how to react to unanticipated changes in demand. If demand falls, the firms will need to decide when to cut prices and how far. Furthermore, since demand is unlikely to fall evenly, it is unlikely that the firms could reach consensus ahead of time on how to react to the many different ways that demand could change. Since the demand changes are uneven, the firms would also have different incentives to deviate from the original collusive arrangement.

### **C. Specific Analyses Relevant to Assessment of the Potential for Coordinated Interaction Effects on Price Arising from the Proposed Mergers**

We conducted many different analyses to determine whether the market conditions were conducive to coordinated interaction on price, either before or after the merger.<sup>59</sup> These analyses often shed light on more than one of the above elements. Some examples of these analyses are presented below.

#### **1. Analyses of Head-to-Head Cruises**

We conducted a number of analyses of the prices and “fill-rate” over the booking cycle of head-to-head cruises, *i.e.*, specific cruises of the four major competitors that had similar ships on these cruises, leaving on the same day with approximately the same itinerary. Figure 2 provides one example of this analysis. The lines track average prices each month (the months are “months before sailing”) of the booking cycle for a specific cabin type and the bars plot the sales for each month. For example, the average price pe



bookings *may* be due to competitor pricing but a shortfall can arise from a number of factors (*e.g.*, soft demand) as well. As a result, competition has only a limited impact on pricing.

Finally, we also ran regression models to test more systematically whether prices on individual sailings reacted to prices on other sailings of similar cruises. The results, although crude, indicated that competitors' prices did not have a significant impact on prices for individual sailings. There was an indication that prices were sometimes related to the level of

One potential theory we pursued was whether prices could be elevated if there was some sort of tacit coordination with respect to brochure prices<sup>60</sup> and if later transactions prices were significantly related to brochure prices. There were a number of issues in testing this theory. First, even early bookers typically pay less, often significantly less than the brochure prices. Second, it is not clear how the merger would impact such the ability to coordinate these prices. If competitors were “signaling” through pre-season brochure prices, why would the merger change anything? There was no evidence that one or more parties were “mavericks” in brochure prices that because of their aggressiveness resulted in a reduction in competitors’ brochure prices. In any event, the above analysis shows that this theory was unlikely to be viable since the overall distribution of prices varied so much from sailing to sailing and therefore was not correlated to brochure prices.

After rejecting a brochure price theory, we turned to an “early” price theory. The idea here was that *transactions* prices early in the booking cycle might provide some sort of “anchor” for later prices. To examine the relationship between early and later prices,<sup>61</sup> we analyzed transactions prices for consecutive sailings of the same ship, as well as the sailings of the same ship in the same week in consecutive years, to see if the distribution of “discounts” off the “early” prices were consistent. Figure 4, which is one example, demonstrates that the relationship between early and later prices shows no stability over four consecutive sailings of the same ship on similar itineraries. The figure shows the percentage of passengers for a single cabin type that purchased tickets at various levels of discounts.<sup>62</sup> Figure 5, which is one example, demonstrates that the amount of “discounting” varied significantly during the same week in three consecutive years. Since there were not consistent patterns or numbers of people paying the “early” price, it seemed unlikely that firms could use these prices as a reference price to coordinate their overall prices.

#### 4. Analyses of “Early” vs “Late” Bookings

Another theory of how the firms could coordinate to increase prices to a subset of consumers was that firms could increase prices to passengers that booked their cruise early.<sup>63</sup> The logic was that passengers that booked early could be more inelastic since they wanted to make sure that they got tickets for their desired vacation. Furthermore, since discounting often occurs relatively late in the booking cycle,<sup>64</sup> prices on average were lower closer to sailing. However, this strategy would require the firms to lower prices later in the booking cycle if the

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firms still attempted to sail full. Increasing the price early could drive some passengers out of the market, but combined with increases in discounts later on would also give passengers an added incentive to book closer to sailing. Pushing passengers to book later would also increase the uncertainty that the firms have on what the actual demand is for their cruises.

One analysis that we did to see if this theory was plausible was to look at average prices early and late, as well as the number of passengers

## VIII. Potential Competitive Effects: Capacity Coordination

### A. Overview

In addition to considering whether coordination directly on price was likely, we considered whether capacity coordination was feasible as a means to increase prices currently or at some point in the near future. That is, could the major cruise lines reduce capacity and cause prices to rise either by reducing future capacity additions or repositioning current capacity?

Several features differentiate this analysis from the price coordination analysis. First, transparency is not as significant an issue. New ship orders and ship itineraries are announced well in advance and the information about such orders and itineraries are readily available. Thus, firms would likely be able to detect deviations from the coordination outcome.

Second, whether the firms (as a group or individually) would have the incentive to go along with coordination is a significant issue. The industry has been growing significantly through capacity expansions and whether it would be profitable to slow down this expansion was uncertain. Thus satisfying the “consensus” component of coordinated effects may be difficult.

Third, how the punishment prong would be satisfied is unclear. How would one punish deviations from coordination on capacity? Building more capacity to punish has several

not yet met the demand for cruising and that continued expansion, at least in the near term, was likely to be profitable for the industry.

To address this issue, we developed a pro-forma model for the profitability of adding a new ship for the industry as a whole and for individual cruise lines, taking into account the impact on pricing from existing ship orders and the cannibalization effect on pricing from the addition of a ship. As inputs into this model, we used financial data on revenues and costs from actual experiences of new ships in the recent past and assumptions on the impact of additional capacity on prices. That is, we adjusted the revenues from the actual experience of previous new ships downward to take into account that the possible new ship under consideration would be launched when there was substantial other new capacity in the market. We also subtracted from the new ship's revenues the loss in revenues for other ships owned by the firm under consideration (or all other ships if we looked at the industry as a whole) caused by the addition of the capacity of the new ship.

Our analysis showed that adding a new ship was profitable not only for individual firms in the industry but for the industry as a whole.<sup>65</sup> While clearly at some point, new ship additions would not be profitable for the industry, this analysis suggested that the current marginal incentives are to add capacity particularly for individual firms. Thus, firms would have a substantial incentive to cheat on any coordination scheme, particularly since, as noted, punishment would be difficult (and not very timely) and building new ships is a way of differentiating oneself from competitors.

We also analyzed the commitments to new capacity that existed, whether such commitments could be modified and when the impact of capacity coordination, if it were to occur would happen. We found that there were substantial commitments to new capacity that would be coming in the next several years and more were announced during the course of our investigation. These commitments would be difficult to cancel. Thus the theory would involve a reduction in orders in the future for ships not yet planned and that would not be launched for at least 4-5 years. Moreover, to have a significant impact on price, several fewer new ships would have to be ordered, further making it difficult to achieve a coordinated outcome. Any such theory was considered far too speculative to provide the basis for challenging the merger.

In addition, given the long term nature of the theory of competitive concern, entry and expansion by the fringe was an important issue, particularly since reducing future ship orders would free up space at shipyards for other firms. Smaller cruise line competitors have added new ships and have plans for additional expansion. In addition, cruise lines that had traditionally targeted European passengers had announced plans to try to get more North American passengers, not only when they sailed in the Caribbean but also when they sailed in Europe. Expansion or entry would only seek to undermine a coordinated outcome (even if such entry or expansion could not entirely offset a capacity reduction by the main cruise lines, it would make a reduction less profitable and thus coordination less stable).

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<sup>65</sup> We have not provided details of our analysis because it contains confidential information that cannot be revealed.



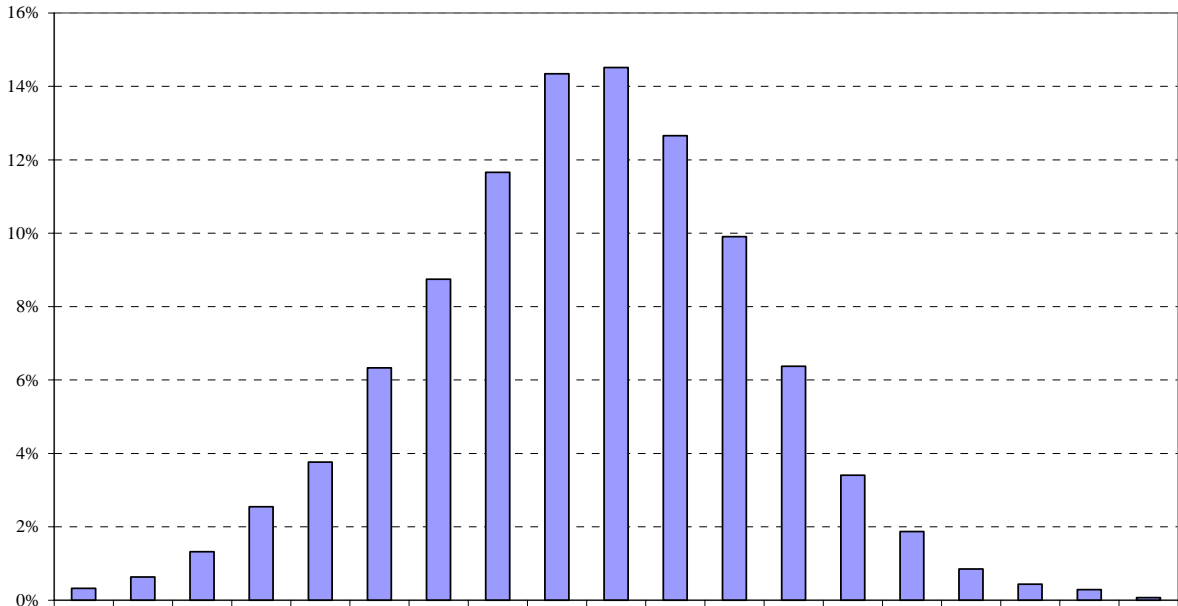


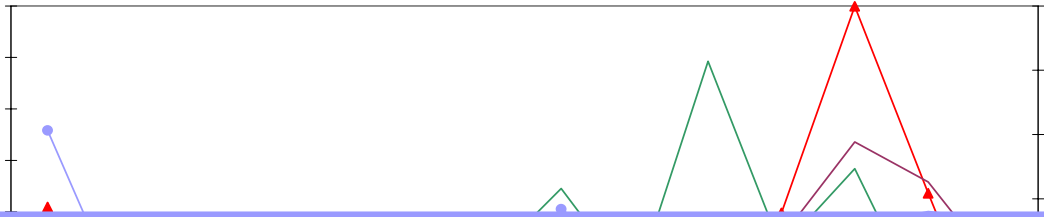
support the market, the hypothetical monopolist needed to be able to price discriminate. While a cruise ship product market would be highly concentrated post-merger, these product market weaknesses impacted the assessment of potential competitive effects of the proposed mergers. Furthermore, although the product market was based on a presumption that a monopolist could successfully engage in anticompetitive price discrimination relative to the *status quo*, this presumption was not supported for an industry that would have three major and a number of smaller competitors, post-merger.

The numerous analyses done during the investigation did not provide support for the various potential anticompetitive theories. The evidence did not support a viable theory of unilateral effects. A large number of analyses of voluminous transactions data, along with a great deal of qualitative evidence, led to a conclusion that the mergers were not likely to lead to anticompetitive effects via coordinated interaction either with respect to prices or capacity. More generally, there is much more work to be done by economists that can shed light on the potential competitive analysis of mergers. One very important line of research is to conduct retrospective analyses of mergers that have not been challenged. FTC economists are conducting a number of such analyses. Another important line of research is to develop more quantitative methods that use the data typically available in a merger investigation and that can provide reliable inputs into the assessment of the potential competitive effects of mergers.



**Figure 1: Relative Pricing Before and After 120 Days to Sailing**  
**All Cruises - All Cabins**





**Figure 5: Distribution of Passengers**

