FEDERAL TRADE COMMISSION

COMPETITION AND CONSUMER PROTECTION
IN THE 21ST CENTURY

MERGER RETROSPECTIVES

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FEDERAL TRADE COMMISSION

I N D E X

WELCOME AND INTRODUCTORY REMARKS

MR. KOBAYASHI: My name is Bruce Kobayashi, and I’m the Director of the Bureau of Economics here at the Federal Trade Commission. I would like to welcome everyone to the 13th Hearing on Competition and Consumer Protection in the 21st Century. And today’s hearing will focus on merger retrospectives.

Before we get started with the substantive portion of the day, I have a few announcements that I’m required to read. First, please silence your cell phones and other devices. If you leave the building during the conference, you will be forced to go back through security, so please keep this in mind, especially during our relatively short lunch break. For those of you who don’t want to leave the building, there is a cafeteria on the 7th Floor that everyone can use.

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Question cards are available in the hallway on the information tables immediately outside the conference room. Staff will be available to collect your question cards and provide them to the moderators to pose to the panelists. Please pass your cards to the end of the aisle to be collected.

All right, that's over. My final task is introduce our opening speaker. Let me say that I think the organizers of this hearing made a great choice. The speaker is the Chairman of the FTC, Joe Simons. Even setting that aside, he would be a great choice.

Chairman Simons has been a consistent supporter of the continuation and indeed the expansion of the FTC's merger retrospective program, a lot of which -- most of which takes place in the Bureau of Economics. Indeed, I can go back to my very first conversation I ever had with Joe. And that conversation was dominated by many of the topics that will be covered by the four panels today.

So it's great to have a Chairman that appreciates both the historical, ongoing, and central role of merger retrospectives and the FTC's important and longstanding commitment to self-evaluation, criticism, and learning. So with all that said, it's my pleasure to introduce our opening speaker, Joseph J. Simons, Chairman of the FTC.

(Applause.)

INTRODUCTORY REMARKS

CHAIRMAN SIMONS: Thank you, Bruce.

Well, good morning, everyone, and welcome to our hearing on merger retrospectives. I've been waiting a long time for this. One of the primary reasons for holding our Hearings on Competition and Consumer Protection in the 21st Century is to see how we are doing in terms of merger enforcement. Are we doing it the right way? And, if, not how do we fix it?

Achieving this purpose could also have an important effect on refreshing the strong bipartisan consensus on merger enforcement that existed for the past two decades or more. My belief is that merger retrospectives can play a critical role in making sure that our merger enforcement approach is on the mark and done with a strong bipartisan consensus.

In instances where merger retrospective studies are feasible, we can directly test whether a decision to seek relief was appropriate or not and whether remedies were effective in those cases in which we did obtain relief. We can also use retrospectives to test the tools that antitrust agencies use in analyzing anticompetitive mergers, such as GUPPIs and merger simulations.

That our methods of analysis make sense in theory is, of course, very important, but if they don’t enable us to make reliable predictions in practice, what good are they? We need to understand whether our tools reliably predict merger outcomes or whether they result in too many false positives or negatives.

In addition, merger retrospective studies can be an important asset in persuading courts to block anticompetitive mergers. First, merger retrospectives can help validate prospective merger review tools. Testing the efficacy of these tools can demonstrate to the courts that these tools are effective in identifying anticompetitive mergers.

Second, retrospective studies can provide an empirical basis for a merger challenge. For example, these studies can help to persuade a court that a merger is anticompetitive by showing that similar mergers in the past resulted in anticompetitive outcomes. I see merger retrospectives as critical to ensuring the success of our merger enforcement program. Consistent with our tradition of self-examination, the FTC has been at the forefront of conducting retrospective studies. FTC economists have authored or co-authored more than 25 studies that have estimated the effects of mergers on competition.

Merger retrospective studies have previously demonstrated their value to the Commission’s past enforcement efforts. In the 1990s, the Government lost a large number of hospital merger cases in a row, and the agencies actually considered whether to give up their hospital merger enforcement program. The Commission did not. Instead, under the direction of then-Chairman Muris, the Bureau of Economics conducted empirical economics studies that demonstrated the anticompetitive effects of certain past hospital mergers. These retrospective studies were critical in subsequent hospital merger challenges.

But despite prior successes, merger retrospective studies raise a number of methodological and feasibility questions. And there are questions about what an optimal merger enforcement retrospective program should look like. There is also a practical challenge in performing a large number of merger retrospective studies that may be needed to fully understand the effects of our merger enforcement program. Merger retrospective studies are time-consuming. They require significant resources and data, so we need to understand how to best allocate our available resources in this area.

In particular, we should consider whether and how the Commission can work with outside researchers on retrospective studies. That will also be a way potentially to improve transparency.

Today's hearing will address many of these issues. The hearing will feature four panels addressing distinct sets of these questions. The first panel will focus on what we've learned from existing merger retrospectives. This panel will address questions of what are the requirements of successful retrospective studies, which industries are good candidates for such studies, and what types of questions may be effectively answered with merger retrospective studies.

The second panel will focus on the use of merger retrospectives in prospective merger analysis. This panel will discuss how we can use merger retrospective studies to test the efficacy of economic tools used to forecast merger outcomes. The panel will examine what has already been done to test our economic tools and also discuss potential approaches for further testing of these tools.

In addition, the panel will discuss how merger retrospective studies could be both used for qualitative and quantitative analysis in studying merger effects.

The third panel will address the question of how the findings from merger retrospectives should influence merger policy. It will also discuss how retrospective studies should influence the case law.

And, finally, the fourth panel will focus on what should the FTC's retrospective program be over the next decade. I hope we will have a very lively, thought-provoking, and informative discussion today. And, in fact, I'm very confident with these panelists that we will. It is only through vigorous debate and exchange of ideas that we can help to build a consensus on our antitrust policy and particularly our antitrust merger policy.

My goal is to make it easier to achieve -- my sense is that it's easier to achieve this goal if we have good quantitative evidence to rely on and, of course, the merger retrospective studies would be critical to that.

Before I leave, I want to welcome all those attending the hearing from outside of the FTC. I would also like to acknowledge the efforts of the staff of the FTC, notably the Bureau of Economics, the Office of Policy Planning, the Office of Public Affairs, and the Office of the Executive Director. My fellow FTC Commissioners and I are very grateful to all of the people who have contributed to producing this impressive event, including and especially our speakers.

Thank you all for attending, and I hope you enjoy today's program. Thank you.

(Applause.)

PANEL: WHAT HAVE WE LEARNED FROM EXISTING
MERGER RETROSPECTIVES

MR. GREENFIELD: I'm going to introduce each of the speakers, and then they'll come up to give their opening remarks. Leemore Dafny is the Bruce V. Rauner Professor of Business Administration at the Harvard Business School and a member of the faculty of the Kennedy School of Government. Jeff Prince is a Professor and the Chairperson of Business Economics and Public Policy at the Kelley School of Business at Indiana University.

Christopher Taylor is a Deputy Assistant Director in the Antitrust I Division of the Bureau of Economics at the FTC. And John Kwoka is the Neal F. Finnegan Distinguished Professor of Economics at Northeastern University.

Leemore.

MS. DAFNY: Thank you so much. I want to start by thanking the organizers for inviting me here today and also all of my fellow colleagues at the Bureau of Economics and the Federal Trade Commission. So I was asked to kick things off by summarizing what we know -- this is panel one -- so what we have learned about the healthcare sector from merger retrospectives.

So I'm going to kick off with a subject we know most about, which is hospital mergers. And up there, you can see the leading comment there is a real understatement. Hospital mergers are well-studied. In fact, I'd venture a guess that most in this room have probably been involved in a hospital merger. So they're certainly very well-studied.

I've only listed on there -- and the font is a little small, so it's probably for the best -- two of the most recent studies of which I'm aware, but there is a very, very long list of studies. And the evidence basically confirms that mergers of close rivals lead to price increases, okay? And the quality effects of these transactions, where they've been studied, are also generally negative. Now, most of these studies use differences-in-differences methodology where they compare the price effects of merging rivals with the price -- with, you know, parties that did not merge. Sometimes they will get rivals. Sometimes these studies address selection into merger, and we'll talk about that, no doubt, during our panel discussion.

You might call these event studies or reduced form studies. Right, some recent studies engage in what's known as structural model estimation.

And what they do is they use data from a given point in time, and then they build a model and estimate parameters that generate the state of the world as best as possible. And when you have that model and those parameters, you can then use them to simulate what-ifs. What if there is a merger? What if there is a conduct remedy?

So it’s a very flexible approach, and some of these studies have concluded effectively that elements of insurance plan design really ought to be incorporated into merger review. Elements of the insurance market which are not quantitatively involved in the standard workhorse of hospital merger review probably belong in there, so we’re gaining insights from these studies on the state-of-art methodologies that we ought to use.

More recently, and, yes, yours truly is involved, there is empirical evidence -- I expect we’ll discuss it during the course of the day -- that combinations of hospitals across geographic markets, so not just within markets where the hospitals are competing head to head for the same patients but combinations of hospitals across geographic markets are associated with significant price increases, okay, and some limited evidence of cost reductions. So that covers hospital mergers.

Everything else relative to hospital mergers we know a little bit less about, but you should think of it in a way on the hospital front as an embarrassment of riches because we do know a reasonable amount from merger retrospectives in the healthcare sector.

And I would say that the research there is growing. There are substantial findings on physician consolidation, both horizontal and vertical. In these cases again, price is most commonly studied, although there is a recent study by some economists here from the FTC, including Tom Koch and Nate Wilson, who have found adverse quality effects associated with vertical integration of hospitals acquiring physician practices. So there's lots of evidence that that leads to higher spending and to higher prices of services.

And now there's evidence there don't appear to be quality improvements, if anything on the contrary. There are some studies I've done myself on merger retrospectives in the dialysis industry, and the evidence suggests -- is consistent with price increases. I would say it's little bit less conclusive than the other studies.

In terms of what we know about insurance markets, I'm pretty sure this hearing is joint with the Department of Justice who does the insurance market. Is it? No, okay, but they do the insurance market reviews. And it's also a personal area of interest, but -- and clearly a relevant piece of healthcare markets. There are two merger study retrospectives of which I know, and they, too, find that when insurers gain concentration in local markets that premiums for insurance go up. And those studies do, I think, a reasonable job -- I am clearly biased -- of controlling for factors that might otherwise have led to price increases.

And, finally, there's a vast literature on pharmaceutical mergers, including something by a panelist who will be speaking later in the day. Most of those studies -- there are exceptions -- but most of them focus on how pharmaceutical mergers impact R&D investments and innovation, which is distinct, so that life sciences focus is distinct from what we're seeing in the healthcare services or insurance landscape where the focus really has more been on price in the pharmaceutical merger space. Generic companies, generic combinations aside, a lot of the focus is on what happens to R&D, what happens to innovation.

Okay, so kind of to summarize, I would say that the merger retrospectives to date, most of them have been horizontal, hence the lead to the slide. There are some vertical merger studies, in particular the hospitals acquiring the physicians. But in the wake of the new combinations we are seeing, we don’t have much information from prior retrospectives on what we are likely to see, be it on the insurer PBM mergers, the health insurer PBM mergers. We don’t have much prior on that. We don’t even have a horizontal PBM merger retrospective, pharmacy benefit manager. So there’s definitely room for additional merger retrospectives to inform our understanding of the transformation that is going to be taking place and is already taking place, particularly on the vertical side.

And last I’d also kind of be remiss if I didn’t observe that the sorts of retrospectives that we see from agency economists tend to be different than the sorts of retrospectives that we see from academics like me. And I wanted to make that point because later in the day I think we’ll be discussing what ought to be some policies potentially to promote creation of merger retrospectives.

And just to point out what will probably be obvious to many of us but perhaps not to every observer, which is that the academics tend to want to study large samples and make generalizable conclusions. We seek to publish in our journals and the reader wants to understand not what happened when A bought B but what in general is happening in this industry and what are the characteristics of marketplaces in which combinations tend to lead to efficiencies that are passed through or are not, and are there offsetting premium or price increases, that academics are interested in the general conclusion.

And, of course, we know that antitrust enforcers are focused on the very particulars of any one case as in a merger review should be. And, therefore, the agency economists, when they do merger retrospectives, they are likelier to take a case study approach and use all of those insights to inform their conclusions and will arrive at something that has just got a different lens than the academic studies.

I do believe these things are compliments. The academics also -- and this is significant to know -- would have great difficulty in publishing a case study because many, many journalists are not going to be interested in the academic pursuit of studying what happened when this hospital bought that or the even when this PBM bought that one. There may be massive industry interest in that, enforcer interest in that.

And the academics, particularly with the reduced form, want a large sample with the new structural models because they are so institution-specific. You may often see and you will hear from panelists who have written studies that dive deep into a particular transaction, but the objective of many of those studies, the contribution is methodological. So it's going to be very cutting edge, potentially more difficult for enforcers to apply. So there are some tradeoffs there, and I will close my opening remarks now.

(Applause.)

MR. PRINCE: All right. Thank you very much. I also would like to thank the organizers for inviting me to be part of this. I think dialogue like we're having today is very valuable for, I think, both sides, academics and practitioners. I'm thrilled to be part of this conversation.

So like Leemore, I think I'd like to open my remarks by giving a general sense of what I understand to be the way retrospective mergers have been done to date. So you know, there's a range of methods that have been used thus far, as Leemore noted, difference in differences or some variant of seems to be the most common. There's many examples of this.

So essentially, let's think about the merging parties, let's find comparable parties and look at their changes over time and make comparisons. Differences that we find we'll attribute as being effects of the mergers, so the list is very long. I'll gratuitously list my own paper on this, but I'll get into more depth in a minute.

Then matching estimators is another popular approach, so the idea being let's look at the merging parties, let's find similar parties on observable dimensions, match them up, and then look at differences in their outcomes. And the key thing there is to make sure that when we think about, you know, what would be driving factors as to why some firms merged and others did not, we want to make sure that those factors are not driving the outcomes that we're measuring.

And so for example, Marty Gaynor's paper and others would find factors like this, we might say they're political factors that might have been driving the differentials, not other factors that are related to the outcomes.

Another popular approach amongst economists would be an instrumental variables approach. So let's see if we can find what we call exogenous variation that we would say could explain why we'd see merging behavior but also then would not be an explanatory factor for the outcome that we're measuring, often price, and use that to kind of isolate the variation that we would think is good for trying to see what the causal effects are of the merger.

So Leemore and others, many others, have done an instrumental variables approaches. One example is in her 2009 paper using colocation as an instrument, right, for the likelihood of engaging in a merger.

A couple more things worth mentioning is using a focus on rivals. So the idea being that, you know, we might think some of the unobserveables that could be contaminating our estimates may not be existent in rivals but they would actually also manifest some of the merger effects. Again, price is a good reference point. So if we see price changes, it also could filter through into their rivals, so we could focus on them.

And then as Leemore mentioned, structural models also have merit in this area. There's been a range of analyses to use that approach, essentially putting structure on the supply and the demand side and then using that to assess what we predict to happen with a merger, a change in a power market structure. And then as Matt and others have done, we can then use those models to predict and then compare them to what we actually observe.

So the focus for me in my remarks is actually going to be on the nonprice side, so I've done a little bit of work in this area. And I think as Leemore said, there is a lot to be done here. I think there is a lot of openings. So when you think about price versus nonprice effects, in some ways, if you think about, you know, what should the control group be, right? So if I say here's the merging firms, who am I going to compare them to as the control so I can see the differences in the outcome.

With nonprice effects, in some ways, there could be some advantages there if you believe that the variables you're looking at are not so easily observed and not so quickly changed by competing firms, then you might say that, you know, if you have similar firms facing similar conditions, sometimes firms in the same market, if it's a nonprice outcome variable then they might actually be reasonable controls for the group that you're looking at because they're not contaminated by the fact that they might also be reacting to whatever nonprice changes you’re doing as a result of the merger.

So Leemore touched on this a little bit, and when you think on the nonprice side of things, what have we really found in terms of merger effects on nonprice variables? And I think the typical way to think about this is quality, but it could encompass other things.

Hospitals, as we’ve seen, there has been a lot of action in this space. We’ve seen a lot of evidence of price increases in hospital mergers. You know, depending on the source, there is some mixed evidence when it comes to quality. So when you think about inpatient quality index, patient safety indicators, the list goes on and on, you do have ample evidence of declining quality, but there is some mixture in terms of what’s been found out there.

On the airline side, which is where I’ve done some work in this space, you definitely see some substantial price increases as a result of the mergers, but then there’s also some evidence out there on quality impacts. And let me kind of dive into some of the work that I’ve done.

One of the quality metrics that I’ve really focused on is on-time performance. I think that's kind of an obvious choice in this space to focus on. I think outside of price there's an argument to be made that that's the metric that consumers would typically focus on. So what we find is we did a merger retrospective. Daniel Simon and I did a merger retrospective, and this covered about 10 to 15 years of time over the airline industry, during which span there were five major mergers.

And what we found is in the short run, we did see a worsening in on-time performance, but then in the longer term, we saw that flip into a notable improvement in on-time performance. And while it's difficult to really parse that out, it is consistent with the idea of having some short-run coordination challenges but then long-run efficiency improvements and that manifesting in the data.

And then there's certainly other measures of interest with airlines. You can think about things like routing quality, cancellations, lost baggage. I mean, we've all traveled. You can think of anything that's going to drive you crazy when it's not there. We can measure those kinds of things. So Chen and Gayle actually have a paper looking at some of these, and they find some impacts on some, not so much on others. And I'll come back to that because I think that's an important thing to think about, is what are the range of things we should be looking at.

Right, so another, I think, relevant point that focuses on some of the research I've done -- this isn't with regard to a merger retrospective, but I think it highlights an important component when it comes to nonprice outcomes. So in another paper, Daniel and I look at the effects of entry and entry threats on on-time performance in the airline industry. And we actually find that on-time performance gets worse with entry and entry threats by a low-cost carrier, and in particular Southwest, but we actually found this for several other low-cost carriers as well.

And I think, you know, the relevance of this for the merger analysis is it speaks to -- unlike with price competition, when you think about -- when we do merger analysis and say what's the impact on price, it's typically framed in the context of two competing forces. There's increased market power which would push price up, and then there's increased efficiencies with it which then could push prices down. And then it creates ambiguity as to what the net effect would be.

With nonprice outcomes, even if you just focus on the market power side of it, there's already ambiguity there. So if you look at the theoretical literature and even some of the empirical work out there, I think what we found with the airlines actually points this out in that there's not necessarily the cleanest of relationships between market power and nonprice outcomes as much as there would be with what we understand to be going on with market power and price.

So what are some challenges in this area when you think about quality measurement? Well, when you think we've got a lot more data out there, a lot more things we can measure, the range of quality metrics that we can consider is certainly growing, right? We can get data on these things and we can start analyzing them. So you think about healthcare, certainly there's a wide range of outcomes that we could be looking at.

When you think about, say, technology, like a smart phone, right, if I talk about quality competition on smart phones, the list goes on and on all the dimensions that I could be looking at. So one of the key issues that I think is worth at least thinking about is what are the subsets of nonprice factors that we should be looking at. So when you think about multidimensional quality competition, the theory is even more complicated in that space. So this already creates challenges.

And I think another concern that I have is, you know, when you think about, we as academics, we try to think about, you know, big-picture problems and we pick variables we think are interesting to look at, do an analysis on these types of things. When you've got all that going on but then there's many, many variables to choose from, I do worry about, you know, even if we're not individually doing any data mining or things like that, collectively it becomes something like that, where if you're analyzing 50 different variables, you're bound to find something, even if it's not really a material impact that's going on.

So thinking hard about, you know, what's the selection mechanism for the variables that we're actually going to focus on, is it simply ones that we can demonstrate meaningfully impact demand? Are there other ways to think about it, creating composite measures of quality rather than just looking at many dimensions simultaneously I think is worth thinking about.

So some main takeaways, right, the

retrospective merger analysis for nonprice outcomes, if you think collectively, there is some mixture in terms of what we find there. And I think it highlights the importance of careful discipline and industry analysis when assessing merger impact, particularly for nonprice outcomes. And in contrast to price, the lack of a clear tie between market power and nonprice variables like quality contributes to the ambiguity as to the findings to date. So I think there is a lot of value in thinking hard about, you know, what to be analyzing and what are some of the important forces that might drive the response of those variables to mergers.

So I'll leave it at that. Thank you.

(Applause.)

MR. TAYLOR: Good morning. Not being an academic, let me give the standard disclaimer. Views expressed are my own and not necessarily those of the Commission or the Commissioners.

So I'm going to take you through the literature on petroleum mergers, but I think it's more important than that because not only am I going to talk about what we learned about the petroleum industry but more importantly I think what we learned about retrospectives in general.

Okay, so some background on the industry. There are multiple levels to the petroleum industry. The first level, we have bulk supply, so refining or large quantities of gasoline or diesel fuel. And then the second level of the industry, we have distribution, so local terminals, trucks, gas stations.

So there are really three main types of merger retrospectives and mergers we're looking at. We're looking at mergers among refiners or bulk suppliers, so horizontal mergers; mergers at the distribution level, so retailing and such and also horizontal; but then vertical mergers between bulk suppliers and retailers. And just to sort of go on top of that, there also can be mergers that are horizontal and vertical sort of at the same time, and these will come up in some of the retrospectives as well.

So the FTC has been very active in doing merger retrospectives. We have seven retrospectives currently looking at nine different transactions. There are some examples there. But, I mean, to summarize, the FTC studies thus far, we have not found consistent evidence of an increase in retail prices from these transactions. There was one case with some evidence of a retail price decrease due to inefficiency. There was another case where prices were expected to decrease and did post-merger, but that was not related to the merger. There was a change in the structure within the market.

The studies have found much more mixed results at the wholesale level. This is one of the more interesting facets of this industry. There are multiple wholesale prices and some of them are not observable by the researcher, which makes interpreting wholesale price effects that much more difficult. So for example, if you're looking at, you know, average unbranded wholesale prices rather than low wholesale unbranded prices, you could end up with very different conclusions.

But this is why we have, the FTC staff have generally concentrated their attention on the retail level. And so this one of the issues in any merger retrospective. If you've got multiple price measures, you have to be very careful about which prices you're actually looking at.

But another activity of the FTC staff, we spent a lot of time replicating some findings in a 2004 GAO report, and I'll discuss those findings when we actually are discussing the GAO report.

So the Government Accountability Office did two studies of the petroleum industry, two merger retrospectives. They were later partially published. And these were at the request of Congress. So both of the GAO studies looked at possible wholesale price effects of multiple transactions across the entire country. The effects were essentially a weighted average of all the wholesale prices at locations that GAO identified as being in a treatment group.

The 2004 study looked at eight mergers in the mid to late 1990s. They estimated 28 price effects across different wholesale prices and formulations and found 16 positive effects, 7 negative effects, and 5 transaction -- or five prices that had no effect. This led to a number of interpretation issues since the merger could have had positive -- some of the mergers had positive and negative effects across different prices and formulations.

So the reason I really want to get into this is the FTC technical report in replicating these estimates for some of the gasoline specifications found very different results. We found the results were very sensitive to identification assumptions. They did not do a standard difference-in-difference approach, which was really not obvious until you got into the weeds, if you really understood the estimation/identification assumption.

And in another case, they had omitted significant data that also affected the result. So ultimately after the replication exercise, we could only find one merger that had wholesale price effects. And this transaction was one that we were already in the process -- or we already had studied in Taylor and Hosken, and we found very different results at retail.

So 2009, also at the request of Congress, GAO did a second study. They found two wholesale price effects -- positive and one negative and four transactions that had no effect. But what was interesting, primarily to us and as a researcher, is that they used a different identification strategy from the previous study. They did a true difference-in-difference estimation.

Once again, if you looked at their study sort of in a cursory way, it looked like the identification assumption was the same, but if you looked at it carefully you could tell that they had actually changed it to a true difference-in-difference specification. One of those transactions where they found wholesale price effects we studied and published in Silvia and Taylor, 2013, and found no retail price effects.

So there were two other US retrospectives in literature -- Hastings and Hastings and Gilbert. Both of those papers reviewed changes in vertical integration in California. Both of those found effects. We later studied both of those transactions, one as a replication exercise and one looking at retail prices. And in both cases, we could find no consistent retail price affect.

So I wanted to briefly talk about non-US petroleum merger retrospectives, if for no other reason more in contrast to some of the US studies. So there have been studies in Canada, Australia, Argentina, and in Europe, a few examples around the slide. That's not an exhaustive list. Sen and Townley looked at retail in Canada; Houde looks at retail transaction in Quebec. Coloma did a study of Argentinian refinery merger. And there have been multiple mergers in Europe that mainly looked at retail.

So these non-US studies, you know, very similar to the US studies, generally use a difference-in-difference framework. They more often than not find effects. In at least one case where they didn't find a transaction effect, the authors did a number of testing to suggest that there was preexisting collusion in the market before the transaction.

But I think one thing that’s common to most of these US studies that is different from the United States is the level of concentration and the amount of regulation in the industry. Concentration in these countries tend to be considerably higher than the United States, at least a thousand points higher in terms of HHI. And a number of these countries have regulations that make coordination easier, such as post-and-hold regulations and in some cases retail entry restrictions.

So what do I think we’ve learned? And I think these are more lessons for merger retrospectives in general as well as really for the petroleum industry. And this, I think, tees off something that Leemore was already raising. I mean, the point of doing these studies is not totally about whether a particular transaction had an effect, but why that transaction may or may not have had an effect.

So I think it’s really important to have a clear design of the merger retrospective so that the study can learn larger lessons about broader outcomes. We can obviously challenge consummated mergers, but we’re trying to learn about merger policy more generally. And this really comes down to a well-documented study, why do the assets in the transaction potentially lead to an effect or why they didn't.

You know, another lesson, we need to examine meaningful price, I think in this case, retail prices. Showing one whole price change is not necessarily a sufficient condition to actually have an effect. In this industry, it's really about the geographic markets and where the marginal supply is coming from. And I think that's one of the main things we learned in this industry, but it certainly applies to other industries as well.

And I could go into more detail and we can during question time, but trying to do too many transactions in one study, I think, is a recipe for failure.

But the last point I want to make really has to do with documentation and replication. I think we have all -- all of us who have tried to replicate someone else's study understands the number of decisions that they make that may or may not be well-documented, and, you know, this is a challenge and this is something that I think we all need to be better at.

But the other point of replication is really to understand robustness and be able to decompose the effects. A number of our replication studies have started by being able to try and understand more carefully where the effects come from. I think I'll stop there.

(Applause.)

MR. KWOKA: Good morning. Let me add my thanks as well to Dan Greenfield, Dan Hosken, Bruce Kobayashi, and others who organized this and certainly for the invitation to me to be here. I am an alumnus of the FTC -- a proud alumnus -- and always happy to be invited back.

Now, let me also acknowledge something that I think Chairman Simons has mentioned already, the role of the FTC in merger retrospectives has historically and up to the present time been crucial. The first recognizable merger retrospective was done here by two economists -- David Barton and Roger Sherman --back in the 1980s. And looking back on it, while this seems in many ways crude, it certainly is indicative of the methodology and importance of doing these studies.

Of course, others have advocated doing retrospectives along the way. We have I think on the program today Dennis Carlton who has called for the studies for quite some time, as well as Bill Kovacic, particularly when he was here at the FTC.

I view doing retrospectives as an act of good public policy, the courage of an agency to examine its own decision; and on occasion, where appropriate, to leave with some conclusions that may not be entirely favorable is the sort of good public policy that I think we don’t always, perhaps often, see.

I don’t have any PowerPoints. I did not get them prepared in time, but the good news is that a good deal of what I have to say has already been said by my fellow panelists. So if you remember some of their PowerPoints that will suffice.

Dan asked me to discuss some of my work and I will, but let me begin somewhere else, by setting out what I think are three different purposes of doing retrospectives. And these match up to some degree with the scope of the undertaking. So one route is to do a retrospective on a particular merger, a single merger, looking at a particular outcome from the event. So there are a fair number of these.

For reasons that Leemore mentioned, these may be more commonly done within the agency than by academia, but they are incredibly important because they provide insight for the agency into the appropriateness of the action that may have been taken as a policy measure for a particular merger, which is to say that in some instances the outcome may not have been what was predicted. Or the choice of policy may not have turned out to be as intended. And it’s an important part of continuous improvement in policy to look back on those and to determine what it is that perhaps should have been recognized at the time a decision was made to clear a merger or challenge it or to apply a remedy or a particular type of remedy or not.

Those actions, those insights really need to be developed on the basis of a stock of data that’s only available within the agency. Joe Farrell and I wrote a short policy piece a couple years ago where we said that one of the great unexploited areas of information for agencies was their own past case-bringing decisions, investigations and choices of policy.

We tend to look as economists for new theories, new empirical evidence, et cetera, but the reality is that the agencies sit on a vast store of information that has not, I think, adequately been tapped. So that’s the role of looking at individual or single mergers.

A somewhat different strategy is one that the FTC has pioneered successfully as well. And that is to identify a broader issue or an industry where there is a problem worth investigating. The hospital mergers that Leemore mentioned, and Chairman Simons as well, is an example of where because the agency was unsuccessful in persuading the courts about a particular problem that the agency knew full well should have been addressed differently by the courts, the agency stepped back and used consummated mergers cleared by the courts as a basis for developing better techniques and certainly better policy to inform the courts.

So a single industry or single issue on some instances, I think, can be addressed by launching a series of targeted retrospectives at that issue or at that industry. Healthcare and hospital mergers are a good illustration of the industry case. An issue, which I've promoted this to examine potential competition mergers. These are -- these suffer -- the courts have established a pretty high bar, but, again, one of the ways of reviving the ability of the agencies to bring successful challenges to mergers that eliminate a potential competitor and raise competitive concerns is to develop a set of retrospectives on cleared or consummated mergers where a potential competitor has been eliminated.

I've done one of these, and if I have time, which I doubt I will, I can talk a bit about that. But this is a topic area that I think would invite such investigation as well.

Third area, third use of retrospectives is to compile in some fashion all available retrospectives and to try to draw inferences from that body of literature about policy questions. And this is, in fact, where a good deal of my work in recent years has been devoted. There have been compilations of retrospectives done by Matt Weinberg, who's here, and by Orley Ashenfelter, I think is on the program as well, and others. They've compiled available retrospectives and drawn some inferences.

What I did was to launch, I think, a more comprehensive survey with the assistance of Dan Greenfield and another former student of mine at Northeastern who assisted in the compilation process and analysis process of the existing literature. And this found its way into a meta-analysis and the book and some articles that I've published.

So in brief, a meta-analysis, as you know, has distinctive strengths over -- for these purposes because the most obvious is numbers. Inferences and implications are not dependent on single cases or idiosyncratic experiences or cherry-picked examples, but rather on a larger body of literature so that we know what the totality of the literature may say.

This does raise a question of whether that totality is adequate or not, but nonetheless, we know a deal more by looking at the entirety of the literature rather than some industry-specific or case-specific example. And so the full -- and this is also -- there also is a meta-analysis approach that one can apply to such a compilation. So in the analysis that I spearheaded, we surveyed literally hundreds of academic studies and imposed various criteria on the studies to be acceptable for the final database of merger experiences.

These needed to be largely or entirely horizontal mergers just for the sake of consistency. They were strictly within the US, putting aside issues that I think have been mentioned that are raised by mergers and studies of mergers in other jurisdictions. These had to look at final outcomes, prices, or quality rather than intermediate steps. For example, some switching costs or impediments in other fashion that don't automatically translate to a final consumer metric.

And perhaps most centrally, they needed to use state-of-the-art standard economic techniques for controlling for other factors -- difference in difference, of course, being the general rule, though there now are more ways and issues, more ways of attacking the question. And, finally, these needed to be published in a peer review journal or in one of a couple respected working paper series, including that by the FTC.

So in brief, the result of this compilation was really two different categories of mergers -- of studied mergers. One was individually studied mergers. Again, these provided the greatest detail, the most granular information about mergers, and allowed for the greatest opportunity to draw inferences.

So there were about 50 mergers, some of them studied multiple times. Those were of interest for the reasons that have been mentioned, because it provides some insight into whether there is consistency in the findings across different studies of the same merger. There were about 50 such mergers from about 60 studies, again some cases of mergers were studied multiple times, across 16 different industries.

And there were -- we identified 120 individually studied products. Again, multiple products oftentimes were studied within the same industry. So that was one category, the individually studied mergers.

The other category were studies that looked at aggregates of mergers, so there was a single case, a single study of aggregate of mergers ranging from, you know, 10 to 1,000 such mergers. And what those provided was less detailed indications or evidence about them. So the results of this analysis were published in my book, and, you know, roughly there was good news and bad news with respect to policy in there. What it showed is that there was a fair number of instances -- a good bit of evidence, rather, showing that agencies made good decisions as to what mergers to challenge.

But it also showed that the number of cases where mergers were approved ended up with many instances of anticompetitive price increases nonetheless. And with respect to remedies, I found a rather erratic pattern, which is to say some remedies were effective, and not infrequently, to the contrary, some were less effective.

So in short, I think that the -- while my work has been focused on the third of these, the compilation of studies and the effort to extract broad conclusions, all of these techniques are valuable, and all of these techniques, I think, are examples of excellent public policy by the FTC and, unfortunately, less by the DOJ, but certainly for academic researchers as well. Thank you.

(Applause.)

MR. GREENFIELD: Thank you to all the panelists. I’d like to start by having the panelists discuss whether there are certain industries well or poorly suited to study using conventional merger retrospective techniques. For example, many merger retrospectives focus on industries with localized geographic markets and they examine how prices change in the effective markets relative to unaffected markets. But how might a researcher deal with a merger in an industry that has a national market, and there might not be an obvious control group?

Who wants to jump on that?

MS. DAFNY: So if I may, unless we’re going to have a separate discussion on differences in differences -- are we? We are. Then just talking about the industries, I would say that the methodology allows for -- it is not as -- it is not -- the most simplified version of differences in differences where you have a treatment group of, say, merging parties and a control group that don't merge is the most simplified version that there is. Certainly there's a risk if you're studying in the same geographic market of a spillover effect, if there is an oligopoly pricing situation going on. Others have noted that problem.

I would say that when we're talking about a national market, the challenge is the same, which is to try to identify either subsegments or certain kinds of products that are less likely to be affected by the transaction in question. There are matching methodologies that one could use to do that, something also called synthetic controls where you try to identify treatments and controls that have similar trends in your outcome measures before a transaction, and that can be, to some degree, a test of the assumption that the control group has similar behavior to the treatment group.

So whereas it may not appear as obvious as when there are multiple geographic markets, I think that the approach is not dissimilar.

MR. PRINCE: Yes, I agree with that. I mean, I think, you know, as you were pointing out, that the challenge is if it's a national market, in some ways, you're basically getting one observation of the market, the concentration change. The other thing I would just add to that, and this is in some ways just thinking out loud, but, you know, it might be worth at least thinking about exploring because of the difficulty often in trying to find what a proper control would be is, you know, we in economics have slowly but surely been opening ourselves to the possibility of using certain machine learning techniques in some of our analysis.

And it might be worth at least thinking about, you know, are there ways to use some machine learning techniques to get, you know, some meaningful predictions for that market in the counterfactual that the merger didn't take place and use that as a comparison point. But I'm not advocating that that necessarily is going to work, but I think it's something worth thinking about. So that at least came to mind because I think there is just this inherent difficulty of trying to figure out what is a reasonable comparison point at the national level.

MR. TAYLOR: You know, I was just going to add that there have been studies that have done hybrid approaches. I mean, so you can obviously just try and model the price formation in a given product. I mean, if you had enough demand and supply shifters, in theory, you don't need a control market. Obviously, for lots of products, that's not possible, but you could do -- and I think Vita and Sacher in a hospital paper did this, where they had a control market, but there were some potential issues with supply and demand shifters in the control market. And so you could have a control market but then also have additional variables trying to control for differences between the control and not. And as Leemore mentioned more work on synthetic controls as well.

MR. KWOKA: I think everything that I was about to offer with one exception, they already have been said, and that is that the problem of control groups, of course, is broader than the case simply of national market. It's oftentimes, it's fair, I think, to say that maybe the principal challenge in doing a retrospective is to find the right control group. There are other statistical and modeling issues as well, but finding a set of experiences -- a set of events, rather, unaffected by the merger, is oftentimes not so easy to do if one thinks broadly about the way industry is adjusting to new equilibria as a result of an event.

So for example, an airline merger is -- it's common to take markets where the two parties, let's say, the two incumbents on overlap markets are not present. On the other hand, there could be more systematic cost experiences that flow across a -- one of the merging parties that affect their performance in other markets or network issues that affect their performance in other markets. And all of those, oftentimes, I think many of those are oftentimes not adequately reflected in the design of retrospectives.

MR. GREENFIELD: So I mean, are there certain industries maybe that are better suited for qualitative analysis than statistical analysis in addition to an instance where you might have a national market? Sometimes prices are particularly hard to measure, for example in a service industry, where each customer is paying a slightly different price?

MS. DAFNY: We can go in order or --

MR. GREENFIELD: Sure.

MS. DAFNY: Okay. So I would say absolutely qualitative analysis ought to accompany quantitative analysis. I want to hesitate to let the perfect be the enemy of the good and to remind us all that hedonic models are often reasonable in controlling for features of products, differentiated products markets, certainly in healthcare.

We've got prices that depend not only on the features of the provider but also on the health conditions and costs associated with caring for the patient who is consuming the service because the price varies based on those conditions, and yet, somehow, we tend to focus on price, which is really hard to measure in part because of some of the issues around multiple quality dimensions and which ones are you observing and this question of what's called p-hacking. If you, you know, look at enough of them, you'll find some that are significant and what's happening to quality measures that we aren't observing.

So price, even if hard to construct, often is a very nice summary measure, although I'd be the first to say that we overemphasize it. And I'd go further on this qualitative versus quantitative. One of the reasons some might think qualitative analysis is so important is because there are these dimensions of quality that are really meaningful that you want to be able to study.

And I would just say that it is possible to quantitatively study these unobserved features using structural models that estimate, right, the magnitude of these and consumers' preferences for them. So I wouldn't say that because quality's important, therefore, it becomes often largely qualitative, even if it's multidimensional, just that you need methodologies that are a little trickier to explain in court.

MR. PRINCE: Yeah, I agree with all that. Those are great points. I guess when I was thinking about this issue, the way I look at it is I think, as Leemore put it, I don't think it has to be necessarily either/or. When I think about it, the question becomes, you know, any model that you might use is going to rely on some assumptions that you make. There are decisions that any modeler has to make to execute. And I think it was Chris or John that was making that point, some stated, some unstated.

And so you know, it's -- even if it's a complicated market where you do have these subtle differences between whatever products that are actually being sold, in some ways, the question becomes, you know, what level of assumptions am I willing to make to be able to make that model estimable and believable? And can I simply use qualitative analysis to inform, you know, the justifiability of those assumptions?

So I guess I don’t look at it is, you know, because it becomes complicated to quantitatively assess this then we should just go to qualitative. I think it’s a matter of, you know, if we’re going to use quantitative methods and it becomes complicated, we use -- got to use more assumptions, that does knock into some of the credibility of it, but then qualitative analysis can help us to, you know, add some credibility to some of the necessary assumptions you might have to make to actually make those models work.

MR. TAYLOR: I guess one of the things to really think hard about today and in general is, you know, a high percentage of the merger retrospectives have come out of a small number of industries where pricing data is fairly available, where the difference in difference methodology is, you know, sort of easier to apply. And so I think, you know, we have lots of different ways of getting at this question, but essentially, the argument is how do we broaden the methodologies of doing merger retrospectives so that we can get at other industries where price is not one of the most important variables and it's readily available?

MR. KWOKA: Well, let me add a couple points. One is that there is, of course, a tendency in the literature, as everyone agrees and knows, to look at price. And then we bemoan the lack of studies on the quality side. But these are not necessarily independent or should not be independent. And here I'll have to acknowledge Dennis Carlton's point. When they steal perhaps what -- some of what you might -- perhaps were going to say later on, but for example, if we observe in a particular industry that price falls as a result of the merger, it could be associated with a decrease in quality. Or if the price increases, it could be because quality has increased.

Looking at price by itself, therefore, is at best incomplete and at worst quite misleading about what the full effects of a merger may be. So if you want to raise the stakes and the degree of difficulty of doing merger retrospectives, I think it's fair to say that we need to pay close attention to the way that firms going through a merger adjust, both on the price and quality dimensions, because those are one and the same decision. And that's often not the way that retrospectives examine them.

MR. GREENFIELD: So even when we have reasonable controls available and reliable data on market outcomes, whether it be price or quality, how does one deal with contemporaneous events that might threaten identification of merger effects? For example, a merger might involve a firm that's financially distressed, and that financial condition of the firm could potentially affect market outcomes.

We'll start, Leemore. You've done stuff along this line.

MS. DAFNY: Okay, well, that is a tough situation. When you -- there's always this assumption that your counterfactual, be it maybe machine-learning informed prediction of how the outcome would have evolved in the absence of a merger or a set of controls whose conduct is proxying for what would happen to the merged market or parties in the absence of a merger, there's always the possibility of some shock that causes market fluctuations. And that's fine unless the control group responds differently than does the merging parties or than do the merging parties.

One way to try to get comfortable with that or see whether your control group is going to be valid is to look at the premerger period and confirm that even in the wake of market changes that a treatment and control have similar trends. That's called a parallel trends assumption. But it remains a threat that, even if you satisfy the parallel trends assumption in the pre- period that in the post-period something happens and that's where you would like some qualitative analysis to confirm whether it seems like a plausible assumption.

MR. PRINCE: Yeah, I guess the way I always frame this is, I mean, that's kind of the killer when it comes to diff-in-diff analysis, right? So anytime you teach diff-in-diff methods, when I talk about, you know, what are these vulnerable to? What you're describing is exactly what I would say, right? It's when you have concurrent changes to the treated group, right, at the exact same time of the treatment that you are focused on.

And so then how can you say it's the treatment that's causing the outcome change when it could be this other concurrent event that happened that was specific to the treated group as well? And as I was thinking about this, the -- you know, how do you get around that, right? So any empirical method, I think, always has vulnerabilities, and I think this is the primary vulnerability of diff-in-diff analysis.

And so you know, one thing that comes to mind is -- and this, of course, is probably asking too much but, you know, is it possible to find some analysis that deals with what you saw to be the current event under other different conditions where the treatment that you're looking at did not happen, right? So then you can try to get a sense of, okay, I know this event happened concurrently with the treatment, right, the treatment being the merger, and then here's what we saw was the impact of that other event, like a bankruptcy, for example.

And so then, when I see this -- what we would then say it's kind of the combined effect in the analysis that you're describing, you know, perhaps we could difference the two, right? Or at least do some form of comparison between the two. At least for me, that seems the most promising defensible approach. But, admittedly, that's a big challenge when something like that happens.

MR. PRINCE: So I was wondering if Dan was thinking about refinery outages or something when he was writing that question. No, I mean, fundamentally, the control group, difference-in-difference assumption is difficult to prove, and that's what you're getting at. I mean, I can show you the pre-trends how they behave.

But unless, as Jeff was saying, I have the same kind of event in the pre-period where I can show you that they behaved in the same way, it's going to be very difficult to prove that. But certainly in the petroleum retrospectives, we've had those types of issues that there's some sort of outage or formulation change in trying to show that the control market and the treatment market had the same type of effect.

But fundamentally, it -- the treatment control relationship is an assumption that I can try and show you is a reasonable assumption, but I can't prove that those prices always behave in exactly the same way.

MR. KWOKA: So again, I wish I had something constructive and helpful to say here, but let me point out that this is part -- a reflection of, I think, a larger issue. Whenever the event, a merger, say, is separated in time from the likely effect, there's simply greater opportunities for other events to intervene. And the implication of that is that certain types of outcomes, for example on innovation, are much harder to assess because they are subject to lots of influences and the effect turns -- tends to be, of course, separated in time by years, not two or three years but perhaps a very long period of time.

The implication of that is that certain types of questions are simply harder for merger retrospectives to assess. We don't have good structural models of innovation. And we -- and difference and difference analysis is subject to more disruptive influences in the technique for those types of questions.

MR. GREENFIELD: Thank you. So as we've discussed, most merger retrospectives examine the impact of horizontal mergers on prices, but I'd like to ask the panelists to consider whether there are other questions that merger retrospectives will be likely or unlikely to successfully address? In particular, two recent NBER working papers have shown a negative relationship between labor market concentration and wages.

Do the panelists think that traditional merger retrospective techniques could be used to add to this literature, and are there unique challenges associated with analyzing labor markets or buyer power as a result from mergers more generally?

MS. DAFNY: Why don't we start there? I mean --

(Laughter.)

MR. GREENFIELD: Yeah, we keep making you jump out.

MR. KWOKA: So you know, the issue of labor market effects and monopsony power in labor markets, of course, is relatively new to antitrust, though it's been kicking around in most labor economists for a rather long period of time. It's a good example of where our silos have really done a disservice to us in thinking about the broader effects.

So I think that the technique is -- the difference-in-difference technique and the general thrust of merger retrospectives is quite capable of dealing with other types -- other dimensions, as I've said before, other dimensions of outcomes with respect to mergers. And I also would like to, I guess, broadly answer by saying that merger retrospectives are useful to the agency in other respects as well.

As I said in my opening remarks, merger retrospectives cast some light on the agency's internal decision-making, but it also -- they also can cast light on the agency's internal methods of analysis, for example, the use of merger simulations against retrospectives, a comparison that's been made in a couple articles in the literature, or the use of merger retrospectives to evaluate use of structural criteria, something that I've done a bit of work on as well.

So there's a wide number -- a large number of areas where merger retrospectives, I think, have not been deployed to their full advantage just yet.

MR. TAYLOR: Mainly, I think this is not so much a question of methodology but the actual data, to get data at the level where you could look at localized labor markets or other types of these outcomes. I mean, I think one of the issues with some of the literature at this point is the level of disaggregation in the data and trying to look at broad measures of these kind of outcomes.

MR. PRINCE: Yeah, my initial reaction is a lot like Chris' in terms of getting measurements for the data, but I think this also, when I think about it more broadly, this kind of feeds into one of the things I was talking about in my opening remarks, which is, you know, in some ways this is asking -- there's a lot more outcomes we could look at. How do we go about that?

And I think it's true. I don't see any fundamental reason why the methods we've talked about couldn't apply to these other outcomes, but I just would encourage us all to make sure that we're having a broad perspective on how we make that global choice. Right? Because here would be the concern, right? If I were a firm, the worry is if you're going to look at 30 outcomes, right, with these mergers, I'm probably going to fail on one of them. Right?

And so I think we don't want to get things to that level and be thinking in a disciplined way in terms of what are the set of outcomes that make sense to look at, and think about that in terms of a global analysis. You know, what does this aggregation of results over multiple outcomes really mean in terms of what really the impact of this merger was? So that would be kind of my main perspective on something like this.

MS. DAFNY: So I would say this is a situation where the richness of healthcare data is, again, a huge advantage. I was able, in one of my retrospectives, to explore monopsony power following insurance mergers using that kind of detailed, geographic-level data on employment as well as wages and find evidence of post-merger exercise of monopsony power.

I would add that the Department of Justice has challenged some insurance mergers for a variety of reasons but including allegations of monopsony harm arising from being able to depress the wages of healthcare professionals.

What I would say is that thinking about the effects of a transaction on labor markets is challenging because you want to make sure that you are mindful that employment reductions do not at all necessarily mean monopsony, right, that sometimes they can mean efficiencies. You want to distinguish between the two. That sometimes a transaction can lead to a change in which labor is compensated and that can raise some serious measurement issues and a change in, you know, bottom-line the production process.

And just to pick up a specific example, I found evidence that after insurers gained market power, they tended to substitute nurse labor for physician labor, thereby depressing physician wages. Right? And so thinking about the implications of that are a little different from holding the production process constant, depressing the wages of physicians by purchasing less of it. So you definitely need some context for that analysis, but it certainly is doable.

MR. GREENFIELD: So do we think merger retrospectives can measure merger-induced changes in production efficiency, cost, input prices, essentially what we’ve been talking about and, more broadly, can they be used to test efficiency claims made by the merging parties?

MR. PRINCE: Well, I thought I’d switch it up. I feel like we’re just going to the corners. I mean, my answer is very quick. I mean, I think this actually kind of layers very cleanly onto the prior question. For me, it just comes down to issues of measurements and, again, thinking about kind of global set of outcomes that you’re going to look at. But that’s kind of as far as I was ready to take it.

MR. TAYLOR: I guess we had at least one merger retrospective where we did see efficiencies. I don’t know whether the parties had actually raised it in the case, but we did see essentially a pipeline reconfiguration that led to lower retail prices.

So I mean, once again, it’s a question of data and being able to identify these type of effects. There’s no methodological reason you couldn’t look at it.

MR. KWOKA: I agree with that. In my compilation of studies, there were a small number of studies that did look at cost issues, cost results for mergers, as well as efforts to measure at least R&D,

if not innovative output, and certain quality dimensions, as Leemore and others have mentioned. So there are studies out there that have used the same technique and sought to apply them.

It seems to me certainly that one of the places they would have high payoff for observers and certainly for the agencies would be to initiate a more concerted effort to determine whether the effects of mergers do include the efficiencies that the parties have claimed. I think there is anecdotal reason to be skeptical about that, and I think that a final determination really awaits this as one of the focuses of a concerted set of studies.

MS. DAFNY: I just have one comment to add, which is that a number of at least in healthcare, the assessments of the impacts of the merger on costs don’t address the issue of merger specificity. So I’ll leave it at that.

MR. GREENFIELD: So Leemore, you had talked about your research on cross-market hospital mergers. And, John, you had talked about some of your work on mergers that eliminate potential competition. I wondered if either of you would mind talking about the challenges of constructing a counterfactual when you’re -- you know, when the merger is affecting a broad set of markets, not just of the markets where the parties are competing head to head.

MR. KWOKA: So I’m happy to --

MS. DAFNY: Sure, yeah.

MR. KWOKA: -- spare Leemore going first again.

MS. DAFNY: I don’t mind.

MR. KWOKA: So once again, the sad truth is that the study that I conducted along with Evgenia Shumilkina was in airlines. Where else would it be? Airlines offers not just a lot of data, making it an invited target for lots of graduate students and attention by others as well, but in the case of airlines, there’s a greater ability to identify who a potential competitor might be. And there’s a fair amount of literature that preceded my work that has -- that identified as a potential competitor a carrier that was positioned by virtue of operating at one or both endpoints to quickly enter the market.

And the argument, of course, is that the -- an incumbent clearly understands that there is a threat of entry, and the prospect of entry if it might fully exercise its own market power on the route, the incumbent recognizes that, and so it arguably affects its behavior.

So the question -- we found, in short, that there was an effect from a merger that eliminated such a threatening competitor. And the effect was about half the size of the effect of the two -- of routes where the two incumbents merged. But, again, the question then becomes -- and I've challenged many of my grad students to figure this out -- what other industries can we find where there is some reasonably objective identification of who a potential competitor might be, so one can run such a set of tests elsewhere? That's not an easy question to answer.

The work by Florian Ederer and others in the pharmaceutical area is a good illustration of important work, but it also illustrates the gigantic amount of work that's involved in identifying who may be prospectively competing with a drug development program on the part of the acquiring company. But -- so there are great challenges. It's not to say that people cannot identify industries and potential competitors, but the identification of potential competitors needs to be defensible, and if it's not, then the studies are correspondingly weaker in the quality and strength of their conclusions.

MS. DAFNY: Thanks for describing that work, actually. The lack of insights on the impact of eliminating potential competition, I think, is a real barrier to enforcement agencies and to courts in weighing that more heavily in transactions, and this new work is, I think, really important and useful. So I'm glad that you're on it.

So the project on cross-market mergers originated when I was at the Federal Trade Commission. I was here. Everyone was -- had -- I don't want to say have it nailed because it is a challenge, but the staff here and the attorneys and the economists worked together very well on the mergers of hospitals that were head-to-head rivals for the same patients and trying to figure out which of those were potentially problematic. Same goes for other provider services.

But what I was hearing a lot about prior to coming as a deputy at the FTC was insurers complaining that hospitals were merging into broader regional systems and now national systems and that they were negotiating higher and higher prices and that the authorities were not -- not investigating or taking seriously the potential harm from these transactions.

So that to me was kind of marching orders when I left and had more time or any time for research, and the study came out just this week finally in the RAND coauthored with Kate Ho and Robin

Lee. And in it, what we do is we have both a theoretical component and a quantitative component. I'll start with the quantitative component, which is assessing what were, in fact, the price effects of a series of all of the cross-market mergers during an extended period, 2000 to 2012, and also subsets of those.

So let me explain -- the answer to your question is, it's kind of tricky to figure out who might be affected and who might not in this whole issue of treatment and control groups. So to pick one of the empirical analyses we do, we take a set of transactions that were investigated by the Federal Trade Commission because of horizontal overlap. Okay, the cross-market overlap, to the extent that it's investigated historically certainly wasn't made public. So they were investigated because of horizontal overlap. And the parties continued to -- they merged after the fact, so instead of divesting what was the area of concern, the hospital of concern, they persisted through that investigation.

So that leads us to believe it's plausible that those transactions were driven by the desire for that horizontally overlapping hospital, and we focus on bystanders. So bystanders -- so plausibly exogenous to them, that they happen to be party to a merger where they gained another hospital in a different market, and we focused on if you gained another hospital in the same state versus another state, what's the implication for your prices?

And we find that if you gain hospitals in the same state where you're negotiating with the same insurer that prices go up, and that doesn't happen in -- when you gain partners in other states. Then we broadened it to include a large sample of mergers, all mergers, and we had a different approach to try to get rid of the hospitals that were the motivation for those transactions, again, to focus on the bystanders. And we found more precisely estimated similar results.

So quantitatively, the conclusion is that there is, I think, reasonably strong evidence that as at least in the hospital sector, as you gain heft in your state, certainly where you're negotiating with a common intermediary, that you're able to extract higher prices.

Now, we know that price increases themselves, that's nowhere in the Clayton Act, that transactions that lead to price increases -- and I'm assuming holding quality constant, okay -- but that transactions that lead to those, there's nothing that says that those are -- that's what the agency can raise a challenge to. They raise challenges when there is a diminution of competition. And so that then goes to the question, which I don't know if we'll discuss now or later in the day, as to what are the mechanisms that are generating these price increases and are they potentially actionable by antitrust enforcers?

MR. GREENFIELD: Well, I think the fact that you had to rely on a lot of industry knowledge in order to set up your research design in that case ties in nicely with another question I had. Are there guiding principles to selecting control products or in setting up your research design? And in doing so is it better to rely on industry-specific knowledge or take a data-driven approach?

You know, for example, a researcher might exclude certain control products because their own industry knowledge tells them that those control subjects might be -- or control products might be subject to unique demand or cost shocks and might confound measuring merger effects.

Alternatively, you know, some folks have talked about using empirical matching techniques where you might select controls based on observable characteristics in the data. I wondered if the panelists could talk about the tradeoffs there in terms of relying on making subjective decisions about -- using industry knowledge versus taking a data-driven approach to selecting control groups and designing your research.

MR. TAYLOR: I can start. Well, it really can’t be an either/or. I mean, you -- you want to use the industry knowledge to hopefully identify some candidate control groups and then essentially show that they are behaving the same. I think it would be difficult to simply look at the prices or whatever, quality, whatever you’re comparing, and show that they act the same and then not go the extra step to essentially explain why the industry detail would lead you to that conclusion or vice versa.

I think if you started out with just a numerical matching exercise that you could easily be led astray. But I mean, also -- essentially, it has to be both at the same time.

MR. PRINCE: I can jump in. Yeah, these are issues I like thinking about a lot. I guess the starting point I would go with is it often sounds good to say I used a data-driven approach, right? It’s all objective, right? I didn’t bring any of my biases into this. But then any of us that have executed these things know that you had to make decisions, right? Some subjectivity comes into this.

One thing I always teach my students is, even just using OLS, you've made a subjective call here, right, in terms of how you treat outliers as an example. Right? So there's inevitably going to be some subjectivity, even if you use kind of what you might think of as being an objective matching estimator. You have to think about how you construct that model, what are the variables that are going to go in it, right, how do they do in it. So I think there has to be some level of subjectivity. And as long as you acknowledge that, then you might as well bring in your industry knowledge to the best of your ability to help guide the subjective decisions that you inevitably have to make.

So I think it's good to think about it starting as a data-driven approach, but recognizing that you have to make calls and those should be informed by industry knowledge.

MS. DAFNY: I'll just add, of course, you need to make use of your industry knowledge. However, where there may be disputes or where it's not clear one way or the other, you always do your robustness checks and confirm and see how sensitive your findings are to different assumptions that's informing your analysis.

I also want to say that it's therefore very important -- it's an obvious point -- but that some of these retrospectives take place unrelated to litigation or to the promise of prospect of litigation by disinterested parties. Government economists are strong candidates. I think academic economists are candidates, although there are, you know, some biases that I'm sure arise.

I think the Commission could also potentially commission some studies. But I do think it's very important, especially because of the sensitivity of results to data decisions, to think about the context in which the analysis is produced.

MR. KWOKA: So Leemore's answer suggests another point, not exactly on target here, but the issue of what sort of merger retrospectives are in the public domain is of some interest. You know, what we would like would be a random sample of mergers, and we're two or three steps short of that in thinking about what's available, for example, in the meta-analysis that I did.

Not every study is equally likely to be

published. Not every industry is equally likely to be investigated. Not every set of results is of equal interest to the profession or to the journal editor. So there are selection issues all over the place. And for that reason, it's not only important that the researcher who's doing the retrospective be knowledgeable in the industry, but it's also important that any compilation of these studies or anything we attempt to synthesize from meta-analysis or any other compilation be sensitive to these kinds of forces that are really not germane to the question of -- the broader questions that we -- that may interest us as well. All hospital mergers, for example, or all mergers about which retrospectives have been done, which is my database.

MR. GREENFIELD: We have a question from the audience. The question is, the panelists focused on mergers but can the group talk about retrospectives or competitive studies that focus on conduct? I assume anticompetitive conduct investigations or cases. What would be -- and what would the issues with such studies be? I'm not aware of any retrospectives that investigated -- a particular conduct investigation case.

MS. DAFNY: Pay for delay.

MR. KWOKA: Go ahead, Leemore.

MS. DAFNY: So the one that comes to mind is pay for delay, and there's -- there are -- there's at least one FTC-produced study that provides an estimate of what is the cost to consumers as a result of that piece of conduct that's widely believed to be an underestimated.

At the same time, there's real selection issues with that, like which products did the pharmaceutical companies, in fact, elect for engaging in pay for delay. Were they products that had the weakest patents and therefore cause potentially greater harm, and is that greater harm captured in this estimate because a generic could have entered sooner? So there's a lot of selection issues that arise in those kinds of studies, just as they would in merger retrospectives.

MR. KWOKA: So as we all know, there are three pillars of antitrust -- cartels, merger enforcement, and conduct. There are hundreds -- I don't know -- maybe thousands of studies of cartels. John Cotter's work was really seminal in this area and we learned a great deal about cartel outcomes, formation, duration, that sort of thing from John's work. And I took some of my inspiration from his work.

He, of course, had a -- he had a very -- he cast his net very widely. He included lots of studies that I think vary in quality, which simply reflects the fact that there are different ways of doing meta-analysis. But it’s easy to do cartel stuff. And for that -- and there’s also an incentive to do cartel studies because these are subject to challenge and rewards to winning plaintiffs, treble damages and the like. And that has prompted a -- over a period of time, I think, a flurry of studies in that area.

In the merger area, of course, there’s fewer, for a lot of those reasons. And there are fewer yet that look at conduct, and there the issue is trying to find a control sample of any degree of reliability. Conduct cases tend to be sui generis, very difficult to identify who it is, has not been subject to conduct by one of the major tech companies, for example, if that’s the concern.

So there are efforts to draw comparisons, but I wouldn’t call them retrospectives. Efforts to draw comparisons, for example, between the US and the EU practice for -- with respect to certain types of challenges to the tech companies. And those produce some insights, but they’re hardly quantitative, and they're certainly not invulnerable to criticism about their idiosyncratic nature.

Still, conduct area is another largely unexplored area, but there I think the challenges really lie with the ability to construct a reliable study along the lines of those that are now being done in mergers.

MR. TAYLOR: Yeah, I mean, just to echo that, I mean, you would need conduct investigation that you had a clear starting point on, a clear ending point, and then a comparison group. I mean, there's certainly lots of studies out there about regulations and changes in regulations and the effects -- price or quantity effects on regulation. So it would essentially be the same -- it would be an analogous methodology, but you would have to find instances that lend themselves to estimation.

MR. GREENFIELD: Okay. Many retrospectives are agnostic about the underlying economic model of competition. However, some do incorporate some structure from economic models. For example, Ashenfelter, Hosken and Weinberg's 2015 RAND paper disentangles market power effects from efficiency effects by using differential changes -- by examining or allowing price effects to vary based on differential changes in shipping costs and changes in concentration.

Another example is Miller and Weinberg’s 2017 Econometrica paper which estimates a model of Nash-Bertrand competition in order to disentangle unilateral effects from coordinated effects. I was hoping the panelists could discuss some of the benefits and costs of adding structure from economic models.

MS. DAFNY: All right. I think -- I’ll say the basics and then please -- please embellish on that. There are enormous benefits to adding structure as the economists would say, and I think I’ll try to explain for noneconomists in the audience. Basically what that means is instead of this construct of let’s have treatment control like a randomized control trial where you look at kind of what happened as a result of the merger relative to the counterfactual in your control group, the structure means that you basically create a set of equations that -- that if, you know, you get the parameters in those equations as close to generating the data that you observe as possible.

So a set of equations that describe a market that have different factors in those equations, including things like costs and dimensions of your product and how sensitive demand is to dimensions of those products and the prices of them and so forth. So a fairly comprehensive numerical model of the world. And the advantage of these structural models is then, instead of just being able to say, as you do in the difference-in-difference merger retrospective, here's what happened, you can say here's what you would expect to happen when these two parties combine. We simulate it. We predict it. And we can show you how it compares. But we can also show you what would happen if we didn't have all-or-nothing bargaining because, say, we banned that.

We can also show you what happens if we required this product to stay on the market for a certain amount of time. So you can test your different potential merger remedies. You can also control for changes in the market that you become aware of after the fact.

So when you were asking us about confounding factors, if you had a structural model of the market, you could say, because it's well known that the price of corn increased so much, we would have expected some change in this marketplace anyway. Let's up the price of corn so we can control for that throughout all of the different components, and then see how just the existence of co-ownership impacted the outcome.

So it gives you a lot of flexibility. There's a tradeoff. You have to explain it. And you also have to feel pretty confident that the market you're modeling is in equilibrium when you're modeling it, otherwise there's lack of stability for all those parameter estimates. And you need an extraordinary amount of data.

MR. PRINCE: Very well summarized. So, yeah, if I was going to boil it down what I think about the tradeoffs, summarize the benefits, I'd look at in terms of counterfactuals -- and, let's see, what was the other one? I can do counterfactuals and mechanisms, right? So you can think about, as Leemore said, I can think about situations I haven't seen but the model can allow me to make predictions about what will happen. And then because you put in the structure, you think about demand and supply. I put structure on that, for example. Then I can really dig into what do I think is the mechanism by which, you know, this change that I'm considering actually filters into the outcome that I'm looking at?

And then in terms of cost, I guess the best way I'd summarize it is risk of misspecification, right? So there's -- you know, as Leemore said, you're assuming that the market is in equilibrium, maybe that's not true, how much of a consequence is that? And then, of course, there's other, as I've been saying all along, there's other decisions that you inevitably have to make, things like functional form assumptions, distribution assumptions on the components that you put into the model.

How consequential are those? It gets into robustness issues, things like that. But, yeah, those are the key tradeoffs that I often think about.

MR. KWOKA: I don't have anything to answer that. I think that's well stated.

MR. GREENFIELD: So I think we can finish here with -- come back to some of the requirements of a successful merger retrospective study, both in terms of data and in terms of ability to develop a reasonable counterfactual. We've gone over this a lot already. And we've talked about difference in differences a lot already. And one of the features there is that it requires data, not only on the products of the merging parties, but also on a set of control products, which were unaffected by the merger but otherwise experience similar demand and supply conditions.

And I'd like the panelists to think about are there any empirical techniques that have either been used or maybe there’s some promise for use in the future that require less data, that don’t require measuring changes in prices or market outcomes over time in two different sets of markets?

MR. TAYLOR: I mean, I think we’ve gotten to where we are with difference in difference because it makes less demands on the data than a lot of the other methodologies that are out there. So I’m not sure how we’re going to reduce the demands from there.

MR. KWOKA: I would agree with that and simply add that if one looks at the set of studies that have been done over time, there is significantly increased sophistication in them, attention to issues, attention to control group issues, issues of heterogeneity, issues of serial correlation. And these are issues, I think, that increasingly are understood to be part and parcel of what one needs to bring to these studies.

So I think that the diff-in-diff is well established for the reasons that Chris mentions, that it’s hard to beat it, but there -- within that model, within that regime, there is -- there certainly has been improvements along the way.

MS. DAFNY: I don’t see them getting

simpler. I'd say in cases where the agency has good reason to understand the counterfactual, that pre- versus post-analysis can be useful, particularly if the markets are, you know, well known and relatively stable. But it's not usually your preferred version.

MR. GREENFIELD: Okay. I think that wraps up the first session. Thank you.

(Applause.)

PANEL: HOW CAN MERGER RETROSPECTIVES BE USED TO IMPROVE PROSPECTIVE MERGER ANALYSIS?

MR. HOSKEN: We're going to start the second panel now, How Can Merger Retrospectives be Used to Improve Prospective Merger Analysis. We have four speakers who have all conducted studies which have been explicitly designed to use merger retrospectives to tell us something about how to improve enforcement tools.

We have Chris Garmon from the University of Missouri-Kansas City. Chris worked at the FTC for a long time, too, so he's very familiar with what we do. Angelike Mina is an attorney in our compliance group and she has a long background in merger review. Frank Verboven from KU Leuven has a recent study that's looked at testing merger simulation. And Matt Weinberg, who I've written papers with for a really long time now, will also be describing his work.

So why don't you start, Chris.

MR. GARMON: Great, thank you.

Well, thank you, everybody. Thank you for the organizers and Dan for inviting me back to the FTC. It's great to be back here, see all the familiar faces, and talk about merger retrospectives and how we can use them to inform prospective merger analysis and what I'm going to be talking about, hospitals in particular and what I've done research to inform prospective merger analysis for hospitals.

So let's see. How do I advance the -- is it this? Okay, the big button? All right.

So as the Chairman mentioned at the beginning, in the '90s, there was a big losing streak in hospital merger enforcement, I believe eight straight losses for hospital merger challenges, and it looked like the merger enforcement was close to dead around the turn of the century. And Chairman Muris at the time decided to institute a merger litigation task force and also the Hospital Merger Retrospectives Project, which took a handful of hospital mergers and did a deep dive on what happened after those mergers. There were subpoenas for getting claims data and interviews and the like.

I think the two big lessons we learned from that project was that there were a couple of losses in the '90s where the merging parties were successful in making the argument that, yeah, we're going to get market power but we're nonprofit hospitals so we have the community's interest at heart and we're not going to exercise it, so you can trust us to do what's best for the community.

And this project was established with a couple of nonprofit hospital mergers that there can be cases where nonprofit hospital mergers will exercise the market power that they get, and so nonprofit hospital mergers can be anticompetitive. And there are also a number of more cases in the '90s where the geographic markets were defined by the courts as being very large, using the Elzinga-Hogarty test primarily. And these -- the Merger Retrospectives Project finding that there were a merger in Chicago and a merger in the Bay Area led to large price increases, showed that you can have anticompetitive mergers in urban areas where a technique like the Elzinga-Hogarty test would define a very broad geographic market.

So one thing that the Merger Retrospectives Project did not do was look at -- or evaluate prospective merger tools, and -- but at the same time, in the early 2000s, some papers were -- Town and Vistnes, Capps, Dranove and Satterthwaite developed some new tools to analyze hospital mergers prospectively. And later in that decade and in the recent years, those new tools, diversion ratios, willingness to pay, upward pricing pressure, had been used in actual court cases and successfully by the FTC and the state antitrust agencies.

The natural question is, are these new techniques and tools accurate in predicting post-merger effects? So what I did in my paper, I looked at 28 consummated hospital mergers of competing hospitals and then calculated the -- these screens, willingness to pay, upward pricing pressure, and a sort of reduced form merger simulation using premerger data, the data that would be available to an enforcer during that initial investigation.

And all -- and used the price method -- estimation method that Leemore Dafny used in her 2009 hospital merger paper, which is really needed to get a sample size this large, trying to get claims data for this level of -- this number of hospital mergers was difficult at the time since the Cooper, et al. paper has been able to look at hospital mergers using claims data, but I was not able to when I started this project.

The price change was measured for each merger relative to synthetic control, and I also looked at the change in the costs for each merger, post-merger change in costs, the measure of average variable cost. And the point of doing that is to evaluate these screens. They are meant to capture the loss of competition from a merger. They're not --

just like you can think of a normal HHI, you're looking at what would -- what would the loss of competition be?

So these -- this evaluation should emphasize this is looking at how well do these screens -- how accurate are they for seeing which merger should be investigated more thoroughly, not how well do they identify anticompetitive cases. So looking at the HHIs -- and this is consistent with what the Merger Retrospectives Project found -- they lead to a lot of false negatives. If you look at an HHI on a broad area, hospital referral region, that would approximate what an Elzinga-Hogarty market would be. It leads to a number of false negatives. If you do the opposite and look at a market that's a relatively small hospital service area, that basically flags every merger as anticompetitive, so that's not very effective as a screen.

And what I found is that the new measures -- willingness to pay and upward pricing pressure -- were more accurate in flagging mergers to be investigated further. And, in fact, for upward pricing pressure -- minimum upward pricing pressure of greater than 4 percent, that gives you the most correct predictions and no false negatives. So if you're really thinking about this as using it to flag mergers for further investigation, that would be better than using -- not ideal but better than using the HHI.

But when you look at the relationship between post-merger price changes and change in willingness to pay, for instance, the UPP graph is roughly the same. There’s a lot of noise. There’s a lot of variation that’s unexplained by willingness to pay. I think that goes to the fact that willingness to pay and upward pricing pressure, although they’re better at flagging potentially anticompetitive mergers, they’re still relatively crude, and there’s a lot that they don’t explain about what’s happening after a merger.

The limitations of this approach, I think there are two big ones. First, and as Dennis Carlton, as far as I know is the first one to highlight this, there’s a selection bias. Those mergers that are most anticompetitive, would most likely be deterred or be challenged, successfully challenged. So the consummated mergers you have to select from tend to be more concentrated than those that are innocuous or procompetitive.

And then there are lots of other effects of a merger that are merger-specific and they relate to price but they’re not necessarily related to competition. If you get a hospital system that merges -- that acquires a new hospital and they have better negotiators, they can negotiate a better price. That’s not a competitive effect, but that can be a merger-specific effect. And so I think that could -- effects like that could explain some of this noise.

So that’s why I think complementing this merger retrospectives approach with approaches like Dave Balan and Keith Brand’s working paper on simulating hospital merger simulations, where they use a Monte Carlo-like approach to test these screens against the solutions to a Nash-in-Nash bargaining model, they serve as a good complement, and both of those together show that the new merger screens do a better job than HHI for flagging potentially anticompetitive mergers. Thank you.

(Applause.)

MR. HOSKEN: Frank.

MR. VERBOVEN: Okay. Thank you very much for organizing this event and for inviting me also to this event. So I will talk in this 10 minutes -- I will start with sharing my insights on a study we did on the -- about one market in Sweden. It’s about painkillers and where there was a very large merger.

So that's the unique distinguishing feature, so it was a large merger.

And when we -- I was also working on the case with people from the Swedish Competition Authority, and we predicted with a merger simulation model large effect. But then the merger for other reasons was accepted. And we then did an ex post analysis, which -- what I think what is nice about this merger is that we could -- since the merger effects were so large, we can test a lot more details, a lot more nitty-gritty than one can do often in other ex post analysis.

So we could look at price effects by brand and at market share effects by brand, and then we have a supply side and a demand side in the model. So in the demand side, we distinguished between basically unit demand and otherwise constant expenditure model, so meaning price is linea-log so the usual literature takes it to be linear. And then we also compare a simple nested logit with random coefficient logit.

And then on supply side, we also do several things, so we account for in a very simple way for deviations from the most common assumption, Bertrand-Nash behavior, before the merger. And then we allow -- when we do the ex post analysis, we also look at whether -- I mean, because we try to explain what happened and where the model fits well and does not fit well. We look at whether also cost changes might have occurred after the merger.

So what do we find? So we find that functional forms matter not surprisingly. So in our setting -- but this is not necessarily general -- the unity model performed worse, so in the sense that one would get markups which -- or elasticities which would increase a lot across products just because they are more expensive and that issue does not arise in the constant expenditure model.

Also, the unit demand somewhat underpredicts or largely underpredicts the expected price effects. On substitution patterns, so basically how the different products compete with each other, so here random coefficient versus nested logit, they both have -- I mean seem to -- they don’t seem to be too much better or worse than each other, so the random coefficients model somewhat underpredicts price effects, but then it also better predicts the market share effects.

So in the rest, then, of the paper, we then studied -- we focused on the low price model constant expenditures, and then we compare then the other two models, random coefficient and nested logit, in more detail. And on the supply side, we see that the predictions on average seem to be quite well. But since effects are so large, as I said, you can also dig deeper, and so we do find anomalies that models cannot predict very well or not perfectly at least.

So the outsiders' price responses, so they tend to be larger than predicted, at least for some, not for all. And then the small -- what we found is in the ex post analysis that the price increase of the two merging firms, they are the same percentage amount, while the model would predict that the smaller firm would raise prices by more, so that is another anomaly.

And then factors that can explain this gap, So basically, the outsider price responses, so the usual way to think about it is, of course, is that it might be some kind of tacit coordination going on, but we also consider there's a cost increase that's plausible. So in this case, so it's about painkillers, so package size was actually reduced at the same time as the price per tablet was increased. So that raises costs, also. And then we did a regression analysis to validate that at least part of the price increase was due to a cost increase.

So insiders’ price responses, so as I said, so there’s some difference between the small and the large firm, and it could be that there was a possible cost advantage so there’s a typo there to the smaller firm that could explain the findings.

So then the broader lessons, because I just talked essentially about one observation, but I think it’s -- I mean, it’s an observation we looked at a lot, so I hope it has more weight than the usual one observation in a data set. So what are the broader lessons? So basically for any demand model, so it’s key -- I mean, it’s key to capture the main dimensions of product differentiation. So there’s discussion in demand literature, should you use simplified nested logit or more complicated random coefficient. That’s, of course, a very important discussion, but I mean, we should -- we should mainly not forget that we should take care of basic -- capturing the relevant dimensions of differentiation.

So in this case, I forgot to say, but basically there was a merger where the two firms, they conquered -- or they got 100 percent of the market in one of the three segments. So -- but then the key question was, of course, whether these segments -- whether they matter from the consumer’s perspective or not. So -- and the nested logit captures this well, but other models could also capture that by including random coefficients for these segments.

And functional forms on the demand side, they do matter. So log models predict bigger effect, but maybe with efficiencies this is not so important. If you -- so but at least if you just look at it without efficiencies and they make bigger -- they have higher predictions, so that basically our conclusion is that sensitivity analysis is desirable.

From the supply side, it’s important to -- we had a model where basically we allowed for noncoordinated conduct or we allow for having coordinated conduct already before the merger. The reason why that we looked at costs and the costs -- the markups from outside information were higher than basically predicted by the standard Bertrand model, so that’s why we allowed for some kind of premerger coordinated conduct.

And basically the broader lesson is that one should try to incorporate such prior information. When -- a final comment or broader lesson is that because I think one of the points of the session is to see whether basically evaluating merger simulation as a tool, so one should try as much as possible when we see that things differ after the merger one should take care as much as possible for any factors that could have changed. So for example, efficiencies that happen after the merger maybe affected some products of the merging firms differently than others. And, also, coinciding cost change or quality changes.

So some very brief remarks on future research on doing merger retrospectives. So I think -- I mean, it's very important to have more observation. So we have very few observations on merger retrospectives, and especially -- I mean, we have lots as we've discussed today but about evaluating merger simulation. I mean, I think there's room for a lot more.

And this is also academically I think very interesting because a lot of case studies I think you can learn a lot from all the qualitative analysis as well. One -- apart from merger simulation, maybe price concentration analysis could also be interesting, like maybe in airline markets in Europe, this has been analyzed a lot. This tool has been used a lot, so maybe in US as well.

I think also retrospectives on, for example, auctions, like when there is mergers between firms where auctions are important. That's definitely interesting and the same for vertical mergers. One thing I wanted to emphasize is it's also interesting to look at longer term effect.

So the study that we did about painkillers, so there was a short-term -- we looked at the short-term effects of two years before and after the merger. But we do have more data, and when I had to look at it last week, you see that the huge price increase that happened after the merger, they are no longer that visible several years later. So I think long-term analysis is also important. Evaluating nonprice effect on efficiency claims are important.

And, yeah, so just as a general conclusion, I would like, yeah, to say that I think merger retrospectives are very useful to evaluate these tools, and I think it would also be interest -- I mean there are costs involved, but I think there's also academic benefits from learning more about this and, of course, there's also challenges that we have to meet. Yeah, thanks.

(Applause.)

MR. WEINBERG: Okay. Thanks for organizing, Dan, and everybody else. Really happy to be here. I'm going to talk about two sets of papers today that are related to this topic of how retrospectives can be used to improve prospective merger analysis, and they have a common theme, but they focus on slightly different features of the problem. So the common theme is looking at this basic model of competition that's very useful. It's a framework. It's like the maybe main framework for thinking about the lion's share of mergers that's built on kind of three parts.

The first part has to do with basically summarizing how people would switch from product to product, given changes in their prices. Of course, that forms pricing incentives. The next step is thinking about a model of competition, the typical thing is to think about the main locus of competition being prices. The next step is figuring out given that assumption about how firms compete what sort of costs would be necessary to rationalize what you see in the data.

And then the third step is, you know, the interesting step, which is given how people would substitute in this model of competition, how prices would change if a subset of products were combined in one portfolio, right?

So really the question is, what are the pricing incentives for multiproduct firms? That's kind of the big question, right? So the first set of papers I want to talk about are really closely related to what Frank just discussed and Chris as well. So the first set of papers, one with Dan, the other one is a more limited analysis on the same theme. What these papers did was very similar. So what we did is we used only the information that you would have had ex ante before two mergers in the first paper and one more merger in the other paper were consummated.

So we had scanner data on prices and quantities in a couple of consumer product markets. And we did those three steps that I just described and computed predictions about how prices would change after these mergers went through, if they were to go through. For whatever reason, these mergers were approved and we then added to the sample data that was generated after the fact and looked before and after at directly what happened to prices, and compared the predictions with these more direct measures that use data ex post. Right?

So we tried to be sensitive to some of the issues that Frank brought up, and one issue that comes up in these models is, of course, functional form does matter. Right? It's well known that not only does getting good measures of who competes with whom through cross-price elasticities or diversion ratios, of course, that's fundamental, right? But also, you know, given two different demand systems that have kind of the same implications about who competes with who, at premerger prices but different implications about how rapidly prices become more elastic as you move away from premerger equilibria, that matters, too, right? So you can calibrate two different demand systems that have the exact same premerger elasticities, plug them into a merger simulation and you get really different numbers, right? In other words, the second derivative matters.

Another way to think about this is exactly who the switchers are. Given a price increase, that matters quite a bit in how these things go through. So we focused on kind of bread-and-butter basic demand systems that were kind of off of shelf back then and did a pretty thorough sensitivity analysis to different specifications, demand, and different ways that you might go about estimating that, given information that might be available if you're actually reviewing one of these things.

So just backing up a little bit, the three different packaged consumer product markets that we focused on were some that Dan and Orley had looked at in a previous paper, and, you know, maybe they're not the most exciting products in the world, but we thought that they might be good fits for this sort of analysis. They were pretty stable. They were pretty simple. There weren't that many products in the market.

So the kind of demand systems that we're talking about here were really simple versions that were kind of off the shelf back then. They all had the kind of basic forum -- well, two of them -- put a lot of emphasis on this basic form of some measure of Q on all the prices, right? There are substitutes in there, so you need all the prices in there.

One key limiting factor on the ability to use those models is how many products you need independent variation and the prices of to be able to estimate them, right? They all have to shift independently of one another and for reasons that are not related to demand shocks, hopefully, right? So there weren't a lot of products in these markets. They were stable. Not a lot of entry and exit and so on. And, you know, that's what we focused on.

So what we found is that they're sensitive to demand, not surprising. We then did this other step of trying to explore the forecast error in a sense, trying to explore the bias. And we looked at the usual suspects, right? We didn't add it to the sample information that you would have not had if you were reviewing one of these things, but you would have had ex post, and so we looked to see if, like, do shifts in demand explain this, are there plausible changes in marginal costs that could explain this and so on.

And we weren't really that successful, to be honest, at isolating exactly what it was that caused these things to go off. It was a challenge.

So the next study that I want to talk about takes a slightly different focus on this. So here, what we did is we really tried to focus on one reason why these models might go off. And this is an assumption that the way that firms compete is static Bertrand competition through prices over and over again without kind of thinking about the past, repeatedly, you know, noncooperatively setting your prices over and over again.

So we focused on this merger in the beer industry, and the approach was -- it was in some ways similar and some ways different. So what we did is we used all of the data, both before and after the merger, to estimate demand. Right? So that kind of, like, limits demand for -- kind of like in a sense we hope that we kind of, like, know what demand is before and after, so that's not going to explain why -- we're kind of shutting that down as an explanation for why prices are moving, right? We're modeling that. And we tried to focus more on this assumption of conduct.

All right. Let me step back a minute and tell you a little bit about the industry. So the specific merger that we're looking at to try and understand the way firms are competing in the beer industry was one between Miller and Coors. At the time, this was the second and the third biggest firm in the industry. The biggest was Anheuser-Busch Inbev. And they made all the brands that everybody knows, kind of the famous macrobrewers.

At that the point in time, you know, in the channels of sales that we had access to, these were still, like, upper 80 percent market share. So it was a big, big share of the market. It was approved by the DOJ after a pretty thorough review in 2008 and for a pretty interesting reason. So this is something I first became aware of through reading one of these year-in-review articles that comes out in the "Review of IO," which is great piece of qualitative information about what people are thinking about in mergers.

And here, it's pretty interesting. So this merger's combining parts that are probably really close substitutes, not a lot of other competition for that segment of the market. But on the other hand, for historical reasons, kind of, Coors was almost all brewed in one location in Colorado. Miller, on the other hand, had six plants spread out across the United States. And that was the efficiency rationale, you know, beer is mostly water. It's bulky and it's heavy. They were going to move the production of primarily Coors brands into the Miller plants and reduce the shipping distances to retailers, right?

So that, in conjunction with what I think were probably demand estimates that implied the closest competitive threat to both Miller and to Coors was the big firm, Budweiser, together suggested this wasn't going to really do much to upward pricing pressure. That's my guess.

So what we did is we looked -- we got as long a range and as long a time series of data as we could. It spans from 2000 up to the end of 2011. And we did something really simple to start. We just plotted the average price of a 12-pack of beer for the main brewers, and also for more distant substitutes Corona and Heineken.

So the first figure on the left shows that after at least seven years of kind of a stable decline in real prices for Miller Lite where Coors Light, and Bud Light, the main beers produced by these firms and produced in the segment of the market that we’re focusing on, you see a pretty abrupt price increase over the three months after the merger, the date of which is indicated by that vertical red line.

Over the same time period, to my eye, Corona and Heineken prices kind of continue falling at a preexisting trend. So what’s surprising about this? Well, one, it’s a pretty stark price increase for Miller and Coors, the two products of the merging firms. The other thing that’s somewhat surprising about this is that a competing firm, Budweiser, matches the price increase. It goes up by the same amount, right?

So that’s kind of hard to explain with most demand systems that I know in this static Bertrand competition model. I think it’s possible, but it would require, like, first a lot of diversion to Bud and, second -- I mean, it wasn’t easy, right? So what we did is we had a model of competition that nests Bertrand, both before and after, but allows for coordination after the fact between the combined

Miller/Coors and Budweiser.

So the merger does three things. It puts Miller and Coors brands in common ownership; it changes Miller and Coors' costs, how much -- or how far away they are from the -- how much the distance changes in shipping; and it also allows for this deviation from Bertrand competition ex post. And we estimate the extent to which that deviation from Bertrand competition ex post is important.

If you take that parameter literally, it has to do with the weight that Miller/Coors puts on Bud's profits and vice versa. The way that we identify it is through the inability of the Bertrand model to predict this increase in Bud prices ex post, so that's kind of what's driving, right? So there's an assumption that Bud's costs aren't going up by a whole lot in this analysis.

Okay, so we reject the Bertrand model ex post. We then do a bunch of counterfactual simulations, shutting down this coordination, isolating the different mechanisms through which the merger impacted prices. You can see that it could have been worse if there were no efficiencies. That's the top line. It looks like the efficiencies did offset what ended up happening. The raw data, which we're interpreting as coming from both the coordinated effects, unilateral effects, and these efficiencies is lower, but it didn't do enough. A lot of the price increases driven by coordinating effects, if you shut those down, you actually do pretty well. So it looks like the Bertrand model would have implied the prices were pretty stable, both before and after.

Okay, so this leads to the natural question of, you know, what are they doing, right? If it's not the Bertrand model, is there another model that might better explain what's going on. And in some of the documentary evidence that came up in subsequent antitrust investigations, namely in the investigation into ABI's attempted purchase of Grupo-Modelo, a bunch of documents came up that described behavior that makes it seem as though there's kind of like a leader-follower pricing thing going on here, where Budweiser is proposing prices and then Miller/Coors is following. They described Bud has kind of a business plan where they describe the way that they're going to do this that makes it really easy to predict and really easy to understand for Miller/Coors.

And at the same time, you know, of course, you have to read these things with care, but the tenor of the annual reports of these companies changes quite a bit and moves away from describing the environment as being extremely competitive premerger to, you know, post-merger we've got robust pricing and sustained price increases and so on.

Okay. So I think this is an example of a way that you might kind of -- it moves a little bit away from, like, the question that you have to answer at the FTC, like given all this information that you could have before the merger, what would happen to prices. That's a super important question, and I think the Bertrand model -- I mean, that's a really useful framework for thinking about those questions. It's an important model.

But I think it points towards kind of a more provocative question as to like what other types of competition might explain the way that things are working in particular industries. And, you know, we're asked for ideas for more work, all these models have lots of kind of parameters that you have to condition on that might be hard to model with only premerger information.

Marginal costs are one thing. In the models with negotiations that come up in the hospital literature, for example, there's another layer of complexity, these bargaining weights. You have to take a stance on how they might change before and after the merger, maybe, you know, a combined hospital is better able to negotiate with an insurer than they could independently. That might happen through these bargaining weights.

So I think these are lots of things that you could explore with more ex post data, and I'm happy to talk more about them later on. Thank you.

(Applause.)

MS. MINA: Good morning. I'm Angelike Mina. I'm an attorney in the Bureau of Competition at the Federal Trade Commission. I should start out by saying that I'm here in my individual capacity and the views that I am expressing do not reflect those of the Commission or any particular Commissioner. I also want to give a big thank you to everyone who helped work on the remedy study. And I want to acknowledge the folks in the audience who helped work on the remedy study as well.

And the Federal Trade Commission and staff in the Bureau of Competition and Economics spent two-plus years working on the merger remedy study that ultimately culminated in a report issued in 2017.

Okay, why study merger remedies? The efficacy of our remedies is critical to the

Commission's antitrust mission. It enables the Commission to clear what it otherwise would consider to be an anticompetitive deal by requiring the merging parties to divest certain assets and/or take other action that the Commission deems to be able to remediate the harm from the loss of competition it sees from the combination.

In 1999, the Commission issued its first divestiture study. There was a lot of learning from that study, and as a result of what was learned in 1999, the Commission took certain reforms such as the Commission -- the study revealed that when the scope of the asset package is less than an ongoing business, what we call a selected asset package, the remedies tend to prove riskier and don't succeed as often.

So in response to that, the Commission started requiring buyers be named up front. Also, because of the 1999 study, the Commission started appointing monitors more frequently, especially in those remedies that proved to be complex or where the products were particularly technical.

So the purpose of the more recent merger remedy study was to evaluate the reforms that the Commission took in response to what it learned in the 1999 study and also to evaluate our merger remedies more comprehensively.

So the goals of our merger remedy study was, one, to assess competition, whether or not the remedy served to maintain or restore competition, and also to evaluate issues that arose during the process to help improve our remedies going forward. Notably, the merger remedy study did not consider whether or not the Commission should have taken the enforcement action in the first place.

So the merger remedy study looked at the orders the Commission issued between 2006 and 2012. The Commission issued 89 merger orders in that time period, and we evaluated those orders in three different ways. The way that -- what I’m going to talk about today is the 50 orders that were evaluated in using the case study methodology. And for those 50 orders, those included primarily horizontal mergers but also a few vertical mergers and remedies and were primarily proposed deals, but also included some consummated deals.

So we evaluated the orders separately by market. There were 184 relevant markets in those orders. And we also evaluated the outcomes of those remedies by buyers, and we had 46 different buyers that served to remediate the harm we saw from the mergers.

Our study was a qualitative retrospective. Most of the information that we got was through interviews. We also gathered some limited sales data to help us primarily corroborate what we were hearing in the interviews. We had the benefit of internal information such as Commission recommendation memorandums, and we also were able to and did have discussions with the investigative case team to learn more about their case.

We conducted a number of interviews, over 200, and we interviewed the respondents who would be the merging parties in this case, and also the parties that are subject to the Commission order. We also interviewed the buyer of divested assets. And for each market, we interviewed two competitors, two customers, and if the Commission appointed a monitor in that order, then we also interviewed the monitors.

We had a very high participation rate for our interviews. We also sought out sales data in revenue and volume from key market competitors, and we obtained that sales data through our 6(b) authority.

We evaluated our remedies in two different ways. The first way was to consider the competition question, whether or not the remedy maintained or restored competition. The other way was to consider whether or not there were any process concerns that came up during the settlement process as the assets transferred post-acquisition to see if the buyer had any issues. And we -- our concerns that we asked about and that we heard about in the interviews related primarily to the scope of the divestiture package, the funding commitments by the buyer, whether or not the buyer had adequate due diligence, how the transfer of back-office functions went, the length of the transition services and supply agreements, and if it was the case that the order allowed for the divestiture to take place post-merger, we also evaluated how the “hold separate” business, you know, went and was implemented.

We rated our remedies as a success, a qualified success, or a failure. We also considered whether or not the process concerns rose to such a level that those concerns could have impacted or did impact the success of the remedy.

Here you’ll see the types of mergers that were included in the case study that we did, as well as the types of remedies that the Commission took that we considered in our study. Here you’ll see the types of characteristics that our orders had that were in the case study. As you can see, in terms of buyer timing, there were -- over a majority of our buyers were buyers up front. We also did post-order buyers.

For package type, over a majority of packages were -- divestiture packages were of selected assets, although we did have 40 percent being an ongoing business. The fact that both up-front buyers and selected assets, those numbers go together, is not a coincidence because, as I mentioned before, after the 1999 study, the Commission began to require an up-front buyer and selected asset packages to help mitigate the risks that it saw with less -- with the parties divesting less than an ongoing business.

Overall, our findings were that our remedies are mainly successful, and I encourage you all to read the remedy study because we lay out how we evaluated the outcomes and what our findings were depending on the type of remedy and whatnot.

So the scope of the asset package matters. As you can see here, all of our divestitures of an ongoing business were successful. Our divestitures that were of selected assets were less so. This was -- what we learned in 1999, and it was confirmed in our most recent remedy study, it’s not to say that all -- you know, some buyers of selected assets were successful, and those buyers tended to be knowledgeable about the markets, have similar operations or complementary products, particularly they might have a product portfolio where -- such that when they acquired the products, the acquired products fit nicely within their portfolio or they were familiar with the customers.

Several of our buyers of selected assets were successful, but encountered difficulties. And then 10 of the buyers that failed all acquired selected assets. They all failed for different reasons, but they had all acquired less than an ongoing business, and notably all of those buyers were also up-front buyers, which indicates that even though we try and mitigate the risk of divesting less than an ongoing business, doing so does not alleviate that risk.

So key takeaways, ongoing businesses are less risky in terms of a divestiture package. Up-front buyers will not always eliminate the risk associated with a selected asset package. And really the goal of our remedies when it comes to a divestiture is to set up our buyers as a competitor in the market to replace the competition that we think would be lost by the combination, and that puts our buyer in a position where one day, they’re negotiating a sales contract with the sellers who are also our respondents, who are also the merging parties, but our intent is that the buyer will take those assets and the next day be in competition with the sellers.

So our divestiture buyers are in a position where they’re buying the assets from a competitor, and in many cases, they’re also getting transition services from their competitors. And when you think about the dynamics of that and you’re in that mindset, then the other takeaways that we learned from the study really flow naturally.

Our buyers do not always have adequate due diligence. We found that they did not always have access to the employees or the facilities or the information that they needed, and they did not have adequate time either.

The transfer of back-office support functions can be difficult. And this we’re talking about IT infrastructure, human resources information, accounting information and other corporate functions that the assets need to be supported so that they can operate in the markets.

And then we also learned during the study that buyers remain reluctant to bring issues to staff and the monitors as they occur. As we were speaking to buyers about their experiences, they raised issues that the buyers -- that they had not raised during the settlement process or during the asset purchase and the integration, which led us to understand that despite our efforts in 1999 to encourage communication with buyers as they acquired the assets, they're still overcoming obstacles without having the benefit of our input. We'd like to think that if they came to us earlier that we would be able to help resolve issues before they materialize into real problems.

So to sum up, I think the case study methodology was a really good way for us to look back at our remedies and understand what was working, what's not working, and what we can be doing better going forward.

(Applause.)

MR. HOSKEN: We've seen two very different styles of retrospective studies, and I did that on purpose because I think they show how these different approaches can be complementary. Chris, Frank, and Matt did work that is very familiar to economists and the way we think about our tools. We're using data, we're making -- we're using specific models to make explicit predictions, and we're trying to evaluate how they work. And that's -- that's one methodological tool that's used in horizontal merger enforcement.

But as somebody who's spent his career working at an antitrust agency, the quantitative component that an economist works on is just one piece of the analysis that takes place. And there's a lot of other work that really doesn't naturally lend itself to quantitative analysis that's really important.

And I think the remedy study is a really good example of that. We have an implicit production function that we use to try and solve competition problems by developing this methodology for selling assets, but the only way we can figure out if it works is if we go back periodically and evaluate it, and we do that using a lot of qualitative information.

As Angelike was describing, a lot of it is just talking to people. And so because a big part of the purpose of the hearing today is to get advice from people on how the FTC can improve its studies going forward, I wanted to start off with trying to think about how we could use qualitative information more to improve our studies, particularly the studies that I think appeal more to economists trying to do something quantitative.

And to start that conversation off, I was going to ask, Angelike, could you describe some of the features that the FTC has or access of data that makes it easy for us or makes us more well positioned to do these kinds of studies.

MS. MINA: I think that for the remedy study we had a large headstart because we were able to have access to all the Commission recommendation memos, which is a way in which the staffs at the Bureau of Competition and Economics recommend to the Commission what action they think should be pursued and it summarizes the evidence and the consent in our case and also why we think the consent would solve the problem that we see. So we had access to that.

We also had access to staff, and they were a tremendous help in helping us understand what the main issues were with investigation and with the settlement. So being able to talk to folks and find out what happened on a one-on-one basis was really helpful.

And then we had 6(b) authority, so we could ask for sales data or basically answers to questions in a written form to -- from the public.

MR. HOSKEN: Could you -- because I think a lot of people -- well a lot of people who work at the

FTC don't really understand our 6(b) authority, and people outside definitely don't. Could you describe, like, what that is and what we can do with 6(b) authority as a Commission?

MS. MINA: So 6(b) -- the term 6(b) comes from the Section 6(b) of the FTC Act and it empowers the Commission to ask for answers in writing from companies or whatnot. It is subject to the Paperwork Reduction Act, which our study overall was and as would be the interviews that we conducted, which means that we had to get OMB approval before issuing the 6(b)s. The document issues the 6(b)s. They're called an order to file special report. And they are issued pursuant to compulsory process.

MR. HOSKEN: So with a 6(b), for example, we could -- the FTC could compel firms to provide data and documentary information?

MS. MINA: The rule itself calls for written answers to questions, so, you know.

MR. HOSKEN: Okay, so with that background, what I wanted to ask the economists would be to think about the studies you've done and the studies you'd like to do in the future. How would this -- what other types of information would you like and how would you use that in your studies, you know, if you could have access to the information the FTC has or potentially work on a study that used 6(b) authority?

You want to go in order?

MR. GARMON: Sure, I can chime in. You know, going back to the qualitative question about qualitative information and back to what Leemore was talking about this morning, the cross-market mergers, that’s one area where there’s research showing that there’s an effect, but there’s not as much about why that effect exists. Is it related to competition, or is it something that’s unrelated to competition?

And I think being able to talk to the customers after the fact would be really useful to get an explanation of why did you talk to the payers, why did you agree to this price increase. You know, talk to the employer customers of the health insurers, why did you see this. I think that would be useful for decomposing those explanations.

MR. VERBOVEN: I would also ask questions like after you’ve estimated a simulation model to see where things are different, so to focus on basically trying to understand why it’s different or for example if the markups predicted by your model are different or maybe seem too low, maybe to get cost information so that you can build that into the model.

I mean, that’s still -- it’s detailed information, quantitative, but also other information qualitative could be like asking internal documents from the companies, all assuming that this is feasible, but where maybe they have basically marketing presentations on where they have developed their strategy on pricing and, yeah, these type of things.

And then another thing is maybe about efficiencies, if they have made efficiency claims, I think it would be nice to get internal documents on also whether these were realized.

MR. HOSKEN: Matt?

MR. WEINBERG: Yeah, I’d follow up on that. I agree with everything that Frank and Chris said. One thing that oftentimes I’ve seen people might have at the agencies that you rarely have as an academic is cost data. And, you know, of course, that has to be interpreted with care, the type of costs that we really would like to know about for our models might differ from what an accountant would put together for cost, so it has to be looked at carefully.

But if you had it in a way that these models that were talking about are overidentified, right, because you need to know model of competition, and if you know that, you assume that, and you know what demand is and you have a prediction of what costs could be, you could confront that with direct measures to get a sense of how well your model is fitting the data. I think Aviv's old Econometrica paper on the cereal industry is a really nice example of how that worked for assessing for models of competition. So that would be very useful.

More broadly, kind of any predictions that were made about why the transaction would be competitively benign would be nice to see if they were borne out, so in the beer case, there was a specific prediction that the shipping efficiencies were going to be important, and so that leads to natural test. You can ask, all else equal, does it look like places where there is greater scope to reduce these shipping distances, do prices go up by less in those markets than they do in markets where there was less scope for that, right?

So any kind of specific predictions that were made, you know, that's something that the agencies have that we don't have as academics oftentimes.

MR. HOSKEN: So a followup to that, and I think Chris touched on this a bit, is are there specific industries or questions that you think the value added would be highest? You know, so Chris was just describing this cross-market merger area in the hospital industry might be one where this would be worth doing. Are there other kind of open questions where having this additional data would be particularly high value-added?

MR. VERBOVEN: I could start, but I also don’t know what’s very important in US, so but my thought would be to look at where -- I mean at mergers where you see ex post that maybe they’re -- you have some anecdotal evidence where there were big price increases, so that would be kind of a general obvious thing.

And then maybe also you expect certain merger waves to come so that when you look at it to say, I mean, in Europe, for example, at the moment, for, like, the mobile telecom there’s a merger wave, so I think -- I mean, because there’s different countries and they all -- I mean, so it’s different from here where -- so but then you -- it would be very interesting to look at further evidence to see what we can learn from future mergers in a similar context.

MR. WEINBERG: Yeah, given the importance for hospital work in the FTC caseload, I think it’d be great to see more of these models fit to those industries to see what happens in the aftermath. I think that's a natural area to look at, together with those cost [indiscernible] you might be able to get at some -- how some of these other parameters might have to change in order to explain the way prices and quantities move with the data before and after. I think that would be really interesting.

MR. HOSKEN: So I'd shift gears a little bit, and these questions are mainly going to be focused towards the economists. One of the big potential value-added of the work you've done is to really test to see how well these merger simulation tools work. And so I realize it's a fairly thin record out there. There are not a lot of studies that have done this work. But what would your assessment be of how well the tools are working and where the areas you think people should be focusing more to do more R&D on these kind of techniques. We can shift. We can start with -- I'll start with you, Frank, this time.

MR. VERBOVEN: Okay. Yeah, I think the supply side is probably the most important and interesting one. Also, academically, it's been on the table a long time, but I think it's been neglected a bit the last year. So now there's recent interest again in trying to understand conduct better. But, of course, it's also the hardest part. I mean, yeah, your paper, Matt, is really interesting on showing this, on how conduct can matter. But generally, we have -- it's very challenging because, yeah, there's so many possibilities in repeated game context, but that's why we need also more evidence on this.

MR. WEINBERG: Yeah, just to echo a sentiment that was raised in the previous session, there are only a handful of studies by a handful of people doing this stuff, and I think the more people doing it, the more cases people look at, the better it's going to be, the more we'll learn from it.

So I think first I would say let's not be too hasty to draw general conclusions from, like a handful of case studies, but, you know, thinking about sensitivity of the models to different specifications, thinking about whether functional forms that might be more flexible or becoming better understood, it might help be more robust, I think that's interesting and I also agree thinking more about the supply side and how competition might change in ways other than Bertrand to Bertrand is super important.

MR. GARMON: I think in the healthcare area, one area that needs to be studied more is outpatient facilities. There's very little out there on what would happen with a merger of overlapping outpatient facilities. I think also, and this is sort of a plug for the work that's being done, research in COPAs, what happens in mergers when there's regulation, particularly price regulation as we just saw with the Beth Israel-Lahey merger where the State of Massachusetts put on conditions related to prices, what effects will that have on prices but also other aspects, quality, access to care. So I think those things need to be studied.

MR. HOSKEN: A followup on that, thinking about the supply side, how important is that for the use of merger simulation tools as a screen? You know, so, like, if -- you know, if a merger is a merger that's combining two firms that sell important substitutes, we're probably going to have a merger simulation predict that that merger is going to be problematic. Does it matter that the merger might also increase coordination or not? You want to start?

MR. WEINBERG: Yeah. We speak directly to that in the paper with Nate that I talked about briefly in my presentation. If you shut down this parameter that we think describes how firms might be coordinating, that's one way to do it anyway. And just focus on the other two mechanisms through which merger changed pricing incentives, the unilateral effects and the efficiencies, then prices didn't really go up.

So in that context, it looked like it could be important. It's just one case.

MR. HOSKEN: Either?

MR. VERBOVEN: Yeah, adding -- I mean, of course, yeah, I mean, I think it's important. I mean, I think it's fine to start using Bertrand, but it's more when we see that there's deviations in ex post studies that we want to try to understand this, but, I mean, to make conclusions, suppose that we find 10 cases where there's always been coordinated effects, I mean, that might tell us something.

But I think even without this, I think most of the mergers that would include coordinated effects would probably have been -- in the painkiller merger, for example, that I studied, we allowed for coordination in a bit different way, like, because we allowed coordination already before the merger, but if we would not have allowed for this, we would still have found sizable price effects. They would be different, but in terms of conclusion, I don't think they would have changed too much.

MR. HOSKEN: Chris, do you have anything, or --

MR. GARMON: You know, just with healthcare, you know, work done with, for example, the Ho and Lee paper published a few months ago, and you could certainly use that as Frank and Matt have done comparing the counterfactual of mergers to see how well the Nash-in-Nash works. So I think that's useful. It's very data-intensive, though. They were able -- they had sure counterfactuals there, and they were able to get very good data.

We see now there are a few states that have all-payer claims databases which you really need to do this work in healthcare, places like HCCI, Humana, and United are withdrawing now, and that may limit the use of that going forward. I think we need more of that detailed data to do this work.

For coordination, at least for healthcare, I would want to know what they're coordinating on at the first step because contracts for hospitals, for instance, are so complex.

MR. HOSKEN: So, again, realizing that it's a thin record, what does the thin record tell economists working at the antitrust agencies they should do as a set of best practices when, you know, using these empirical tools for merger screening-type purposes?

MR. GARMON: Well, if I can jump in, I think it's already reflected a little bit with the Horizontal Merger Guidelines. So the 2010 revision explicitly states that for differentiated products, we're moving away from the use of things like HHI and moving more toward things like diversion ratios and the upward pricing pressure.

For differentiated products cases, I think that's the right approach. You should move away from things like HHI and move more toward those things. Of course, for the lawyers in the room, you still have to prove a market. That's part of the law, so ways in which that market definition can be consistent with the predictions of the models, I think is what we need to focus on.

MR. VERBOVEN: Yeah, so I think what would be needed as basically best practices is to do a lot of sensitivity analysis on the things we've discussed, demand side, supply side, and check how the results would change under different assumptions, and then in addition complement that with -- because the models that we're using are econometrics, but don't be addicted to these models, and also use outside information to try to see which -- when we do the sensitivity analysis, which -- I mean, maybe enough in many cases the results would go in the same direction, but if they don't, then this extra external information can be very useful to incorporate.

MR. WEINBERG: Yeah, again, kind of the worst part about going last is --

MR. VERBOVEN: You should start next time.

MR. WEINBERG: -- I agree with everything Frank said. Like understanding, you know, what parts of your prediction -- this is stuff that people here, I think, are probably already doing a lot of, but I think it's important just to acknowledge what parts of your analysis are coming from assumption and what's coming from the ability of your model to fit the data. And if you don't have the ability to fit a flexible model, think about the predictions of alternatives.

MR. HOSKEN: So we have a question from the audience for Angelike, which was why in the remedy study did the team focus on a two- to three-year time period for determining the success of a remedy, and what is kind of the interpretation of focusing on a relatively short time period rather than, you know, a longer time period?

MS. MINA: So I think that's referring to the different ratings where we had success. Qualified success is when it took a little bit longer for our buyers -- or for what we saw post-order to get the competition back up to where we expected it to be. And one is we kind of looked back to the merger guidelines where we saw that there's entry analysis that relies on this two-year time period.

And then we heard -- we just -- as we were going through the process, some buyers seemed to really be able to step into the shoes of the merger parties pretty much immediately or within a short time period, and then some were able to do so, but it just took them longer than we had anticipated it would take them to. And so that's where the qualified success with the longer time period came in.

MR. HOSKEN: A somewhat related question. So, you know, so the remedy study was a huge undertaking. I mean, the Commission invested a massive amount of resources in the study. What do we do with that information to try to improve our enforcement behavior to kind of justify the investment?

MS. MINA: Oh, sure. So we learned a great deal of information from the study that we began incorporating pretty much immediately in terms of the way that we vet our buyers or the scope of the asset package and press on the pressure points that we see when we're crafting remedies, really asking questions about is the buyer doing due -- getting the due diligence that it thinks it needs, that it would normally get in an arm's length transaction, asking the respondents or the proposed respondents what steps they're taking to provide the due diligence that's needed, really pressing on questions about transition services and the kinds of back-office support that a buyer might need going forward.

I'll go ahead and make this plug now because I was going to do it eventually anyway. Please read the remedy study. It's only 37 pages. But if you don't have time, read the back because in the back we have a set of best practices that's like seven pages long, and it's really intended to let respondents and buyers know what to expect when they're part of this Commission order divestiture process, what kinds of information we're looking for, most -- it informed a great deal from what we heard in the remedy study, and what kind of questions we'll be asking when they come forward with a proposal and when the buyers come to us and explain to us what their business plan is.

MR. HOSKEN: Frank, in your presentation you talked about, you know, other areas where these kinds of studies would be useful, and one of your slides or one of your comments was on using merger retrospective in an auction-type setting. Can I put you on the spot, and like do you have like an industry where you think this would be particularly successful?

MR. VERBOVEN: Okay. Yeah, I had a little time so now it’s a good moment to talk about it. So I think in auction markets, for example, construction auctions, there is a recent paper by people in Vienna, Christine Zulehner, Gugler and other co-authors, who basically look at -- I mean, there’s many, many bidders there, so it’s a market with a lot more competition, but they both do an ex post analysis, and also study then an auction market, like basically the estimated structure bidding model for auctions to try to see how things compare.

And so I think it’s a promising area, maybe the unfortunate thing for research, but I think it’s a very interesting paper as there there’s relatively many bidders. That’s good for the market, of course, but the effects of mergers would be relatively small. On the other hand, auction markets, I think, are also interesting because the rules of the auction are well known. There could still be deviations if there's collusion and stuff like that. But at least it's better known than if you're studying a differentiated products market.

So I think this could be definitely an interesting avenue if there are a lot of mergers in bidding markets going on to study this, yeah.

MR. HOSKEN: So I follow up to that, and I know it's not your paper, but when I think of a lot of the bidding markets we see here internally they often involve products that are very customized. And so, you know, you have two customers coming in that might have some RFP-type process, but the service components to the different purchases could be very different.

And so there's a serious measurement problem for price, and trying to think of a counterfactual that you'd be using in the merger retrospective piece would be difficult. In like a construction-type setting, is that less of an issue?

MR. VERBOVEN: So this is not my main research, but I think just generally in auctions, I mean, I agree that prices are customized, but I don't think that's necessarily an issue because even when prices are different for all customers through the bidding process, I mean, the is advantage that it gives us lots of data so we can do sensible econometrics and we get to make forecasts on what will be the effect of the merger, even though it might not be materialized to an individual customer, but we can still make an expect prediction about it.

So we need, of course, lots of covariates that explain or that can try to explain why, say, one auction is different than another, but I don’t think that should be impediment to study this.

MR. HOSKEN: We had another question from the audience. I’m not sure, because Angelike and I, I think, would be the ones to answer it, which was has the FTC studied the effectiveness of firewalls as a remedy to a vertical merger such as a remedy recently imposed in the Staples/Essendant case.

I’m not aware of that. Are --

MS. MINA: Well, so in the merger remedy study, we had four vertical cases.

MR. HOSKEN: Okay.

MS. MINA: And most, if not all of those cases were information-sharing cases that -- where the remedy was a firewall. So, yes, in the study we did, we did follow up to find out how those firewalls went for working.

MR. HOSKEN: And how did they?

MS. MINA: They worked.

MR. HOSKEN: They worked, okay.

MS. MINA: So we spoke to -- I mean, the most informative part of that was speaking to the monitors who really were -- the monitors oversee compliance with the order and help facilitate when there’s a problem involved, you know, if there’s a buyer, but in vertical cases, there’s not -- there wasn’t a buyer with the firewall cases. But -- so we had very detailed discussions with the monitors.

MR. HOSKEN: So I should probably take a step back. What’s a firewall?

MS. MINA: So a firewall is essentially when you try and cabin off competitively or in our -- competitively sensitive information so that individuals in one part of the company do not have access to what we do not want shared with the other part of the company. And it can be done, you know, through IT systems, it can be done very easily because you can just, like, not enable people to have access to that information over IT servers or whatnot. But you also train people and you also do followups to make sure that people are in compliance with the ground rules that are set up so that there is no sharing of information that shouldn’t be.

MR. HOSKEN: I think we've covered this a bit, but I think I'll go back to it, because one of the common criticisms I've heard of merger retrospectives over the last 20 years is the case study critique, that, you know, that you put a lot of work in, you learn a lot about something, but who cares because it might not tell us anything about the next transaction, the next deal, whatever.

So for this area where we're looking at the statistical test of merger tools, how worried are you about the case study critiques of our -- this very small sample of studies which have looked at these tools? And, you know, the summary of the tools seems to be there's a lot of value, these things can pick up -- we can pick up demand substitution, we can identify substitutes, and we can make predictions, but the predictions are kind of noisy and sensitive to assumption that are hard to evaluate using only premerger data.

MR. WEINBERG: Yeah, that's a hard question. So, of course, there are limits to how you can extrapolate from one of these studies to another, just the way that a lot of this work and especially some of the work that I talked about is built is the details really matter a lot, right? Like, who competes with who, you know, how the demand system looks, what the different firms' marginal costs are, how those changed. That's not going to be easy to extrapolate from one industry to another, of course.

On the other hand, you know, my kind of hope is that you might learn something through this process about how competition works in particular industries. And that's where I think focusing more on the supply side and conduct is really important. You know, hopefully, it's somewhat stable. You can build off it if everything's always in flux, you have a host, right?

MR. HOSKEN: Frank?

MR. VERBOVEN: Yeah, I agree with that. So if I can add to that, so if we would be interested to know what is kind of the average price effect of a merger, then I would agree fully with you, then, I mean, yeah, single or even 10 studies might not be enough. We would need 100. But if it's the purpose what we're talking about here in this session, it's about evaluating tools like structural models of supply and demand, it's still -- it remains a case study, so we also need a lot, but, I mean, we can still learn from how these models perform and maybe already 10 studies would be very informative. I think all the studies that there are now already tell us quite a lot on what they are doing well and where they can do better.

So if it’s the purpose of just evaluating the methods, then I think the case study issue, I mean, it is valid, but so you need more research, of course, but it’s not a big issue that, yeah, one is looking at one sector of one industry.

MR. GARMON: I think it shows the tradeoff between the detail you can have with a study and the sample size issue, like the mergers retrospective project, that was four mergers studied in detail. Doing a fully specified merger simulation is very data-intensive. So, like, what I did, you can get the sample sizes up to 28, but the cost of that is I was only able to do reduced form merger simulations and the basic screens.

So there is that tradeoff. It’s very resource-intensive to look at methods that are -- I think would be better like a fully specified merger simulation to really evaluate those well.

MR. HOSKEN: And I guess, Angelike, the same question to you. What do you think about the generalizability of the findings, you know, from the remedy study? I mean, that’s explicitly a case study, but it’s pretty close to the population of remedies we did, right, or a very large fraction.

MS. MINA: So it was a very broad cross-sectional study of 89 orders, hundreds of markets, and the one commonality was that they were subject to Commission order. So in learning about the process and concerns that came up about our remedy process, I think it was very informative because that was one commonality where we could ask similar questions across all the interviewees. We asked them questions as it related to competition as well, but they were all -- the industries were just so varied that it made it a little more difficult to be able to compare apples to apples.

MR. HOSKEN: But if you’re kind of -- and if we get to something that we’re not allowed to talk about because it’s confidential, just don’t. But the way you describe the findings is the general findings didn’t seem to be terribly industry-specific. It was much more related to the structure of the remedy or characteristics of the remedy. And so is that true?

Like it’s not the case that in this widget industry we always have problems.

MS. MINA: Right, we didn’t look at specific industries to see if there are particular problems within a particular industry. It would have been really difficult to do that in the case study because they were all -- I mean, the types of products and the industries involved were so varied that it would have been very difficult to do so. But they all went through the settlement process, and we always evaluate the scope of the asset package if it's a divestiture. We always evaluate the buyer, the buyer is acquiring assets and going through that process. So there are similarities that we could ask about that carried over from one case to another.

MR. HOSKEN: Another question from the audience, so far all of the studies have evaluated structural models, and the question is can these retrospective studies be used to evaluate reduced form approaches to prospective merger analysis, such as what was done in the Staples case.

MR. WEINBERG: Yeah, of course. Yeah, sure. I think it's a good idea. Like anytime there's a prediction made that's quantifiable, looking to see if it's borne out after the fact is possible no matter what the tool.

Yeah, I don't mean to beat up on the structural models. I think that's true in general.

MR. VERBOVEN: Just to elaborate, I fully agree, but I think structural models, we're using them because sometimes we have those data on prices and output quantity, so it's the best we can do, and then that's how we can forecast, but in the Staples case or in airline mergers, we have unique other experiments to look at, so it's like the same company that's active across markets. So if one has this data, then it's so rich, one has to use it, but then, of course, we need to evaluate it, too.

MR. HOSKEN: Great. The one plug I'll do for my own research is we -- a number of coauthors at the FTC did a bunch of work looking at mergers in the supermarket industry, and we also looked at entry and exit in the supermarket industry. And our editor on the entry/exit paper wanted us to compare how the exit and entry effects -- you know, how entry affects price, how exit affects price, compared to what we found from mergers.

And so it's not exactly this, but it's close, and we found that exit was a terrible predictor of prices, but that entry, the price effects of entry seemed similar to what you would get in merger retrospective.

So another question, is there a difference in technique or approach in doing a merger retrospective of the type being discussed and the investigation of a consummated merger?

MR. VERBOVEN: Would you repeat the question?

MR. HOSKEN: Sure, sure. I think what this question might be getting at is, you know, the FTC can and has challenged consummated mergers, and when we do that, there's a certain production process called a law enforcement investigation where we would try and determine if that merger was anticompetitive or not. And how does that compare to the kind of work you've done evaluating --

MR. GARMON: Well, I can speak to, you know, for instance, Evanston. That was a case with -- where we did a merger retrospective, and you can do the standard diff-in-diff approach, but then there is the question of what -- did the merger cause the price increase. Well, in a court case you can actually look at the documents, you know, look at the negotiations that are going on and connect the qualitative information and evidence with quantitative, and that's -- that was what was done in that case, where it was very clear that the price increases were caused by the merger and not just coincident with it.

MR. HOSKEN: Looks like we might have time for one more question. We've probably -- I've probably asked this a number of times but I'll ask it one more time. So how do we think of the value-added of these merger simulation tools compared to traditional screens for merger analysis? So I'll speak for myself. I started working here approximately a million years ago, and at that time quantitative analysis meant calculating HHI 16 different ways. That was your robustness check.

And so how would we say we've progressed with these tools, and do we think they're better than HHIs?

MR. GARMON: As I said before, I think in the hospital case, and I think this is probably true in general with differentiated products cases, I think the tools that are based on models of price formation, whether it's Bertrand or whether it's Nash-in-Nash in the hospitals case are more accurate. And I think, you know, my paper and others have shown that.

So I think when it's feasible to do that, that should be the -- that should be used for prospective analysis. Again, you may have to do the standard merger analysis as we well, but when you do that, those market definitions that are the basis of the HHI should be consistent with the way your theory of harm and the way the markets are working as you understand it. So I do think they're an improvement in that context.

MR. WEINBERG: Yeah, I would agree with that. It's a much more nuanced view of who competes with who than yes or no in the market or not. And, also, you know, in principle, it gives you a framework for thinking about -- it kind of sidesteps the issue of, like, what you take a share of, right? A share of what, right? You've got to define the market.

So, you know, in principle, a well-specified demand system can give you a lot of the information that you would need to get more a direct answer.

MR. HOSKEN: Frank?

MR. VERBOVEN: I agree. So just to add, so I think whenever there's -- I mean, when you have differentiated products markets but more specifically when there's an asymmetric kind of differentiations, whether you have niche products like in -- the painkiller was one example, but applies to almost every market. If the merging firms are competing in one segment or something, then a symmetric measure like HHI would not be sufficient.

Also, it allows you, like you mentioned through HHI, you can have loss of robustness, so it's hard for me to imagine exactly what that means, while if you do robustness in a structural model, you -- basically you can feed in prior information that you have and then see how results are robust towards an assumption of higher margin cost or something.

Then maybe one remark on like what's nice about HHI is that it's very clear, although I forgot now exactly what it is in US, but, you know, like, you have the threshold's like 2,500 or stuff like that, while it's not clear to me, neither in Europe, but I think also in US what is the threshold for a price increase to be problematic. I'm not sure what's the answer to that, but it's something also we need to think about, what's the threshold.

MR. HOSKEN: Well, I think that's a natural point to take a break for lunch. For those who are -- well, I guess for everybody, we have a cafeteria upstairs on the 7th Floor. We have a relatively short time until we start again in about an hour. So thanks a lot.

(Applause.)

REMARKS - COMMISSIONER REBECCA KELLY SLAUGHTER

MR. KOBAYASHI: It's my pleasure to introduce the after-lunch speaker, Commissioner Rebecca Kelly Slaughter.

Prior to joining the Commission, she served as Chief Counsel to Senator Charles Schumer of New York.

COMMISSIONER SLAUGHTER: Thank you, Bruce. Good afternoon. As Bruce noted, I am Rebecca Kelly Slaughter, and my first order of business is to note that the remarks I'm about to deliver represent my own views and not those of the Commission or any other Commissioner.

So thank you to the Chairman for convening today's hearing and these hearings writ large, and to everyone at the FTC, particularly our staff in the Office of Policy and Planning, for the monumental effort they have put into carrying out this ambitious endeavor. Thank you to the panelists who are here today to share their knowledge, expertise, and views about merger retrospectives. Some of you have been repeat players at our hearings and we appreciate the time and effort you've given to this task.

Today's discussion of retrospectives is a key way these hearings can fulfill their mission, as described by Chairman Simons, to examine and evaluate the effectiveness of our enforcement and, where we identify areas for improvement, to implement reforms. As I said at the second hearing way back in September, these hearings cannot simply reaffirm our current policies and practices with a pat on our back. Any serious and credible wide-scale review of our enforcement and policy record must be able to identify ways in which we can improve.

This morning’s panels, and I’m sure this afternoon’s panels will as well, involved extremely sophisticated and detailed economic and legal discussions of merger retrospectives. I’m going to take us in a completely different direction for a moment.

If any of you are or have recently been the parents or relatives of preschool age children, you may be familiar with the show, Daniel Tiger. Daniel is the cartoonized son of the puppet tiger on Mr. Rogers’ Neighborhood, the PBS show, with which many children of the ‘60s, ‘70s and ‘80s grew up. Anyway, Daniel is the current generation’s version, and using the concepts and themes pioneered by Mr. Rogers, he teaches extremely helpful life lessons in 15-minute segments, each punctuated by a unique summarizing song.

I personally have discovered that there is a Daniel Tiger song for basically any situation, including, as it turns out, how to think about antitrust enforcement and merger retrospectives. A very frequently cited Daniel Tiger refrain in my house is one about making mistakes -- and I will embarrass myself by singing it for you.

(Laughter.)

COMMISSIONER SLAUGHTER: It goes, “It’s okay to make mistakes, try to fix them and learn from them, too.”

(Applause.)

COMMISSIONER SLAUGHTER: I did not have an alternate career as a singer, it will not surprise you to know.

These are wise words for children, but they are important for adults as well, including antitrust enforcers. And while I would not say enforcement mistakes are “okay,” they are certainly inevitable, since merger review is generally an exercise in predictive analysis about how markets will operate after a proposed transaction is consummated. This predictive nature provokes reference to the well-worn quotation that: “Prediction is hard, especially when it's about the future." This quote has been variously attributed to Yogi Berra, Mark Twain, and apparently, Neils Bohr has a claim to it as well. This is what the internet has taught us.

It resonates because, even though we use our best economic and legal tools to make the most accurate predictions we can, we know that sometimes we may make mistakes. Of course, sometimes the evidence gathered in a merger investigation unambiguously predicts clear competitive harm that requires enforcement action.

For example, in the Tronox matter, the Commission successfully argued before several courts that the elimination of Cristal in the North American titanium dioxide market would have harmed competition. Just this week, the Commission announced a unanimous settlement that required a clean sweep divestiture of the relevant Cristal assets.

In other instances, accurate prediction is substantially more difficult. While our predictions need not be absolute, correctly divining how a proposed merger will change firm behavior and market outcomes, especially on non-price factors, like quality and innovation, can be extremely challenging. Recent vertical mergers illustrate this well. In the vertical context, predictions about how changes in firm behavior will influence competition are often more complicated and may be less clear. Two people in good faith can disagree about the merits of a given prediction and ultimately the propriety, or legal viability, of enforcement action.

But what I think we can all agree on is that the Commission's predictions and its enforcement decisions can profoundly impact competition and consumers for many years. There is an enormous weight on our shoulders to make the right decision about the fate of a merger. This responsibility extends beyond the time at which we evaluate proposed mergers; it also requires us to improve upon our predictions and to correct erroneous decisions that resulted in competitive harm.

And this is where we do well to heed Daniel's call to try to fix our mistakes, and learn from them, too. That is precisely what merger retrospectives can do. They can help us to check our work to test the accuracy of our predictions about a given merger. They can help test the usefulness of our models and other tools of analysis to inform future merger investigations, which, as Chairman Simons noted this morning, affirmatively helps our enforcement efforts.

The hospital merger retrospective study initiated by Chairman Muris, which resulted in a new strategy for successfully challenging anticompetitive hospital mergers, can and should serve as a model for how to tackle other enforcement challenges facing the Commission. Another good example of how retrospective analysis can be useful to improve prospective enforcement is the recent remedies study Angelike discussed in the last panel, from which the Commission learned several important lessons about ensuring the success of divestitures.

Importantly, retrospectives may also be able to help us determine not only how to handle new cases in the future but whether, in a specific case, further enforcement action, such as unwinding a consummated merger or challenging anticompetitive conduct, is necessary to protect and restore competition.

I appreciated the discussions this morning of different types of retrospective analysis, including not only the traditional modeling that relies on control markets but also simulation models. I am particularly interested in retrospective reviews that allow us simply to compare a market post-merger to our own predictions about what would happen at the time we evaluated the transaction.

This type of review may be particularly useful in vertical cases when our merger analysis rests on assumptions not merely about price but also about the behavior of merged firms. Did we rest our conclusions on an assumption that the merged firm would not engage in a foreclosure strategy when later we can observe that it did? Did we assume entry by third parties that would keep competition vibrant when no such entry in fact occurred?

To the extent that retrospectives can help us to improve our predictive tools and analysis and correct prior decisions, we need to do more of them. And given the increased complexity of analyzing vertical integration, I believe we should focus our resources on reviewing our enforcement decisions regarding vertical mergers.

Furthermore, if we make clear at the time a vertical transaction is cleared that it will be the subject of a future retrospective review, that may have the benefit of a disciplining effect on the merged firm. I appreciate that this may be unsatisfying from the academic perspective of looking for robust data, but I would be willing to assume that cost for the benefit of protecting competition.

I actually don't think anyone disagrees with the idea that more retrospectives would be a good thing, although I may be proven wrong. But I recognize the significant resources that retrospective examinations require. I support Chairman Simons' advocacy for more resources and his willingness to find ways to work with outside researchers who wish to conduct value-add merger retrospective studies.

I know I sound like a broken record on the topic of resources, but that is because it bears repeating again and again. When I first got to the agency, almost exactly a year ago now, I spent time meeting the staff across the bureaus. I asked everyone I talked to what they thought the greatest enforcement challenge they faced was and resources was the resounding refrain. The numbers bear this concern out.

Over the past several years, merger filings have increased and the cost to investigate and challenge anticompetitive mergers has skyrocketed. Yet, our funding levels have remained largely flat, which in reality is not flat but declining, because each year the cost of compensation and benefits for the same number of employees rises, so flat funding provides for fewer staff. This means specifically that the Bureau of Competition staffing levels have decreased in recent years.

But despite this headcount decline, the FTC's workload has increased. Since 2010, the number of premerger filings has more than doubled, and this statistic does not reflect the many additional mergers we investigate that fall beneath the Hart-Scott-Rodino reporting threshold.

That said, the FTC's dedicated staff works tirelessly to do more with less. Last year, they litigated four conduct cases and three merger challenges, and prepared to litigate an additional three mergers before the parties abandoned the transactions.

So what does this have to do with merger retrospectives? As Bruce Kobayashi, the Director of the Bureau of Economics and the gentleman who introduced me, said on a recent ABA panel, the resource crunch has required the Bureau to devote more resources to investigations and enforcement. This means less research and fewer merger retrospectives.

We should work with Congress to reverse this trend and ensure we're able to devote an ample and reliable stream of additional resources to our merger retrospectives program. With an increase in funding of $50 million annually, the Commission could not only supplement its Merger and Conduct Division staffing, it would be able to reboot its retrospective analysis by adding more attorneys and ten economists to the effort. But we cannot and should not wait for our resources to increase to consider whether and how we can retool our enforcement efforts now, including our retrospective analysis.

The panels today have been and will be incredibly useful to informing the Commission as to how we can be most effective in undertaking retrospectives and how they should inform our enforcement mission.

The questions in which I personally am most interested include: Should we look more at mergers that were not challenged following significant investigations? How would a vertical mergers retrospective program help hone our investigatory techniques? What kinds of information would best assist our retrospective efforts and what are the sources of and most effective means of obtaining such information? And how should we think about retrospectives in industries that are marked by rapid and significant technological change?

On this last question, I want to emphasize an additional point. The Commission often must review mergers in technology-intensive industries well before they have matured. And I want to be clear, I'm saying "technology-intensive" industries I don't think "technology" accurately describes any industry anymore. It's too widespread, crosses too many different fields.

But retrospectives may be particularly useful to inform our understanding of how these industries evolve and how mergers in the early stages of such industries' life cycles affect nascent competition and influence industry structure, growth, and dynamism. In this way, merger retrospectives can support our other technologically focused enforcement efforts, such as the Bureau of Competition's Technology Task Force.

So I look forward to hearing from this afternoon's panelists and thank you again to all of today's participants.

(Applause.)

PANEL: SHOULD THE FINDINGS FROM MERGER
RETROSPECTIVES INFLUENCE HORIZONTAL MERGER POLICY,
AND
IF SO, HOW?

MR. VITA: Thank you, Commissioner Slaughter, for those really insightful remarks.

So, welcome, everybody. Good afternoon. This is now session three of today's hearings entitled, Should the Findings from Merger Retrospectives Influence Horizontal Merger Policy, And If So, How?

I'm Michael Vita. I'm a Deputy Director here in the Bureau of Economics. And we have a really great panel for this session. So I'm just going to quickly name everyone. Orley Ashenfelter from Princeton; Steve Berry from Yale; Leemore Dafny, who you met this morning, from Harvard; Debbie Feinstein, the sole attorney on the panel, from Arnold & Porter; and Aviv Nevo from Penn.

It's a great panel, not only, you know, some distinguished academics and a distinguished attorney in Debbie, but a lot of enforcement experience as well as academic experience. Leemore, Debbie, and Aviv have all worked here at the Department of Justice as enforcers. So they have a really good understanding of the importance of these kinds of studies and how they can affect what the enforcement agencies are asked to do.

So let me just step aside then. Orley, I'll let you go first.

MR. ASHENFELTER: It's alphabetical, right?

MR. VITA: It is.

MR. ASHENFELTER: I have no slides, and that's very unusual for me. But I'm not going to talk about data. This is ten minutes that I'll take -- I hope not longer -- to talk a little bit about some policy issues and some more general issues related to merger retrospectives.

The first point that -- I want to make four points. The first point I want to make is that to some extent the methodology associated with retrospectives is associated with accidental opportunities to evaluate some merger. My first association with the idea really was using retrospective mergers to actually challenge a merger. That was the Staples-Office Depot case. I think I was involved because my good friend Jerry Houseman was an econometrician working for Staples. There was a belief I could crunch numbers, too. Probably not as well as he could, but good enough.

That situation was very unusual because at that time, the opposite of today, those firms were expanding. And there were many examples where one or the other would open a store in an area where this format, a brand new format for -- you may not remember now, but back in the day there used to be stationery stores. They're all gone now. As the format expanded and disrupted that whole industry, there were plenty of examples where one of the large superstores existed and another one would come in, and we could actually look and see what happened to the prices.

There was plenty of good anecdotal evidence that attorneys had turned up on what managers were supposed to do faced with this new form of competition, even telling them how much they should reduce their prices. The econometrics fell in line with it, too, and because there were many examples of stores that had opened across the country at different points in time, we could study those examples. They were retrospective merger evaluations, but they were used as a challenge for the merger going forward.

So that was an example -- it excited me because it was an extremely unusual example which we'd normally never run into. And then it opened my eyes to the idea that you could probably do that in some other cases, but that as a more general matter, the opportunity to study retrospectively what happened to mergers was something that could be done on a broader basis and probably should be done on a broader basis to inform us about how successful the merger enforcement issue efforts have been. But also to help us a little bit in learning about, if possible, where mergers were more or less likely to be problematic.

At that time, there were really -- it was 20 years ago, by the way. It was exactly 20 years ago that case took place, 1999. At that time, there wasn’t much to use as an alternative. I’m always fond of this agency because I’ve worked with some of the people in it like Dan Hosken, Matt Weinberg, who was here for a while. I know Bruce Kobayashi. In fact, we taught together for many years in trying to teach statistics to judges, probably not successfully but at least -- they’re probably still trying.

(Laughter.)

MR. ASHENFELTER: And I’m probably the only person here who has actually done work for the FTC not just in merger issues but in the fraud squad. I was involved once with a scam that the FTC shut down that involved trying to resell large quantities of wine to consumers as guaranteed investments. Unfortunately, the FTC did not shut down this operation until -- I learned about it when they had already stored away 30,000 cases of wine. They didn't actually shut it down until there were 130,000 cases in an unrefrigerated warehouse in San Jose, California. A whole lot of fine alcohol went down the tubes.

(Laughter.)

MR. ASHENFELTER: So the first thing I wanted to say, the first point is I think it's inevitable that retrospective analyses are going to have to be opportunistic because it either depends on the data or it depends on the opportunity to study something which is unique to a particular industry. It always has to be fact-intensive and difficult. So I think there's nothing that you can say that gets you past the fact that it's always going to be optimistic and, to some extent, like a case study.

Now, the panel before mentioned case studies can be really good -- and I'll come back to this -- for learning a little bit about how industry operates. Many times we don't really understand exactly the theory that helps explain how an industry works. But that's the first point I wanted to add. I don't think there's any way you can get around that.

The second point I want to make is with respect to public policy. In some sense, it’s inevitable that merger retrospectives affect public policy. We all know that’s really true. Because what we have observed is when we started doing retrospectives analyses, we were seeing price increases where there was a wide group of people who thought that all mergers led to price decreases, Robert Bork amongst them.

Bork’s book is factually intensive. He seems to think he knows what the effects are. Clearly, it was not based on the facts at all. But his influence and the absence of any evidence to suggest that he was wrong had a phenomenal effect on the judiciary. I still remember Vaughn Walker, who was one of students by the way, who I still am in touch with -- he’s no longer a judge so I can talk about him, but he’s a very good friend in San Francisco -- explained to me that the antitrust law should only be used for price fixing. There was never any justification for blocking a merger. And, basically, that was Bork’s position, I think.

So there is a sense in which, even if it’s examples, it does affect the climate of public policy and it does affect whether or not people will take seriously the potential for anticompetitive behavior from mergers.

Now, the third thing I want to say, it relates to some work I've been doing recently -- more recently in the antitrust area. It's a very, very new thing. And that has to do with labor market. Every once in a while I realize you make a mistake, we heard a lovely song about that, and then you try to recover from it. And one of the mistakes I've made historically is, like most labor economists, we never really thought there was anticompetitive behavior in the labor market. We now know that's just not true.

We have plenty of examples even of cooperative behavior. The specific price -- naked, I guess it's called by the DOJ, naked wage suppression. And as a result, whenever I was looking at the issue of mergers, it never occurred to me to think about what the effect was on employment or wages. That was a mistake. I should have been more -- I think in some places it's unlikely you would ever see an effect, but it's probably not difficult to study it in some situations. In others, it can be difficult. Wages can be even more complicated than prices if we're trying to figure out how to measure them.

But I think that being open to other

outcomes is probably something that in the merger retrospective area maybe needs to be rethought a little bit in some areas. So that's my third point.

The fourth point is kind of a story and it leads me to what I think is -- actually someone I was speaking with earlier suggested this policy proposal when I explained a few facts, and it was exactly the idea that I had in my own head. So maybe you'll come to the policy proposal as soon as I give you the facts, too.

This has to do with a paper that Dan Hosken and Matt Weinberg and I wrote about the merger of Maytag and Whirlpool. Some of you know it was a problematic merger in some people's minds. We studied that our best we could econometrically, the effects of that merger on pricing, a lot of different products, a lot of different ways the products are brought into the market. And there were quite some puzzles in the paper. For example, effects, no effects on washers but effects on dryers as an example of one I just happen to bring up.

Subsequently, because of having written that paper, I actually was involved in the trade case that was just brought in the last two years involving Whirlpool's allegation of dumping by LG and Samsung in the washing machine market. Now, there's one nice thing about the International Trade Commission, their proceedings are public. So when you write down your testimony or whatever it is, there's no redacting, you just get up and you give it and everybody can come in and listen.

The staff prepares usually a huge document with lots of data that's very public. As a result, I learned a great deal about what was going on in that world, and I want to mention it to you.

So that was an example where the merger was approved because of the weapon of foreign competition. It was a theory that we would have -- it would not be possible for -- even though they merged 80 percent in some products, it would not be possible for one to increase prices because there would be foreign competition. Well, as you probably know, there was an increase in prices and there was foreign competition. LG and Samsung came in and had two-thirds of a market.

Our recent tariffs are extremely annoying for most economists. We learned from the ITC that there's exactly $20 of labor in a washing machine. There is no labor used to make washing machines. There are 2,000 workers in Ohio and they make four million machines. They said, as a result of these tariffs, they might increase the plant by 200 people. We need 130,000 jobs a month just to keep track with the labor force. Two hundred people is not even -- that’s how many people kill themselves with opioids each day. It’s a tiny number.

Now, the best part about it is, for example, I learned why it is we found this effect on dryers. Well, Whirlpool had a brilliant idea. It’s something you would never think about from theory. They discovered or believed that dryers and washers were complements and that people would buy them as a group. Up to that time if you ever bought one, you know that dryers didn’t cost as much as washing machines. They cost about half as much to make. ITC documents that, public information.

All Whirlpool did was brilliant. They actually raised the price of dryers to be equal the price of washers. That’s more or less what we found in the paper. That’s not what you’d expect, but it happened. And LG and Samsung sat back in their office and said, those guys are really smart, we’re going to do that, too.

So now, you’ll notice if you go anywhere to buy a washer and dryer, they’re all the same price. People expect to buy two. Samsung, being in the phone business of course, then started adding design elements so that you almost have to buy the dryer at the same time as the washer, otherwise they won't look right up there in your fancy place.

Now, an interesting feature of this is that -- so, in a way, this whole industry was completely changed as a result of the increased competition from abroad. LG and Samsung are now building factories here. It won't be long before we don't have any American machines of that type. It is true that when the tariffs were enacted a little over a year ago, prices for machines went up by 15 percent or so, Whirlpool's stock price went up by a lot, and they said they might hire 200 people.

There's a real lesson here, which is if you think that international trade has a discipline device, then I think you have to get a promise from the company involved that they're not going to go to the ITC as soon as they get some competition and have it suppressed. Now, you wouldn't learn that unless you actually followed that merger over a long period of time.

So the fourth point I wanted to make was I think there's a good case for an institution having some longer term memory, very long-term memory that allows you to understand much more about what the long-term effect was of a decision that nobody would probably today at the DOJ even -- there's probably nobody there who was around at the time that it happened. But, nevertheless, the idea that competition is disciplined by international trade really only works if you have international trade.

(Applause.)

MR. BERRY: So I don't have much enforcement experience, a little bit of consulting experience. So I typically assume that if I'm invited to one of these things, it's on the topic of what kind of findings should -- what kind of research should influence policy.

So it's tempting to think of merger retrospectives as a relatively simple exercise, although people who have done them know better that you sort of -- there's a merger and you just go out and you look at what happened and you say, well, you know, that's what happened. And I think the important thing to keep in mind is that merger retrospectives are kind of counterfactual analysis. What you're curious about is what would have happened had the merger not occurred. Of course, since the world is a constantly changing place, that's not immediately evident from what did occur. So the question is how do you think about the counterfactual world that would have occurred in the absence of the merger?

So in retrospect, a merger analysis and in the study of policy effects more generally, one common modeling approach is just a classical difference-in-difference analysis, which is attempting to set up an appropriate control group that can tell you what would have happened. And the approach controls for, broadly speaking -- you can have some variations -- three sets of factors. Observe factors that could include classical kind of demand and cost shifters that you see in your data, some time and variant attributes of markets and our products and market and variant effects of time.

Now, apart from these factors in a really pure diff-in-diff analysis, the required assumption is that mergers or the effects of mergers in a cross-section are randomly assigned. Now, in the nonmerger context, diff-in-diff became really popular in the context of policy changes often that were differential in their timing as to when they were enacted. Different states had different policies at different times. And the classic argument was that the timing of these laws and not the existence of these laws was really just kind of a random thing, idiosyncratic politics, and that kind of thing.

So we might want to think for a minute about whether that argument is plausible in the case of mergers. So, you know, on one hand, the desire to merge is driven by the profitability of private firms, who have all kinds of private information about themselves. And on the other hand, the ability to merge is driven in part by regulators who are a consistent national experienced group of regulators who go out of their way to also gain a certain amount of private and sophisticated and sort of qualitative information. So we're not clear that random mergers, even with some fairly rich controls, is the right way to look on things.

Now, it might seem that I'm criticizing the analysis. So it's probably a good time to confess that I've done it myself. So, for example, Joel Waldfogel and I wrote -- I think it's one of the earlier, but probably not earliest, diff-in-diff merger retrospectives, I think it was about the same time you were working on Staples. I think we knew of your work at the time. Our paper was published in the QJE in 2001. And it looks at the effect of mergers on product variety in the radio industry. So I'm proud of that paper, so I think -- you know, I don't want to beat up on diff-in-diffs too much because I really think often it's a really useful thing to do.

Now, one important difference with some studies is that we did have an exogenous source of variation in merger policy. Therefore, we could use an instrument, something that moved the probability of a merger in the cross-section of markets. In particular, the 1996 Telecommunications Act set new higher maximum limits on the number of stations that a single owner could own in a local market. But that was cross-sectionally varying across markets. It depended on the total number of stations. Markets with more stations could have more owners. Now, you might worry that the number of stations themselves isn't a very good instrument, but that's very highly correlated with population, for example, with market size.

So we were able to use that variation, say, in population to trace out a differential effect of mergers in the cross-section on top of the diff-in-diff analysis that controls for other things. Now, you know, Orley talked about taking advantage of things, right. Well, we wrote the paper because Joel noticed the Communications Act and many times you don't have that. And I do think that without that kind of exogenous variation, diff-in-diff gets a little harder. You have to think of some notion of quasi-randomization. So you've controlled for a lot of fixed effects, a lot of product effects, a lot of time effects, but somehow the effects of the merger is thought to be quasi-random across different markets or different products or however you want to run your statistical analysis.

So that strikes me as strong, but not maybe stronger than a lot of things we do in applied work and, you know, a very useful thing to do. And it's also true that the diff-in-diff toolkit that's used by labor and public economists has had increasing sophistication in looking for pre-trends and doing placebo effects, kind of in a long hunt for confounding effects and whether you can rule them out. So this used to be a very simple thing to do. Now, the papers are very, very long as people try to rule out all of the possible confounders that referee two has mentioned.

(Laughter.)

MR. BERRY: So another recent trend, which I've been more recently involved in, is to apply some of the same kind of identification arguments involving fixed effects and instrumental variables to a more classically economic style supply and demand context. How can we identify supply and demand and the effect of mergers in that context? So, for example, the brand might be differentiated products or naught; it might be homogeneous, the supply side might involve imperfect competition, we might or might not be willing to model that. People often criticize this for the reason that there are kind of a lot of moving parts and it's hard to know where the parameter estimates are coming from, and I think that's actually a pretty good criticism.

But I think there's been a move recently, which I want to just briefly elaborate on in this context that might say we can identify those underlying things more convincingly, in fact, maybe using some of the very kinds of ideas that are used in the diff-in-diff analysis.

So why might we want to do this? I would say first is a point emphasized by UCLA philosopher and computer scientist Judea Pearl. He has a new book, it's gotten a lot of attention. It's called the Book of Why. So what he argues is what people, in general, looking at data should be doing is writing down a pretty explicit model -- it could be supply and demand for an economist -- that makes it clear what we mean by causation and counterfactual in the course of trying to figure out what is going on. His point is that you often need that model to ask why something is happening not just what has happened. So a lot of mergers retrospectives are focused on the what. Did prices go up? And you wonder if you can go a little farther and focus on the why, right? Is it close substitutes, is it synergies? What is the thing on the demand or cost side that's actually going on?

So let me just finish with a final thought on that. I think it may be possible actually to combine the insights from the diff-in-diff and the instrumental variables analysis with this supply side -- supply and demand style of model. So, for example, let's say that we believe Orley and Dan that a particular set of fixed effects in the product level price regressions are sufficient to render the change in market structure, a basically quasi-experimental object. That becomes a fantastic instrument for price in the demand function so that we can actually get out substitution patterns in a very rich way using the policy variation -- and I think Orley was getting at this as well, too -- using the past policy variation to learn about the future underlying fundamentals of the model.

So if we believe the diff-in-diff, I actually think it makes the supply and demand analysis actually much more credible because it gives us this much more credible source of variation to go ahead and do that. So that would be one suggestion for moving forward and it might create a virtuous circle between these different approaches and it might help us to create some synergies between the questions of what and of why.

(Applause.)

MS. DAFNY: I would like to start by thanking the Commissioners and the staff and especially Michael Vita for inviting me to share my views on this important topic today. It’s a pleasure to be here.

So this morning, I had an opportunity to share my views about what we’ve learned from a great number of merger retrospectives that have been completed and also to discuss some of the methodologies. So I’m going to use my opening remarks to answer questions that I rarely answer because they begin with the word “should.”

And should those findings from merger retrospectives influence hospital merger policy? And my answer to that is, yes, I believe that they should. I understand not everyone believes that. I believe there's enormous potential and, certainly, we learned this morning about how much we know because of all of the merger retrospectives that exist.

So in these remarks I want to accomplish three things. I want to explain what I believe the goals of merger retrospectives ought to be to highlight why the findings can and should influence policy and to suggest some potentially bold steps to be taken to ensure there are more of them, okay.

So let me start by saying that I believe the goals of a merger retrospective should be to evaluate how an industry is functioning at the time that you undertake the analysis to describe what value is being created and for whom and to provide an estimate of how everything would be different in the absence of a merger. The primary goal of a merger retrospective in my view should not be to assess whether the enforcement agencies made accurate predictions when they were evaluating the transaction.

To some degree, any disparity between what the agency had predicted and reality will come to light and that's very useful information that can improve our merger review process. But if evaluating the agency's accuracy were the goal, the primary goal, then I think that those retrospectives would be too backward-looking. We wouldn't necessarily assess outcomes we hadn't been thinking about at the time of performing the review and it could potentially devolve into some sort of a blame game as to who predicted this and what, why, and I don't actually think that would be particularly productive.

So I wouldn't support a proposal to fill out a form of what you believed was going to happen at the time that you did the review. And I think it would also amplify some noise, which is necessarily going to happen. Even if merger enforcement policy is optimal, there's going to be some noise and predictions that we would expect and we might overemphasize what the prediction as against what actually happened. So to me, the primary goal is let's try to understand this industry and the impact that the merger has had on it.

All right. So second point, if the merger retrospectives indeed used those as the goals, I believe that it's clear they can influence policy, they can help stakeholders, regulators, enforcers figure out what's happening. They can highlight consummated transactions to investigate, inform our screening methods, identify conduct concerns. They can help us understand when merger remedies, whether structural or behavioral, are successful and why. They can help us look at outcomes that wouldn't have been considered at the time of the merger. And last, but very much not least, I think that they can help to deter anticompetitive conduct. Certainly, they would give us the long memory that Dr. Ashenfelter was asking for the agencies to have and it would be memorialized in a way that hopefully Debbie Feinstein will tell us the courts should find useful.

So third, most bold, is to suggest that we pilot a default merger review system. So I'm going to try to fix ideas that I believe were suggested also by Commissioner Slaughter. So imagine a policy where all transactions of a certain size would be evaluated three years after closing. The report would be due six months later. I can feel the tension in the room.

(Laughter.)

MS. DAFNY: You asked a "should" question. And the parties would be made aware in advance of the data request, compliance would be mandated as part of the merger approval or the attorneys will come up with some other way to make it binding. The FTC might have to either obtain extra or exercise its subpoena authority to get data from the parties or some other parties, if necessary.

There is an out. If staff did not believe that the merger retrospective was likely to be useful, perhaps because the industry fizzled or, you know, there was some kind of shock, then they would write up a little summary of why and the Commission could vote and say we're not going to undertake this merger retrospective. But the fact that -- and in the case of Justice, the AAG could approve the recommendation.

But having a rule like that I think would avoid issues of selection bias. It could potentially have that deterrence effect, and it would start to create a library of information that so many stakeholders could draw upon.

Now, what about the mergers that are smaller? So there are very big ones that we don't dismiss out of hand as just not being interesting to do for a merger retrospective. What about the rest? And there you can imagine some sort of probabilistic decision rule where you have some probability that any transaction that was approved as investigated, where the weight depends on how big the industry is, how long it's been since a merger retrospective was done in that industry, which maybe for the ones I love, the hospital mergers, would mean no more of those. And something about the volume of transactions in the industry in the last couple years.

So you would try to be selecting, with higher probability, merger retrospectives that were likelier to add value. And then the total number of retrospectives would have to vary depending on budget. And, of course, I would only propose that this be a funded mandate. And I would like to think there would be bipartisan support if the number is -- you know, you make an estimate of how many this is going to be and what the staff would be or, you know, source out -- commission some of these studies, I think that there could be enormous value.

And, finally, because that's just not enough, I would suggest that we consider adding some retrospectives of transactions that were proposed and that, say, the Commission contemplated very seriously or even voted out a complaint and then were abandoned and study what happened in those cases that might give us a sense of the overenforcement margin about which we don't know too much.

So I think I'm probably out of time and hopefully not out of goodwill.

(Applause.)

MR. VITA: Lemoore, on behalf of the 600

future members of the Bureau of Economics, we thank you for that.

(Laughter.)

MS FEINSTEIN: So a number of the things that Leemore raised are things that we're going to discuss in the question, so I will resist the urge to respond immediately to some of the proposals other than yes, saying it would probably require a significantly larger Bureau of Economics, something that I actually, believe it or not, advocated for regularly when I was here in the Bureau of Competition for just that reason. I felt like we were keeping folks so busy with case work that we didn't have time to do some of the studies we needed, not only retrospectives but just studies of the industry at large. The impact of generic entry, you know, that sort of thing often very, very valuable in both the conduct and the thing.

So let me start with, of course, retrospectives can be helpful and -- you know, should they be done without question. I do think it's important to figure out why are you doing the retrospective, and some of it is what were our predictions and why did we get it wrong. And I don't think it's an issue of the blame game and I never had the sense that folks felt like that when we did sort of the divestiture retrospectives. But just to say we're going to look at an industry and see how it's functioning and how it would have functioned before the merger, I don't know how you do that without some understanding of how did we think it functioned before the merger and what has changed. So I think that's inevitable.

The notion that, of course, it's backward-looking, I mean, that's in the definition of retrospective. That's what it means is to look back and see what happened. And I think it's also important because you want to basically figure out what are we trying to figure out here. Is it that our predictions of entry are completely wrong and that we're not good at assessing timelihood, likelihood, and sufficiency, and understanding if a particular deal was cleared because folks thought entry was likely. I think it's important to have an understanding of that going in.

Now, it's a little tricky because when a Commission closes an investigation, we don't always know why the five Commissioners agreed. The memos aren't sort of check-the-box. There will be a whole discussion of issues as to why a particular transaction is not likely to lead to anticompetitive effects. The Bureau of Economics and the Bureau of Competition may or may not agree on why that's happening, they just agree that there's unlikely to be effects. Often, it's this holistic view as opposed to one particular thing. But I do think there is some reason to say why are we asking the question rather than just randomly, hey, let's look at it and see whether or not this market has been changed by the merger, and if so.

The resource intensivity is a tremendous issue. Think about the fact that your average merger investigation that involves process takes six to nine months, one merger with multiple people on it, lawyers and economists, and the notion of doing that regularly. You really have to pick and choose or you basically have to do wide -- you can basically do wide or deep. And in the divestiture study, for instance, we decided to do wide but only so deep. And basically we had a very clear question we were answering, which was did the divestiture buyer actually stay in the market? Was there a business that the divestiture buyer actually maintained? Some rudimentary ideas. Sometimes we got market share.

We did not attempt to basically do the deep dive that we would have been able to do on a small handful to basically say, look, can we get the data, can we look at prices, can we look at some of those indicia. Because what we were trying to figure out is not the magnitude of any price effect if the divestiture didn't work, but simply, hey, are we creating divestiture buyers that are meaningful competitors in the marketplace?

So I think it's really important to go in with a very clear question that you're trying to address because that is going to drive, again, whether you do deep, whether you do broad, whether you do it industry by industry as the Commission did years ago in hospital mergers because there was a particular problem, as Commission Slaughter said, you know, do you look at vertical mergers because you want to figure out if you've got it wrong there. I think it's really important that you have this understanding so you can figure out how best to use your resources.

I do think that even what I call sort of "mini-retrospectives" or "retrospectives as we go" occur and can be very useful. So when I was first here in the late 1980s, the then Bureau Director decided to do an informal, nonpublic gut check kind of retrospective and it literally involved taking dozens of mergers that had closed without action, but that there was some debate about, and calling customers and saying, so what happened, worse, better the same, just to get a sense of how often were customers saying, you got it completely wrong, you should have blocked that transaction. Interesting to see what happened there, and there was some useful information that came out of it for thinking about not only how to do investigations, but also how to keep files and how to keep that institutional memory going forward.

And then, finally, I would say I think that the Commission all the time does this kind of retrospective learning because it looks at the same industries over and over and over again, often in the same geographic market. So I can think of one, in particular, that I thought was really interesting because it's -- the first merger had happened before I was at the Commission and there was some controversy over whether or not the decision not to take action was the right one.

Fast forward, we had another merger in that industry. And in the course of looking at that merger, staff, of course, asked questions about what's happened over time. And much to my fascination, to a one, in great detail, the customers talked about how the previous merger, that had been somewhat debated within the agency and had a lot of scrutiny, was absolutely good for them. The promises that the merged parties had made to them had been delivered upon. They basically talked about how they were getting better deals, better service across the board, it was good. That was learning that we had, and that continues routinely.

So the notion that we always have to do these formal retrospectives I don't think is the case because I think there's this organic learning going on as the Commission does things. Not to say that formal retrospectives wouldn't also be useful, but I don't want to underestimate the extent to which this kind of learning goes on on a daily basis.

Thanks.

(Applause.)

MR. NEVO: Thanks, everyone, for putting this together and for inviting me. It's a pleasure to be here. I think this is actually the first time I've been on a panel in DC that was mixed lawyer and economist and the economists were a majority.

(Laughter.)

MR. NEVO: It's like wow. Now you know how we usually feel.

(Laughter.)

MR. NEVO: So I had the advantage of going last, A, because, you know, all kinds of really good points that I didn't even think of I could say, oh, what Steve said, that's great or Orley had really good comments. But it also means that, you know, it sounds like that's all I did. The fact I have handwritten comments even leads less credibility to the claim that I actually had some of my own.

So let me just start by answering the question that was put in front of us. Should the findings from merger retrospectives influence antitrust merger policy? And I think like several others, I'll give an unequivocal "yes." Okay? And maybe I'm done. But I still have to fill nine and a half minutes, so let me go on a little bit.

So generally, not just talking about retrospectives, just generally the importance of empirical analysis and of data and antitrust, I think has been understated for a long time. I think it's kind of finally coming out. When I was at the DOJ now almost five years ago, that was kind of a big thing that I always sort of would give in speeches and in talks. People would ask, well, what's the next wave. I said, well, the next wave is data. Everyone is talking about data except in antitrust.

Like you're teaching a business school -- you know, in our business school, there are statistics courses that no one wanted to take, okay? Until they started taking the exact same courses, but instead of calling them "statistics," now they're "data analytics." They're packed.

(Laughter.)

MR. VITA: We go over exactly the same material, the same features, everything the same. So, you know, I think we should stop calling this antitrust, but, you know, data analytics for competition policy.

(Laughter.)

MR. NEVO: So, you know, big data is everywhere except in antitrust, but that's been changing thanks to a lot of the folks in this room. And I think that's a positive wave. Merger retrospectives are one direction and, I think, you know, the more, the merrier.

I actually have been thinking about merger retrospectives for much longer, I think, than folks realize. I think when people think about me and mergers, I'm usually kind of affiliated with merger simulation and developing models for that. But actually very early on in my career, actually around the same time that Steve and Orley were talking about, oh, we were doing these retrospectives, I actually put forward a proposal to a private foundation proposing to say, you know, we should then game up, you know, gather together with the agencies and start this kind of collaboration, academic, government, to evaluate mergers.

We should create this database where we're looking consistently at mergers, getting information from the agencies about what's going on, where should we be focusing our attention. But the agencies are underfunded. How about we have some of these foundations that would like to fund public policy do that? I wish I had saved the referee report that I got. I wasn't funded, so that just gives you the idea. I wished I had saved the referee report that I got. Maybe I do have it in one of my old files. But they ranged from anything like, hmm, okay, you're just a first-year assistant professor, do you really think you're going to pull this off, to great idea and so forth. Anyway, it didn't get funded. I put it aside. I guess I wanted to get tenure. Probably should have pursued it a little bit more.

So beyond the simple answer of, yes, we

should be looking, a little slightly more nuanced answer is looking kind of at the details. I really want to make two points, some of which really overlap with what's been done. One is, how should we be using retrospectives? So that's kind of one point. I would like to discuss a variety of different things that have been proposed, and then touch a little bit on some of the same mythological points that Steve touched about. Maybe not surprisingly we're going to have, you know, somewhat or very similar views here.

Okay. So in terms of how to use the retrospectives, I think this was discussed in some of the panels earlier this morning. I would sort of say there's at least three different ways to look at. One is to say, let's just evaluate overall policy. Ask a question like, is the marginal merger pro or anticompetitive? Okay, you can ask a question of that sort. So that's kind of one type of use of retrospective.

Another is to improve the tools. Our kind of second panel of the morning was really all about that. And then, finally, a third is the use in either regulatory decision-making or litigation. When you litigate a merger, should we be looking back, when possible, at what actually happened. So Orley talked a little bit about the Staples case, but there are other cases where there were proper merger retrospectives, not as much as entry and exit analysis, which is basically the same thing and how have those been used.

So let me say a few about each of these one at a time. So on the first goal of trying to evaluate do we have the line at the right place, I'm less keen on that goal. I mean, not to say that, you know, it's not something worth looking at, but I think there are just a lot of issues that have been brought up before, issues that have to do with selection of which mergers we're looking at, issues of what is really the marginal merger, can we really honestly say that we know what that merger is.

And there's also a question of even if we -- so suppose we find that the marginal merger that was approved ends up being anticompetitive. There is a real question as to how that's going to impact actual decisions. Because you can imagine now you're going to make a decision and you could say, well, no, this really isn't the marginal one. Everything that we've seen doesn't really apply to that. So it's a little bit of a question you've got to translate into, you know, what does it mean to actual facts on the ground.

But to the extent that we are going to do this and this kind of, again, touches on points that have been made by others, I would focus more on more unique -- what I would call “unique” situations, whether it’s vertical mergers, whether it’s kind of other mergers and situations that are a little bit different, potential competition was mentioned in the morning as another example, and try to look at those situations. And in some sense, you know, just to help us, how should we even start thinking about some of these? I mean, vertical mergers, obviously, we have a clear way of thinking about it, but we have to see how to leave it in the ballpark in our way of thinking about it.

I’m more positive on the second goal, which is the goal of improving our tools and our methods, but really want to make two points about this. First, I guess before I even make the two points, this is not easy to do. There’s a lot of things going on, a lot of moving parts, and we heard a lot about this in the panel just before lunch.

Two things I want to sort of mention. One is whenever we are evaluating a tool, we always have to think about what the alternatives are. So I remember in one of the earlier versions of the Hosken-Weinberg paper, it had, you know, the two mergers, the artificial maple syrup merger and the oil merger. I don't know if this survived after the final version. Merger simulation got one of them right and one didn't, and that's a problem. And I was like, 50 percent success, hey, I'll take that, that's good.

So there's a bit of a question as to what's the alternative because in that case, if you actually applied structural analysis, you would have done even worse. So the question is if you're going to evaluate a method, the question is relative to what. You have to think of what the alternative is. So that's point number one.

Point number two is looking -- when we evaluate the mergers -- and you could see that actually a little bit in the panel -- the discussion before lunch, a lot of the focus was on the demand side. Because we're used to thinking about diversion and cross-price elasticities and does the random coefficients do better than AIDS and does it do better than nested logit and so forth, and so on and so forth. But I actually think where we really need to push the frontier, where we're really missing is on the supply side.

So I used to give this as a class exercise, actually exactly that paper. I would give to the students, say, before you evaluate the method, just look at the outcomes, take as given what's kind of founded from the retrospective, and then make reasonable assumptions on substitution patterns and cost efficiencies.

What I mean by reasonable is don't suddenly come to me and say, you know, a nonmerging party has suddenly become extremely more efficient or we take substitution patterns that don't match anything in reality. And say, and tell me a story -- okay, in some sense I'm telling you, you know, make up your demand elasticities and your efficiencies and try to explain what we see in retrospective. And it wasn't impossible, but it was pretty convoluted. It was pretty hard. And that is consistent.

I already gave an example of the appliances merger. I mean, that's another case. But it ends up, ex-post, maybe there is a very clear explanation but one that was completely outside of the realm of what we were thinking about.

So the question is, when we look at these retrospectives and then try to match them up to models, we have to ask what is it that we're missing.

I mean, is it that we don't know how to estimate elasticities the right way or that we just don't have kind of the standard way of thinking? If we actually have our typical model that will say you have a smaller party merging with a larger one, what I would actually tell you, you will see more of an effect on the smaller one, and that's a lot of times not what we see.

And then, finally, the use of -- in litigation. So this is a place where I actually think it's a little bit underused both in terms of, you know, being as kind of you want the main effect, but also in terms of, you know, debunking certain things that are brought up.

So let me give you an example from the Aetna-Humana case where I was actually the DOJ's expert. We used a retrospective there. We had a rare opportunity where Aetna, who was purchasing Humana, also purchased a much smaller insurer a few years before. And we can go and look and see what happened.

Now, before I got on the stand two days earlier, I got the perfect lead-in to that where the CEO of Aetna, when talking about efficiencies, said, we're very conservative in efficiencies. Why?

Because we used the same model here as we did in the other merger. And in that merger, it ends up the efficiencies were far, far greater. Okay? So guess what? We looked at the merger retrospective, and it ends up that there was a price increase. So that would be kind of a perfect case where you could say, look, you know, how do we deal with efficiencies. We can look at what happened. So that was my first point.

The second point had to do about methodology. I see on the sign that time's up, so let me just kind of go through this. Basically, a lot of what I have to say is really what Steve said. Let me just add a little bit on the point of saying that when we look at retrospectives, folks think about diff-in-diff as the gold standard. And in some ways, it is, but we have to realize there are a lot of assumptions built into it. We talked about control. But there's also assumptions about linearity. Do you do it in levels? Do you do it in logs? How do we think about things?

And then there's a really big question, which is how do we interpret the results? And I talked about the example of how we look at them. But, also, do we look at price, do we look at quantity. So there's an argument, well, you look at price, but you don't know what happens to quality and, therefore, you want to look at quantity because that will give you what happens. Well, there's assumptions built into that. And especially when there's heterogeneity, you know, looking at just price and just quantity is not sufficient. It won't actually give you the whole story.

It's very easy to construct examples where prices go up and quantities go up and down and you can show how welfare could have gone up, could have gone down. We're actually doing that right now in the context of the airline merger. You actually have to dive a little bit deeper. A lot of times what you basically need to really interpret the results and really understand them, you go back to the fact that you need a model.

So let me just conclude by saying, should we use retrospective? Yes, we should. But I think we need to do that kind of very carefully and really use the results appropriate. Thank you.

MR. VITA: Great. Thank you, Aviv.

(Applause.)

MR. VITA: Well, thanks to the panelists. That was a great lead-in and it builds very nicely on the discussions that were held in the morning panels. So let me dive in with a couple of questions to sort of follow up on some of the issues raised in those earlier discussions, as well as amplified by the speakers in this session.

So Aviv’s comments were a nice lead-in to my first question. I think what we’ve heard today is that there are at least three chief goals of a retrospective merger program. One is we address the really sort of big question, is policy too strict or too lax or broadly defined? Secondly, how well do our analytical tools work? And, three, how can retrospectives help regulatory proceedings, judicial proceedings, that sort of thing?

So let’s talk a little bit about or think about the first question, especially in light of the discussion that took place in Dan’s session about what retrospectives are. It’s a whole big collection of case studies and a very nonrandomly-selected set of case studies. In the morning session, John Kwoka talked about his meta-analysis that covers virtually every study that was done between the early ‘80s and the time that the book was published in 2015. There’s like 45 or 50 transactions that were analyzed, horizontal transactions.

There’s an amazing amount of concentration in a handful of industries because that’s what the researchers decided to study. So there were 11 petroleum cases, 9 airline cases, 10 cases involving mergers of academic publishers, and another 5 cases involving hospitals. So it’s a very small set of industries.

So I guess my question for the economists on the panel is, does the fact that the studies are so concentrated on a small number of industries limit the inferences you can draw especially on sort of the big overall questions about the -- is merger policy too lenient, too strict? What can we infer?

MR. ASHENFELTER: Do you want me to --

MR. VITA: You can go first.

MR. ASHENFELTER: Are we going to go alphabetically again?

MR. VITA: We’ll do it this time and then we’ll --

MR. ASHENFELTER: Now, is that on or do I have to push a button or something?

MR. VITA: I think it’s on.

MR. ASHENFELTER: It’s on, okay.

MR. VITA: Yeah.

MR. ASHENFELTER: Well, the way I always

think -- here's the framework I would use to think about this issue. The meta study world, so sometimes it gets a bad name, but basically all that is is you collect a bunch of estimates of a parameter that's well-defined. This could be something like -- in labor economics, it's the return to schooling. That's the regression of the log of the wage on education level.

Here it's a price effect pretty well-defined. There are a lots of complexities. But here's the way I think about the meta study thing, and I even wrote a paper about using this method. You could think of each estimate as having a component, which is just sampling error. We know what the distribution of that's supposed to be because it's a parameter estimate and they're supposed to be normally distributed, at least in their limit. And then there can also be systematic factors. So think of a regression where the retrospective merger effect is a function of some characteristics that are associated with why you would get different effects. There could be a lot of different reasons for those. They could come from economic theory or they might come from some other aspects of it.

And then, there's one further component, which is that if you think of the price effect as a function of these characteristics, there can also be an error, a statistical error, in that regression. So that's a framework for breaking down -- for controlling for sampling errors. That's going to depend on what the standard error is of the estimated coefficient. Then, in theory, you can systematically explore what those characteristics are that go with the size of the treatment effects and what's left over that you can't explain. The issue that you're raising is that we can't explore very much of the parameter space because we don't have estimates for a lot of examples that we would like to have them for.

But I still think that if you think of the problem that way, you can always think of it as, okay, I would like to be able to know what the effect is in some other industry. Well, in order to figure out what that is, you have to go to the other industry. That's an organizing framework which a lot of us use when we think about meta studies. I think it helps, at least for me, to think about how you -- so everything is a case study in economics.

If I think about returns to schooling, there are probably 50,000 estimates of those in every country in the world many times over. They're not all the same. In fact, they're not even the same -- different countries have different -- so it's not like everything is the same. There isn't any example really where they're all the same. In fact, meta studies really came about from examples of randomized trials. In the case of randomized trials, we at least know that confounding effects from other variables are lost. We don't have to worry about them. We still have to worry about sampling error, but it doesn't mean that the treatment effect, when you do that, it's going to be the same everywhere. That's basically a point that was made early on by Ari Fisher.

If you think of randomized trials of agricultural products, it depends on where you plant the thing. You're going to have a different treatment effect in one place as opposed to another. So it isn't as if we can't think about this problem, but I concur that we can't go very far in saying things about the parameter space, but at least we could try.

MR. BERRY: Yes, well, I'll try to be quick. So, you know, obviously it would be better to have more than fewer. I think this is where some of these -- obviously, people are thinking hard about how to get more studies in more places, in more places where there's not public data.

Second is that, you know, in our field of a broad field of industrial organization, maybe even more so than labor economists, we very much are the people of the details, the people where the devil's in the details. So we really do think that the effect of a merger may differ in different industries and under different conditions, and to speak broadly of the policy effect of a merger doesn't go down very well with us, which means we want to think hard about the detail.

But I think, you know, even I and others may come back to the point that this is where I think it helps to have a model and a modeling strategy that gets you back to the whys and not just to the whats. So, you know, we got to the diversion ratios through theorists thinking very hard about what the models meant. Are the retrospectives showing that that's correct? What are the factors that are generally working across industries and helping us to predict what's going on?

If you picked up on the agricultural study, you could sort of throw your hand up and say, well, all soil is different and all elevations are different and, therefore, we need a statistical averaging model or something. I don't know. Or you could have a theory of the effect of sandy soil versus richer soil versus soil with different kinds of nutrients. And that theory could help you then build up a general notion, even though you only had 12 plots in different parts of the world.

So I think, in some sense, going up back to the model through the why and back down to things may be helpful.

MS. DAFNY: Thanks for that great question, Mike. So I think this concern about nonrandom selection of transactions for merger retrospectives is what led me to propose a more random selection strategy. And I'll just say as much as I would like the E to be huge, N can be a function of budget, it's just the selection into it should be formulaic. Then we won't have as much of an issue, which you rightly raise.

Because, as an academic, I think some of the factors that effect what we study include what we find interesting -- that explains the studies on academic journals -- what we're worried about, which is why you might think most merger retrospectives would have a bias toward finding the cases where the agencies, in retrospect, should have blocked, which only has some value for prospective merger review, where you can get data, the third factor, and then where there's a big N because of large sample properties and also power. Those are not necessarily the factors that you would want to determine merger retrospectives if the objective were to influence your horizontal merger policy.

So I'll concur with you and say that the full employment policy for economists to research this is a good one.

MR. NEVO: You don't want to weigh in on what the economists should be thinking?

MR. VITA: I'll have a question for Debbie on this, but you can go ahead.

MR. NEVO: Okay, good. So let me just go quickly on this. So I think in an ideal world, yes, it would be great to have more studies and more parts of the parameter space or more industries or whatever you want to call it, but, you know, we live in this world, not in the ideal world. So the question is, does it limit the inference? Yes, we have to proceed with caution. Does that mean that we shouldn't pay any attention to it? Obviously not. We shouldn't be kind of, in some sense, in any corner because having some study is better than having none.

But, you know, in how we think about this --

you know, actually, the way that Orley sort of posed the problem, to me, is really the big difference I think between how labor economists and how IO economists approach the problem. Actually, Mike Whinston and I had a paper about this a few years ago in the Journal of Economics Perspectives. It was a comment to a paper by Josh Angrist and coauthor.

You know, we, maybe too much, tend to really sort of focus and say, look, each industry, each merger is unique. We can’t learn from anything around it because everything is really unique. I think labor economists, maybe to the other extreme, go and sort of talk about returns to schooling, right, as opposed to we don’t really talk about what’s the effect of a merger, of a generic merger. We talk about what’s the effect of merger A, merger B, and merger C. And, you know, the truth is probably somewhere in the middle.

You got to have some sort of learning from one situation to the other. And this is -- the question is, do you do that learning -- Jeff mentioned earlier machine learning. So do you basically say, look, let’s get all these parameters, let’s get a bunch of things that were different across these mergers, and let’s have some statistical model that’s going to fit something to the surface. That’s one approach.

Another approach, which I think has more potential, is to go back to the economic model and use that to kind of learn how we should be navigating this space. So I think in many ways I'm back to exactly where Steve was in his earlier comments.

MR. VITA: Okay. So my question for Debbie, as an attorney and as a former enforcer, maybe a future enforcer at some point, how should this literature -- how does it or how should it influence case law? How should it influence trial judges who are adjudicating a merger? Does it? Should it? Or appellate courts? What is your experience looking at from both the prosecutor side and the defense side?

MS. FEINSTEIN: Remember that judges are not thinking about case law. That's sort of a byproduct of what they do. They're trying to make a decision in a particular case, point one.

Point two, other people's retrospective studies aren't evidence in a case. An economist can cite to it, but they are not evidence in a case and the judge can give zero weight to it quite easily. An economist is going to have to say why a study in a different industry is relevant to this particular case, and I think that can often be a very hard burden to show other than just the notion that some mergers are anticompetitive and some mergers aren't. I don't know how much that gets you.

I think if you look potentially at the very same industry, as Professor Carlton did with respect to the Comcast-NBCU transaction, and explain why that didn't have some of the effects that the Justice Department theorized and that were the same as were theorized in the case before it, that may hold some weight. Obviously, the judge mentioned that as one of the factors.

Do I think that case would have turned out differently if Professor Carlton did not have that study? I personally -- this is just me -- think it would have come out the exact same way. It was more corroborative of all of the things that were being said in that case as opposed to an independent, you know.

Should they have more weight? That makes me nervous, the notion that you would start judging a merger before you based on some other merger where the facts weren't the same, that that ought to influence how the judge thinks about a different case with different facts. I think one has to be pretty careful about that. I think the notion -- I mean, so that's just particular case.

Then case law, bigger picture, other than hospital mergers, I have a hard time thinking about where retrospectives sort of change the way courts were thinking about a particular practice. I think that's going to be harder on the merger side to think of something like that. I mean, if you did a study that showed there was never a merger that ever had any efficiencies, yes, maybe that would affect case law.

I think where it would be more interesting to see whether or not retrospectives affect case law is, you know, in some of the debate about two-sided platform markets and some people say, ah, we'll be able to show that the courts have gotten it wrong. In thinking about it, it might be somewhat interesting, but I think there's a limit to how much retrospectives can and should be used in individual cases and to effect case law at large because judges are making decisions about specific cases. I think it's hugely important for the agency internally, but I think once you're before a judge, you're litigating the facts of that case.

MR. VITA: Great. Thank you.

While you guys were speaking, I jotted down a couple of phrases that I heard from you that I think lead to some interesting questions. One of the phrases I heard from Steve was figuring out not just what happened but why. This sets up a question I was thinking of in the morning session when Leemore was speaking about her studies on cross-market hospital mergers and thinking about what role, again, should they play in informing FTC enforcement policy. So I hope most -- I'm going to summarize it real quickly, and if I get it wrong, I'm sure you'll correct me.

Actually, there's a very nice survey or summary of Leemore's work and the work done by others in this field by two BE economists, Keith Brand and Ted Rosenbaum, in the Antitrust Law Journal. But basically the studies involve mergers of hospitals that are probably not substitutes for the patient at the point of purchase, geographically separated hospitals. There seems to be pretty robust empirical evidence that those mergers can have substantial adverse effects on prices.

So what should that say to the FTC? And a lot of it depends upon -- or I guess maybe this is my question. There's different possible theories about what could be driving those results. One possibility is that the mergers change the provider's bargaining sophistication. So an unsophisticated bargainer is acquired by a sophisticated bargainer, they get better, and they get a better price in the next round of negotiations.

Another explanation -- and I think this is mostly in your paper, Leemore -- where for some services sold by the hospitals, they actually might be substitutes for particular patients.

The third is sort of the really novel explanation, which is there are substitutes. The hospitals are substitutes for inclusion in an insurer's network even if they're not substitutes for patients at the point of service. So there's different possible explanations.

So let me go back to Debbie. You know, your economists in the Bureau of Economics tell you these are good papers, they're well done, there's no technical flaws with them, the data analysis is done right. How important is it to you to know what the underlying mechanism is that's driving the observed result? How important is that to you in sort of incorporating that into your enforcement decisions?

MS. FEINSTEIN: Critical. I don't see how I get past a motion to dismiss, which is sort of almost unheard of in a merger case, if I can't go in explaining how there is a reduction in competition.

An increase in prices as a result of a merger is not a Section 7 violation. I have to show more if I'm a plaintiff in one of those cases. I mean, to me, that's not a lot different than the theory I think that was theorized in one of the mergers of Company A bought Company B. Company A only had one product. It didn't have to worry about its reputation in the market as much, so it was willing to raise prices in a way that Company B won't. Okay, bad result, but Section 7 case? Wow, I don't think so.

I think that would be really -- I can't even imagine how you write the complaint that shows that that is a reduction of competition. My personal opinion is that that would be extremely difficult to do, but based on conversations I've had with numerous other lawyers, I don't think that's a minority view.

So understanding why it is that that actually is the result of a reduction in competition, competition for what I think is really important, so I do think you have to understand the theory to be able to write a complaint that passes muster and to be able to explain to a court why this merger, as opposed to another merger that might take providers in totally different places, isn't problematic.

MR. VITA: So my question for the economists

-- and, obviously Leemore, I'll let you go first -- so to the extent that it is important to understand the mechanism that's driving the results, is it a reasonable expectation to expect you or anybody, any of us, to be able to determine that? The typical retrospective, as Steve said, asks what, not why. Is that asking too much of our methods and our data or is that something that we --

MS. DAFNY: It may ultimately be asking too much of the data, but it is absolutely not asking too much to try. So in our paper -- apologies to those who were here this morning, but it was motivated by being here and seeing the success of the horizontal hospital merger retrospective and at the same time hearing about the fanning out of hospital systems across the country and concerns raised by insurers that they were able to negotiate higher prices.

Section 7 is not that long, and I know in it, it does not include if transaction leads to price increases, then it is a violation, it's a lessening of competition. So it's very important that in doing that analysis we developed a model that we think leads to an actionable antitrust offense if you can find enough supporting evidence of it. So let me try to be clear about what it is and what is the market.

It's basically if there are hospitals that are not competing for the same patients, they're potentially in different geographic markets, but if there is an insurer that is offering a bundled product of hospitals and other services to employers who value hospitals in these markets probably because they have employees who are commuting from both places or they have employees in multiple sites, so if there is a common customer, then the combination of those entities could increase their bargaining leverage when it comes to negotiating for inclusion in the insurer's network. Okay? So the presence of common customers and a common intermediary that is negotiating with these players can lead to a price increase.

Now then the question will be, if empirically when we find, as we did, that these transactions tend to lead to increases in price when they occur in the same state where we think common customers are likelier than when they occur across states, whether that is sufficient evidence of that mechanism or you can come up with an alternative, I think that's for us to discuss and/or our referees to debate. Although, we got published.

(Laughter.)

MS. DAFNY: But we had those debates.

MR. VITA: Yeah, thank you, Lemoore.

MR. NEVO: So I think it’s a great question, and I think that’s exactly one of the -- if you want the weaknesses of just a pure retrospective without kind of followup with an additional study -- I used to -- actually, whenever I would visit various agencies, I would actually give them an example. I’d have to talk about bargaining models because, actually, in that context, it comes up a lot more.

I would give them an example of saying, suppose you have a national coffee chain with a green logo, let’s just assume, that buys a local coffee shop and they say, we’re going to increase the price. Why? Because we have regional pricing. We believe a cappuccino should be $3.50 or $4, whatever it is now. And, you know, the local mom-and-pop shop didn’t think that way. And you know this, this is a fact. This is established, it’s stipulated to. It’s not in dispute. Would you block the merger?

What you get is I think exactly the response that -- Debbie didn’t respond to that question, but gave almost an identical hypothetical. I would say 90 percent of enforcers, this is around the world, would say no. Usually the 10 percent are young economists that have only been there one or two years. They say, wait a second, prices have gone up. You know, it’s like, ehhh.

I mean, the most comical was actually meeting with the chief economist team at the European Commission where one or two of the economists, the young economists swung up, and the rest of the team went up and were like, no, no, you guys don’t know what you’re talking about, that’s not what we do here, that’s not the case.

So I really think you need to go to it. And the problem is not just with retrospectives. Even when you go to models, models beyond a kind of simple differentiated products models, you have to start agreeing what is a loss of competition. If you look in the case of bargaining models, you might want to separate between leverage and power, right? I mean, the sense that I have better leverage because of the merger, I would personally argue that’s probably a loss of competition versus I now have more power in the sense that I have better lawyers that I didn’t increase the size of the pie, I’m just getting a larger part of it because now I can afford to hire Debbie, and Debbie is a much better lawyer than I had before.

I would say that’s a little bit more like the managerial ability, like the -- a pricing policy. But not everyone would agree. And I think that's kind of the frontier of understanding not just what happened, but then figuring out what's our lines. What's a loss of competition if it's not an increase in prices?

MS. DAFNY: Can I respond? Factually, just in the situation of cross-market hospital mergers, I just wanted to point out that our study focuses on the acquirers, not the targets. So what you're pointing out is certainly very relevant. And we also have a treatment group that is likelier to have common customers as against a treatment group that was similarly exposed to a merger had made a transaction and purchased a hospital outside. So I would say those two excellent examples pertain to the question, but the evidence that exists in this industry is, I think, robust in them.

MR. VITA: Orley or Steve, do you have anything to weigh in on?

MR. ASHENFELTER: Can I ask a question of Leemore? I don't have any comment, but I -- well, I do have a comment, which is we all know there are effects from mergers. We can get the pre- and the post-price and take the percent of the change, and we can call that the effect of the merger. There's no reason why we shouldn't study it and expect to be able to predict differences in it, in fact, based on economics. I will say that as a response to Aviv's comment.

But I wanted to ask Leemore a question. So would you go so far with your proposal as to suggest that people register their studies before they do retrospectives?

MS. DAFNY: Yeah, yeah.

MR. ASHENFELTER: See, one of the --

MS. DAFNY: Like clinical trials. Right, right.

MR. ASHENFELTER: Well --

MS. DAFNY: See, it's good to put something out there so that we can have some debate.

(Laughter.)

MR. ASHENFELTER: So write down what you're going to do --

MS. DAFNY: It's only about half of the reason that I proposed it was to have this fun discussion in the afternoon on a Friday.

MR. ASHENFELTER: I don't know if everybody understands it that --

MS. DAFNY: I do understand it. So what

you've asked is wouldn't it seem to be appropriate to register the existence of a study -- and so many academics will do something and not find anything and say that nobody wants to publish it -- and or not because it's not only a zero, it may not be a precisely estimated zero, which you really can't publish. So I would say yes.

(Laughter.)

MR. ASHENFELTER: I think your proposal is definitely going to get you in trouble.

(Laughter.)

MR. ASHENFELTER: But not with me.

MS. DAFNY: But you're having a good time, right?

MR. ASHENFELTER: You won't be in trouble with me.

MR. VITA: Steve?

MR. BERRY: Just one quick thing, which is I think there are two interesting points to your question. I hadn't thought of the first one and people spent a lot of time on it. It's interesting. One thing is that in the absence of a mechanism, are you sure that the effect is competition?

The other thing is in the absence of a mechanism, do you even believe the result? So it's very common, again, among our public labor colleagues, if someone publishes a paper they say, we lowered the cost of going to college, fewer people went to college. So people say, you know, in the absence of a mechanism, I actually just don't believe that result. I just think it's a weird outlier, right? It's just some -- I'm not saying you didn't do the study, but I'm saying it's some weird, you know [indiscernible] you know, 1 in 20 times, you know, it's significant.

So I think one thing is you, particularly for a surprising result, you want at least an hypothesized plausible mechanism, right, before you believe it at all, which I think you provided. I'm not talking about your study. You followed up. You provided it, right? Then I think, even better, which you also just mentioned, is some actual evidence in favor of that exact mechanism. But I think there is sort of a credibility ladder, right, when you get the surprising result of is it a plausible mechanism.

MR. VITA: Steve, I have to ask you to speak into the mic.

MR. BERRY: Sorry, yes, I'm leaning back too far. Usually, I'm so loud that there's no chance that somebody can't hear.

MR. ASHENFELTER: We drifted away.

MR. BERRY: Yeah. So I think as this credibility ladder of, you know, if it’s a surprising result, is there any plausible mechanism and then is there any evidence for that mechanism?

MR. VITA: I may want to return to this point in a little bit. I might have a question for Debbie on it because this sort of relates to the proposal that -- I see Dennis Carlton’s in the audience. He’s on the next panel. He’s made some suggestions along the lines that we’ve been talking about. Maybe he’s going to talk about that. Maybe he’s not.

But let me put that aside for just a moment because we have a question from the audience that I think is a very good one and I think I would like to hear the panel’s thoughts on it. So the question is, Commissioner Slaughter mentioned acquisitions of new potential nascent competitive firms that might develop into competitive threats in the future. Facebook-Instagram being an example that’s frequently talked about as as something that might be a good example of that. So Facebook acquired Instagram when Instagram was quite small, but there’s an argument that had that merger been prevented, Instagram may have developed into a social media platform that would have presented some kind of important degree of competition for Facebook and other platforms.

So the question is, is it even possible to do a retrospective study on a case like this? What would the control be? So who wants to go first? Aviv, why don't you go first? Oh, no, excuse me.

MR. ASHENFELTER: Why don't I go first?

MR. VITA: Excuse me, you go first.

(Laughter.)

MR. ASHENFELTER: I'm afraid I don't see how you can do anything. This is -- people speculate about this. But without some -- I think this is an example of where you have to use something anecdotal. In fact, I guess if we didn't exclude -- if Steve didn't exclude -- and I certainly wouldn't -- anecdotal evidence for mechanisms, then you might find some way how to do that. But I don't see how a quantitative method -- I mean, people propose ideas like that all the time. I don't know how you could actually establish that using what we normally think of as economic methods.

MR. BERRY: Yeah, I think it would be incredibly tough to think about it in a retrospective context. I do think there are cases where we're going to have to rely on -- you know, let's make it a little stronger than anecdotal -- good anecdotal -- deep institutional knowledge and a consistent theoretical framework that has perhaps proved itself in other dimensions to make us think about what's the source of dominance here, what do we know about it, what do we think about it in the deepest way, and what would happen.

MS. DAFNY: Nah.

MR. VITA: What?

MS. DAFNY: Nothing to add.

MR. VITA: Nothing?

MR. NEVO: So I think the easy thing to say is I agree, and I do agree with that. But there is one version that might actually be somewhat workable, I mean, somewhat. So suppose if what we say is the goal not to say what would have happened but for the acquisition, but we want to say there was a promise of you acquire this up-and-coming firm and we say, no, we're actually going to develop them, we're going to bring them up, we're going to let them be, you know, bigger and greater and a lot better than they are now. That you can go back and check.

So this goes a little bit back to, do you want to compare to retrospective or do you want to compare relative to some promise or prediction or some discussion that happened as part of the approval? So in that case, what you're looking for is relative to a promise. That's how you get the "but-for" world

MS. FEINSTEIN: Yeah, just two anecdotal points on that. I read an interesting article recently where the Instagram founders all said they were horrified by what Instagram had become because they always imagined it to be this small, little boutiquey kind of place and, in fact, it has become this big giant. So it was interesting that that wasn't the goal.

So I think the best you can do as enforcers is look at what the documents say at the time. And the irony is we wouldn't be talking about Facebook-Instagram if Facebook had taken Instagram and put it in the drawer and never done anything with it again because we would say then it had squashed the -- I mean, you're sort of, in these nascent industries, caught either way. If you develop it, you get told, well, if you hadn't bought it, it would have developed like that organically. If you stick it in a drawer, it's evidence that, oh, you squashed it. So I'm not sure how you do a retrospective on that either way because I'm not sure even what you're looking for sometimes in those kinds of cases.

MR. VITA: Let me ask sort of a followup sort of that’s a bit related. A lot of the industries that are important and the subject of public policy debate are industries that are basically -- the price to the consumer is zero or the explicit monetary price to the consumer, but those are important industries and there are concerns about the degree of competition in those markets.

How might one do a retrospective study of a merger, say, between two firms like that? They earn their revenues from advertising or something like that, but the services they provide to consumers are also important. How should we think about that? And if we were to do a study of a merger like that, what kinds of questions should we be asking and how can we do the analysis?

MR. ASHENFELTER: Well, here, I think Aviv should start.

MR. NEVO: Okay, thank you, Orley.

(Laughter.)

MR. NEVO: It’s the second time today that we agree.

(Laughter.)

MR. NEVO: So, first, let me just point out this is not completely a new problem. Everyone talks about products are free and it's a whole new world. You know, there's this thing that now no one watches because we watch all video on our TV, on our phone, but I think all of the TV that's been around for quite a while that exactly had this model that you get eyeballs by offering free programming and then you sell advertising. I mean, substitute programming for YouTube for cat videos and we're going to Google, right?

I mean, so it's not completely new. And, obviously, you want to look at different things, but you could imagine looking at, A, what happened to the price of advertising if you were doing this in the context of TV. You could imagine what would happen to the quality of programming, although please don't ask me how we measure the quality of a cat video.

MR. VITA: I was going to ask you that.

MR. NEVO: But that is kind of, I think, the idea of, yes, these are new-ish kind of things, but they've been around and we've been looking and evaluating mergers in that for quite a while, in industries like that when I say "that," industries like that for quite a while.

MS. DAFNY: Yeah, I'll add some other

potential outcomes. We certainly investigate nonprice outcomes all the time on time performance. In the case of some, I guess as Commissioner Slaughter would call them, technology-intensive industries, you can imagine both the ad intensity and the extent of data breaches, the degree of privacy protection, and in some of these cases, using output as a marker might be a useful way to try to explore. If they burden me with too many flashing things so I stop consuming online news, then some transaction that may have lessened competition and provision of that, even if the monetary price was free, could be interpreted as having been anticompetitive due to the output production.

MR. BERRY: I would give a pitch for my -- some of my theory colleagues' work on this actually. Dirk Bergemann and his coauthor, Bonatti, I think have some nice theory papers talking about what the data markup is in these industries. It's exactly this kind of bartered thing where people give you something of value, you give them your data, and they sell your data. There's a really clear markup there, which is what they get for your data versus the value of what they give back.

So I think Aviv is right, which is in the sense that you could easily -- easily if you had subpoenas and other things -- think about how much they're getting for the data that they're collecting. You could, of course, look at the cost of the margin of what they're providing back to you. Probably the theory says it should be the value of what they're providing back to you, which gets at this quality issue. But for example, if you think the quality hasn't gone up much and the advertising price went up a lot, I think you could conclude that the market went up.

MR. ASHENFELTER: Well, I'll just add that when you think about -- TV is not a bad example. Radio is probably a better one before that where you don't even have to look at it. These are industries where we have typically measured their value by their total box office, and the box office, of course, is defined as the combination of anything you pay directly plus whatever is generated in advertising revenue. So the idea it's free is kind of -- that's a little bit nutty.

Movies have now typically both ads as well as a ticket price. So I think it is right you can think about what the total revenues are. Whether you could ever challenge anything as anticompetitive because of the fact that they managed to get their box office up in the law, I'm not too sure. Maybe Debbie can respond to that, but I think it might be a difficult case to make.

MR. VITA: So think about other sort of formidable problems that you face, interesting, important policy issues via the root of a retrospective, in a lot of markets, what we're concerned with is not so much static pricing behavior, but we're concerned about things like innovation. And the FTC and the DOJ bring a lot of cases that are based on a theory that the merger will reduce incentives to innovate. Innovation and competition is important.

Is that something that's really amenable to study using the kinds of data and methods that we're likely to have available to us? How does one measure innovation? How does one find a satisfactory control market against which to benchmark the potential loss or gain in innovation? Anybody want to take a crack at that? Aviv?

MR. NEVO: Sure.

MR. VITA: Just to mention a name randomly.

(Laughter.)

MR. NEVO: When the going gets tough, send it to Aviv.

MR. VITA: Yeah, that's right.

MR. NEVO: I mean, I think, look, in terms of importance of the question, understanding the effects of merger on innovations, I think that's extremely important. I mean, I think there is a certain sense in which what we all do is we're kind of always looking under the lamppost because that's where I have the data and that's where I have the models. That's why we know what to do. But innovation might be, in the long run, really the key thing.

That being said, it's very, very hard because innovation, almost by definition, takes a long time to see the effects. So if you're going to do a merger retrospective and say, oh, let's look ten years later, good luck convincing anyone that you've really got a causal effect of the merger, unless you were able to run some social experiment and take two identical industries and have a merger in one and not the other.

So I think that's just a long-winded way of sort of saying it's a great question. I don't know that I have the answer to it.

MR. BERRY: Okay, so let me try. I'm not

saying I'll succeed. I think the hardest question is just measuring innovation. Academics do this by things like patents, indirectly through R&D expenditures, other measures, and they're heavily criticized. Then, again, a lot of our price measures turn out to be not so good as we claim when we use them. I think once you have an innovation measure, then we're just back in the whole debate that we've had before.

I agree, maybe the lags are a little longer, but I talked about -- my merger retrospective with Joel was about product variety, not about price. So the question is we had to take a stand on measuring product variety. Having done that, we could do the same technique.

I think the European Commission, in looking at innovation cases, has, on the theoretical side, taken a stance that's very similar to what they would take on price, that a merger has diversion effects and market expansion effects, and that's not that different than lowering your price effects, you know, where we talk about diversion versus growing the market. And I think if you could -- I don't think anybody's done it -- I think if you could get a good measure of innovation, you could put it in some of our existing frameworks. That's an interesting challenge for somebody, yeah.

MR. VITA: Orley, did you want to --

MR. ASHENFELTER: Well, I just wanted -- the other thing I would add to that -- probably Leemore could have more to say about this -- it seems medicine is one of the areas where there's deep concern about innovation. I'm thinking of pharmaceuticals. There might be better opportunities to measure things there. I'm sure it's an issue in the potential for pharmaceutical mergers. And there might be some way of quantifying a little more rigorously than sometimes occurs with just patents in that field. But you might want to say something more about that.

MS. DAFNY: Yeah, no, I do. Thanks for the lead-in. I'll start out by repeating that, first of all, you ask hard questions. It's very difficult to know what the counterfactual is to try to predict what innovation we might have enjoyed in the absence of a transaction. If I wanted to do that, I would surely not go to a group of economists first to ask. That was a joke.

(Laughter.)

MS. DAFNY: Thank you. I think the

methods --

MR. ASHENFELTER: That wasn't funny.

(Laughter.)

MS. DAFNY: But we're laughing now. I do think the methods are very conducive to looking at some modes of innovation like product variety. I will say that in health care, as Dr. Ashenfelter suggested, there have been some pretty interesting studies looking at drug development, most recently by one of Steve's colleagues, Florian Ederer and coauthors, who found that when pharmaceutical companies acquired drugs in early stages of development below reporting thresholds that they were much likelier to kill them if they already had something like that in development. So there is some evidence in health care.

It's also possible to use models of technology diffusion and adoption to try to predict the but-for world, which has been tried in terms of -- adoption of health care technologies in more versus less competitive markets.

MR. VITA: Okay. Well, we're down to like a minute and a half. I have another question from the audience, but it is a pretty detailed one. I don't think we have the time to get into it. So I'm just going to say thank you to our great panel. It’s been a great discussion, and I think we’re lucky to have had all you guys here today. Thanks very much.

(Applause.)

PANEL: WHAT SHOULD THE FTC'S RETROSPECTIVE PROGRAM BE OVER THE NEXT DECADE?

MR. KOBAYASHI: I realize breaks are the best part about these hearings, but we need to get started, especially since Marty has a quick connection and is going to have to leave us right after this hearing.

So this is the final panel, and the title of the panel is -- you can tell that BE did not name these panels because this panel has the word "should" in it.

(Laughter.)

MR. KOBAYASHI: "What Should the FTC's Retrospective Program Be Over the Next Decade?" Be did, of course, have another pull to, once again, have four economists and one lawyer, not counting myself. So, once again, we have another great panel. And I'm going in reverse alphabetical order just to be contrarian.

Up first, we'll have Nancy Rose from MIT Department of Economics. She was also -- everybody on this panel has agency experience. She was the DAG at Justice. After Nancy, we'll have John Kwoka, who was on a panel this morning, from Northeastern University.

Right in the middle, we have the one and only Bill Kovacic, my former colleague. I guess it is unfair to call him a lawyer because he was my colleague at George Mason and everybody at George Mason is an economist at least in thought.

MR. KOVACIC: We are all economists, Bruce, yes.

(Laughter.)

MR. KOBAYASHI: Next to him -- and Bill is at George Washington University.

Next to him is Marty Gaynor. He used to have my job. He is from Carnegie Mellon University. And at the end is Dennis Carlton from the University of Chicago, Booth School of Business, who was also the DAG at Justice.

So I'm looking forward to the discussion. Nancy?

MS. ROSE: I don't have slides. Do you want me up there nonetheless?

MR. KOBAYASHI: No, you can sit.

MS. ROSE: Is that okay with your video?

Okay. So thank you for the opportunity to share my perspectives on what I think are a very important set of topics and a topic set where enforcement and academia most productively intersect and collaborate. That's a space I feel like I occupy or am privileged to occupy.

You've heard a lot today about what we've learned from retrospectives, how to design and execute them, and what their value can be to enforcers. So I'm expecting during the Q&A to weigh in more on some of those questions, which were in the fourth -- in this final panel set of topics, but I think my highest value might be to start with questions and answers that haven't been discussed at length by panelists.

So I want to start with the last question that was on the set that Dan and Bruce circulated for this panel. Should the FTC devote more resources to retrospectives, even at the cost of current enforcement? And I was delighted to see Commissioner Slaughter be so passionate in her defense of the need for more resources. This goes to what I feel is the most significant, and yet still largely invisible message, in the ongoing debate over competition policy, which is that antitrust enforcement in the United States is chronically and substantially underfunded.

For years, the appropriation requests have been modest in their increases. Oversight hearings and interactions with the Hill have too often featured the mantra, “when business picks up, our talented and hardworking staff just do more with less.” I will say I think the career staff at both the FTC and the DOJ Antitrust Division are among the most dedicated, highly-skilled, and hardest-working professionals.

It was my great privilege to work with a number of them at DOJ, and I know that colleagues who have worked at the FTC feel the same way. They deserve our greatest appreciation and applause and not just from those of us who work in antitrust policy, but from the entire American public, on whose behalf they tirelessly work.

But there is a limit to the number of hours in a day and the number of days in a week and the well below market compensation for the lawyers and economists who work in the agencies, which is another significant problem, is insufficient to demand that staff give up all rights to leave their buildings, occasionally see their families, or catch up on sleep.

So I think it’s inevitable that if we’re asking agencies to reflect on the effectiveness of their decision-making through programs like retrospective programs, it is going to come out of someplace else. And I fear that given the ongoing intensity of the merger wave, that's going to come out of enforcement.

We are amid an ongoing sustained, what's been called by some, tsunami of mergers. Each year there are thousands of mergers noticed to the agencies and thousands more below the HSR thresholds, that work by Thomas Wollmann at the University of Chicago suggests, skate through to consummation with practically no probability of review or action, the occasional consummated merger enforcement action notwithstanding.

The dollar volume of mergers is at historic levels and that suggests that there are a lot of mega-mergers competing for enforcement resources. In addition, litigation costs continue to climb, both for challenging mergers or bringing Section 2 actions, especially as parties with especially deep pockets escalate litigation defenses, correctly calculating that even adding some tens of millions of dollars in antitrust litigation costs would be just rounding error in their merger financing.

And, finally, I would say it's inconceivable to me that there are not at least some counsel that are advising parties that a good time to bring marginal mergers forward is when the agencies are stretched thin by major investigations or multiple litigations.

So I was interested to hear the statistics that Commissioner Slaughter shared after lunch. I recently did a back-of-envelope for the Antitrust Division, just to understand kind of the nature of this problem, setting the number of mergers and the Antitrust Division dollar budget to 1985 to 1 and then carrying it forward in real dollars and number of merger terms. I expected to find that mergers increased faster than the budgets, but I was frankly a little stunned by what I found.

So total US mergers are at five to seven times the level in 1985, and the real dollar budget for the Antitrust Division peaked at less than twice the 1985 level in the early 2000s. It remained roughly flat and has even declined slight in recent years. So if Congress and the American people care about antitrust enforcement, and there’s every indication that many of them do, we need more resources, first, for enforcement, and then, secondly, for programs like the retrospectives that we’re talking about.

So now, let me go to the retrospectives and say a few things about that. I think one way, in the short to medium term, to help with both of those objectives is to perhaps do a little bit more outsourcing or collaborative work of retrospective activity with academics. One way to foster those collaborations would be to offer access to data to academics, particularly data that would not otherwise be readily available.

So I'd encourage the agencies to think about how to write explicit data production requirements into future merger settlements. That's one way to perhaps give you a stream of data into the future. I would say they should do that even with structural divestitures because we don't really have a great sense for the impact of many of those, the FTC's noteworthy merger remedies retrospectives notwithstanding.

That's only part of the data that you'd want to analyze the effects of mergers ex-post, but at least it gets us started there. And I think that then in terms of the collaboration, there are a lot of models that one could use to both respect the confidentiality requirements that are likely to come with data collected in that way and also to engage academics.

So just to mention a couple, you could think about the Bureau of Census warrant employee model, I think something similar to that that is used by the Consumer Financial Protection Bureau to bring in academics and work on their data with questions of mutual interests. You might be able to attract early stage doctoral students who are often looking for interesting research questions and data that others haven't worked over. I think agencies could probably increase programs for visiting academics, encouraging them to visit to develop retrospective analyses that might be able then to be continued post-visit. You'd need to have that be written into it given the depressingly long publication lags that now exist in economics journals.

And here's a -- you know, maybe silly, but maybe not, idea, since academics seem to like recognition, perhaps the FTC could add a competition for best merger retrospective study of the year and award that at its annual, very successful, applied microeconomics research conference as a way of recognizing and rewarding that kind of work. Those are some ideas of low-hanging fruit that aren't going to get us to where we ought to be but at least might start us along the way.

So now that we've solved the problem of how we're going to encourage and facilitate more merger retrospective analyses, where should that work focus? I would say the top priority should be to identify where our models of likely competitive effects go awry and why. So here are a few candidates.

First, do we focus on too narrow product overlaps that aren't really where the competitive harms lie? So Leemore's discussion of these nongeographically contiguous hospital mergers are an example of that. I would say the Comcast-Time Warner Cable case that I worked on at the DOJ was another example of that. Maybe data creation in tech acquisitions is an example.

Second, we should look at analyses that might miss what I might call portfolio effects. Leemore's could be an example of that. Could be portfolios of unrelated drugs, oil field services, which is a merger that I worked on at DOJ, sort of examples where it's not just the narrow product market overlaps that are important, but there's something about the broader portfolios that the two companies have that affect competition.

Third would be, do we fail to capture potential competition problems? I think this is understudied in academia and I think underappreciated in the agencies. I think it’s also extraordinarily difficult given case law, but that might benefit from more analysis and particularly if we could show, through retrospective analysis, why that area might merit more attention.

And then, finally, I would say I think there may be an unwarranted focus by academics and antitrust practitioners here -- I’m about to say something fairly heretical -- on unilateral effects. So I know that was seen as a great advance when we moved to that in the horizontal merger guidelines, but as has been discussed earlier we often are thinking about unilateral effects models either differentiated Bertrand competition or maybe Cournot competition depending on the nature of the product, and we generally assume once unilateral, always unilateral.

I don’t think we understand, as an economics profession, kind of what mediates the transition from one form of competition to another, that is to say from noncooperative to cooperative. And I don’t think we understand if those models are not rich enough to capture what’s going on in markets, so trying to understand better where that kind of focus might lead us astray.

Thanks.

MR. KOBAYASHI: Thank you, Nancy.

John?

MR. KWOKA: Thanks, Bruce. Between the last panel and Nancy's comments, there's very little for me to add. I'm much in agreement with everything that Nancy has said.

The previous panel came to one overriding conclusion. That is, more merger retrospectives are good. There was a certain fragmentation of views after that. So let me return, to some degree, to what I said earlier this morning about the different purposes of different types of merger retrospectives. In contrast to some of the discussion earlier, I do think that examining single mergers does have considerable value, and it is because I do think that the process of examination on the part of the agency in cases where the outcome was different from what was predicted are incredibly important in the process of continuous improvement of the analysis within the agencies.

I think that there have been examples where this has already proven to be the case, where the agencies have examined past decision-making and investigatory strategies and have revised accordingly. This has also been true elsewhere. To shift focus to a side discussion that occurred about the tech sector, examining the way that the EU looked at the Instagram and WhatsApp acquisitions by Facebook is actually instructive, because in the Instagram, they, of course, put much more on the record. The issue is slightly different and the analysis is different there than here.

Be that as it may, if you were to read the entire record of both of those as published by DG Comp, you’ll see that in the second of those acquisitions there was a much more sophisticated understanding of some of the risks of approving the merger. They approved it anyway, but, nonetheless, you do see that the internal processes of the agency had learned something from the first go-round and applied it more rigorously the second time through.

That occurs within the FTC and within DOJ, for sure. That is to say the repetitive mergers and acquisitions within individual industries, the resident expertise within the agencies is brought to bear repeatedly on these issues and there is a considerable improvement in the techniques that they apply. So I do believe that this is -- and I might also add that when we talk about merger retrospectives done for that purpose, no one is talking about academically publishable quality mergers. In some instances, these can be done quite readily.

I served as consultant to the State AGs on a series of airline mergers. The data was publicly available. We had the data cleaned, we had the software ready. The next merger could be analyzed fairly quickly after one or two or three preceding ones had been reviewed. So in some instances, it's quite straightforward. In other instances, of course, it's devilishly hard. But I think it's an exaggeration to think that this is an intractable problem in general.

The other comment I'd like to make is with regard to meta-analysis. It's been pointed out more than once that the meta-analysis that I did is heavily concentrated in a certain number of industries, 16 by actual count, and that there's a disproportionate sampling within three or four sectors. However, the results are insensitive to the fact that there are multiple mergers within hospitals and academic journals and airlines, and the simple strategy, which I've reported on, to determine that is simply to take an average of the results for all, say, hospital mergers, rather than taking the weighted average, which is to take every one of them separately, and you get very much the same results. So the result of the happenstance of the sampling that was done in those mergers is not dispositive.

The question is, of course, the deeper question is, to what end is meta-analysis appropriate? My work was not to develop a scorecard on the agencies. My efforts were to try to draw inferences that would allow better enforcement strategies in future mergers and certainly not to, as my book points out, it's not to simply say challenge more mergers. The issue is to try to look at those, at the margin, to see what it is that might have been decided or pursued differently.

Which ones are at the margin? Well, there are ways of determining that as well. I don't want to spend all my time here today talking about that, but it is quite possible to determine the ones that were unambiguously anticompetitive and to look at the structural characteristics of those.

The other uses of meta-analysis, I've put those to two other uses. One of the uses was to examine whether stock market event studies are good predictors. I've published a paper that shows based on the actual merger retrospectives, the stock market event studies, which were a fad some time ago and, in fact, very poor predictors of the actual outcomes. I've published another paper which used, again, the same database of merger retrospectives that examines whether structural characteristics of the sort that are in the horizontal merger guidelines, the levels and changes in HHI or numbers of significant competitors, whether those essentially structural characteristics are good predictors. And the answer is yes, they are. They make very few false positives if one chooses them correctly. So those are inferences about broader policy that I think are helpful, and those cannot be addressed by looking at one or two or any single number of small mergers.

I did have other recommendations, but, again, most of these have been covered. Nancy has been eloquent, as Commissioner Slaughter earlier, about the need for resources. There seems to be bipartisan support on the Hill for more competition output, but it's not clear that there's bipartisan support for more input into the process.

Two years ago, then Congressman Keith Ellison did introduce into Congress a so-called Merger Retrospectives Bill of 2017, I guess it was, which provided for the agencies to, in fact, do a certain small number of merger retrospectives each year.

There were provisions in there for how they were to be selected, who might review the selection process, et cetera, et cetera, and an increase in the budget, specifically earmarked for that purpose.

The point of that was that there is, in fact, some appreciation of the constraint imposed by current budgetary issues within the agency. The idea of having the agencies required not to do 10 or 50 of these per year, but to do at least a handful, reflects a similar policy in the UK, where, as many of you know -- and I guess Bill Kovacic knows more about this than I -- but I think there now is a requirement that they do a couple of these per year on the basis of matters that they have reviewed.

Dan Hosken and I sat on an evaluation panel a couple, three years ago at the OECD that looked at both the UK and also a couple other countries' efforts to look back on their policies and to evaluate how effective and how accurate their decision-making had been. Those are all, it seems to me, well-taken initiatives and they all, it seems to me, feed directly into the need of something of the same sort within the DOJ and the FTC.

How might the data be collected? So the FTC has 6(b) authority and that is a mechanism for collecting data. But it also seems to be possible that both agencies can, as a regular practice, require production of data from parties that have filed mergers that go through some investigatory process and consent order or agreement with clearance or remedy or consent with the agencies. In fact, without changing the HSR law, it seems to me that could be -- I'm not the lawyer here, but arguably it might be implemented to require all the parties filing HSR to do so might require statutory changes. But in any case, a significant fraction of mergers would end up being required to produce data that could be evaluated subsequent to a merger or a remedy.

That, of course, might be a therapeutic effect on the parties as well, but it certainly would provide the agencies with the raw material to conduct look-backs and to see whether, once again, the parties' representations about price, or for that matter, efficiencies and whether the agency's decisions with respect to how to resolve these mergers in fact were borne out.

So I think all of those are strategies we're thinking about in order to implement this. Again, I heartily endorse Nancy's very good suggestions for how to finesse some of the resource constraints, but certainly to think about how to institute a comprehensive strategy for merger retrospectives in the not too distant future. Thank you.

(Applause.)

MR. KOBAYASHI: Thank you, John.

Bill?

MR. KOVACIC: Thank you, Bruce. Thanks to your colleagues in the Bureau of Economics and indeed to the Commission for the chance to participate in this superb day of discussion.

It’s really appropriate that the FTC convenes an event on this topic. Beginning with the FTC’s first evaluations of past vertical restraints cases and the Xerox case in the late 1970s to the present, the Commission is the reason that there’s global awareness among competition authorities that some investment and evaluation is crucial to do two things. To answer the basic question, how do we know it’s working, and second to know, how do we do it better the next time. There is, I think, a general global acceptance of the idea that this is crucial not just to effectiveness, but to legitimacy and accountable as well. And that all started here. No other agency had a greater impact on shaping those norms.

I want to talk about four specific suggestions, a bit about building an analytical baseline for doing the evaluations; to talk about big antitrust data, which the agencies have, which several colleagues have mentioned today; to talk a little bit about how to deal with resource constraints, and I agree a boost to the budget would help, but I won't really believe the sincerity of the Congress until they relax the caps on salaries where they are now.

If they're not willing to put the FTC on a plane at least with the Federal Reserve Board or the CFPB and to increase salaries to match the higher-paid agencies, or God forbid to go even halfway to market rates in some instances, I won't believe it. It's not a matter of having more bodies; it's a having of good bodies, and you don't get them and keep them unless you're willing to pay for them. So I regard so much of the legislative debate about resources as being an organized hypocrisy. Until we see the resources put with the people that we need, we're just churning. We're not going to do a better job.

The analytical baseline, big data resources and institutional support, how to sustain things over time. How to build the baseline? I see a great value in documenting -- and I think this is a low-cost step

-- the assumptions and priors that went into the formulation of the decision to prosecute or not to prosecute. That is internally making very clear so that other researchers can examine why it was that the agency decided to act or not to act. John and other colleagues have mentioned this already.

Spelling out those key assumptions is crucial to going back later and asking how did it turn out. And if it didn't turn out, not simply to know that it didn't turn out -- and here I echo something Dennis has mentioned many times -- the point of doing the assessment in so many ways is to do it better the next time from the agency's point of view. So what do we learn about improving the methodology the next time around?

An example of how this can be very informative, the FTC, in the mid-2000s, approved a joint venture of Lockheed Martin and Boeing to create a merger to monopoly basically in heavy launch vehicles for national security launches. There were two crucial assumptions that supported the decision, an efficiencies argument about how consolidating greater experience in a single team would improve reliability, and a second about entry, that the US Government would, over time, promote the entrance of a new firm into the sector. We know, over time, that that happened. ULA has had not a launch failure in its entire existence. That was one of the hoped-for efficiency gains, greater reliability. And there was entry, Elon Musk's SpaceX, Blue Origin and several others, with the United States Government assisting in that process.

By providing and identifying the assumptions, one had an opportunity not just to ask were those assumptions fulfilled, but if not, why weren't they? But perhaps it's important if they were, for reasons we anticipated or for reasons that we didn't have in mind at all, and to inject that knowledge back into the review of the next transactions.

Another way to improve the analytical baseline, especially for outsiders, are informative closing statements. The US, at a minimum, should adopt the practice that's common in other countries, but where the US uses compulsory process to conduct a major investigation, it ought to explain, in informative detail, why it decided to close the file, to promote the debate and evaluation of whether or not the decision not to prosecute made sense, and to track that over time.

Second, we've had several discussions, I think, of the crucial fact that there is big data. We talk about big data that firms collect. There's huge antitrust data that the antitrust agencies themselves have. They've accumulated, consolidated, experienced across a wide array of cases. It's useful to think in terms of building industry biographies, which enable the agency, within an industry or sector, to have a better intuition about how to act and decide in the next case.

An example of how that could have been brought to bear on a merger at an earlier time, baby food, Heinz. In the late 1970s, when I was working on impact evaluations involving vertical restraints and helping Tim Bresnahan, a young promising academic who's going on to great things, do the Xerox investigation, we were performing an assessment of whether to bring a no-fault monopolization case. Which company was at the top of our list was going to be the test candidate. It never proceeded. That was Gerber. Why? For the better part of a half century, they had a durable, significant market share that was impervious to entry on many fronts.

The Heinz and Beechnut merger would have confronted Gerber with a strong second firm. Thus, if you assumed that Gerber was durable, that sweet little cherub had such brand loyalty that parents would always come back to it again and again, maybe it was not a great risk to think of creating a second to go after it. That knowledge gained from the no-fault monopolization inquiry never made it’s way into the assessment.

Maybe you’d still decide to block it because you’re not going to block what was seen to be a three-to-two. But if you were thinking of taking a bit of a chance in your portfolio, knowing that Gerber had been so durable, you build into your analysis what you’d learned in these earlier exercises, and you bring that to bear in deciding whether or not you’re going to challenge the transaction.

In thinking about innovation markets, I think of the roughly 40 to 50 transactions that FTC and DOJ have done in the defense and aerospace sector, I think there’s an enormous body of information there that can teach us a lot about innovation, what innovation and skills and disciplines predict success. What past activity indicates whether the innovator is likely to do it again? Where do new entrants have a big impact? There’s a massive amount that one can learn in transactions that again and again treat price as a completely secondary consideration. It is the impact on quality and innovation that has meant most to the purchaser.

Third, dealing with resources, again on Nancy's important theme about what you do if you don't get the additional resources or my plea, good salaries for people who come to work for the agencies, first, several colleagues have mentioned, I think you can do quick looks. You can do quick looks with a fairly austere record if those priors are well stated and you can go back and say, did actual experience meet the priors with the idea of answering Dennis' crucial question? What does that tell us about how to do it better the next time?

The CMA, with respect to merger process, and to all of its competition cases, routinely does quick lookbacks about the method that the institution used to do studies. They do these almost across the board with the spirit that the results of this will not be a source of retribution for people who failed or for things that haven't gone well. They've built a norm that says the only reason we're doing the look-back is to do it better the next time. This has been extremely informative.

Second, as Nancy was saying, how to enlist coproducers in this effort to share the burden. A good way to think about how to structure the academic partnership is to look at the FTC's first modern impact evaluation effort that was launched by Jack Kirkwood, 1978, '79, guided by Bob Lande to evaluate the effects of the FTC's vertical restraints enforcement program. That was a wonderful collaboration between academia and the agency with senior researchers like Dick Caves, who designed the protocol for the study, young promising academics who ascend to significant positions in academia later on, first for the vertical restraints program, then for the Xerox case, in which I had a hand with Tim Bresnahan. Tim did the work; I did the contracting documents. So, obviously, a heavy burden there.

But Tim publishes the most informative study we have of the effect of the Xerox case, that protocol, that experience is extremely informative about how to do it again, how to bring academics at relatively low cost, how to offer them data, how to give them publication possibilities and very good publications they were in luminous places over time. You can build upon that model, I think, quite successfully, to have a collaboration that works.

And, yes, you can do the collaboration

internationally with other governments that have a shared interest, common research projects about common sectors, looking at mergers and transactions which increasingly several different agencies have looked at. Pick a couple of partners who have an interest in doing the same thing.

Last, how to sustain this from an institutional point of view. First, I think you build focal points to do that. One is to continue the habit of drawing attention to the subject and gatherings like this. This can be a routine feature of the microeconomics conference that BE organizes quite successfully. It could be the standalone annual event called “the evaluation conference.” That could be an FTC/DOJ production. That could be a joint venture with a major academic research institution with a shared interest, where the focal points are, do your papers on advances in methodology, do your papers that involve case studies, do your papers that provide the more detailed quantitative, empirical studies.

You can also use, as John was just mentioning before, settlements and litigation as an avenue to prompt this. It’s striking in the area of monopolization litigation. The AT&T decree that Judge Greene signed had a specific provision that said, “we are coming back in 10 years to evaluate the effects of this.” Judge Wyzanski, in United Shoe Machinery, did the same thing in his 1954 decree. That is, you could have judges, more as a matter of routine, saying, we are going to come back and take a look at this. That could be a condition that’s built into consent decrees as a routine element, at least for some transactions, to come back and look again.

And, last, the suggestion that I think has come up in many of the discussions here, I think it’s a mistake to put cartels, mergers, and conduct in watertight compartments. There’s so much, I think, to be learned across these areas, the way in which what we’ve learned about cartels feeds into coordinated effects, analysis, and mergers, what we’ve learned in individual sectors about how they have evolved over time and how competition law -- its absence or its presence has affected the way they’ve grown, to teach staff to draw connections among them, so that when they’re doing work on individual cases, they’re not just handling the horizontal restraints case or the merger case or the dominance case, but they’re thinking about how building a body of knowledge that will be useful to apply across the whole piece of what the agency does.

Thanks.

MR. KOBAYASHI: All right, thank you, Bill.

(Applause.)

MR. KOBAYASHI: Marty?

MR. GAYNOR: Well, thanks. I want to first thank Bruce and Dan and everybody who I know worked so hard on putting this together. This has really been a terrific day. And I want to thank the Commission for having the foresight to hold this hearing, but all of hearings, to really try and look at a set of very, very important issues.

So I have four broad points about retrospectives, and they're as follows: One, do them. Two, do them regularly. Three, be selective. And, four, do more than just horizontal mergers. I'll elaborate a little bit, but the rest is just commentary.

Retrospectives are very important, and I think there's universal agreement on that. But let's be clear about one of the reasons they're important is that it's really critical for the agencies not simply to be reactive. There is a tidal wave of stuff, as we've heard already, coming over the transom, and the agencies could be simply swept under that tidal wave and simply react to this, that, and the other thing, and not make investments in the future. And retrospectives are part of that absolutely essential investment program.

Now, having said that, not all potential retrospectives are good candidates. We already heard a lot about that. So it's important to be selective. I think it's very, very important to have dedicated resources to do this on an ongoing basis. It can't simply be on an ad hoc, periodic basis. It has to be part of what the agency does.

Now, of course, it would be wonderful if Congress would appropriate more funding. I am 1,000 percent in agreement with Nancy and with Bill, it's not just a question of money. It's a question of the salary levels that people are paid. The people here are every bit as good -- no, I'm wrong, I'm sorry -- they're better than the folks at the Fed or at the CFPB, yet the salary levels are not commensurate, and that is a serious and ongoing problem.

Let's think a little bit about criteria for retrospectives, and this will be at a fairly high level. I'm not going to be as specific as some other folks. These are really kind of obvious, but I haven't heard it said yet -- maybe because they're so obvious nobody needs to say it, but I'll say it anyhow. Focus on enforcement areas that are key. That's one.

Focus, among those, on areas where you really need evidence or evidence could be the most productive. There may be some key enforcement areas where, for right now, the agency is just humming along, and the models seem to be working really well and things are going well in court. Then maybe you don't need additional study, at least for the time being, in those areas.

And, last, of course, you have to look at where retrospectives are going to be most likely to be valid because like I said, and we've heard throughout the day, not every retrospective is one that can be done in a scientifically valid way.

Some thoughts on areas I won't call new, but new-ish areas for retrospectives, or just not simply horizontal mergers -- and we've heard about many of these already -- but agency actions, enforcement actions, decisions, rather, remedies -- those really do need to be evaluated on a regular basis.

We've heard a bit about labor markets, but I think monopsony, more broadly, that includes labor markets, of course. They're absolutely critical. But there are other -- other markets where there potentially is buyer market power where mergers, for example, might create harm to competition in the buying market. That should be examined.

We've heard about nonreportable mergers. There has been some examination of those by Tom Wollmann at Chicago. And that's certainly a great start, but we need to know more.

We've heard a lot about potential competitors. Again, that is not an easy area, but is potentially very important. So, really, some very hard thought needs to be devoted to that.

We've heard about vertical. Again, it's always been important, but particularly, if we look at certain industries or certain markets in the economy, there has been a lot of consolidation. And I want to be clear, consolidation market structure are not where we stop. But if we see markets that are dominated by a firm, then we start worrying a lot more about what comes next because once you have market power, you want to keep it. You probably want to enhance it. And vertical issues start to become much more germane at that point in time.

The next logical thing, of course, is anticompetitive conduct more broadly, and I'll throw a very broad umbrella over that. I'll include coordinated effects under that exclusion, a wide variety of most-favored customer clauses, a wide variety of conduct.

And the last area that is not necessarily an antitrust area is consumer protection. So there may be some overlap, of course, between consumer protection and antitrust. But I think this is a particularly important area. I think the value added to studies done, retrospectives done on consumer protection is particularly high.

Well, why is that? It’s relatively unexamined. It’s an area that is sorely in need of more studies. The agencies are in a perfect position to do it or to commission studies. And actions in this area have been far from consistent. Some might say they’re inconsistent. Some might even say they’ve been incoherent. And so consumer protections is an area where the benefits to retrospectives could be extremely high.

Now, having said all that, some of these things may be complicated, may be very, very complicated. If you start to think about some of these issues, exactly how to learn about these sorts of things from retrospectives is unclear. One example is counterfactuals may not be at all clear. But that's why we have to think hard about these things. And it may be that the agency concludes that some of these are not good candidates for study. But it's important.

Now, last, I'd say while it's very, very important to take this on, one can't do everything, and I'll finish with a maxim that comes from a collection of sayings attributed to sages from ancient times called "Wisdom of the Elders." It's attributed to Rabbi Tarfon, and it says it's not your responsibility to finish the work, but neither are you free to desist from it.

Thank you.

(Applause.)

MR. KOBAYASHI: Thanks, Marty.

Dennis?

MR. CARLTON: Thank you.

So I'm literally the last one of all the speakers for the whole day, and there's not all that much for me to add to their excellent comments. But maybe I can at least put them in a perspective that I hope you'll agree with. And you'll also agree that when you want to teach, the best way is to say, here's what I'm going to do at the beginning of the day. So we heard that from Joe. And then you do what you do during the day, during your lecture, and then you hopefully say, this is what you should have taken away from my lecture today. So by being the last person, hopefully, I can, without offending anyone or misrepresenting their views, at least give you my take on what you should take away from today.

So, first, let me say it’s a pleasure to be here, and I applaud the FTC for holding a hearing on this topic. The topic of merger retrospectives, in my view, is a key one, an important one because it holds the promise that it could improve our ability to identify good mergers and bad mergers, to distinguish between the two at the evaluation stage.

And as Bill has indicated earlier and some other speakers, I’ve been interested in this topic for a long time. I wrote a paper on the importance of merger retrospectives, as well as the difficulties of doing them. By that, I mean there are certain self-selection problems that arise. It’s not a random sample. A number of people have referred to that. And I explained in this article how you can correct for that. And if you don’t correct for that, you can get the wrong answer.

But assuming you do it right, retrospectives can be extremely valuable under certain conditions.

And the first, probably most important point to take away is that these retrospective studies can be important, really only if they help the decision maker alter his decisions from what he would have done before you told him what your findings were. So if I'm an enforcer and I look at 100 mergers and they all basically look the same to me and I let them all go through, and then you come to me and you say, Dennis, I just studied this merger, or these 100 mergers. On mergers one, two, and three, you really blew it. But on the rest, you were pretty good.

And I'll say, well, is that all you can tell me? What did I do wrong? And if you say, I don't know what you did wrong, I'm only here to tabulate the data, I'd say, well, thank you very much, that's interesting, but you're not much help. On the other hand if you say, gee, those three mergers were all in the same industry and those were the only mergers you saw, or if you tell me, here are the characteristics of those three mergers you missed, that would be helpful.

So I want to explain how you would implement such policy. So I'm going to disagree with something Lemoore said and more agree with what Debbie said in response. And that is, here's how do you it. At the time a merger is allowed to go forward or challenged, I want the economists at either the FTC or DOJ, to tell me why their recommendation is what it is.

I want to know did they do retrospective mergers in that industry and what it showed? Did they do a reduced form analysis, like the one Orley was talking about that he did in the Staples case? Did they do a merger simulation model, either horizontal if it’s a horizontal case, or vertical if it’s a more complicated one of these vertical merger cases? And in their simulation model, what was their demand structure, what did they assume about costs, what did they assume about competition, what did they assume about entry, what did they assume about product innovation, what did they assume about efficiencies?

And I want to see what they’re saying. And then what I’m going to do is say, let’s do a merger retrospective. Like I say, assuming you can do it correctly, I want to know what happened to price. And, by the way, everybody always talks about price, as John Kwoka said earlier. There’s a focus on price. It’s an undue focus. It’s not just price going up. Price goes up and you think it’s bad, output should go down. What happened to output? What happened to efficiencies? What happened to repositioning? What happened to the quality of the product? What happened to entry? What happened to innovation? All of those things I want to see what actually happened.

And then what I want to do is figure out, if I was wrong, why I was wrong. And let me tell you how I would do it. And there was an excellent article on this by Craig Peters -- it hasn't been mentioned yet. It was in the Journal of Law and Economics. He does something like what I'm going to describe, very similar.

First, I look at what happened. Say I used a merger simulation model. Did I do something wrong, did I get it wrong because my demand system was wrong? I can check ex-post whether my demand system is the right one. Had I used a different demand system would I have done better? Why? Maybe that's a demand system that has better second-order properties.

What about other variables that are changing? Maybe that's why my prediction is wrong. And suppose those other variables have nothing to do with market structure. So suppose the demand curve depends on income or I think someone used the example of the price of corn. I can calculate, if I have a structural model, how that would have been taken into account, and then I can, therefore, isolate that out of the model, and say, well, what’s my prediction correcting for the fact that the world has changed?

But I can go further. And this, I think, is key, and a few other people have already mentioned it, especially in the panel before the break. You want to focus on the supply side. These merger simulation models all use a static Bertrand concept, or most of them do. You can test that. When merger simulation models first came out in the ‘90s, people occasionally, not always, would test, is it Bertrand?

No one does that anymore. It’s gone out of style. Except for the papers that we heard earlier today who are bringing back into style testing whether the Bertrand assumption is good. They brought it in by explaining that -- which is true -- we’ve ignored cooperation, oligopolistic behavior. We don’t model those in these merger simulation models. So we heard a little bit today about how some papers are dealing with that problem.

But what no paper has dealt with -- and this is an area of future research -- how does the oligopolistic game played differ after merger compared to pre-merger? That’s a really hard question. I hope people will write dissertations on that and work on that. That’s a hard problem.

Am I wrong ex-post when I see what marginal cost is compared to what I predicted it was going to be? That's actually tied to what I just said before about Bertrand competition. The way these merger simulation models work, sometimes it sounds counterintuitive, but in a lot of cases people don't look at costs. They look only at demand. They invert the demand system and they come up with marginal costs. They're inverting the demand system assuming Bertrand competition. If you don't have Bertrand competition, you're going to get whacked with marginal costs. That's, therefore, a clue that it's a bad assumption.

Were the efficiencies achieved in these models? And let me just mention something that's not been discussed at all or brought up. These merger simulation models often use linear prices. If there's one thing you learn when you get into the details of studying an individual industry it's that the prices are much more complex than linear prices. And if that's true, your merger simulation results are going to be, or could be, way off.

Just mention briefly these vertical models.

Is that a zero? I have my reading glasses on. One minute, okay.

In these vertical models, which are called Nash and Nash, you’re basically putting a cooperative model of Nash bargaining onto a merger simulation model. You can make the Nash and Nash -- the Nash bargaining models sometimes noncooperative. But, basically, you’re making lots of assumptions. And in these Nash bargaining models, as Aviv referred to, the bargaining parameter matters, as well as -- no one’s mentioned it, but it’s something called “the no,” the no agreement point. What’s the no agreement point? That’s what happens when you can’t reach agreement.

Those are really hard to model. That’s all I’ll say. And one of the things I would check on these vertical models, are whether you’re getting those right ex-post. So there’s a lot of opportunity ex-post to figure out why our methods -- which parts of our methods need improvement. And that’s what we should be focusing on.

And let me just end by saying I agree -- and I think Bill just mentioned this -- that you can do these same types of retrospective studies not just on mergers, which are, obviously, important. But you can do it on a variety of conduct measures. The FTC has a famous volume on resale price maintenance it did in the ‘80s. Now that we’ve gotten rid of some resale price maintenance or states have put them on again, what happens? You could look at what's been happening in -- I think Orley has done a lot of work on this -- where we see a rise of noncompete clauses in certain kinds of contracts, labor contracts, what happens?

All of those could be done in the context of a structural model. And you could see using these structural models and using cases where certain practices are banned. What happens? Were our models correct in predicting what would happen?

So I think these retrospective merger studies are very important. I think they hold the promise if we can use them to figure out what we did wrong. I think they hold the promise of improving our antitrust policy.

So thank you.

(Applause.)

MR. KOBAYASHI: And I guess the challenge of everything having already been said and asked applies to the moderator of the last panel.

(Laughter.)

MR. KOBAYASHI: So I will say a couple of things before I ask my first question. Orley said, Bruce, I can't believe you're working for the Federal Government.

(Laughter.)

MR. KOBAYASHI: And Commissioner Slaughter mentioned that I went on an ABA spring meeting panel. It was the director's panel. And I said something about, we need more resources, and I went to George Mason the other day and people yelled at me.

(Laughter.)

MR. KOBAYASHI: Somebody called me a Niskanen bureaucrat. But let me think about -- so I do think that is a serious problem. And if you look at what is going on it's that people want us to do something, and they ask the Bureaus, other than the Bureau of Economics, for, you know, the resource ask, you know, and some of them were, like, large resource asks and what you would do with them. Thankfully, I think both the Bureau Directors said, oh, by the way, if you increase the workload 10 percent, you have to increase BE by 10 percent, because the drive demand for the services of the economists are going to go up commensurately.

And what I said -- and I didn't sleep that night -- is that, you know, if you want us to do research, then you had to do BE, you know, disproportionately, and that's why I got yelled at when I went back to my law school.

(Laughter.)

MR. KOBAYASHI: But it's really true. And I think something that Mike, who's my deputy for research, gave me, he gave me what has happened to billed time by our economists and research over the past nine years. And, I mean, it's like the equivalent of five FTEs full-time. And Commissioner Slaughter said, yeah, you look at the HSR filings we have to deal with in our case load, and you know why that happens. Certainly, resources are a big problem.

With respect to retrospectives, I think the bigger constraint -- I think if there was a great retrospective project to do, I think one of our economists would find the time whether -- you know, we had a furlough so we had, you know -- people did a lot of research then, but it wasn't billed. But they'd find time to do the projects because they are interesting. I think the biggest constraint is data.

And so a lot of questions is, yeah, I mean, you guys should -- I mean, I had a bunch of questions, and the answer is, yeah, you should do as much as you can, you should do all of it if you can, you should get more money. And that's like not very interesting. So the big question is -- and I think Aviv said -- he stole my thunder when he used the economist into the lamppost metaphor, but I think that's a bigger constraint than -- I'm not downplaying the resource thing, but the data -- and Mike mentioned it. I mean, you look at Kwoka's book, John's book, and, you know, he has a comprehensive sample of what people have done. And you look at what we've done in the 30-odd studies that we've done and it's hospitals, oil -- it's -- you know, we look where the data is.

And so I guess the issue is not so much thinking about the money because that's way beyond my pay grade, but, I mean, there's data -- so we do hospitals because we have either the discharge data or the insurance data. So we have the data. I know that some of the work Dan has done, it's retail and, well, it's Neilsen. There's data. The oil price -- we have the oil price data.

So I guess the question is, is there some industry that we should look at? And the question is, yeah, ones that are problematic or ones where you don't know a lot. But is there data that, you know, assuming away sort of the 6(b) question, or insisting on it at the end of an investigation, is there data that is out there that we would find useful that we could buy?

MS. ROSE: I'll just take a stab at that, Bruce, which is I suspect that's not where your highest return is going to be. If there are data out there that people can access in academia that provide the opportunity to do interesting research, somebody's likely to already have grabbed it. I think that's why John's set of studies, you know, you look at banking, you look at oil, you look at airlines, you look at hospitals, you look at pharma. You're picking industries where there are available data sets -- often proprietary, not necessarily public -- but either public or proprietary that you can access, that you can buy access to or get access to, to let you do those studies. I think we should be very concerned that we know very little about retrospectives in industries that are outside of those.

MR. KWOKA: Let me just jump in and second that concern completely. We know an enormous amount about the airline industry. All of my PhD students write at least one essay on the airline industry. I've sometimes said that if the airline industry could collectively accomplish one thing, they would end the reporting requirement that they are subject to, or put differently, if we had the same amount of data on -- pick an industry, like Nancy says, that we might think otherwise as problematic -- if we had the similar data on that industry, we would know a great deal more. So data really, I think, is the single biggest driver of the focus of these.

Let me make a somewhat unrelated point, which is I think equally obvious, and that is that retrospectives are an investment good on the part of the agency. The idea is not just to add to the burden of the agencies, though, that surely will do that in the moment. But the idea is to make, say, merger policy more effective and more efficient at the point where there’s a body of evidence to rely on and to deploy in approaching investigations and resolutions of mergers down the road.

So, you know, if some number of retrospectives were done every year, in five years or whatever, there would be considerable more insight into how to pursue investigations or what strategies are appropriate or how to resolve mergers. And that might be effective within the agencies, perhaps not in court, but certainly within the agencies, in determining where to deploy their resources at that time.

MR. KOVACIC: I think, John, you point to a crucial choice that an agency has. Do you consume or do you invest? The consumption is the next case, it's the next investigation. The investment is the outlay for activities that make you better in doing all these things. And that's a very hard choice in this town.

I think what is healthy about the culture that's developed at the Commission is that it's accepted the notion that investment is significant. So I think it would be receptive to undertaking that kind of approach. And I can recall working with the team that worked on the early evaluations in the late '70s. That was a hard-sell for several reasons. One is it was going to take money away from cases. The second was, what are you going to learn from doing the assessment? Maybe you'll learn that you did just the right thing. Maybe you'll learn that you had no effect at all. Or maybe you'll learn that you made it worse. And two of those three things are bad. Let's just say it's the first and leave it at that.

It was not obvious, especially to case handlers, that it was a good idea to run projects to go back and ask how we'd done, fearing that this would be an occasion, again, to go out and shoot the wounded and to use it as a source of retribution. I think what's been very healthy, that would lay a foundation for doing more investment, is that that resistance, I think, has, if not disappeared, it's been weakened. And, quite happily, I think there's a sense that the investment is indispensable to effective policymaking. And I think that sets an environment in which you could do more.

MS. ROSE: So, Bill, could I ask you a question as the lawyer-designated representative on the panel? One of the things that I think concerns some within the agencies -- and maybe this is more significant in DOJ, given its kind of structure and function -- but is that if you do a retrospective, you should expect it can and will be used against you in a court of law. And we had an experience with that in the Electrolux-GE merger investigation where the parties wanted to use a retrospective of Whirlpool-Maytag to argue that there wouldn't be any effect of this merge.

Now, there are a lot of reasons why that was crazy in that particular context and the way it was pitched didn't make a lot of sense. But it does create a risk, because if the retrospective is done by the agency, even, it assumes maybe a greater credibility before a judge. And I, frankly, do worry a bit that if retrospectives are used to defeat later enforcement actions, maybe they're not so helpful.

MR. KOVACIC: Oh, I think it is a risk. And to punctuate it, in the vertical restraints assessment, the fiercest opposition we received was from the case handlers who were working on a matter called Beltone, which was one of the subjects of the inquiry. And they said, why would we ever run an assessment in an area where that study, if it comes out badly for us -- it did -- will be used against us -- it was -- and we’ll lose the case -- we did. So every set of possibilities that they feared came to pass. And I think it’s a risk that one assumes.

I suppose the faith I would have is that doing a large enough number, having a careful examination and assessment of why things went wrong, ultimately gives you more credibility and legitimacy in front of the courts when you offer the interpretation of your work. I see it as a way of branding yourself as an agency that is saying, we go where the data goes, we go where the facts go, and if for some reason we’re not doing quite the right things, we do them differently in the future. So that when we stand before you and ask for that margin of discretion in the case where it is a matter of judgment, you’ll trust us because we have shown you that ultimately, we want the good policy result.

And I say it as someone who faced exactly the scenario that you described. In Electrolux, it did not get in the way of a good result for the Department of Justice. In Beltone, it's probably a case we should have lost anyway. But I think -- when I look at the entire set of possibilities, I would rather be in the position of the agency doing a large enough body of work and saying, if it turns out -- and I'm assuming that it's a well-done study that genuinely undermines the position that one is trying to support. If it is a well-done study and it points to a different direction you should be taking, that's the direction to take.

I can see the problem that a court might not interpret it properly. That's always a problem with the work. But I see ultimately for the agency that it builds a sense of confidence, accountability, credibility, to take that chance in the hope that you get enough other things to point you on a good policy path. So like hospitals, hospitals would be the main case, and that's the one that you have. But I can't wave my hands and say that it's always a happy end in that respect because these can come back and hit you. And Beltone is a good example.

MR. KWOKA: So, Bill, let me -- while we're piling on Bill Kovacic, let me ask a question about closing statements.

MR. KOVACIC: As Pat Benatar said, hit me with your best shot.

(Laughter.)

MR. KWOKA: I'll save that for later. But how about asking about closing statements. So closing statements, of course, are -- they're fulsome statements --

MR. KOVACIC: For the younger people here, she was a singer a while ago.

(Laughter.)

MR. KOVACIC: Sorry.

MR. KWOKA: No, no, no, it's okay. So whenever I mention closing statements, people at the FTC shudder. They talk about the one that was issued after the Office Depot-OfficeMax merger, which came back to haunt the agency in its effort to stop the Staples merger with a combined Office Depot-OfficeMax, and is illustrative of the price you pay for describing, either in short or maybe even more dangerously at length, the basis for clearing a previous merger that had the same players and some of the same properties.

Obviously in the EU, with an administrator rather than a more judicial litigator forum, providing full statements is standard policy. But, again, here, it seems that there raises obstacles because then the agency will have to explain why the merger they want to challenge that's in front of them differs from every other merger to which the parties might compare some aspect of the one in front of the court.

MR. CARLTON: Could I just butt in here? I think -- I'm troubled by the whole question. The goal of the FTC and DOJ isn't to win cases; it's to get them right. And if there's studies you do that conflict with DOJ or FTC's position, I'd like to see those if I'm in the DOJ or if I'm against the DOJ, or if I'm in the FTC or against the FTC. We want to get the policy right. And I dislike hearing or it makes me uncomfortable hearing that we should tailor what the Commission or the DOJ does in order to win cases.

I want them to lay out their logic. What are they thinking? And if it's right and in the next case it turns out not to be applicable, they should explain it. Now, if you think judges are too stupid to figure this out, I don't quite know what to say. Maybe we should be educating judges. But at least let's educate ourselves so that we know what the right answer is.

MS. ROSE: But, Dennis, I think that’s a complete mischaracterization of what I said and of the example they I gave. The issue is not whether -- even whether the Division got it right in Whirlpool-Maytag, and, therefore, should not have challenged. The issue is that they were two completely different mergers. Yes, they both happened to involve appliances. I don’t interpret, actually, the facts to suggest that the challenge in GE-Electrolux was wrong. I think it was completely correct.

But the point is that parties have an incentive to take official statements of agencies -- be they closing statements or retrospectives -- this wasn’t a retrospective done by DOJ -- and, frankly, confuse judges, who are not economic experts. And you may be right, Bill may be right, that in fact in the discussions when -- you know, truth will prevail, but it adds an extra layer of complexity and problem that, as John pointed out, the EC doesn’t have because it doesn’t have --

MR. CARLTON: Oh, they get sued on the basis of these statements. They do.

MS. ROSE: Not so much in mergers.

MR. CARLTON: Oh, yes, oh, yes, yes, indeed. They are subject to lawsuits on the ground that the actions taken by the institution were too weak, that they took a cheap deal or closed the file.

MS. ROSE: Oh, no, no, no, I'm saying in a later merger. I think what John was saying is --

MR. CARLTON: He was talking about closing statements.

MS. ROSE: Right, right.

MR. KWOKA: How they're used in a subsequent proceedings.

MS. ROSE: Right, it's the subsequent use of them that makes me concerned because it's easy to -- to -- it can be difficult for people to understand is there really an obvious connection between the two?

MR. CARLTON: Then isn't that the burden of the analysts to explain, or whoever has done the study or is relying on the study who wants to defend against it being misused, that this is how it's being misused? I'd rather see the study come out and have people debate as to how to interpret it than not do the study because the study could be quite informative to improving policy.

MS. ROSE: Everyone is always free to do the studies. I'm just pointing out a risk of these that I think is real and significant. And in my experience, given the way the burdens are in court proceedings, defendants have every incentive to throw lots of little bits of Mylar into the air and hope that the judge’s attention is distracted towards some of them.

MR. CARLTON: Don’t you think the solution is to try and correct that in some way, not not to do the study?

MR. GAYNOR: Well, let me suggest something. It may be a little dangerous stepping in here.

(Laughter.)

MR. GAYNOR: But I think probably -- I mean, I agree with these points. But if it’s a study that seems ex-ante will be a very high-quality study, personally, I’m far less concerned. My view would be let’s do it, let’s take the risks, and we’ll just deal with it.

Now, if you’re looking at something prospectively, and you’re a little more dubious, then I think I start worrying, both because it’s internally hard to interpret anyhow, but then somebody will grab some piece of that and potentially try and use it against you. So that may be another part of the cost-benefit calculus.

But I think if we think it’s a good study that will help inform the agency, that’s an investment in future actions, then I think we just have to go ahead and do it.

MS. ROSE: I'm not disagreeing, I'm just saying I think there are -- it's not an unalloyed plus. There are costs we should be aware of.

MR. KOVACIC: Oh, there -- as mentioned before, they exist. They exist. I think the happy interpretation is that in GE-Electrolux, in Office Depot-Staples, part two, these matters did ultimately not have that effect on the court. They required effort to explain.

But on closing statements, I think they've been such a good discipline. And before Carnival Cruise Lines in the early 2000s, the FTC's number of closing statements for the previous 25 years had been exactly one, and that was Boeing-McDonnell Douglas. And, again, I would say, when you do an elaborate inquiry and you close the file, to explain why, I'm not -- I guess I have faith that with the continuing improvement in the analytical technique that despite the chaff that's going to be thrown at you, just as Nancy mentioned, I'd accept the cost because of the legitimacy.

I'll mention exactly the legitimacy I have in mind and the credibility. It's going three blocks away here to the Court of Appeals, in particular.

Those judges -- agencies have brands and reputations when they stand in front of those judges, and the judges have a good sense of what you do over time. I always wanted our people to stand before them with a halo before they said a word. And part of the halo comes from saying, we're aware of this, but we put our cards face-up. In the math exam, we show our work. And we realize that we get buffeted as a result.

But when we ask you at that decisive moment, especially as an administrative agency, trust our judgment and defer, that's the moment I want them to think I'll do it because I trust you. But I agree, Nancy, there is risk.

MR. KWOKA: So let me wade into the issue about what judges know and how we should proceed in court. I've observed a number of times that in full trials where both sides get to present all of the evidence for and against, say, a merger, not infrequently, it's still impossible for observers to anticipate how the judge will rule. Take any recent famous case you wish, where there's wild speculation about how it might come out, it clearly depends on the judge. It doesn't -- the weighing of the facts and the final assessment will be different depending on who the judge is. That's a crazy, crazy process.

How can we, in fact, decide that that's a sensible way of doing it, only eventually to be screened, perhaps, at the appeals level. There's something wrong with the process where the full elaboration of the evidence doesn't give most people a pretty good prediction of how it should come out.

So my suggestion is that we have three-judge panels for antitrust trials. That would minimize the idiosyncratic nature of a single judge that has some predilection or prior or whatever it may be, that allows this incredibly high-variance outcome to the single sample out of the population of judges.

MR. GAYNOR: My suggestion is we do a retrospective study of John's policy change.

(Laughter.)

MR. GAYNOR: We can identify all kinds of structural parameters.

MR. KOBAYASHI: Right. We could randomly experiment with panels of different sizes.

MR. KOVACIC: Bruce, did you have questions for us today?

MR. KOBAYASHI: No. You know, the nice thing about being a moderator on a panel like this is I get to shirk. It's great.

(Laughter.)

MR. KOBAYASHI: I just want to say that John mentioned the closing statement in Office Depot-OfficeMax, and it said, I mean, that, the type of entry-exit analysis that was done, you know, when Orley did Office Depot 20th century, was not there in Office Depot-OfficeMax. And the staff did the same thing for Office Depot-Staples, 21st century, or II, right. And what they proceeded on was a wholly different theory about sale to businesses. And I guess maybe it’s not a clean test because the defense decided to rest instead of putting on a case, which is in error.

But, yeah, I mean, I think transparency is good. It does constrain the agency. And there is a cost and it’s going to raise, I guess, the number of Type II errors.

So, anyway, if I could go to a second question. Maybe there will be blood, right?

(Laughter.)

MR. KOBAYASHI: I guess the first question was, are there any $20 bills on the sidewalk? And the answer is no. Although, I have to say, I was walking my dog this morning and I found a $5 bill.

(Laughter.)

MR. KOBAYASHI: I looked at it, and I just left it there because I --

(Laughter.)

MR. KOBAYASHI: All right. So the other thing that I wanted to ask about, and it was mentioned by some people, is 6(b). Once again, you know 6(b) is our ability to subpoena data for large studies. I guess the famous version of that is the line of business data where we forced firms to come up with their own idiosyncratic accounting systems. I mean, I guess people have mentioned it.

So what would a 6(b) study look like? Would it be to create sort of an industry tracking? You can imagine the industry going screaming to Congress about that. Would it be sort of us looking at, you know, our ability, even if you sort of get in the investigational data the party’s data, trying to get third-party data, because you would probably need some of that to do a retrospective? What would that process look like?

And then I guess the other question is -- and this is probably most for Bill -- can we then share that data outside the agency? Because you were both the Chairman of the Commission and the General Counsel.

MR. KOVACIC: On the second, you can. Now, there will be -- as you know, the purpose of the line of business data was to publish the data, and several years of the data set were published. Now, there were amalgamations that prevented, I think, in specific instances, if I recall correctly, the identification of individual firms. That’s a faint memory. But the intended consequence of it was to put this data set in the public domain.

And I’m trying to recall how many years of information -- Dave Ravenscraft, I believe, was the internal architect of the process, and I think it was three years. So the short answer is, yes, in various forms, you can.

And on the subject of what you’d collect, I mean, one interrogatory I could imagine where you’re simply tying to test efficiency predictions made by the firm, realizing that they’re making predictions as well, but during the course of the analysis, you made the following representations about efficiencies and other things that you thought would mitigate possible competitive harm and would ensure a good competitive result, we’d like to track how well things have gone on that and hear questions we have about that. That would be a specific kind of question that I don’t think might be -- might not be too intrusive to answer just on the question of how it turned out.

And I'm thinking again, I'm anchored by Dennis' observation that what I want to do in developing it is to enable me to identify, in a clear-headed way, what to ask about the next time and to decide -- make a better judgment about whether or not the argument should be credited or not the next time around, not just to see whether it happened. I want to know, as Dennis was saying, why did it happen? Why did I miss it?

MR. KOBAYASHI: Anybody else want to take a stab at a b(b) study? A lot of people looking down.

MR. GAYNOR: Well, just, I mean, briefly, one thing -- really I think just reiterating what Bill said, there's been a lot of talk today about understanding not just what but why. And I think one of the potentials with 6(b) is getting behind that. And some of that may be qualitative as well as quantitative. But in terms of informing the agency about how to think about how these things work going forward and why things go a certain way, then I think there is some potential from 6(b) that you might not -- where you might not be able to get the same kind of information otherwise. And 6(b) has to be used in a very judicious manner. It's not meant to be deployed by the agency in a capricious manner at all.

MR. CARLTON: I'm not an attorney and I don't really have much expertise in interpreting 6(b), but there's one point I want to make about data. If you collect data from a firm after they've merged, the question is they're aware you've collected that data or that you're going to be getting that data, and that also will affect their actions or could affect their actions.

So you have to kind of factor in that aspect to the analysis. It's not just you're observing data that has no effect on -- it's the act of collecting the data could alter the actions, and I think you want to think that through in your analysis.

MR. KOVACIC: There was an event held here, perhaps in even in this room, on the painful day of September 11, 2001, where there was an IO roundtable.

MR. CARLTON: I ran that.

MR. KOVACIC: Yes. We were here, both of us. I was watching; you were at the table. But I recall at the end of the session in the afternoon the question came back to -- and there's a transcript on the agency's website that records all of this -- the question was, what to you do when you have an intriguing efficiency story, but it is speculative, but you're deciding that the potential benefits of it, if it comes to pass, are strong enough that you would like to take a calculated risk that it would work out, but you're uncertain about whether or not it is likely to come about or not?

And a couple of the panelists said, you could offer an approval with this condition. We will come back at some point to see whether these things took place. And I recall that a concern was, yes, now they know they're on stage. How will it shape the way things happen?

But others said might that be the only way to really test -- because the alternative will be we'll issue a prohibition decision. We won't go ahead. Is it either going to be subject to manipulation or is it a way that the firm, in a way, makes a credible commitment and says, we really do believe in this and you can come back and check later.

MR. CARLTON: Yes. You know, there's one other thing I want to say. There are some industries in which you see the same firm having a sequence of acquisitions. So you can actually test from the past what they've said, whether that actually turns out to be true.

The only other thing I would say about that conference that I helped organize is I showed up at the entry level and I hadn't listened to the news. And the woman says, who are you? I say, I'm here for this conference. She said, you understand that a plane just went into the Pentagon. And there were soldiers in the street. I really didn't know what was going on. I said, listen, Tim Muris wants this conference. I bet if he's in the building, he's going to say, let's hold the conference. And that's what he said. And that shows just the commitment of the FTC to getting the unvarnished truth from economists, to their credit.

MS. ROSE: So could I just follow up with that with another question which is, doesn't it depend a bit on why you're collecting the data? So in the example you gave, you may alter the behavior of the firm, but that's intentional and beneficial. I think the mistake would just be then to look at that outcome and say, well, therefore, we should accept these kinds of efficiency arguments when we don't have the intent to collect the subsequent data.

I think that's a little bit of a problem in some of the mergers that get settled, particularly with conduct remedies. And you said, well, look, the firms didn't raise the price or didn't do this bad behavior, but they’re still operating under a consent decree. It’s a little hard to know, well, as soon as that consent decree lapses, what will the behavior be?

If your intent is for the duration of the decree or for the duration of the time you’re investigating the followup data or do you see these things put into place that affect the efficiencies, you know, does that happen in this case, great. But we shouldn’t think of that as a lesson necessarily for how to make that decision in the future unless it’s accompanied by those.

MR. KOVACIC: Yeah, I would want to think very clearly, as an institution, about the why the behavior in question has taken place and under what circumstances would it take place again in another setting. What kind of observation and monitoring is required? Because these are strategic actors.

MS. ROSE: Right.

MR. KOBAYASHI: Yeah, I think Chris is working on something that is related with the COPPA laws, and it’s sort of a type of behavioral remedy where a state says, well, I know you don’t want this hospital merger to go through, but let’s let the in-state, you know, hospitals get a certificate of public advantage, and we let it through, and often they're let through with behavioral remedies.

And I think, you know, it matters -- I mean, some of the points that were made earlier today, you know, during the time when the constraint's active, you don't see any effect. And I think you see effects that are long-term when they're not constrained. And, you know, a lot of these things you have to figure out what the right inference is from the study.

I know Commissioner Slaughter talked about we're going to threaten to collect data and look back. And the other way to do it is we're going to give you immunity so we learn something, and I think she throws me out of the office at that point.

(Laughter.)

MR. KOBAYASHI: But, you know, I mean, it is another one of these tradeoffs that we've been discussing about learning stuff and being able to make specific inferences about a specific question versus, you know, trying to do law enforcement.

So we have less than two minutes left. Any other sort of really -- anybody want to close or toss out some more heated questions?

MR. CARLTON: I would just second the suggestion that several people have made that -- or implied that having a visitor program where, say, graduate students who are writing their thesis or assistant professors could come here for a day or two during the summer each week or something and then be “employed” by the Bureau to do studies. That, I think, would not be that costly. That is, it wouldn’t be costly to even have to pay them that much. They might pay you for the right to do that.

I just think that’s a very good idea if you could figure out how to do it without violating the confidentiality of the information.

All right. Well, I’d like to thank the panel.

(Applause.)

CLOSING REMARKS

MR. SCHMIDT: Excuse me, I just want to close with a few comments to end. I'm Dave Schmidt. I'm an Assistant Director in BE of our applied research groups. And I just really want to thank that last panel for really boxing me in with my boss' boss saying that several topics were well above his pay grade, which put them in the stratosphere for me, and Dennis Carlton saying there's very little left to say. That doesn't, you know, give me great hope for instilling you with words of wisdom.

But I would really, first, like to thank everybody, the panelists, the moderators. This really was a very enjoyable, informative, educational day. And we're just really grateful to everybody for your time and effort coming here and sharing your thoughts with us. I especially want to thank the FTC staff who helped set this up. And, in particular, you know a lot of us put work into this, but this really was largely Dan Hosken's creation, and I think he did a terrific job, and I would really like to thank Dan for all his effort in this.

So I just had a few thoughts on the day, and I think we'll need some time to think about what we learned here today. But I just wanted to go through a few things. And I apologize, my knowledge of musical cartoons is a little dated, and I sort of stop at “Schoolhouse Rock,” and I can’t help but think, at a hearing on merger retrospectives, that my Hero Zero probably should be coming up here somewhere. But I can’t really remember the lyrics, so I’ll spare you and I won’t try to sing any of it.

What I’d like to do is maybe work backwards and just give some thoughts I had on the -- that came to mind for me throughout the different panels. And I think this last panel, there was a lot of discussion -- and I’ve heard Bill say this many times, and I think it’s really a good point -- that these sorts of research projects, including merger retrospectives, are an investment that we’re making in the institution. And I think that’s an important thing to keep in mind.

And part of the discussion that happened here in this last panel I thought highlighted that one thing we need to keep in mind is that when we’re making investments, we need to make wise investments and we can’t really just study everything. We don’t have the time. We don’t have the resources. So we need to be selective. This was a point Orley brought up, that we need to be sort of opportunistic when looking for mergers to study.

And I think that it's a really good point that we need to be conscious of and we need to think not only sort of what's the opportunity, what data do we have, but what do we hope to learn and how does it relate to the point that came up that certain industries seem to be studied very frequently and others are not studied at all and do we need to be thinking about whether there are possibilities to expand this analysis to other industries that have not been covered?

I also want to highlight, as far as investment goes, that I think research in general, and merger retrospectives specifically, are an investment in human capital, as well as in knowledge. And we have really some outstanding colleagues here in the Bureau of Economics, and in the other Bureaus, that do get utility out of producing this sort of knowledge, this sort of intellectual endeavor. And it's one of the ways that I think we can help compensate people for the huge wage differentials that a number of speakers mentioned, relative to some of the alternative ways that we could be employed.

So I think it's really important as an institution to continue to provide those opportunities to give that sort of distinction for this job, relative to consulting or somewhere else, where you might not get as many opportunities to contribute in that way that I think a lot of people here really value.

I'm sort of working backwards through the day. In the third panel, what struck me there is that -- the thing that I sort of grasped there was that these merger retrospectives have a lot of different audiences, and we need to think about what audience we're shooting for when we're starting to do a study. You know, I found it interesting that Debbie sort of said, well, you know, courts really aren't going to pay much attention to a merger retrospective in a similar industry, that's not going to carry a lot of weight with them. But that might carry a lot of weight with the Commission internally.

And there was a lot of discussion about the what and the why. And I think -- you know, the what might not be of all that much value to courts, and there's a question about, you know, with the Commission, you know, do we necessarily care whether this merger caused prices to go up 5 percent or 7 percent? We may or may not.

I think there are some interesting things from the perspective of an economist, like some of this work on the cross-market mergers that Leemore discussed. Some of the early work in there didn't really have much of a theoretical base for why these mergers might be causing prices to go up. I credit Leemore and her coauthors for trying to build a theory into it.

But I think there's real value in just the empirical finding itself to give economists something to think about, to build the basis for saying, hey, there might be something here. It might be worth thinking about, whether this is a competition issue, and others can build on that. So I think like the whole "what" and "why," it gets a little muddied to me when you think. I think "what" can actually lead to you "why." So I think really the question is you have to sort of evaluate what is it that you think you have to contribute with the particular project that you're working on.

So on the second panel, one thing I found interesting was how many of the speakers found that the sort of tools for prospective merger analysis often worked well, but they didn't consistently work well. Linear demand might work well in some case. Logit might work well in another. Even GUPPIs or diversion ratios might be informative in some cases and less informative in others. And I had sort of two thoughts on that.

One is I wonder if we could be doing more with retrospective analysis to help us, in a case-by-case basis, determine which of the models might be best in that particular case. So take a particular merger. Can you use pre-merger data to do some sort of goodness of fit analysis on the different models? And then use that to project -- you know, the best-performing model there to project out the effect of the merger. That sounds sensible enough, but it might not be.

And if we did that exercise with a consummated merger, we could see, you know, is there some way to sort of do a horse race with pre-merger data that helps to us to select the best model to then predict out forward what the effect of the merger will be and can we validate that somehow using data from consummated mergers?

The other thing that struck me in that discussion was, it sort of flows into the first session, is the use of some element of structural models to help us estimate merger effects in cases where difference-in-difference might not capture everything. I think one thing that is important in doing that is to keep in mind that these merger simulation models that we've estimated and found have varying levels of performance in any given case are calibrated as well as they can be to the specifics of that merger and that market, and sometimes they perform really well and sometimes they don't.

And so if we start throwing structural elements into these econometric models that are just estimating the merger effects, we need some evidence that the way that we're throwing structure into the model is actually an accurate description of the market and isn't like throwing a linear demand system into something that should be AIDS or constant elasticity. We want to make sure we're not missing the mark.

The last thing I want to end on I think is a fairly positive note. And it might be taking the risk of really stating the obvious, but in the first session, I think one clear takeaway -- and Orley sort of alluded to this and so did John -- was that I think we can all take heart that although there are like varying estimates of what the impact of certain mergers have been, one thing that's clearly demonstrated, I think, in the merger retrospective literature, is that there are some harmful mergers out there. There are some anticompetitive mergers.

Harkening back to Chairman Simons' opening comments, talking about the strong bipartisan support for merger enforcement, I think this body of evidence suggests that there is strong empirical support for continuing with merger enforcement. And so I found that to be sort of a positive takeaway. I know it's kind of an obvious takeaway. But I think it is something that this literature demonstrates.

So with that, it's 10 after 5:00. So just thank everyone, again, and thank you.

(Applause.)

(At 5:12 p.m., the hearing was adjourned.)

CERTIFICATE OF REPORTER

I, Linda Metcalf, do hereby certify that the foregoing proceedings were digitally recorded by me and reduced to typewriting under my supervision; that I am neither counsel for, related to, nor employed by any of the parties to the action in which these proceedings were transcribed; that I am not a relative or employee of any attorney or counsel employed by the parties hereto, not financially or otherwise interested in the outcome in the action.

s/Linda Metcalf
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Court Reporter