

The FTC Cruise Line Merger Investigation

ABA Section of Antitrust Law “Brown Bag” Program

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Editor’s Note: At the end of 2001, Royal Caribbean Cruises and Princess Cruises competed to acquire Carnival Corporation, each of which is in the business of providing cruises to and from multiple locations. The three firms are the largest in a “North American cruise market,” which includes a substantial fourth firm (Star Cruises) and a competitive fringe. Within this antitrust market, either merger would have resulted in a single firm with a share of about 50 percent and HHIs that exceeded 3700.

While post-merger there would still be three large cruise lines, the safe bet would surely have been that either deal would be tanked by the FTC, even under the Muris Commission. Thus, it was a surprise when in a 3–2 vote, the FTC closed its investigation of the deals. What happened to Chairman Muris’s repeated claim that the enforcement policies of the Muris FTC would be largely consistent with that of the Pitofsky FTC? Was this decision a signal that “almost anything goes” at the FTC?

On October 2, 2002, the FTC took the unusual step of issuing a public statement to explain how it arrived at its decision (<http://www.ftc.gov/os/2002/10/cruisestatement.htm>). That statement has afforded legal and economic practitioners something more than a glimpse of why the Commission cleared these mergers (and why two Commissioners dissented, <http://www.ftc.gov/os/2002/10/cruisedissent.htm>). Anyone familiar with the work of David Scheffman, Director of the FTC’s Bureau of Economics, can see his fingerprints all over this statement.

In this issue of the Source, we offer an edited version of an ABA Section of Antitrust Law “Brown Bag” program on November 21, 2002, during which Scheffman and Competition Bureau Director Joe Simons provided yet even more detailed insight into the reasons for the majority action. (This transcript should be read in conjunction with Scheffman’s PowerPoint presentation, available at <http://www.ftc.gov/be/hilites/ftcbeababrownbag.pdf>). As Simons makes clear in his introductory remarks, this was Scheffman’s show.

The Commission statement and Scheffman’s more detailed elaboration of the bases for the Commission decision are notable in two respects. First, the explanations are clearly a huge step in the “transparency commitment” that both Bureau Directors have made to the public. Rarely have the antitrust agencies openly given so detailed an explanation about their decision to clear a merger.

Second, it is notable for what we can learn from it. It informs us (as Scheffman has been saying for some time) that telling unilateral effects stories is yesterday’s news. It instructs us about the kind of data required to defeat coordinated effects concerns. And

for some, it will cause us to wonder about the weight that the Commission will ascribe to statistical analysis offered by the parties and the staff of the Bureau of Economics. (This PowerPoint presentation is one filled with histograms and line charts with nary a statistical test, although Scheffman promises that such tests were in fact undertaken.)

The cruise line decision is controversial. But, along with that, the openness of the Commission has been instructive and even courageous in light of the heat the Commission has experienced as a result. In the late 1980s when Scheffman was the Director of the Bureau of Economics for the first time, he espoused the post mortem, i.e., the evaluation of cleared-but-close-call mergers, to determine the soundness of the Commission's decisions and to learn from experience what was and was not important in merger outcomes. Can there be little doubt that in the not-too-distant future, there will be a post mortem of this Commission decision?

—JOHN R. WOODBURY

ART LERNER: The topic for today's Brown Bag program is the FTC cruise line merger investigation and the teaching and educational tool it provides for coordinated interaction antitrust analysis. The FTC closed this investigation with an announcement on October 4. It was by a three-to-two vote; that in and of itself is a little unusual.

The decision was notable in a number of respects: First, the Commission elected not to challenge a merger that the majority of the Commission acknowledged would involve very high market shares in what they thought there was reason to believe was the defined product market. So that's unusual. Not by any means rare in and of itself, but unusual, uncommon.

Second, it's unusual because the decision itself was controversial and resulted in a public discussion of the issues by the Commission. The majority explained why they had not issued a complaint and two dissenters explained why they thought a complaint should have been issued. That offers a window into the Commission and its thinking process and creates an opportunity for us to learn more about how the analysis works and what considerations enter into it. While the vote was three-to-two, I think if you read both the majority and minority opinions, both acknowledge that it was a very close call. So the actual difference may or may not be all that great, despite the split vote. I think everybody seemed to think that the same analytical principles would apply.

We have today an extraordinary opportunity to have two exceedingly well-qualified guests talk to us about the thinking process of the Commission and its staff in the cruise line merger investigation. Our guests are the two appropriate directors of the bureaus at the FTC—David Scheffman from the Bureau of Economics, and Joe Simons from the Bureau of Competition.

We're going to ask each of them to provide some perspective on the matter, to explain to you the message that they'd like to get out, and to talk a little bit about how they approach the issues. David has brought a PowerPoint presentation that he will refer to during his comments.

JOE SIMONS: I thank Art Lerner for hosting this, and the Antitrust Section Clayton Act Committee and the FTC Committee for sponsoring this program. This is really primarily going to be Dave Scheffman's show.

What happened here, at least from the perspective of the folks in the Bureau Director's office, was quite interesting. We had two cases going on at roughly the same time—this one and another one, which is still non-public. The other case had superficially very little to recommend it, while the cruise matters looked like they were actually going to turn into a case. In fact, I was of a pretty strong opinion that the Commission was going to vote out a challenge. As we went through nine months—and Janet McDavid will certainly tell you that we went through many months of very exhaustive investigation—what happened was the case I thought was going nowhere had all the

evidence come in the other way. It was overwhelming. On the cruise case, conversely, the documents and the testimony came in, and they were ambiguous. The testimony and documents were such that if there was to be a challenge to the transactions, this would be one of those cases where the quality of the lawyers would actually make a huge difference. It was that close.

What happened as time passed, however, was that the data came in. We asked for a huge amount of data. It took some time to get it in; and then because of the way it came in, it was very hard for us to work with and put in shape. In any event, we worked with the data over a long period of time, and what it ultimately showed was really overwhelming. Dave is going to go through that in detail.

The testimonial here today, at least from my perspective, really is for the Bureau of Economics, the economists, and the data. All of those three elements are very important. It may seem unusual for the Bureau of Competition Director to actually give a testimonial for the Bureau of Economics, but most of you know that I am very sympathetic to economics. This case really demonstrates how important the economics and data can be—and particularly how important it is to get it in early and work very closely with Dave and the economists in the Bureau of Economics.

The other thing I'd like to add is that the folks in the New York regional office did an incredible job investigating this case in terms of their analytic ability and their thoroughness. I also want to thank some other folks in my office, particularly Bruce Hoffman and Robby Robertson, who did a tremendous job. And now I'm going to turn this over to Dave.

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—DAVID SCHEFFMAN

DAVID SCHEFFMAN: I want to reinforce what Joe was talking about. The case that turned out to be hot that looked at first to be a dog also turned on analysis of the data. That's the message we're giving today: Basic data analysis can make a difference in decision making. It may support or undermine support for a case. But it improves decision making. And we are working hard to convince our decision makers at the FTC that this is true.

I want to echo what Joe said about the Northeast Regional Office: the New York folks did an extraordinary job on this investigation. The New York staff and the Bureau of Economics staff worked together very closely. As theories of anticompetitive harm were developed during the investigation, we worked together to test the theories with the data.

Of course, I didn't do the data work—the staff of the Bureau of Economics did. David Meyer was the economist, who, with some very good RAs, actually crunched all of these numbers that you're going to see. He was assisted by Mary Coleman, who is of course my Deputy, and Elizabeth Schneirov, who is our assistant. Jim Ferguson was another staff economist on this case, and the supervisor was Jeff Fischer. Pablo Spiller was visiting us the first half of this year, and he was actively involved with developing some of the theories we investigated. So the work by the staff of the Bureau of Economics was really extraordinary.

There were also a number of economists on the outside sifting through and developing various analyses of these data. There were four sets of outside economists, plus our potential experts. Thus, most of the major economic consulting companies were involved in one way or another.

The idea of this presentation is to show you more of the analysis, especially the data analysis, and show you how important that data analysis was. One point to notice is that this is not complicated econometrics. This case was not decided because of complex econometric models. The case was decided on basic data analysis that any lawyer conversant with basic antitrust economics could understand. As I have said in other settings, I think econometrics can be very useful. We regularly use econometrics in the Bureau of Economics as one basis of our recommendations. But if you can't convince the decision makers about the evidence that underlies the more

complicated econometrics, you are not going to be persuasive. So my message is that you should supplement the econometrics with basic data analysis that anyone can understand.

I'm going to go through this quickly. Just to pick up what Art said, there has been discussion of the two Commission statements in this case. This is a Commission that has been extraordinary in its openness in providing guidance. For example, after the Synopsys-Avant! investigation, which was closed five-zero, the Commission issued pretty detailed statements explaining why that matter was closed. This is part of the policy of this Commission to provide more guidance about why we make the decisions we're making. And the Cruise statements were in line with that policy. For those of you who do not know, there was a much more detailed explanation of the Commission's decision making in Joe Simons's recent speech in San Francisco.¹ I'm going to assume that those of you who are interested enough in this have probably read that, which will allow me to go pretty quickly so I can get to the data analysis. This whole presentation, of which I'm only going to give snippets, will be posted next week on our Web site.² (This has the Exhibits—and many more—that I will discuss later in this presentation).

For those of you who follow the ABA Brown Bags, the analysis presented here should not be a real surprise. Mary Coleman and I presented at an Economics Committee Brown Bag on coordinated interaction a year ago. Based on our experience working on a number of merger cases involving coordinated interaction, we described our approach to analyzing coordinated interaction with very straightforward data analyses. Basically, what we did in this case was apply that basic methodology. Our paper on analyzing coordinated interaction will be available in March 2003.

Everybody knows that market definition was important in this investigation. There was a lot of evidence, both qualitative and quantitative, that indicated that market definition was going to be difficult and that the demand elasticity was pretty high. The qualitative information is summarized in the Commission statements and in Joe's speech in San Francisco. At best, the evidence in the documents was mixed in pointing to whether there was a cruises market or not. Because this was an industry that had grown very rapidly, the capacity had increased a lot over time—we were able to analyze statistically and in other quantitative ways what had happened to price, entry, and capacity in the market.

Most cases depend on a few facts that catch people's attention, that get them thinking and eventually lead to a decision on the matter. A key fact in this case was that there was a substantial change in capacity between 1999 and 2000. What was interesting was what happened following this increase in capacity: There was a very modest decline in price, although cost had declined a little also. But essentially load factors remained the same. That was a very interesting fact, if you think about it. Think about plunking down, say, 20 percent more hotel rooms in Las Vegas in one year. What do you think would happen? Room rates would fall, but you would expect the occupancy rate to fall substantially too.

What's interesting in Cruises was that it did not happen. Occupancy rates remained about the same, even with the big increase in capacity. That was a sign, certainly from the economist's point of view, that the market was likely to be broad or at least that demand was very elastic. The argument is that the market is broader if cruises are just drawing people from abroad from other vaca-

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¹ Available at <http://www.ftc.gov/speeches/other/021024mergeenforcement.htm>.

² The complete version of this presentation can be found at <http://www.ftc.gov/be/hilites/ftcbeababrownbag.pdf>. The page numbers given for charts in the discussion here refer to page numbers in this presentation.

tions. So this natural experiment seemed to indicate that demand was quite elastic even in the short run.

We did more than look at this single change in capacity. We did other analyses of changes in capacity and prices over time to estimate the demand elasticity, as the parties' economists did also, and we concluded that the short-run elasticity in this market was at least $(-)$ 2.0 and maybe quite a bit bigger, and that in the long run, elasticity might be considerably larger.

Well, then the parties came in saying that we needed to look at the critical loss, especially because Joe Simons was one of its "inventors." The critical loss in this industry is very small because virtually all the costs are fixed. So the critical loss is very low, much too low given what any reasonable estimate of the demand elasticity was, to sustain the argument that an across-the-board price increase could be profitable. And that, of course, made it clear that market definition was going to be complicated.

The data would not support an across-the-board price increase, with the usual SSNIP test of market definition. However, since this is a hospitality industry, like hotels, airlines, Disneyland, and everyone else, they use yield management. This is a well-established tool in the hospitality industry now. So while maybe an across-the-board price increase would not sustain a narrow cruising market definition, yield management might allow for a price discrimination market. Naturally, because of the relationship to airlines, we thought maybe it is like airlines in its use of yield management. The idea was to determine if there were cruise travelers that resembled airlines' business travelers—passengers who would constitute an antitrust market using the critical loss/elasticity test. So this is what we began to look for.

We had cooperation with our friends at the Department of Justice on this. Because we do not do airlines, one of their economists who worked on airline matters came over to talk about a number of issues. How did they look at market definition for airlines? Had they looked at leisure travel before? If so, how did they look at leisure travel?

In addition to speaking with DOJ, we did a lot of investigation of yield management in this industry and how it works. I will not go into that in detail now, beyond doing the data, but when the parties came in, one of the first things we said to them was, "We want to talk to your yield management people." We wanted to understand how yield management works in this industry. We met with yield management people of the four major cruise lines and spent a day or more with each of them understanding how their yield management systems work.

Looking at price discrimination from the point of view of market definition means that we are trying to determine who is the customer that could be disadvantaged by the merger. The idea was to find the customers who are being targeted now, like airline business travelers. So first we looked at characteristics of customers. Focusing on characteristics of customers was not a fruitful area because overwhelmingly sales are through travel agents, so cruise lines are not in a position to discriminate based on types of customers. Airlines do not know if you are a business traveler when you call. However, they know whether you want a ticket that can be cancelled, and then they know what to charge you.

Now cruises are not like airlines in that most bookings can be cancelled. In fact, around three out of every four cruise bookings are cancelled. We knew from the documents and depositions that the cruise lines worry a lot about whether, if they change their rates, they are going to cannibalize their own sales, as people are going to come back and rebook. So it's very different from the airlines because you do not get to anything like the level of cancellation penalties as in airlines, or if you do, it is not until fairly late in the booking calendar. Cruise booking starts eighteen months in advance, and a lot of bookings occur pretty early, as I'll show you in the data.

So we're looking for characteristics of purchase behavior in this market. The identifiable characteristics that we looked at were the type of cruise—Alaska versus Caribbean—type of cabin, and time of booking. There are a lot of types of cabins, and cruise lines compete based on this. For example, these days balcony cabins are very important. But there are also interior cabins, outside cabins, and suites. Time of booking is the airline example. So those were the obvious things that we looked at.

In doing a price discrimination market, the bar is high, as you'd better be able to identify who your captive customers are. As I've often said to our lawyers, we'd better have a three-hyphen-or-less description of what the target market is and be able to back it up. That's why we were looking for a captive group of customers that we could argue were being discriminated against now, who were paying higher prices than they otherwise would, and then the theory would be based on them being targeted. That would give you a solid market definition basis for a case. (Of course you would still, according to the Merger Guidelines need to provide and theory supported by evidence, that the merger would be anticompetitive).

As a matter of theory, yield management may give you market definition because a monopolist engaging in yield management likely would be able to raise the *average* fare relative to what would happen under competition. But exactly how a monopolist could do "better" than competition in practice is quite complicated. Under monopoly some people would pay a higher price and probably some people would pay a lower price than they would under competition. Even under a monopoly, you would not necessarily be able to target who would be paying higher prices in the sense of defining a price discrimination market by characterizing the customers. (Defining a market as those paying higher prices won't feed the bulldog. In almost all markets some customers pay more than average). And since we were not dealing with a merger to monopoly, we'd still need to solve the *SunGard* issue of what are the characteristics of the captive customers in our price discrimination market.

Does high concentration plus existing "price discrimination" mean a case? No—without a monopoly or viable dominant firm theory, you have to show that the merger has an anticompetitive effect. That there is "price discrimination" does not prove that. Now we can argue semantically about whether yield management in this industry is really "price discrimination." But yield management is not necessarily *anticompetitive* price discrimination. Yield management, in my view, is the way in a competitive market you price a perishable asset. That's what everyone does. That's what the smallest hotel in D.C. does if it knows what it's doing. It has some sort of yield management system. It does not have any market power. It's just a way of effectively pricing a perishable asset. It's not inherently anticompetitive. (That's also what small sellers do in farmers' markets in changing the price of their produce through the day). As a general matter yield management is likely to be procompetitive compared to a one price "system." More rooms are sold, more berths on cruises sail occupied, and more airline seats are filled because of yield management. Yield management itself is procompetitive compared to the alternative of selling everything at the same price. Now, that does *not* mean that yield management may not be the source of a case, because yield management could be used, as appears to be the case in airlines, to raise prices to business travelers in concentrated markets protected from entry. That's the sort of thing we were looking for. Can we find the cruise equivalent of "business travelers" who are targeted in a very concentrated market?

Let's go to a brief discussion of competitive effects—unilateral effects or coordinated interaction on price or capacity. First, let me touch on unilateral effects. The original Commission statements produced some confusion and rhetoric on the outside about "what happened to unilateral effects"

But yield management is not necessarily anticompetitive price discrimination. Yield management, in my view, is the way in a competitive market you price a perishable asset. That's what everyone does.

in our investigation? After all, the merger would create a firm with a share of more than 50 percent. Well, the problem again is market definition. As a theoretical matter a monopolist practicing yield management will be able to get average rates up, compared to competition. Now, the issue is what would you do if you have a 50 percent share? If you have a 50 percent plus share, what you might try to do is wait a little longer before reducing your price and see if people will buy at the higher price. The problem with that is what the competitors are doing. Yield management looks for people who are “willing to pay.” A dominant firm in such a situation is simply freeing up targets for what the competitors are naturally doing. This is not a facilitating or non-accommodating response; this is just the way competition works in this industry. If there are customers out there who are willing to pay \$1100, but you’re the dominant firm and you’re going to hold out with \$1200, it’s likely that your competitors are going to find those folks because they’re looking for them and they’re going to book them. The 50 percent share firm will have lost them, and remember, because critical loss is so low, this means that waiting longer at a high price is not going to be a profitable strategy. Put differently, you don’t have a 50 percent share of the people willing to pay \$1200, etc. Again, this is a subtle point, as this is not a competitive response sort of theory; it is the way competition works in this kind of industry.

So unilateral effects analysis would not work based just on share. In addition, there was no basis for making any sort of closest competitor argument. All the cruise lines have a range of different cruises and itineraries in which there’s a lot of overlap. Since Joe’s speech explains more of the analysis of unilateral effects, I’m going to go on to coordinated interaction.

Very quickly, everyone on the staff concluded that we needed to have a theory of anti-competitive price discrimination through coordinated interaction that would be facilitated as a result of the merger. What was interesting about coming back to the Commission, after having been there for ten years in the 1980s, is that there have not been many coordinated interaction cases lately. In the 1980s, almost all of our cases involved coordinated interaction, and we had an approach to analyze them. For example, look at the Warner Polygram litigation and a number of others. In part, the analysis of coordinated interaction has been “lost” because very few coordinated interaction cases were brought in recent years. Most were unilateral effects cases. There were three-to-two cases, but the “baby food” case indicates that you do not have to argue very much about coordinated interaction in the three-to-two cases because there are so few players.

So, in this industry, post-merger there are going to be three substantial competitors and a fringe (which has shown it can expand and redeploy). This means that the current state of competition in the industry is going to be very important to the analysis, since the coordinated interaction theory has got to be that the merger is going to change the nature of competition. You’ve got to know about what the current state of competition is in some detail and then be able to argue why it’s going to change as a result of this merger.

This is a relatively new and dynamic industry. Capacity has increased tremendously over the last ten years, and quality has gone up, while prices and costs have gone down. New capacity and quality features are the main drivers of competitive activity in this industry. Building bigger and fancier boats is one of the prime means of competition. New ships have skating rinks and rock climbing walls and almost anything you can think of because the modern cruise ship is like a Las Vegas hotel.

As capacity has increased very substantially over time, there has been a general modest decline in average fares and costs, yet concentration has also increased. There had been some acquisitions in the past, but concentration is mostly changing because of internal growth—people building more ships. So the question for a coordinated interaction case, at least from an econ-

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omist's point of view, is whether there is a credible basis of concern that the state of competition will be significantly adversely affected by the merger.

Now let me tell you about the complexity of this market. At one point in the 1980s, we probably would not have gone very far with this case because of the complexity. There are lots and lots of different itineraries. Ships go to Alaska, they go to the Caribbean, they go to Mexico and the Panama Canal, and they go to Europe. There are lots and lots of different types of ships. There are lots of different cabins on a ship. Different ships have different services. Sales are made through travel agents. There are group discounts. There are vouchers for on-board benefits. There are upgrades, which are very important. So you have a lot of arguments for why this is a really complicated industry. If we analyze things like the Commission did in the 1980s, certainly what the economists would have said, and I suspect the Commission would have agreed given the sitting Commissioners at the time, that this is just too complicated an industry for a *price* coordinated interaction case. (I will discuss coordinated interaction theories based on *capacity* below).

Together with the lawyers, we developed a lot of evidence bearing on coordinated interaction. It is a concentrated "market." These companies do look at one another. They try to monitor what each other company is doing. So now I finally get to why I'm here. Joe and the three Commissioners, I think, would say that this case turned on the data. The parties produced over 100 gigabytes of data. That is a lot, and the reason for the huge amount is to some extent a lack of cooperation by the parties. That's why in second requests, we sometimes say just give us all your data because you will not sit down with us so we can tell you what we want and why we want it. David Meyer and RAs spent a lot of time getting it down to a workable 10–20 gigabytes.

The data were the actual transactions data—the bookings (that "stuck," i.e., for which someone actually paid and sailed) on all the ships, for the last few years, for the four major cruise lines. In my view—and this was the message of my presentation with Mary Coleman at the Brown Bag a year ago—the details of the current state of competition provide important evidence in assessing a coordinated interaction theory. You need to understand the current state of the competition in terms of the actual transactions data. These transactions, these bookings, told us what cabin they bought and sailed in, what itinerary, what date, what ship, all that sort of stuff.

Now I'm going to talk quickly to show you some of the data analyses that we did. The first thing we did was to look at the data. We were interested to know a number of things. The parties say, "We try to sell out." Well, hotels try to sell out and airlines try to sell out, too. But the cruise companies say no, we really do sell out. So we wanted to see whether that was true. We found that, for the most part, they do sail very close to full. We also wanted to see whether there really was a lot of variability in prices. We wanted to see how variable the pricing on, say, balconies was relative to the variability of pricing on inside cabins. So what we did was look at the data in detail, rather than begin with econometrics.

This exhibit is an example of one of the first things we did—a chart (p. 24 of the full Web site presentation³) showing the same ship sailing a similar itinerary four consecutive weeks in a row. These lines are the average price of bookings for each sailing for a given month. These are months before sailing, starting with a time thirteen months or more before sailing, down to the last month before sailing. This is for a particular type of cabin. These are the average prices during a month, but we looked bi-weekly, and we looked in lots of other ways, and this is an example. Most

³ Available at <http://www.ftc.gov/be/hilites/ftcbeababrownbag.pdf>. The page numbers given for charts refer to page numbers in the Web site presentation.

of the examples I'm showing you are among a number of different things we looked at. These bars on the chart are what percentage of the sailing's bookings occurred during that month. So, for example, at this very high price there were hardly any bookings. You do not see much of a red bar down there, so you know there were only a few bookings at a very high price.

We studied this kind of stuff for a long time. We said, let's look at the same ship sailing four consecutive weeks on the same itinerary and think about the variation of prices and bookings we see, and try to think about whether we have a systematic theory of pricing. What we saw was complicated. For example, there's a belief in the industry that prices for a given sailing fall over time. But notice in this example that for two of the sailings prices significantly increase towards the end.

As this chart shows, and lots of other data runs we did confirm this conclusion, prices move all over the place. One reason why there is this price variability is that the cruise lines are going around making all sorts of offers, working with travel agents in certain regions on special deals, trying to find people who will buy a cruise. For example, they may go to travel agents in Cleveland with promotions, and they may or may not get some customers. If not, then they go to Arizona or somewhere else. So you get this kind of pattern—as sometimes they have to have the price lower or higher or whatever. Yield management sounds complicated, and it's somewhat technically complicated, but it's something more like the Faneuil Hall market in Boston, and how the different vegetable stands would work as the day wore on. As vendors wanted to get rid of their stocks, they would bargain with customers, and different people would pay different amounts for the same five pounds of tomatoes because sellers were trying to get rid of the tomatoes, which were worth nothing if they didn't sell. That's in crude terms what's going on in the cruise market.

Probably the single most important factor in people's thinking about this case arose from data for head-to-head cruises. Remember, this is the transactions level data, and it is really quite extraordinary to be able to do this type of analysis. This chart (p. 26 of the full Web site presentation) is for four head-to-head cruises—four different competitors, sailing similar ships, from the same port, the same week, for a particular type of cabin. This is the same as the earlier chart, in that the lines are the average price of a cabin booked in that month, from thirteen months out to the month before sailing, and the bars show what percentage was booked in each month. Well, these are head-to-head competitors. This is *not* what you expect to see arising from head-to-head price competition. Look at this and tell me where that is? Prices are not responding. You can do correlations, but this shows why it's so good to look at the real data. We could have said these data are not correlated, which they are not. But looking at the actual data, you see some prices going up, other prices are going down.

You have one ship which is really late in getting bookings, so they're lowering prices at the end trying to fill up their boat. Meanwhile, another ship is going along and pretty much holding around the same price. It's pretty daring, but it has more of a pricing strategy flavor—okay, I've got this price and I'm going out to try and sell my boat. That seems to work for that cruise, but the other ships seem to have to find pockets of people around the country to fill up.

This was actually consistent with what the yield management people told us about how competitive pricing figured into their own pricing. They said it was a factor, and that they do spend a lot of time trying to monitor it, but they said it was often not very important to the extent that it actually changes their tactical pricing. We knew they were prepped and that's what they would say, but that's why the data were important, because it actually looks to be true that there's really not much relationship between prices.

If you look at the figure, what appears to be moving the prices of the different ships, at least in part, is their load factors. When they're not very full, they are likely to cut their price, and when they

are getting pretty full, they may hold or raise their price. But it's actually a lot more complicated than that, as we found from doing statistical modeling of it—i.e., there is not a close statistical relationship between load factor and price trends through the booking season. The relationship is much more complicated and more specific to the circumstances of the specific cruise.

Returning to coordinated interaction theory, I think of coordinated interaction theories as being in one of four categories. First, we have the small numbers theory, 3 to 2 mergers for example, which because of the “baby food” cases have a very strong presumption that they are illegal. But more generally than that we have cases in which we are able to show the number of competitors actually makes a difference. The data may show that there's a correlation between the level of prices and the level of concentration or the number of competitors. Another theory comes from dynamic oligopoly theory. The focus of this theory is: Are the facts consistent with achieving a consensus, detect deviations, and the punishment of deviations? (See, for example, the European Court's decision in *Airtours*).

Third, you have the theory of the maverick, which Jon Baker has written a lot about. These cases can be easy, as you've got a good argument. The factual argument is that the maverick is going to be absorbed by one of the non-mavericks. In markets where the maverick can be demonstrated by sound evidence that it is really important to the state of competition, that's obviously an easy case.

And then finally, is there evidence of existing coordination?

We did an analysis of these coordinated interaction pricing theories. We tested the small numbers theory. We did that in various ways. We looked at concentration in different areas, such as in Alaska versus the Caribbean (and many other comparisons), and we analyzed how changes in concentration over time impacted prices in these geographic areas. Essentially we analyzed what we call a “natural experiment.” (This sort of natural experiment analysis is one of the most important tools in analysis of mergers).

As I mentioned before, the growth of the cruise industry has led to increases in concentration but also to falling prices. In addition, to this general macro data trend, our analysis of individual geographic trades did not show a relationship between the number of parties and “price.”

The next thing we looked at was whether we could find something equivalent to the airline business traveler. We did a lot of analysis trying to identify the cruise equivalent of the business traveler. One of the first things we looked at was cabin type. There are balconies, there are suites, there are inside cabins, and they vary significantly in price. So, was there effective price discrimination? This is an area in which Pablo Spiller helped us with the theory. He said, well, if you have more effective price discrimination in balconies, what you should see is a different distribution of prices. You should see a tighter distribution of prices for balconies compared to the distribution of prices for inside cabins. Essentially, you might see everyone in a balcony cabin paying “close” to the same price, but then you see inside cabin prices all over the place as they were just looking for cabin purchasers to fill up the ship.

So both BE and the parties looked at that theory in the data. We did various summary statistical measures like coefficient of variation, but I'm a practical guy so I say I want to see the histograms. This histogram (p. 31 of the full Web site presentation) shows the percentage of the sales for two different cabin categories at various prices. This is one representative example for one sailing, which showed there was no evidence that there was a difference in the distribution of prices for outside cabins than for inside cabins. If you look at the variation in prices, outside cabins did not look different than inside cabins, instead of more grouped together at the high end if outside cabins were a price discrimination market. That's not surprising, because it goes to whether

cruises are the market, as people are making the decision of whether to go on a cruise or take some other form of vacation. So people who buy balconies are thinking about having a balcony or going to a fancy Caribbean resort and people buying inside cabins are thinking about doing that or driving to Disneyland. So it's not obvious why there would be a difference in distribution of the prices.

The next thing we looked at was time of booking. Is there a relationship between the time people book and price? Is there something systematic happening like the cruise lines are harvesting early bookers or late bookers? Remember, in the airlines it's the late bookers that are harvested but it's more complicated than that. It's late bookers who will not purchase non-cancel tickets.

This slide (p. 34 of the full Web site presentation) is very complicated, and you'll have to look at this on the Web to digest this. Cruises are booked over a period of roughly eighteen months. What we did is analyze the percentage of cabins booked at different time points. We looked at a number of different measures. So, in this example we looked at how many of the ships' berths were booked 120 days or more out from the date of sailing. What this bar graph shows, and this is across all sailings, is what percentage of all sailings had sold what percentage of their cabins by 120 days prior to sailing. So this 55 percent bar here says that ships for which 55 percent of the berths were booked 120 days or more out account for about 8 percent of all sailings. So about 8 percent of all the cruises we had transaction data on had 55 percent of their sales more than 120 days out. What this summary measure shows is that there is no consistent pattern as to when sailings are booked—that it is all over the place. So, one idea was to see if cruise companies could get people to pay higher prices closer to the time of sailing. The problem is you cannot tell how fast people are going to book. Any given ship may book up really fast or it may book up slowly. It's very hard to tell ahead of time. Yield management is about trying to manage what happens when the average does not happen. So there's just tremendous variation in bookings.

Remember why 120 days is important. Most of the bookings are made when there is not a significant penalty for cancellation. In fact, something like 3 of 4 bookings are cancelled. So it's like the leisure air travel market, and as far as I know, I do not think that DOJ has brought an airline case specifically on the leisure market as opposed to a fortress hub case focusing on business travel. But again cruises are different in some important respects than airlines. If you add a new airline that goes between Dallas and Des Moines, load factors are going to go down on that route and fares are going to go down. What's different about cruises is you always find enough people to essentially fill up your boat to practical capacity on average over all the seasons.

The last main theory on price we investigated with the data was stimulated by the lawyers. In depositions and documents there were indications that the cruise companies cared a lot about what the price was early in the booking season. The reason for this is the way yield management systems work, which is that you try and calibrate the system to get out there with the right early price and then work off that. So it's understandable why they were concerned about that because that's the fundamental input of yield management. So the theory was, well, yes, this pricing is really complicated but, it's simple because they'll just coordinate on the early price and they'll raise their early price and that'll drag all the other prices up.

Now my first reaction to that was, wait a minute, that's the list price theory. That's like taking an industry where there are list prices and saying there seems to be coordination on prices because the lists are similar. But the problem with that is the actual transaction prices might be all over the place. We already knew that transaction prices were all over the place, so this was not much of a theory. But it needed to be tested, so we looked to see if there was a relationship between the early price and what prices were later. We looked at this in a lot of different ways. We looked at the data

and found a price that seemed to be the early booking base price and then looked at what percent of this price did the later bookers pay. What this chart (p. 36 of the full Web site presentation) shows is that the discount off the early price varies a great deal. That is, there is no systematic relationship between the early price and what happens later, which is not surprising if you set the early price wrong. If you set the early price wrong, you are going to have to lower your price a lot or you may not drop it as fast or you may even raise it. That led us to another analysis.

This chart (p. 39 of the full Web site presentation) looks at the difference between the average price for bookings made before and after 120 days prior to sailing. It shows the distribution for all cruises for three years. For example, for 14 percent of all cruises the average later price was 15 percent below the early price. But for 6 percent of all cruises the later price was 5 percent higher than the early price. In essence, they made a mistake and set the early price too low. So again, it's all over the map. There isn't a systematic relationship between the early price and the later prices.

We did a number of other analyses. We did statistical and econometric analyses of all sorts. For example, we did various correlation analyses. We also tried to model econometrically the relative importance of competitors' prices versus load factors and other things on pricing. David Meyer tried a lot of different models and found nothing conclusive, other than the fact that on average the load factor was more important than anything else, but even that was not very consistent as an explanatory variable. All of these analyses informed the way we thought about things, and then we translated it into something that the lawyers and Commissioners would find was credible evidence.

At the end of this data analysis, I think staffs were in agreement on the viability of a pricing theory. We did not have a viable pricing theory. We had a problem with market definition, although we thought we could sustain that in court—at least for a hypothetical monopolist. But we had a real problem with a viable price theory, given what the data showed.

The obvious thing, the easier thing, would be to focus an anticompetitive agreement on capacity instead of price. But there were a number of problems with a capacity theory. First, there was a lot of capacity already committed to coming on line in the next few years. The industry was going to increase capacity almost 30 percent over the next few years—a very rapid increase. Most of these commitments were firm. And the history in this industry showed that any cruise ship that can still sail will, as we've had cruise companies go under and someone else gets that cruise ship and sails it.

In assessing the viability of capacity theories we did a lot of financial analyses. In one of our financial analyses, we looked at the profitability of adding ships taking into account potential cannibalization. We looked at coordination industry-wide or by hypothetical colluding groups. We did a lot of analysis of various types that looked at the profitability of redeployment. (Another problem with capacity theory, consistent with some of the analysis in the European *Airtours* decision, was that in Europe the big travel agents entered and added capacity, about 30 to 40 percent capacity increase, in a couple of years. This suggested a possible problem with showing entry barriers.)

Let me conclude by stating that data analysis is not a one-way street. Data analysis in this case may have rebutted the coordination case for some Commission decision makers, yet in the other case Joe talked about, it has provided important support for a case. So data analysis is not the secret for getting difficult cases through. We won't know until we analyze the data. In any event, we're going to ask for all the data we need and we won't stop asking until we get it. We're going to analyze it. You can look at our best practices on the Web site. If you meet us halfway, we'll tell

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you what we're doing with it, we'll tell you what results we're getting. We're interested in hearing your ideas and seeing what you have. Janet McDavid can tell you about how she worked with us on that.

Finally, importantly, what I reported was not "rocket science." It was basic economic and financial analysis of data that anybody (you do not have to be an econometrician) could understand. Even though there was in some cases econometrics or statistics underlying the analysis, we are able to present the analysis in a way that the decision makers could fully understand and assess its weight in light of other evidence in the investigation. ●