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Antitrust Economics Workshop
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Panel 1: What Can We Learn From Merger Retrospectives?

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Panelists:
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MS. COLEMAN: Good morning, everyone. We are going to get started on the second session.

Welcome to our panel. We are going to be discussing merger retrospectives. I'm Mary Coleman with Compass Lexecon and I'll be moderating the panel.

I'm pleased to welcome several distinguished speakers to our panel. First, on my right we have Bruce Kobayashi, who is the current Director of the Bureau of Economics at the Federal Trade Commission. Next to him is Lee Van Voorhis, who is currently a Partner at Jenner & Block. Next to Lee is Leslie Overton, who's a Partner at Alston & Bird and who was Deputy Assistant Attorney General at the Antitrust Division of DOJ from 2011 to 2015. Finally, on the end we have Ben Wagner, who is a Vice President at Compass Lexecon.

In this panel, like the last panel, we have a few different topics about merger retrospectives that we are going to discuss. We are going to do it in a Q&A format, hopefully get some discussion going, and we will try to open up to questions for the panelists from the audience either at the end of topic areas or certainly at the end of the session overall.

When you do ask questions, I'll try to remember to remind people, if you can state your name and where you are from, and if you can come to one of the mics that are on the side, they are doing a transcript and this will help them to hear the questions being asked and know who asked it.

Before we get started, I would also like to give Bruce a chance to give his needed disclaimer.

MR. KOBAYASHI: I've been at the Federal Trade Commission for over three months, so I've got all the experience and knowledge that I'll ever get there.

The views expressed today are those that are mine and not necessarily those of the Federal Trade Commission or any of its individual Commissioners.

MS. COLEMAN: To get started, we are first going to talk a little bit about what are merger retrospectives and the history. Ben, if you can kick us off and say briefly what is a merger retrospective from an economic point of view?

MR. WAGNER: Sure. I guess I'll start from a noneconomic point of view which is also an economic point of view. It's really a backwards-looking analysis after a deal — a full merger or a partial merger, a joint venture — if it's horizontal, any sort of change in concentration, and just asking the question, what was the result of this event? Was it good for consumers; was it bad for consumers; did it have a competitively neutral impact? And then, armed with that information, which I will be talking a lot about today, what does that mean; what can we do with that information to inform general merger policy, a deal that we're evaluating currently; what lessons can be learned, if any, from the results that we find; and what can we do going forward?

From a more economic perspective, the way I look at merger retrospective would be sort of like any other event study. If you're trying to figure out what the impact of a minimum wage increase is on labor or if you're trying to figure out what happened to prices because of an alleged cartel or what happened when a competitor entered a market, those are all event studies, and a merger retrospective is in the same vein. The context and the details are different, but think about them similarly.

The way that is is: What happened to some outcome that you're interested in that you think is reflective of consumer welfare — price, quality, quantity — so what happened? And then the hard part: What would have happened had this event not happened? With the two of those components together, hopefully you can try to attribute some of what you find to a direct impact of the merger and maybe say that there's causality there and not that there was something else going on.

MS. COLEMAN: Thanks, Ben.

Bruce, the FTC has done a fair number of merger retrospectives over the years. Could you give us a little history of the program at the FTC?

MR. KOBAYASHI: Sure.

Probably actually one of the big events that caused the FTC to start doing this, and we've been doing them — I say "we" — the people preceding me have done lots of retrospectives.

One of the events that caused the FTC as an agency to think a lot about merger retrospectives was losing six, and then by the time the retrospective program was in full bloom eight, hospital cases in a row.

At the time those cases used the Elzinga-Hogarty Test to do market definition. If you remember, Elzinga-Hogarty measured the flow of patients in and out of regions and you had some arbitrary thresholds (15, 25 percent) and you increased the geographic market until those thresholds were met. What was happening was we would see mergers of the only two hospitals in a rural area, but that rural area was not a market under the Elzinga-Hogarty Test because there was a significant number of patients who would go to the medium-sized city 125 miles away.

Theoretically people noted that that was problematic because the people who were going 125 miles usually were going for something that maybe wasn’t offered or wasn’t offered at the same quality as the small hospitals. In fact, they were inframarginal rather than marginal consumers.

As a result of these, the geographic markets were huge and we lost, and the DOJ also lost, seven consecutive hospital mergers.

In 2002 my coauthor and colleague at Scalia Law School Tim Muris, and a former Chairman of the FTC, said: We need to sort of look back to see what happened in all these cases that hopefully we didn’t screw up. We wanted to challenge them, but maybe the people making the calls, the judges, did.

They subpoenaed data from hospitals and insurance companies and they actually estimated, as Ben set out, the price effects of four hospital mergers. There was an existing article by Mike Vita and Seth Sacher on the competitive effects of nonprofits [*The Competitive Effects of Not-for-Profit Hospital Mergers: A Case Study*], and, out of Tim Muris's wish to look at these mergers, they also published three Bureau of Economics working papers on hospital mergers. They found that these mergers which we thought were problematic but the courts did not resulted post-merger, after the mergers were consummated, in large price increases.

It also suggested that we had a particular problem in the use of our tools to define geographic markets. It caused us to adopt the tools that we use today, which are the willingness-to-pay (WTP) bargaining models.

That evidence was then used going forward, and it has resulted in immediately the successful challenge to the consummated merger in *Evanston Northwestern Healthcare/Highland Park* and a rather successful and robust hospital enforcement program going forward.

We have continued and under the current leadership of the FTC plan to continue being self-evaluating, and critically self-evaluating. So we think that merger retrospectives are an important thing to spend our resources on and learn what is going on with what we do and the tools we use going forward.

We currently, I think, in the Bureau have six merger retrospectives ongoing in various stages of getting published, being written, requesting data. So we continue to have a robust program at the FTC.

MS. COLEMAN: Thanks, Bruce.

Leslie and Lee, FTC is clearly one source of merger retrospectives. Maybe you could talk a little bit about other sources, either private sector or from the DOJ side, Leslie, from your experience.

MS. OVERTON: I'll say the FTC has been more active in merger retrospectives than the DOJ. But other agencies around the world have done retrospectives and a lot of academics do retrospectives. They are an important source. Private parties commission retrospectives in certain litigation or agency advocacy contexts. So I think really anyone who can get access to the necessary data for the methodology they want to use and can put in the demanding work that these take could do it.

MR. VAN VOORHIS: I don't have much to add on that other than I think that Leslie's last point suggests why government agencies around the world are best positioned oftentimes to do these. It's because of access to the data necessary to do a retrospective in the first place that is hard to come by for any entity outside the government, whether a researcher or a company.

MR. KOBAYASHI: I have to say that it's also hard for us too. If you think about all of our hospital retrospectives, we buy the data like anybody else.

Dan Hosken, who has done and still does a lot of these retrospectives, did a lot of work with

Matthew Weinberg and Orley Ashenfelter. They bought the data. I think Orley bought the data because he was concerned that if the FTC bought the data that he would have a harder time if there was some fight with Dan — which there wasn't — getting it out.

One of the shocking things to me is that there wasn't any special advantage from being at the FTC. We go out and we buy the patient and insure data just like anybody else. I think from our perspective we want to do that and it's just really important in terms of self-evaluation.

MS. COLEMAN: Now we've talked a little bit about what a merger retrospective is and something of its history and the sources of merger retrospectives.

Now we want to move on to the topic of what makes a good or high-quality merger retrospective. To start us off, Ben, can you just talk a little bit about the basic methodology — or methodologies because there's more than one — that have been employed in retrospectives or could be employed?

MR. WAGNER: Sure.

Just on that last point briefly, I think Bruce enunciated why a lot of the retrospectives like you were talking about were done by the FTC have been these hospital ones, because that's where you can actually buy in the public domain the detailed sources of data you need to get a somewhat robust result.

On the advocacy side, I have done a lot of these. Obviously, they are never going to see the light of day in published journals or anything like that. But you can learn a lot when you have the types of data that you need — sometimes you want detailed cost data, detailed price data, at the product level — but then you try to go out and look for something that you can use in the public domain to study and to publish. It's very difficult to get the kinds of data you need to conduct these. But, fortunately, working with clients you get access to some of these sources of data and you can do the kinds of detailed things that you'd like to do to answer some of these questions.

The basic methodology that is pretty standard now in these merger retrospectives is the difference-in-difference (DID) methodology. Basically what you're doing is you're finding — like I was talking about before, what you're really interested in is what happened after the merger and what would have happened had the merger not occurred.

The first part if you have the data is somewhat easy. You can say, "Okay, here's this event. Here are some markets or products that were affected — we'll call those a treatment group." If it's a horizontal merger, that's where the parties have overlap. Also, obviously, when you're doing these things there's some question about what degree of overlap are we going to study, and there is how big of an overlap does it need to be to be in the treatment group and lots of things. Every single part of these retrospectives has assumptions you have to make. We can get into some of those.

Basically, you take a group of markets or products, a treatment group, that is affected by the merger and you have an outcome variable like I was talking about earlier, like prices or quantity or quality, and you look at the change in let’s say price before and after the merger in the markets that were affected — let’s say that prices go up $10. Then you have a group of markets that you think simulate what would have happened absent the merger, that were unaffected by the merger — let’s say prices in that market went up $5. So the inference there is that the net effect of the merger was not to increase prices by $10 but to increase prices by $5.

One way you can do that is by having a control group, a group of markets unaffected by the merger. This can work pretty well when you have a retail merger or a hospital merger and you have geographic markets that are affected and geographic markets that are not affected. Hopefully you can say that the factors that influence price, like cost for example, would be similar in both those markets.

But sometimes that’s not so easy. If you have a retail merger that affects products all across the United States — let’s say Coke and Pepsi were merging and they’re in every single grocery store — so what are you going to use as a control group? Those kinds of things can be difficult in those cases.

One thing you can try to do is estimate a regression where you include a factor if you don’t really have a control group where you try to control what would have happened absent the merger by controlling for things like cost and demand, and you put those in the model and you can control for them, and you can hopefully get an estimate of what happened and you can say that it’s a causal estimate. But the kinds of data that are required to estimate a reliable model are very hard to come by, so the standard methodology that is typically used is this difference-in-difference methodology.

MS. COLEMAN: Thank you, Ben.

Bruce, employing either the difference-in-difference, which has the been more standard, but as Ben said, if you wanted to estimate more of a model of prices or other effects over time, what are some of the issues that come up when you're trying to do that and make sure that you're doing a high-quality, robust study?

MR. KOBAYASHI: I think all of the retrospectives that the Bureau of Economics (BE) has put out as reports are difference-in-difference. I won't say diff-in-diff or DID. But there are problems.

If you use these things called fixed effects to control for things that are common but that are idiosyncratic differences that stay constant over time in what we call in econometrics identification, that's generally the identification strategy that allows us to say "A causes B" rather than "A is just somehow related or correlated to B."

When I teach my students statistics, there's this great website that has all these correlations, like number of Nick Cage movies and teenage suicide and the correlation is 0.97. This sort of gets at that point.

What we like to do at the Bureau — and we sort of have a methodology — is that we like to at least have some plausible causal claim that what we are measuring is the effect of the merger and not some other effect.

One of the things we do is we ask two basic questions when we're thinking about a retrospective. One is: Do we have the data? The corollary to that is: Do we know what our left-hand side variable is; what are we trying to measure? It's not always just the price. Sometimes it's the quality-adjusted price. Sometimes it's some larger metric of competition.

The second thing — and this is another big thing as Ben pointed out — is: What's the control group? We tend to look, at he said, at geographic markets where you have the merger affecting some markets but not others, and you could use the nonaffected geographic markets as a control group.

If we don't have those, generally the Bureau says we're not going to do those, because in the end if we find what we would call a first difference, before the merger and after merger, and price goes up, we have no idea whether or not that is due to the merger or due to some other spurious effect.

The other way you can do it — and I think in the CLE readings, or at least in the bibliography, there are a few pieces by Dan Hosken with Matthew Weinberg and Orley Ashenfelter, and one with Mike Vita — you could do what I would call the old-style structural models or reduced form models where you try to stuff every important variable in a regression to do the prediction and you have a dummy variable to note whether or not it is after the merger, and then you look at that dummy variable to see the price effect.

The problem there is basically something called omitted variable bias. If you leave out something that is correlated with the stuff you put in, then all of the variables that you put in, including that dummy variable which you are using to try to infer a causal effect of the merger, is carrying that thing you left out.

Basically it’s the same problem. Why do we leave out stuff we think is important for correlating with the stuff we put in? Because (1) we don’t know of (2) we can’t measure it.

So largely over the past decade there has been this — it’s an unfortunate term — credibility revolution in economics, where we’ve gone to causal designs like difference-in-difference because that old way of trying to get the model right is just too hard and we never really achieve it. At the Bureau almost all the things we do are difference-in-difference and then we require a control group.

MR. WAGNER: Just another thought about the control group is sometimes you can have a merger that affects lots of markets and sometimes you can have a merger that affects a single market. A lot of the work that goes into this is trying to figure out if the control group is appropriate. If you have a single market, you can do a lot of work trying to figure out what's the best approximation of this place, of this city or metropolitan statistical area (MSA) or whatever it is. If you have forty markets that are affected, you might have a harder time finding a good control group and developing forty control groups might be tough, but you also have more events to study, so you might think that on average the effect in those forty markets is telling you something useful.

When I work on those things, they usually fall into one of those two buckets: there's one market that's affected and you can spend a lot of time really trying to get a great control group; or there are lots of markets affected and you can spend a little bit less time but hopefully the average or you have a distribution around the effects in all those different places.

MS. COLEMAN: One of the issues that came up in the first topic we were discussing and we're talking about here is the limits of rigorous access to data. As Bruce pointed out, a lot of what they do now is work on studies where they can buy data or have it from public sources. Ben had noted that in some cases on the private side you will do studies for a particular deal because there's a past transaction you think might be informative of the current deal.

But, as Bruce had noted, in the beginning of the hospital retrospectives there was subpoena power used to gather information. Maybe Lee and Leslie could talk about whether that could be an appropriate use in other situations and when that might be the case and when it might not.

MR. VAN VOORHIS: Yes. I think there are at least two, but two fairly significant concerns of private parties to giving up the data and information that will be useful in these — I think admittedly useful — in the merger retrospectives.

The first one is just strictly confidentiality and whether you can have sufficient confidentiality protections to give comfort to parties that their information will not be put out there or used in some way that is detrimental to the business.

The second one I think is equally as significant — maybe more so — and that is I think there might be a great fear of what the use of the information will be by government enforcers when they get it. Justified or not, I think that this fear is fairly prevalent. Bruce even said in his remarks the FTC's impetus to do a hospital merger study was not intellectual curiosity but rather losing cases. Of course that's purely human nature that you want to go back, and you are more often going to look at your losses than your wins. But I think that is a legitimate justification for the fear.

I think we'll talk about this a little maybe later, but when a company turns over information to a government enforcer, it’s not just what they might find out about a merger you had done but what else they might find out about your industry to prompt some new investigation.

Maybe there are safeguards that can be put around this, guardrails that can be put around this — we’ll talk about that later too — but I think there are some rather big concerns for private companies in providing the useful data.

While we’re talking about what information could be used, without trying to preempt your role, I have a couple of questions for the economists actually.

In merger review itself, of course the parties have produced documents and other information. So one of my questions is: is that used in these types of information? Putting aside the very issues I’ve just raised about getting it for the future, there are certainly some public sources of documents — 10-Ks or whatever else — and I wonder if those are brought to bear.

And then my second question: Another thing that's look at of course in merger review prospectively is the role of innovation and market dynamics and change. I wonder to what extent that is brought to bear in the merger retrospectives that have been done thus far. There are some cases that leap to my mind as being particularly interesting that might be looked at: things like *Blockbuster/Hollywood Entertainment*, which got a lot of scrutiny, and eventually that industry went away a very short time afterwards; or *Sirius/XM Radio*, looking at the flip side, got approved and now was that the right call; or *Whole Foods/Wild Oats*, where natural and organic supermarkets were maybe a thing but now everywhere has that.

Back to the question, to what extent are documents and documentary evidence brought to bear and could they be brought to bear to enlighten the numerical data, and to what extent is innovation taken into consideration?

MR. KOBAYASHI: I've been three months. [Laughter] There's a lot there.

Whole Foods is different. There's also when we do merger investigations, which the FTC has done — I mean *Whole Foods* was an instance where there was a natural experiment. You're using the same kind of difference-in-difference methodology to predict the effects of mergers based on the reverse thing, where what happened to grocery premium organic supermarket prices, the basket, when you had entry into the market and you think that the merger is just the reverse of that. I didn't work in *Whole Foods.*

It did work in *Staples/Office Depot*, which is another one where the FTC prospectively used natural experiments to try to look at — you know, we have a Fredericksburg, Virginia, and what happens when Office Depot comes in or what happens when the *BestBuy* comes in? You can sort of both do market definition and just actually get some idea of direct effects using the same kind of difference-in-difference methodology.

There is a great paper I recommend everybody read by Orley Ashenfelter, Jonathan Baker, and David Ashmore on the econometric evidence in *FTC v. Staples*. That was the 1996 one, not the 2015 one. If you think about innovation, I think the FTC challenged the second go-around of *Staples/Office Depot*. They did the same type of natural experiment stuff on the consumer side, said “Amazon, things change,” so they did take it into account, and then they said, “But we have a different problem, which is the business side.”

We do try to take those things into account when we’re looking at mergers when we have natural experiments —

MR. VAN VOORHIS: Retrospectively.

MR. KOBAYASHI: Retrospectively?

If you have innovation, it’s hard. Usually that falls into what’s the control group? It also falls into what’s your measure, because dynamic markets are not impossible — we do think about them, we think about them seriously — but they are harder to get a grasp on even theoretically, but empirically they are even harder.

We do like to look at the tools that we are using and that I think we’re going to talk about. The merger shops both at DOJ and the FTC use a lot of tools. It’s no longer the Herfindahl-Hirschman Index (HHI). It’s these first-order conditions: Upward Price Pressure (UPP), Gross Upward Price Pressure Index (GUPPI), Compensating Marginal-Cost Reductions (CMCR).

There are a lot of retrospectives — and I think this is the part where the agencies have the advantage because in our merger reviews we use these tools, the economists calculate it — and what you can do in some of them, especially merger simulation, is you get a price prediction. So we could compare what our price predictions were from the merger review and compare that retrospectively to actually what happens.

That is really the same thing as what Tim Muris wanted to do in the 1990s when we were losing. But we're not necessarily losing; it's the things we let go.

It's an important point to note that we can't do retrospectives on the things we block. We can only do retrospectives on the things that we either decide not to challenge or we decide to challenge but a court decides that we're not going to be able to enjoin the merger.

There is a big thing called selection effects, which we only see one side of the ledger there. All of the transactions that we do block, there are correct outcomes where we block anticompetitive mergers, and I'll guarantee you there are going to be errors where we erroneously blocked efficient mergers. So that side we can't even see.

I've probably said this. I'm half joking. But what you want to do ideally to learn stuff is to randomly select mergers on the margin and randomly let them go just so you can get both sides. We do that in every other setting. They usually tell me to take Mike's stuff out of my office or throw it out on the street when I say this. But random selection is really a big part of having a causal design. I mean if you think of how we test drugs, we give half of the people the potentially life-saving drugs and then we give of very sick people a placebo. That is so we learn stuff. It's not that we want to harm the people either taking the treatment or the placebo.

It's very hard in this setting to even think about doing that. Even if you're doing natural experiments, like *Office Depot*, the joke is that entry is not exogenous; entry occurs because of market conditions. So Staples or Office Depot comes into a market because they're not throwing darts at a map; they're basically looking at where they want to come in. So what's the natural experiment there? I guess one way to do it is to send a bunch of people around with cans of gasoline and randomly burn down some office supply stores, but that probably isn't going to pass any review board either.

And if you look at Whole Foods, that certainly was brought up.

QUESTION [Cecile Kohrs]: Burning down Whole Foods?

MR. KOBAYASHI: No, no, no. This always goes bad for me when I do this.

What comes up is the fact that the experiments aren't random selection. You do see that, I think, in Judge Hogan's decision in *Staples/Office Depot*. There were a lot fewer events in *Whole Foods/Wild Oats* than there were in *Staples/Office Depot*, so you run into problems with statistical precision and power and stuff.

I think one of the things to learn is we have a lot of tools. We don't just blindly use those tools. And certainly we have a whole Bureau of Competition who are looking at all of the normal things.

MR. VAN VOORHIS: I didn't mean them. I certainly know looking prospectively. I just think of where they could be brought to bear retrospectively as well.

MR. WAGNER: I agree with all that. Just to piggyback on that — I think Bruce mentioned this, but maybe it deserves more note — if you have a direct estimate or entry or through a merger retrospective, it can be a substitute for market definition.

In the innovation point, let's say there are two competitors in your defined antitrust market, Hollywood and Blockbuster, and you think *These are the only two guys in the market* — or I guess maybe in this example there would have to be three because we had to be studying a merger — but you do that study and you find that, "Okay, there was no impact on price."

So what does that mean? One inference is that the market was already competitive enough. I can't exactly do a study to figure out who's in it, with all these other people who are providing video, but I can be reasonably certain there was no impact from this increase in concentration. So that must mean that there are other competitors who were making the market competitive enough such that I see no effect.

In that case, to your point, Lee, obviously if the event happened many years ago it’s not going to be that relevant still, but maybe there are some entry events that happened recently, or maybe you have a merger from a few years ago and you have some entry recently and you have two data points, and you can look at those and you can say, “Oh, well when this competitor entered there wasn’t much of an effect and when I looked at this merger retrospective there didn’t seem to be much there either, so it seems like the market was — I don’t know exactly who the other players are, but it seems like the market was already competitive enough,” and so those direct effects can be very important to the extent that you can actually get good and reliable estimates.

To Bruce's other point, even if you could randomly let through a few mergers, the test in these things is not like testing drugs obviously. You have a lot of these assumptions you have to make and you have to be able to figure out reliably if the effect is a 10 percent increase on price, I bet there are some assumptions you could change or make and now that 10 percent is 4 or 5 percent, and maybe that is a whole different set of inferences that you have to make.

MS. COLEMAN: I think this may lead us naturally into our next discussion, which is: what is the role of merger retrospectives; why does it make sense to conduct these? We've thought about, and we've already mentioned, different ways that they can be useful.

Leslie, can you talk about can they be used to test how well the agencies or the courts are doing in making decisions about merger enforcement?

MS. OVERTON: I think they can be. They do have a role in informing how well the agencies are doing. I think it's important though that they be used as a tool but not given too much weight in terms of saying how the agencies are doing. You could have an agency that does a very good job making a merger enforcement decision based on what it has available to it and then it turns out that there is a price effect for some other reason. I think it's important to not read too much into it.

I also think we don't get merger retrospectives evenly across the board. There are certain industries that they tend to be concentrated in for reasons of data, congressional interest, other reasons. So I think it could present a misleading picture if we look and say, "Oh, the merger retrospective told us this; that sells us everything about what the agency is doing."

But I do think that there are definitely benefits to an agency if an agency is able to get the data for the methodology that they are trying to use and that they are able to take into account all of these different issues that we are talking about. These are hard to do, these are labor-intensive studies, and I think that they can go off the rails. So if you've got an agency that is willing to make that commitment and is willing to be self-critical, I think that's valuable.

I do think it is also important to not read too much into them because you don't want to chill and agency's interest in doing retrospectives and being self-critical. You don't want the agency to only choose retrospectives that are going to reflect well on the agency.

MS. COLEMAN: Any responses to Leslie's comments from the panel?

MR. KOBAYASHI: John Kwoka has a book [*Mergers, Merger Control, and Remedies: A Retrospective Analysis of U.S. Policy*], which I think commits some of those errors, and my colleague Mike

Vita has written a defense of the agency.

I think one of the things that Leslie pointed out which really deserves highlighting is that if you look at his set of forty-nine or fifty retrospectives, some of them are really old and a lot of them are hospitals, airlines, retail, petroleum. That’s where these things are.

Why are we interested in them? We’re interested in some sense because there are some marginal mergers, but mostly those retrospectives got done because there is data. Why are retail mergers done? Because there’s something called Nielsen data, which is scanner data and you get quantities and then you get some noisy measure of price. For hospital mergers we can buy the patient and health insurer data. For oil there’s lots of good data.

There’s an old joke about the economist under the streetlamp. How many of you have heard the economist under the streetlamp joke?

The economist loses his keys. A passerby said to the economist, "What are you doing?"

He said, "I'm looking for my keys. I dropped them over there in the middle of the dark street."

He said, "Why are you looking under the streetlamp if they're over there?"

He said, "That's where the light is."

[Laughter]

There are lots of economist jokes. They're mostly not jokes, they're just mean. [Laughter] There's "assume a can opener" and all of that stuff.

But in a sense what we have to remember is what John did in his book. It's actually an interesting book. It's a meta-analysis, taking a study of the studies. He sort of said, "Okay, here's the body of retrospectives, the body of studies, and let's do a study of studies and see what happens on average."

On average, the median price increase — there's a long right tail, so there's a couple of mergers that led to an increase in price of 40–50 percent — but the median price increase is 0.8 percent. Something like 30 percent are either negative 5-to-0 or 0-to-plus-5 percent.

Part of what you don’t want to do is say, “Well, the agencies have been permissive because in half of the mergers that we look at versus retrospectives the prices go up, and some of them go up a lot.”

If you’re really doing optimal antitrust enforcement and you go to the right margin — remember we only see the mergers that we let go or a court lets go; we don’t see all the mergers that we block — you probably want to have something where the average or the median effect is pretty close to zero, and you think that there’s going to probably be around a 50 percent error rate on the side of the mergers that you see. If you go and you start blocking more mergers, you are going to probably be causing the other type of errors where you’re blocking anticompetitive mergers.

But we don't know because we don't really see that.

So it's a difficult task to over-infer about what the agencies are doing and whether they are doing something that's too lax or too strong because of just the strong selection effects and the limitations that data put on us to look at mergers as a whole.

Plus they're expensive. Greg Werden has a nice piece saying, "Look, you can't just do these things in a vacuum. They're actually quite hard to do and they require a lot of institutional knowledge. If you don't have that institutional knowledge, you're going to do a bad study."

MS. OVERTON: Let me just say too that the Organisation for Economic Co-operation and Development (OECD) has done a lot of work around merger retrospectives and giving countries tools for how to think about merger retrospectives — not telling them one methodology, because as we've talked about these are very, very difficult to do and it's going to depend on your data and your resources and a whole lot of other factors. But there has been a good amount of work that OECD has done to help countries understand the considerations for using merger retrospectives for self-assessment.

MR. WAGNER: One of the points of that Werden piece is that it’s hard to do these things. One of that criticisms of that Kwoka book is that he didn’t present any distributions around what those effects are. To get right what the but-for world is and to get right what the effect is, he sort of treats these things as precise estimates, but there’s going to be a range of assumptions you can make, it’s not an exact science, and some of those distributions might be large.

When you think about doing testing of merger simulation versus what happened from a merger, you can’t take for granted that what happened after the merger is exactly correct.

The way I see it is you can do a bunch of different assumptions and hopefully test different things and you get a range of outcomes and hopefully that range of outcomes points in a certain direction, and combined with other evidence, documentary evidence and things like that, can point you to the truth. But it’s hard to put precise estimates on these things, and some of the inferences that you’re trying to make when using precise estimates — “Well, the simulation predicted 5 percent, but the actual fact was 8 or 9 percent” — to one person that might be bad; to another person, “Well, that’s pretty good.”

But these things are difficult and there’s a lot of effort, like we’ve talked about, that goes into it. There are reasonable assumptions that you have to make. That’s just something to be cognizant of.

MS. COLEMAN: Bruce had brought up earlier that the hospital retrospective study in *Evanston* was used to successfully block a consummated merger, and there certainly have been other challenges to consummated mergers in recent years. When can merger retrospectives potentially be useful to either side in challenging consummated mergers and what issues arise in conducting such analyses?

MR. VAN VOORHIS: I think there is a difference between "when can they," which might be fairly frequently, and "when should they," which is arguably never. [Laughter]

I think that you have to see there is at least the possibility of a different viewpoint on the hospital study and what happened as a result of it, whether that's a positive or a negative thing.

But, more neutrally, I think you do have to evaluate the policy considerations, of whether it's a good policy to take merger retrospectives and challenge specific consummated transactions.

This goes back to what I was talking about earlier in terms of getting the data. We all acknowledge getting the data and information necessary to do a good retrospective is a real challenge on top of all the other challenges that we've talked about in doing a merger retrospective.

If the goal is to encourage private entities to allow their data and information to be used in a merger retrospective, then I would argue that there's got to be some protection given as to how that data will be used. This is, I think, a very specific one that goes to the fear I mentioned before about turning over the data only to find it thrown back in your face that you have done something — maybe it's a consummated merger, or maybe something else, some other behavior — and you have an enforcement action against you when all you were doing was trying to help merger retrospective studies to deliver better tools and better analysis in the future, which I think we all agree is probably the point of doing these merger retrospectives, putting John Kwoka's book to one side. That's my point on those.

MS. COLEMAN: Other thoughts about using retrospectives for consummated mergers?

[No response]

Ben, you've talked a little bit already

about using merger retrospectives to assess a proposed merger in the same industry where there was some previous merger. Can we talk a little bit about when that might be appropriate, again what issues, and I'd like to hear everyone's experience at and before the agencies of trying to put forward such retrospective studies or when the agencies do them themselves?

MR. KOBAYASHI: The FTC sees them. Sometimes they occur as part of the Hart-Scott-Rodino filing, which I think Ben mentioned.

Chris Garmon has just published a paper in RAND. Chris did a lot of this work when he was at the Bureau of Economists at the FTC, where he said, "Let's evaluate our tools that we use in hospital mergers." I think he looked at seven consummated hospital mergers doing our traditional hospital retrospectives. One is the pay model and using those to get price predictions. He looked at HHIs, whether they are predictive; the first-order Upper Pricing Pressure (UPP), and CMCR. I think he did critical loss. So he looked at how all these tools would have informed, at least on the economist side, the merger evaluation and then compared it to what the retrospective did.

I think that is really an important thing to do because, like all tools — whether it's in the old days when I was last at the agency when we used structural tools to do screens or you use these newer tools — it's really important to see how well they work.

The parties can and certainly do use them to say, "Your tools aren't very good" or "they over-predict price increases here." So we see them.

A lot of the problems that I think we see with these retrospectives is, as Ben said, they are just estimates. Our tools, our predictions, the estimates of the price increase are estimates, they're not actual causal effects of the merger. So they have standard errors. A lot of times people are arguing they're zero, and they are actually not zero; the point estimate is positive, but they're just not significant. That's a problem of not having enough data and not having enough precision in your estimates.

When you want your parties to come in, the thing you'll hear from the Bureau of Economics is "What's the power of your test?" Ask your consulting economist what that means. It means is your test likely to detect a small-but-significant price increase if it was there? So significance is not just the only thing that we care about. We also care about, "Well, okay, what if there was a price increase; would your test detect it?" and that's the issue of power.

MR. WAGNER: What we're trying to do is figure out what is going to happen before the merger and what's going to happen after the merger. You're trying to make a prediction.

One tool is saying, "Well, if there's a merger in the same industry — maybe even one of the parties involved in this deal had a prior merger —

that's obviously a data point possibly among other data points that can help you infer what is going to happen after this deal."

I think Mary's question is when is it useful to do a merger retrospective to inform what's going to happen in this deal? Setting aside let's say that you could get the estimate exactly correct from the prior retrospective, you would want to know are the parties in the merger you are studying selling a similar product to what they're selling in the deal that you have. Is it the same product market or is it differentiated enough such that maybe this doesn't bear on the current deal?

What was the change in the level of concentration in a horizontal deal, the deal that you're studying, versus the deal that has been proposed? Maybe you might think, *This merger I'm studying will only change concentration by X, and this deal is bigger, so we can learn something; but if it was the same size change in concentration, maybe that* *would be better.* Or *When did that prior event happen? Have there been changes in the industry since that event that you're studying such that it doesn't make it very relevant anymore?*

These are some of the things that you would want to consider if you wanted to say, "This prior merger that I'm studying in this industry, possibly even with one of the same firms that's involved in the deal now, has a bearing on what I think is going to happen as a result of this merger."

I don't know how I'd weight those things, but those are the things that I'd think about when trying to say that this has a bearing on the current deal or not.

MS. COLEMAN: Lee and Leslie, you are in a deal like this and your consulting economists are saying, "We think it worthwhile to look at this." What is your reaction? How do you work with the client to figure out does it make sense to invest in this sort of a project?

MS. OVERTON: I think I'd take into account the types of factors that Ben was talking about.

For example, how similar is the product? Just to give an example of a real-life use of a merger retrospective in a new merger, in the *GE/Electrolux* matter there was a merger retrospective related to *Whirlpool/Maytag*. *Whirlpool/Maytag* involved washing machines. In the new deal the government said that the problem was in cooking appliances. But one could argue that they are all appliances. I think the government wasn't persuaded. We don't know whether a court would have been persuaded or not because the parties abandoned while the case was at trial.

But I would want to know. These are such big undertakings and the government is so likely to be skeptical of it, I would want to have a really good case, really good data, really strong similarity, before I invested the resources.

MR. VAN VOORHIS: I agree with everything Leslie said. I think the practical considerations narrow it to a fairly small set of cases where it makes sense.

I think it also has to be a deal with large enough parties and a large enough deal that the investment of the resources makes sense, even if everything else factored in its favor.

So I think the practical considerations severely limit the willingness of the parties to undertake this in a unique transaction.

MR. WAGNER: I guess there is one other thing to mention. There was a discussion of efficiencies earlier today. If you do have an event where the acquiring party is now making another acquisition, you might use one of the prior deals to test one of your efficiencies arguments. That's another place where it might be useful.

I would say obviously if one of the parties in the deal was involved in the prior deal, as opposed to two other competitors, that is probably a good place to focus in general.

MS. OVERTON: I agree with that, Ben. I think parties can improve their credibility on the issue of efficiencies if — we're not talking about a full-blown retrospective study, but if they can show that they actually did achieve efficiencies in past deals, I think that could be helpful for their credibility.

MS. COLEMAN: One last topic, and we'll try to keep this short so we can give some chance for people to ask questions. Maybe I will just throw it out to the group: Where do we go from here? Are there things that we should be doing differently that is already being done in this area? Are there some some areas that might be a good prospective area to look at merger retrospective studies, or are we getting it right and doing them when you can and not doing them when you can't, when you don't have the data to do them?

MR. VAN VOORHIS: I have two ideas, one specific and one more general.

The first I was talking about a little bit before, and I throw it out as a challenge to all the economists in the room, although I think there is a role for lawyers in this. That is, is there some way from the types of transactions I mentioned before — the *Blockbuster/Hollywood* and *Sirius/XM* and *Whole Foods*, and I'm sure there are multiple others — some way from those to generalize some measures of the innovation effect in a merger retrospective so that it's not industry-specific? I don't have any great ideas. Is it something the parties said and the parties argued in those transactions, that *X* innovation was going to happen in *Y* time, and we can compare that across when we're looking back at those and others?

I also recognize there is likely to be a sample size problem here that limits the scope of rigorous economics. Maybe there is a role for lawyers where there is some sort of joint effort in doing that to look back. But I think that to my mind that is potentially a fruitful ground to look back and do some retrospective in that way.

My second one is more general and more process-oriented. As I've talked about some of these issues and we've talked about some of these issues in getting the data and how you do this, I've tried to focus on what might make the business world more inclined to participate and to make it easier to get as much data and information as possible to do these?

I wonder if there's not something like the Army Materiel Command (AMC) that could be created with a specific goal of doing merger retrospective studies. That is, a public-private partnership that in some ways is insulated and separate from the enforcers to give that comfort that I was talking about that the data and information doesn't go to enforcers specifically.

I recognize there are other problems. There is still the confidentiality problem that would have to be solved. I think there is is the issue of peer review, and if you can't have your results peer reviewed by enforcers, at what level do you get to that? And would this entity have subpoena power, and lots of other things.

It's a very broad idea and you would need the political will for Congress to make this happen. But I wonder if there isn't some way to set something aside in that way, ring-fence it, so that we could really improve upon the quality of our merger retrospectives in a big way I think actually with the data that's out there in the world.

MS. COLEMAN: Any other responses or thoughts?

MR. KOBAYASHI: The data issue — the FTC has subpoena power under 6(b) to require people to have data. We've had mixed experiences with that in line-of-business data. Under Tim Muris we used our subpoena power. I think as an enforcement agency we have to be self-critical, and we have to do them and we will continue to do them when we can.

I think we're also very cognizant of the burdens and all the other issues involved with using our subpoena power. So we're not willy-nilly going off and doing a retrospective study.

One of the things that you have to solve — you know, any academic could do this. There are a couple problems.

One of the things that you would want to do, if you really wanted to make inferences about the overall level of things that we are doing at the enforcement agencies, is you'd want to do a lot of retrospectives, you'd want to do them at the margin, and you'd probably want to do some off the margin.

Dan Hosken and Orley Ashenfelter did a study where they looked at five mergers that they thought were marginal and then they did the same number that they thought were non-marginal. They found that HHI was actually as an initial screen useful because for the ones off the margin they didn't find price effects in four out of the five and for the ones at the margin that were let go they found the opposite.

There are those things. You can have outside academics do it just as well as us. They just have to interest them in doing it.

The one problem is there is something called publication bias. Studying this merger and there are no effects — that could be great for my career in my tenure file. That’s a serious problem to correct. I as an academic have been an associate editor on journals and I love zero/no-effect papers because I think they’re really valuable, as long as they have enough power. But there are a lot of incentive problems that you have to correct.

I think what we are doing at the Bureau of Economics is that we are continuing to be committed to doing retrospectives whenever we can and giving staff time, really critical and scarce staff time, to people to do these studies. We do actually have that enforcement knowledge and when we can give people access to that data we like to do them as frequently as possible.

MS. COLEMAN: I want to leave the last few minutes to give a chance for people to ask questions.

Just a reminder. If you have a question, we ask you to go to one of the mics and identify who you are and where you're from.

QUESTION [off-mic] [James Keyte]: I won't use a microphone. I'm James from Fordham.

Just a quick question on hospital merger retrospective studies and this move to willingness-to-pay. How do you deal with the situation — and I don't have a horse or a dog in this race — how do you deal with the situation where you don't have competitive overlap but under a willingness-to-pay theory maybe it's almost a conglomerate-like merger? You're going to have a higher willingness to pay — you could call it a quality-adjusted price. It's just there's this one conglomerate, you're collecting different hospitals, so dealing with managed-care companies you have more power, but there's no competitive overlap at all. So you might have some but-for kind of issues.

MR. KOBAYASHI: We have a term for that. It's called cross-market effects. Is that what you're talking about?

QUESTIONER [off-mic] [Mr. Keyte]: Maybe it's for the lawyers.

MR. KOBAYASHI: No. We have a couple of BE staffers who are really good, actually Ted Rosenbaum and Devesh Raval, I believe. There are a bunch of people who do a lot. Keith Brand is another one; Dave Balan.

They always look at those effects. I don't believe we've found one that we thought was warranted. Patients aren't going to drive 300 miles, but the insurers may have. Under the willingness-to-pay model there might be an effect. It might be sort of a coalition-type threat point type thing. Those are part of the willingness-to-pay models.

It may be that two hospitals are not close enough for people to drive to on the patient side, but it may be that there is enough overlap that insurers are concerned. So we always look at those. I think that's a standard thing that both the economists and the lawyers look at.

QUESTIONER [off-mic] [Mr. Keyte]: All right. So you're just really looking at the insurers as the consumer.

MR. KOBAYASHI: That is the WTP model, right?

QUESTIONER [off-mic] [Mr. Keyte]: Okay.

MR. KOBAYASHI: Then our theory is that if the insurers raise their price, then consumers in one way or another, whether it's the premium or fee-for-service.

That model is all set out in the literature. Chris Garmon's paper in RAND is a neat paper because it just really sets out what has become a standard model. It's not *a* standard model, it's a series of models, so there's a WTP, there's a UPP version. They still look at how far consumers are willing to drive.

QUESTIONER [off-mic] [Mr. Keyte]: Yes, although that wouldn't [inaudible].

MR. KOBAYASHI: The big problem is to sort out the inframarginal from the marginal consumers. I think Ted Rosenbaum and Devesh are working on that.

Not to go back to my burning down hospitals, but Ted and Devesh have this really neat paper on natural disasters. There were no gas cans and people burning down hospitals, but they look at when natural disasters close hospitals for extended periods of time and they use that as a natural experiment to see what goes on with the pricing. I think it was Katrina or one of the big hurricanes that took out a whole bunch of hospitals in a geographic market.

So we are using a lot of the techniques — not necessarily to do enforcement, but to learn.

MS. OVERTON: And Leemore Dafny at Harvard has done a lot of work in that area, too.

MR. KOBAYASHI: Right.

QUESTION [off-mic]: Hi. I'm Shirley Quo

from Murdoch University. I just have a question for Bruce.

You talked about the retrospectives on consummated mergers and defined that it did result in competitive harm as a significant price increase. Is there any potential enforcement action that can be done given that this is a consummated merger?

MR. KOBAYASHI: Yes, we have the power to do consummated mergers. I think what the Bureau of Economics does is we do these studies to evaluate our tools and then the Commission can do what they like.

There are a bunch of mergers that we don't see under Hart-Scott-Rodino. There is a paper by Thomas Wollmann, who's at the University of Chicago, that looks at what happened after they raised the Hart-Scott-Rodino thresholds [*Stealth Consolidation: Evidence from an Amendment to the Hart-Scott-Rodino Act* (2018)]. There is a bunch of mergers that we used to have premerger notification on that we do not anymore.

But we do non-Hart-Scott-Rodino enforcement. We do consummated mergers. In fact, the *Northwestern Memorial HealthCare/Centegra* Chicago hospital merger was a consummated merger. I think the reason that the antitrust enforcement agencies went to premerger notification was that it's hard. As Lee was saying, it's a bad idea. I think the term is it was a "Pyrrhic victory," that you end up spending a lot of money and it doesn't — the first panel is remedies, right? There is no remedy, the eggs are scrambled, and so you spend a lot of money and you don't do anything.

But there are things where we could do an enforcement action against a consummated merger if we learn about it. We still have conduct cases, and those aren't mergers. We usually look at everything.

So it's possible. I don't know if there's any direct case where we did a retrospective and then we went out and sued somebody. I just don't know.

MS. COLEMAN: Any other questions?

[No response]

I’d like to thank all the panelists for participating and now everyone can head out to lunch.

[Adjourned 12:15 p.m.]