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UNDERSTANDING SINGLE-FIRM BEHAVIOR:

EMPIRICAL PERSPECTIVES SESSION

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DR. HEYER: Okay, first, it's a pleasure to be here, and since you're probably less interested in what I have to say than what these people have to say, I am going to be brief before turning things over to Bill.

I wanted primarily to thank some people, not only the panelists for giving us their time and soon sharing their insights with us, but I wanted to thank particular people at the Antitrust Division who have helped prepare this and helped prepare me.

We have some people from the Legal Policy Section in the Antitrust Division, Deputy Chief Gail Kursh, who in an earlier life helped manage the Dentsply case, which you will hear more about from Dr. Reitman over there. One of the attorneys in her section, Joe Matelis, crackerjack paralegal Brandon Greenland, and most importantly, June Lee, one of the economists in the Division, who, in addition to putting up with all the administrative stuff, has actually contributed substantively.

So, with nothing further, I am going to turn it over to my distinguished colleague and co-moderator, Bill Kovacic.

COMMISSIONER KOVACIC: Welcome to the New Jersey

Avenue Conference Facility on September 26th, the 92nd Anniversary of the adoption of the Federal Trade Commission Act. We're delighted to have you all here today and to focus on what I think is one important dimension of the assessment of what standards for unilateral firm behavior ought to be. Many of the presumptions that run throughout discussions of doctrine and policy involving the enforcement of competition law against dominant firms derive from empirical judgments about the state of the world. To read judicial opinions and see how often the opinions say "we know, it is believed, it is thought, the world is," and then to look futilely in the footnotes for what editors in journals would note and say "Add cite," is a striking phenomenon.

More than that, when you take a look at the papers of some of the Justices of the Supreme Court, papers that have become available, you see how frequently in their deliberations they're relying upon hunches, judgments or assessments about the state of the world and the way in which business behavior has been used in the past, and about the significance of that behavior. It's impossible, in short, in looking at the full range of history and enforcement policy and judicial decision-making, to escape the significant role that assumptions about the state of the world play in the formulation of doctrine.

Our aim today is to address three questions and to try to link empirical work that's been done or might be done in the future to the development of standards. Three questions really animate our session today.

The first is to consider what past empirical work tells us about how firms become and remain dominant, to look back and, at least selectively, to take a look at what work has been done by empirical researchers, whether in the form of quantitative work, whether in the form of case studies, whether simply in the examination of the way in which judicial decisions or enforcement decisions have affected the way firms behave.

Second, and more forward-looking, is to ask what we would like to learn if we could, what additional facts would we like to have if we could get them in principle.

And last, based upon what we offer as an answer to the second question, how might we go about doing it? What combination of effort within public enforcement agencies, among think tanks, academic research centers or other bodies, might provide the means by which important empirical questions could be answered?

Later today, as Ken has, I will acknowledge the many contributions of our professional staff that have made the event possible. For now, to begin, I just want to remind you of a couple of housekeeping details about the session.

The first is to respect our speakers by turning off all of your communication devices. I was at a hearing a couple of years ago in the federal courthouse where the bailiff stood up and said, "If your Blackberries or cell phones go off, you will be removed." We won't remove you, but please do honor this convention.

Second, those of you who want to make your way to the restrooms, they are through the lobby -- the signs are marked -- between the elevators and off to the right. Now and then, there are planned or unplanned fire drills and alarms. If one goes off, we and our staff will lead you out to the street, to the right, back through the lobby, and we will simply gather out in front of the building until it is possible to return.

To begin today, we have divided our session into two parts. We are going to have a series of presentations before we take a break, and then we will have a larger discussion joined by two of our panelists who have agreed to discuss what they have heard and then to add comments of their own about the proceedings.

To get us started is Mike Scherer. Mike is as renowned and significant a figure in the modern development of economic research and analysis at the Federal Trade Commission as there is. Going back to his time as Bureau Director in this institution and through his recurring assistance, research and analysis, I think it is fair to say that, in the illustrious collection of those who have served as Bureau Director of the Federal Trade Commission, none has been more distinguished in that very hall-of-fame like collection of individuals.

Mike is also well known for the extent to which not simply has he done theory, but one of the reasons we asked Mike to come here is Mike's particular affinity and interest in empirical work and the extent to which empirical work, as well as history and an examination of the past, has figured into his own scholarship.

Mike, please, thank you.

(Applause.)

DR. SCHERER: Thank you for those kind words, Bill.

Let me just briefly address the third of Bill's questions, how to learn. In many ways, I have been a disciple of Joseph Schumpeter, not the stuff he wrote about monopoly and technological progress, but what he wrote about how economics advances. Schumpeter argued that economic analysis was all about three things. It was about theory, it was about statistics, and it was about history. To do economic analysis right, you need all three, and I have tried hard to do all three of those things. I think in the profession now there is a bit of an imbalance; in particular, we do too little history.

I am not sure whether it was distributed or whether it is on the web or whatever, but I do have a background paper for the meetings entitled "Technological Innovation and Monopolization." It is a case history of seven great high-tech monopolization cases in the 20th Century, and the thrust of my remarks will be based upon that paper.

Now, first of all, how do you monopolize? Well, it is pretty well known. Mergers, here we have very strong precedent, so I won't dwell longer. Natural advantages, such as economies of scale, the control of natural resources, network externalities and the like, these are fairly rare except in the traditional regulated industries or in those cases where you define the market very narrowly, as in certain pharmaceutical deals.

The most interesting one is surely superior efficiency and especially technical innovation. These pose the hardest cases for antitrust. When a firm achieves a monopoly position through superior efficiency or innovation, one faces very difficult trade-offs. We should clearly, clearly be encouraging technological superiority, but where is the line crossed? That is the really tough question.

A subset of this is patent accumulations. In at least two of the seven cases I analyzed, that is the key to how firms monopolized, specifically, General Electric in the lamp case and AT&T in the telephone case. We did not do anything about it early in the century, and therefore, we had a raft of problems to deal with beginning in the 1940s and later.

There are some puzzles here. There is one that I really think the FTC or someone ought to study very carefully, and that's Cisco. Cisco reached its dominant position in the network switch business on the strength of about 100 acquisitions and a lot of patent acquisitions. Was that necessary? Would we have had the best market structure for the switch industry if antitrust had intervened against these mergers?

I remember one time being at a cocktail party in Cambridge and meeting a gentleman who told -- you know what you do at these cocktail parties, "What do you do? What do I do?" He said, "Well, what I have done, I have developed a switch that is a thousand times faster than anything Cisco has." He ran a high-tech startup, needless to say. I said, "What are you going to do with it?" "Oh, we are going to exploit it. We are going to market it." The next thing I know, he is bought by Cisco for a couple of billion dollars.

Now, what would have happened if this guy had been encouraged to develop the switch technology on his own? These are interesting counterfactual questions that ought to be explored carefully.

I pass on very briefly to the pricing consequences of monopoly. It has to be brief, because the theory and the evidence are extraordinarily complex. It depends critically on entry barriers, broadly defined, or cost structures. In particular, if entry barriers are low, you have the paradox of explaining how a firm achieved dominance despite having low entry barriers.

The United States Steel case, decided by the Supreme Court in 1920, bears careful examination. The evidence is very clear. The Bureau of Corporations did a superb job studying that industry. U.S. Steel had no cost advantage over its rivals after the Carnegie properties had settled into normality. So, it had no cost advantage. How could it preserve its dominant position? Well, the answer is it could not, and so it chose an umbrella pricing strategy. It set prices high enough to provide nice profits for everybody in the industry. That encouraged a flood of entry, and gradually, U.S. Steel's market share declined, which the Supreme Court saw as evidence of effective competition, the declining market share.

In fact, what it was evidence of was setting prices monopolistically high above the entry-deterring level and behaving essentially sluggishly about entry, and as a result, we have a steel industry that inherited this tradition of sluggishness, of not responding to price signals for 50 years until it got into big trouble in the 1970s and 1980s.

Well, much more important than pricing is technological innovation, much more important. There I am clearly a "Schumpeterian." The question is, are monopolists, are dominant firms, superior innovators? The theory we have on this -- and we have got a lot of it, and evidence, too -- the theory and evidence on this say there's a duality. On the one hand there are situations, situations mainly associated with slow-moving technologies, where the science base is changing slowly. There are situations where a monopolist will, in fact, be a superior innovator, where only a monopolist is able reasonably quickly to realize sufficient quasi-rents to cover the R&D cost. Those cases definitely do exist in small markets and markets where the science base is moving slowly.

But there's an exception when the science and technology base is moving rapidly, where you have revolutions, the kind of revolution we have had in information technology in the last few decades, where that is happening, and/or when monopolists are reluctant to cannibalize the rents that they are earning on the products that they already have marketed. In those cases, firms in dominant positions are almost surely sluggish innovators. I say "almost surely" because here, too, one can find exceptions.

The most interesting exception in recent years I think has been Intel. Andy Grove's book Only the Paranoid Survive is a really nice example. I participated for the FTC in the case against Intel and read all of Andy Grove's memoranda for several years. Intel was really terribly alert to new technological challenges and tried hard to stay abreast of them and not be out-competed by upstart innovators. Even so, the record is quite interesting. I do not have a slide projector, and I did not bring a slide anyway -- I forgot to bring it, it was the most important slide I was going to bring with me, and I forgot to put it in my portfolio --

COMMISSIONER KOVACIC: We have a sketch artist in the back.

DR. SCHERER: No, I will wave my arms so you can see. I did a graph, this was in the FTC's Intel case, from public data. I had a graph on which time was the horizontal axis, and on the vertical axis was the speed of microprocessors, and what one sees is two things.

First of all, in the period when Intel had a monopoly, at least in 32-bit chips, where Intel had a monopoly, the trajectory introducting speed improvements was like this, quite gradual, but then AMD and then Cyrix caught up and got into the 32-bit technology and began competing with Intel, and what you see, that slope abruptly turns sharper. There was more rapid increase in the key variable of competition, the speed of the microprocessor, and one also found the individual new product points more tightly clustered, showing that more new products were being brought into the market as a result of the competition from AMD and Cyrix.

Intel argued in the FTC's case that we are our own best, sharpest competitors, because we have got all this installed base out there, and we have to bring out new products constantly or people will just stick with their old microprocessors. I did a series of simulation analyses, and what I found was that using reasonable parameters, Intel would try to maintain a generation for five or six years in the absence of competition. When there was competition, however, it moved the speed of the introduction process to two or three years.

Now, this blends into another aspect where you really have serious problems for antitrust, and that is the so-called fast second strategy. This is a concept that was introduced in the late 1960s by Lee Baldwin and -- I don't know his first name -- Childs, and there has been a good deal of theoretical development on it since. The basic idea is that the dominant firm holds back until there is a real threat -- Andy Grove's Only the Paranoid Survive -- and then when that threat appears on the horizon, the dominant firm comes onto the market with a new product, with all guns blazing, and perhaps with a whole panoply of practices to make life difficult for the new company. You can see them described in the paper I submitted for the record, but you clearly see this kind of conduct in Standard Oil, in General Electric, in AT&T, in Xerox, in IBM, and in Microsoft, you see at least delayed innovation, and for IBM and Microsoft, a powerful fast second strategy.

How much time do I have?

MR. HEYER: You have got another ten minutes or so.

DR. SCHERER: Oh, okay. Then I will read Judge Jackson's -- I think it's the penultimate paragraph --

MR. HEYER: Five or ten minutes.

DR. SCHERER: -- in Judge Jackson's decision in Microsoft.

"Most harmful of all is the message that Microsoft's actions have conveyed to every enterprise with the potential to innovate in the computer industry. Through its conduct toward Netscape, IBM, Compaq, Intel and others, Microsoft has demonstrated that it will use its prodigious market power and immense profits to harm any firm that insists on pursuing initiatives that could intensify competition against one of Microsoft's core products. Microsoft's past success in hurting such companies and stifling innovation deters investment in technologies and businesses that exhibit the potential to threaten Microsoft. The ultimate result is that some innovations that would truly benefit consumers never occur for the sole reason that they do not coincide with Microsoft's self-interest."

Well, Intel pursued similar policies. Actually, the truth is more nuanced than what Judge Jackson said. What he said was basically right, but recognizing this, firms that had to compete with Microsoft or had to compete with Intel pursued more sophisticated strategies. Sometimes they simply tried to avoid areas of dominant firm strategic interest, and therefore, we may have missed significant innovations. We will never know what we have missed.

But in other cases -- and I think this is the larger majority of cases -- what they did was made their appearance on the scene and then made it clear that they really would like to be acquired by the dominant firm at a very hefty price, and here we face a tough counterfactual question. Would technological progress be faster if they had seen their way clear to innovate independently rather than having their operations taken over by the dominant firm?

Now, my own view is that open competition is clearly superior in inducing vigorous innovation as compared to situations in which one has a relatively secure dominant firm. The presumption of antitrust should be to err on the side of maintaining competition and especially, especially keeping both conduct barriers, including fast second strategies, and structural barriers at minimum feasible levels. This is hard. There is no way to evaluate such situations without a careful rule of reason analysis guided by appropriate economic theory. But when monopoly positions exist, the job can be done, and it should be done.

At this, I will stop and will be happy to take questions. Thank you.

(Applause.)

MR. HEYER: I think what we are going to do is we are going to hold off on questions until we get into the post-break round table discussion. We will let each of the panelists go.

Let me say a few words about Luke, eager to get up here. Luke has a very long title. He teaches at Vanderbilt. He is particularly proud of his work recently at the Federal Trade Commission, and I am happy to say I know Luke back from when he was a staff economist at the Antitrust Division. Despite his work there, he became chief economist at the Federal Trade Commission.

With no further adieu, we can --

DR. FROEB: Can we bring up the slides?

MR. HEYER: Actually, these aren't Luke's. All right.

DR. FROEB: Thank you. It's a pleasure to be here. Every time I go in and out of academia, I get more discouraged about what we are doing in academia.

We work hard on problems no one cares about and publish results in journals that nobody reads, and so it is a delight to be back here working and thinking about important problems that people care about.

This area is the source of the biggest policy disagreement between the U.S. and the rest of the world. The U.S. is relatively permissive towards single-firm conduct, while the rest of the world is not. We have reached agreement, by and large, on how to analyze price-fixing and merger cases. And while we do have differences about individual cases and evidence, we do agree on the analytical framework.

There is no such agreement on single-firm conduct, and why do we have this disagreement? What do we really know about single-firm conduct? But more importantly, do we know what we don't know about single-firm conduct, and the message of this talk, there is a lot of stuff we do not know, and I think we have got to be really careful about policy in this area.

Before I start, I want to thank those who have contributed to my thinking in this area. I thought I would stop taking credit for other people's work once I left the FTC, but apparently not for a couple more years.

Okay, so why is horizontal merger analysis easier than vertical? The biggest reason is we ignore the long-run indirect and strategic effects of horizontal mergers. We focus solely on the short-run increases in market power, and we have relatively good understanding of how that occurs. Most disagreements focus on the magnitude of the effect and how to estimate it. In other words, we disagree about the evidence, but not on the analysis.

The second reason is that we have these distinct mechanisms through which mergers affect consumer welfare: unilateral effects, entry, product repositioning, efficiencies, and coordinated effects. I think we know less about coordinated effects than we want to, but the other mechanisms are well understood. To analyze cases, we gather evidence on each mechanism, and estimate the net effect by estimating the magnitude and likelihood of each individual mechanism.

So, why is analyzing single-firm conduct harder? Well, we are concerned about long-run, indirect strategic effects. We just cannot ignore them. If we did, we would have a very simple analysis. And the second reason is that mechanisms with opposing effects usually appear in a single kind of behavior. Predation is the simplest example. In the short run, firms reduce price, but in the long run, we get fewer competitors.

Vertical integration has the same problem. In the short run, we have the unilateral effect of vertical integration where firms eliminate the double marginalization. But in the long run, we might have a raising-rivals'-costs or reducing-rivals'-revenue mechanism.

Exclusive dealing, again, has two opposing mechanisms. The immediate effect of exclusive dealing is to reduce consumer choice, but indirectly, exclusive dealing serves to align the incentives of the retailer with the goals of the manufacturer. So, balancing these effects is really, really difficult. They appear together, and we do not really have good ways of balancing them.

So, for these three reasons, single-firm conduct is hard to analyze. There is a taxonomy that I borrowed from Tim Brennan that says, let's consider the simplest case where we have some kind of behavior that has only two effects, two mechanisms at work. There is a proximate, immediate, direct, short-run mechanism that we may know something about, but the effects of the distant mechanism are much less certain.

There are four possible outcomes, the distant mechanisms and the proximate mechanisms can both be good or bad. Those are the relatively easy cases. Where we run into problems is when the mechanisms work in opposing ways, where the distant mechanism can be bad or good and the proximate mechanism has the opposite sign.

When you are doing single-firm analysis, evidence determines which box you go in, and most of the kind of behavior we are concerned about goes in either the off-diagonal boxes. The good-bad box and the bad-good box, those are the ones where we run into problems. Most of the problem cases fall into the lower left box where we have a distant bad and a proximate good, and you can think about bundling, as an example.

Bundling offers consumers a better price for the bundle. That is why they buy the bundle, and they are better. But in the long run, the bundle may exclude competitors, and that may have a negative long-run effect. I have already talked about vertical integration, but loyalty discounts and predation give rise to the same kinds of problems.

So, how do we characterize the different regimes? The big difference between the U.S. and the rest of the world is that we disagree on the distant effects of mechanisms, i.e., what is the magnitude of these distant effects and how frequently do they occur?

The Europeans are much more concerned with the long-run negative effects of things like bundling and predation and loyalty discounts, and so they are concerned with avoiding type II errors. If regulatory agencies are uncertain about the effects of single-firm behavior, they are going to make mistakes. They will either deter behavior which is good, type I error, or let bad behavior go through, type II error. And there is an inevitable trade-off: The only way you can reduce type I error is to increase type II error and vice versa.

The U.S. regime is more concerned with type I errors. We are more concerned with deterring good behavior. So, we tend to regulate less aggressively. Europeans are more concerned with type II errors, so they regulate more aggressively. We cannot determine who has the better regime, but we can say that relative to the U.S., the Europeans commit more type I errors; and relative to the Europeans, we commit more type II errors.

The "makes no business sense" standard is really about trying to find cases in that box so we do not deter any good behavior. We miss more bad behavior than the Europeans; but they deter more good behavior than we.

So, the interesting question and the focus of this hearing is, how do we determine the effects? Mike correctly states that the effect question is a difficult counterfactual. How do we know what would have happened had a firm behaved differently?

This requires comparing two states of the world, only one of which we observe. That is what Mike means about the counterfactual. We have to figure out what would have happened had the firm behaved differently.

There are two ways to do it. You can construct a theory that describes competition, and use that theory to tell me what would have happened had the firm behaved differently.

The other way is to use what we call natural experiments, and this is really a misnomer. Any statistician in the audience will cringe when I use the word "experiment," because there is nothing experimental about economics data. We do not get to run experiments with the economy, probably for good reason.

When I talk about natural experiments, I am talking about comparing a market with the behavior to a market without the behavior, and drawing inference about the effect of the behavior by comparing those two markets. The big questions here are how well does the experiment mimic the effect of interest; and did we hold everything else constant that could have accounted for change. These are tough questions to answer.

We would particularly want to draw inference about the distant, long-run, or strategic effects, because we know less about them, and because uncertainty about their effects is the source of conflict between policy-makers, attorneys, and economists. I hate to be so hackneyed, but we need more information; we need more research. However, do we have natural experiments that estimate the effects of these distant effects?

Here is my favorite study. It is from a paper by Mike Vita of the FTC, and it estimates what happened when the appeals court overturned the must-carry regulations for cable TV. Local cable TV monopolists must carry local over-the-air broadcast channels, and in close areas like Baltimore/Washington, they must carry both the Baltimore and the D.C. stations. When the Court overturned those regulations, which stations did the cable TV monopolist drop?

Would the Baltimore cable system drop the Baltimore over-the-air broadcast stations which compete for audience share and advertising revenue, or would they drop the Washington over-the-air stations where they do not compete and can get the same content? And Mike found that they dropped the channels that had the lower rating, and these tended to be the competitors. Competitors were less likely to be dropped, and Mike interprets this as evidence refuting the anticompetitive hypothesis. He found that in the long run a firm will not exclude its competitors, as long as they are carrying a good product. I thought it was a very clever kind of use of the decision to try to draw inference about these long-run distant effects.

Another Whinston natural experiment is Indiana's ban on exclusive territories for beer distributors. After a state law banned exclusive territories, beer consumption fell by 6 percent. Here again, the author concludes exclusive territories were pro-competitive.

Other experiments show that gasoline prices are 3 cents higher in states where refiners are prohibited from owning their own gas stations. For fast food, prices at company-owned stores are 3 percent lower. Another experiment which is pretty messy, and I have given this talk over in the UK, and they fight me on this one, on the banning of tied pubs -- so if you are a beer manufacturer, you can't own your own pub to exclusively promote your own -- you have to carry at least two brands of beer. Small beer manufacturers liked having their own pubs because they were using them to promote their beer, and they thought it was an effective way of competing against large brewers. And once they got rid of tied pubs, price went up and quantity went down. However, there were a lot of other changes that were going on at the same time, so it is a hard experiment to interpret. But more telling was that the small beer manufacturers fought the change. They liked being able to own their own tied pubs and to have exclusives with a pub so they could promote their brands, and sure enough, the small -- the small beer manufacturers were hurt by the change.

At the same time that we were reviewing the literature, Francine Lafontaine, who knows more about franchise agreements than I, and Margaret Slade, who used to be at the FTC and is now in the UK, were reviewing the literature as well, and they used a different taxonomy than we did. We were trying to determine what can we learn about these distant effects, but they were looking at government-imposed changes versus voluntary changes, and they looked at a lot of the same studies that we did. Here is their conclusion:

When manufacturers impose restraints, not only do they make themselves better off, but they also typically allow consumers to benefit from higher quality products and better service provisions. In contrast, when the Government prevents these kinds of contracts, the effort is typically to reduce consumer welfare as prices increase and service levels fall. And they conclude that the interests of manufacturers and consumer welfare are apt to be aligned, while interference in the market is accomplished at the expense of consumers, and, of course, manufacturers.

I would interpret this as evidence that these kinds of arrangements are doing what we want them to do, which is the U.S.'s relatively lenient attitude toward single-firm behavior relative to the rest of the world. I do realize there is a lot that we do not know, and I think it is important to recognize that there is much we do not know.

More importantly, how do we generalize these studies to cases? I am not naive enough to think that in a litigation context we are going to have a nice natural experiment that we can interpret cleanly to tell us what to do in a specific case. However, I am not sure how frequently we have been looking for experiments like these.

I am much less sanguine than Professor Scherer that we know that much about innovation. So, you look at the Intel innovation, who knows what the innovation rates would have been had we had more people in there? Maybe there was room for only one firm in the market? It is a really tough counterfactual. I wish we knew more.

And finally, how do we test for the effects of antitrust intervention? Bill Kovacic has been a real advocate for what he calls competition R&D. When we go around the world and talk to new antitrust regimes, we say, look, don't just adopt a regime and freeze it, because what if you get it wrong? Instead, build in some kind of feedback mechanism, and start with the kind of follow-up studies that are done at the FTC and DOJ. I think they are absolutely crucial to try to characterize what are we doing, and to try to figure out what would have happened had we done something differently, in hope of improving.

So, characterizing what we do and determining what its effects are really tough, but there are some instances where we can figure out what is going on, and I think we have to be on the lookout for good natural experiments.

I guess that is all I want to say.

MR. HEYER: Thank you.

(Applause.)

MR. HEYER: Okay, our final panelist presenter pre-break is Professor Wally Mullin. You have got his bio. He is a professor at George Washington University, and particularly of interest to us I think here is that he has done a fair amount of empirical work on some of the issues we are trying to grapple with. A lot of us have a lot to say about theory, but he has gotten his hands dirty a bit, and we look forward to his remarks.

DR. MULLIN: Thanks. I am delighted to have this opportunity to appear in these public hearings, and I thank the Department of Justice and the Federal Trade Commission for jointly sponsoring these hearings and, of course, in particular, the co-moderators today, Ken Heyer and Bill Kovacic.

So, switching gears, today I want to talk about what lessons we can draw from the history of antitrust enforcement, okay? Now, these may very well be lessons that are kind of in the DNA of current antitrust enforcers, but in the interest of redundancy, I am going to include some of those lessons as well.

So, the initial set of dominant firms arose out of the trust movement in the sort of merger to monopoly way. So, in saying that this should be an area of contemporary interest, you know, I certainly acknowledge that similar economic and legal conditions may never return; however, the historical emphasis can still provide a modern researcher with a relatively large sample of dominant firms which faced antitrust scrutiny. So, as an empirical economist, that is very attractive.

So, I am going to focus in the discussion today, in part, as reflected in my own work, on an admittedly non-random sample of these firms, okay, Standard Oil, U.S. Steel, which Mike has already talked about a little bit, and American Sugar Refining Corporation. So, this choice arises out of a variety of factors. One is sort of the economic importance of the firms, you know, at that particular time, the legal significance of the associated antitrust decisions, and to some extent the similarity and differences in their business strategies.

In work with co-authors, I have studied two of these firms. I haven't published any work on Standard Oil, but other people here have, and obviously it's a well-known case in terms of monopolization law.

So, since all three firms faced antitrust prosecution, we can examine not only dominant firm behavior, but also the effects of prosecution, and we can also study the effects of remedy as implemented or, admittedly, more speculatively, consider the effects of remedies that were not ordered, because in some cases no liability was found.

So, let's start with Standard Oil. My remarks on this will be relatively brief, reflecting sort of comparative advantage issues. So, Standard Oil, right, if we want to have a poster child for different types of dominant firms, Standard Oil was an aggressive competitor, okay? So, while the claim that Standard Oil engaged in predatory pricing has been debunked by McGee, the company had other practices that still marked it as an aggressive competitor. For example, Granitz and Klein in 1996 published an article studying how Standard Oil obtained differential rebates from the railroads on petroleum transportation, and that is a source, according to Granitz and Klein, of their sort of supra-competitive rents, and those rebates, of course, advantaged it relative to other refiners.

Of course, Standard Oil was found guilty and dissolution was ordered, and it was kind of alluded to by Mike, Bill Comanor and he have argued in a paper that dissolution of Standard Oil raised long-term industry performance, and also in that paper, this is counterfactual, it would have been good had U.S. Steel been dissolved.

In his academic work, Bill Kovacic has argued that the effect of this dissolution rests in part on the fact that the dissolution involved formerly independent entities. So, one shouldn't necessarily take this as a dissolution child's story in which everyone lives happily ever after as an automatic indication that structural remedies in all forms and in all circumstances will work. You have to be sensitive to the particular facts involved, but given the fact that Standard Oil was organized as such that what was spun off were things that were in some sense formerly independent or had a certain amount of autonomy within Standard Oil in terms of decision-making, in terms of things like corporate culture, the enterprise was able to grow and prosper going forward, and so my take-away would be that, you know, a different remedy in another industry or even with a firm with a different internal organization and history might have unduly sacrificed production costs, but that is merely a speculative comment with a note of caution.

So, in terms of U.S. Steel, Mike has already touched upon part of this. So, you know, John D. Rockefeller and Standard Oil is the poster child for the aggressive competitor. United States Steel is sort of a poster child for a dominant firm that may be good for competitors and bad for competition, which was something that the Supreme Court didn't realize at the time.

So, in published work with co-author brothers, and it's otherwise hard to find two other Mullins, we have presented evidence that dissolution, which, of course, was never ordered, would have lowered steel prices in that case, in particular, and raised steel output. So, in particular, the pattern of contemporaneous stock market reactions to events from the dissolution suit, okay, basically from 1911 to 1920, not only judicial decisions but periods when it was rumored U.S. Steel might dissolve itself to basically avoid prosecution, and then a denial of that rumor the next week, some subset of the events that I mentioned ended up having big stock market reactions for U.S. Steel, indicating that there was news sent to the securities markets in those particular events, and in those weeks, the stocks of customers, in particular, of U.S. Steel, particularly the railroads, reacted in a way that suggested that the stock market believed that dissolution would have lowered steel prices.

So, interestingly -- and this is a bit in contrast to maybe what Mike Scherer was talking about -- one of the things I also find of interest, and this is part of the tension of monopolization law, is that there are parts, going back to things that might have potentially been sources of market power, that contemporary scholarship would suggest maybe were, in fact, efficiency-enhancing. So, in particular, U.S. Steel was losing market share over time, and you might think, well, wait a minute, is there some sort of scarce factor upstream from steel production that they could use and acquire in order to foreclose entry, you know, or at least put a limit on that, right?

So, historically they were vertically integrated into iron ore properties, as the Carnegie properties had been, and during the period where they were undergoing antitrust scrutiny at the start of the 20th Century, they added to that a significant amount by long-term leasing the iron ore properties of the Great Northern Railway and James J. Hill. So, that is why they are referred to as the Hill properties. And that was viewed as anticompetitive by contemporary antitrust authorities for some reason, as I will sort of talk about in the next slide, but that is not only criticized by the standing Congressional Committees -- the Federal Trade Commission wasn't around at the time -- but the Bureau of Corporation's report criticized it, and, in fact, U.S. Steel ends up cancelling the lease in 1911 in part to try to forestall prosecution because this was that big of deal to the Department of Justice at the time.

Okay, so what might be some of the lessons we take from there? So, as before, of course, the law should protect competition, not competitors. You know, it strikes me -- as I said, I recognize that this would be known by the contemporary court, but it is a good case to assign students, because you have them read the case, and, of course, the Supreme Court is praising U.S.

Steel because its competitors had such nice things to say about it at trial, and the contrast with Standard Oil is pretty stark. U.S. Steel's anticompetitive effect is not only due to single-firm conduct in a narrow sense, but U.S. Steel's actions in organizing the Gary dinners, which it later abandoned, clearly had a collusive intent, and they were also bad for competition, although good for competitors.

So, another tension of monopolization law is that even a firm with market power may have efficiency-enhancing innovations, right? So, the easy case would be in which, you know, if you wanted to do some variation of the diagram, the easy case would be, oh, there are firms that have market power and there are firms that have cost reductions, and they are completely disjoint. I say empirically, that is not the case. In fact, in terms of work that we have done, U.S. Steel was a firm with both elements.

So, in a paper with one of my brother co-authors, okay, we didn't have a falling out over the difference in these papers, orthogonal to that issue, the paper with Joe Mullin examines the Hill ore lease, and says that, on balance, that it seems to be best explained as being efficiency-enhancing rather than as vertical foreclosure.

There are several reasons for this. So, if you sort of back up, the underlying problem of developing an iron ore mine is a problem of relationship-specific investment, something that was studied later by transaction cost economics, both for kind of developing the mine or the investment in the mine, which, of course, is not mobile once it is sunk, and also development of transportation to get the ore or some variation of the ore to market, and that transportation, given where those mines were, was over the Great Northern Railway, which otherwise would have owned the mining rights.

So, the specific contractual terms that were in the lease, which caused the Bureau of Corporations to scratch its head circa 1906, has been studied by people like Crocker and Masten. So, one example of this is they had a take-or-pay provision which was quite large, so U.S. Steel was basically committed to making these large payments, and, in fact, during the initial period of the execution of the lease before it fell under antitrust scrutiny, they were, in fact, investing -- they were basically scaling up to exploit that property at a very high level.

And it's striking, also, in the sense that you might imagine some notion of vertical foreclosure or barrier to entry would be, oh, well, they are going to acquire this iron ore. They have other iron ores. They don't need to exploit it to produce right now. They are just going to sit on it and prevent anyone else from gaining entry to it, but, in fact, they invested heavily in trying to exploit the iron ore.

It is possible, of course, it had an anticompetitive effect, so it is not so much a -- you know, a complete nesting of the hypotheses, but rather, sort of saying, our judgment, my judgment, the bulk of the evidence would be that that particular aspect of their innovation was something that was efficiency-enhancing.

And, of course, the challenge for contemporary antitrust enforcers is what sort of humility should they exercise when faced with some sort of business practice that they don't automatically have an obvious efficiency explanation for? Now, obviously the staff and other people are going to be aware of transaction cost work, et cetera, right, but presumably, we will figure out 20 years from now other reasons why some firms might have some sort of purpose. That doesn't necessarily mean that the behavior is necessarily benign, but that's the situation that requires the people to look at it.

So, finally, love of my life, American Sugar

Refining. So, David Genesove and I have written a series of paper on this. This is one of those things that you don't necessarily know what you're getting into when you start. So, in a paper that recently appeared in the Rand Journal, they profitably engaged in predatory pricing, and that was one of their business practices.

Now, these joint hearings have already included a rich discussion of predatory pricing in an earlier session, so I won't recapitulate that now. We might get into some element of that in the discussion. David and I noted in the paper that compelling evidence of predation is rare. That is reflected not only in the academic consensus, but obviously also in the case law, but we think the evidence that we present in the paper in this case is compelling.

So, in terms of a couple of things to point out, American Sugar engaged in predation. They didn't prey on all entrants. Every single entry episode didn't trigger predation or didn't trigger immediate predation; however, the nature of the market was such that after they preyed, they acquired the entrants and other fringe firms at lower buy-out prices. So, in a sense, if they were making the dynamic calculation, they were sort of saying, well, here's some small firm, it's entering, you know, no big deal. As more firms enter, they are sort of like, okay, well, now it's time to prey and buy people out and raise up our market share.

In terms of trying to rationalize the observations under different theories of business behavior, that manipulation of rivals' beliefs played a very big role as in some of the reputation models. So, once again, it is not as if they sent out a clarion call saying that, oh, they were going to prey and then they were going to buy people out, so, in fact -- precisely because there were multiple firms they were basically preying on simultaneously, there are cases in which they basically made an arrangement with one of the firms to say, okay, well, fine, we are going to buy you out, here are these terms, but let's keep this secret, and so -- and then continue the war, and then buy out the other firms.

So, in some sense, part of the aspect of kind of buying out firms and engaging in predation is that the process is sort of the reverse of what we are calling the free-rider problem when you form a trust, right? If you form a trust, you are going to restrict output, and so people will want to stay outside of it and just take advantage of the output lowering entity.

Conversely, if there's predation going on, and you know there will be a buy-out and the predatory pricing is going to end, of course, people also want to free-ride on that. So, the manipulation of rivals' beliefs is I think part and parcel of being able to be successful.

So, there was a monopolization suit, and it stretched on over a period of time, that eventually resulted in a consent decree. But there are some other sort of, you know, maybe, you know, happy lessons here that antitrust serves as a deterrent on a variety of levels. Part of the rationale of the antitrust law is to be punitive, but obviously you also want to think, well, gee, you hope other firms get the message and we don't have to go prosecute them, or this firm in the future, once bitten, twice shy, and so will behave better, and have some sort of implicit consent decree.

So, there are two examples of this, and one deals with American Sugar and one deals with other firms. So, during its monopolization case, American Sugar underwent sort of partial "voluntary" dissolution, so this was before the consent decree, because of the government victories in the American Tobacco and Standard Oil cases.

So, focusing on American Tobacco or Standard Oil as cases, those basically had a spillover effect on the behavior of another firm, in this case American Sugar, and presumably other firms. The difficulty of the non-random sample is, of course, it may be that the whole universe of firms behaved differently, which is a reason why people should do more work on it.

Later on, there is also an impact on American Sugar itself. David Genesove and I also studied not a single-firm conduct, but in terms of collusive conduct, we studied The Sugar Institute of the twenties and thirties, of which American Sugar was the largest and most important member, but no longer as large as in 1911 or 1914.

So, this is noted in our AER paper, even though it wasn't the focus of that paper, which was that the legal representatives of American Sugar at these basically collusive meetings within the industry were very sensitive to things like discussion of price. That was a part of the battle, in a sense, within The Sugar Institute, one person complaining to his boss, oh, gee, we are never allowed to do anything that's going to have any real effect, and so that may just be the wise counsel of American Sugar at the time, but one has to think that the fact that they had had this antitrust prosecution was something that empowered people within the firm to say, okay, compliance is important. It is certainly something you think that going forward would be an important part of antitrust enforcement.

So, all I have for now.

(Applause.)

COMMISSIONER KOVACIC: Thanks, Wally.

I would now like to invite Jon Baker to present his comments. Jon, as you know, like Mike and Luke, is part of the galaxy of superb economists who have headed the Bureau of Economics at the FTC. In addition to Jon's affiliation with the Commission, in many ways he's been what I consider to be hitting for the scholarly cycle. Not only has he done excellent quantitative work, both at the Commission in matters such as Staples, but also, in his own published work, he has contributed wonderfully to theory. In studying the deliberations that took place over the Verizon-Twombly matter, I many times went back and referred to Jon's paper on two Sherman Act dilemmas from the early 1990s. And quite apropos for this panel as well, Jon, like so many of our presenters, has a good aptitude for history, reflected not only in his survey paper in the JEP on competition enforcement, but also in his recent paper in the Antitrust Law Journal on the development of widely accepted norms and standards, and his political bargaining paper. We are delighted to have Jon here today.

DR. BAKER: Thank you. Thank you, Bill. That was a very nice introduction. It is not what I would expect from a case book co-author, but I appreciate it anyway.

COMMISSIONER KOVACIC: I should have added, he is the co-author of the most astonishing and --

MR. HEYER: Copies on sale in the lobby.

COMMISSIONER KOVACIC: During the break, there will be the signing process --

DR. BAKER: And I am always delighted to be back to see all my former FTC and Justice Department colleagues. I worked with Ken and Luke back in the old days at the Antitrust Division.

Well, so let me -- I have a -- sort of several comments on what we have heard this morning. They are a little bit disjointed, and I will just get into them and see how far we get.

The first is on the question of what can we learn from the old monopolization cases. On the one hand, there are very few of them. They are often high profile, but there aren't many, and a lot of them were reviewed when antitrust standards were very different than they are today and when ideas about remedies were different than they are today. I don't think we would remedy the Standard Oil monopoly were that to have appeared today anything like the way it was remedied then. We would have tried to get the parts that were broken up to engage in head-to-head competition from the beginning.

So, there's something funny about this exercise. The -- you wouldn't -- it's a little like saying, well, what can we learn about merger analysis from studying Pabst and Von's, you know, some poster children of merger cases that are no longer thought to be good precedents, although they are technically controlling Supreme Court precedents, as an aside.

Well, what we learn from Mike Scherer and Wally Mullin, I think, is something that perhaps we have always known, which is the value of careful case-specific analysis. This is what the judicial system at its best makes possible.

Now, that's not to say that the courts have always undertaken this -- the adversarial system has always forced the same level of analysis that later scholars have been able to bring to these cases. I mean, it took 50 years, but the Mullin Brothers finally got to the bottom of the U.S. Steel case. One would like that to have happened, in the case itself. But on the other hand, it shows you the power of case-specific analysis to hear Mike and Wally go through what they have learned about these cases.

That's not to say that their conclusions are undisputable, but the kind of analysis they do, they can focus in on the issues, and it really does support the kind of work that we do in the enforcement agencies and the courts.

Now, let me move on to say something about the issues Luke raised. It struck me, one interesting point is the short-term focus, Luke says, of our antitrust thinking. He didn't quite put it this way, but I mean I guess I'm a little -- I read it in the light of also thinking about a paper that John Lopatka and Bill Page wrote where they argued that antitrust enforcement courts are more congenial to -- or the decisions, I suppose you would say, the decisions are more driven by the short-term benefits and costs than the long-term ones.

If you take that perspective and think about Luke's charts, it seems to me that one message is we shouldn't just give a free pass to all those kind of practices in the lower left box of Luke's taxonomy: Price predation, bundling, vertical integration and loyalty discounts. These are things where I think Luke says the proximate effect is good and the distant effect is bad.

Now, I suppose that my characterization of the implication of those boxes is a little different from Luke's, but in order to go beyond the picture Luke drew to an enforcement regime that gives a free pass -- well, free pass is a little strong -- but that makes it tough to bring cases in the lower left-hand box, you have to take another step in the logic. You have to argue, as some people do, things like the Government can't do a good job analyzing these practices, separating out the two kinds of effects, and remedying it, and you have to conclude that the costs of one type of error are greater than the other. There's a whole additional apparatus that we have to apply before we can reach the conclusion that antitrust should be hands off on all these practices.

In thinking about Luke's taxonomy a little more, I started thinking about most favored customer clause cases or most favored nation clause cases. The Justice Department for a while had an enforcement program involving dominant firms that instituted these kinds of practices. It was a dominant health insurer that had a most favored customer clause in its contracts with healthcare providers, and I'm thinking of -- was it Delta Dental, there's a bunch of Delta Dental cases, and

I think there's some other ones.

So, the idea was the provider, the doctor or the dentist or whatever it was, wouldn't lower rates to rival health insurers without also lowering it to the dominant provider, let's call it Blue Cross, and so that makes it impractical for the rivals or the entrants to make procompetitive deals; that is, rivals to Blue Cross. Insurers want to come in and say if you give me lower rates, I'll funnel more business to you, the provider, and we will both do better, and then this creates competition for Blue Cross.

Of course, these most favored customer clause provisions can also result in collusion by making discounting more costly, but we are in the dominant firm context here, so we will put that aside.

The interesting thing about these most favored customer clauses as a practice is that there are efficiency justifications that are often offered, but in a health care setting, they are not very plausible. The best efficiency justifications are either preventing opportunism when futures markets are unavailable, which sometimes happens in long-term contracting where you see these kinds of provisions, or perhaps signaling low prices where buyer search is costly, and these are the kind of -- here, we're thinking there about retail businesses selling to customers.

Perhaps Luke will say to me I just moved these provisions in the health care context from his lower left box to his upper left box, where the efficiency justification isn't very good, and so there isn't a problem, but I think if you accept what I have gotten to so far, that these provisions can be troublesome for dominant firms to contract using them in many of these health care contexts, you have to ask, well, when we move outside the health care context, perhaps to one where the efficiency justification is potentially more plausible, don't we have to analyze? Don't we have to think about whether the bad guy story and the good guy story -- which is more powerful as between the two? So, my take from Luke's taxonomy is we ought to think hard about practices in the lower left-hand box and analyze them as best we can.

On natural experiments, Luke, I think you missed an opportunity when you were talking about experiments. I have a new motto for the FTC, and this really would be your motto, not mine, "We fool around with the economy every day." Natural experiments are fine in principle -- that was just a joke -- natural experiments are fine in principle, and I basically am sympathetic to what Luke was trying to do with them.

Tim Bresnahan and I have a recent paper where we talk about something similar. We say that a key challenge for antitrust analysis and empirical industrial organization economics going forward, which is not recognized in antitrust to the same extent that it's recognized in economics, is to exploit similarities among related industries that focus an inquiry involving the industry and the firms under study. We have some examples different from Luke's, but I think the spirit of the exercise is similar. An important question, even assuming it's a good natural experiment, is what generalization you can make from it.

Tim and I think that the right generalization is the level of the industry. In other words, I would look at some of the examples that Luke has about -- oh, I don't know, gasoline divorcement or something like that, but not -- and perhaps that would create a presumption about gasoline retailing, but I wouldn't connect the dots and generalize to all vertical restraints. All of Luke's examples, for example, in his representative studies are about manufacturer- distributor relationships in consumer products. They do not tell us much about most favored customer clauses, for example, in health insurer contracts with providers.

Finally -- I am not sure how much time I have left. Do I have time left? Okay.

MR. HEYER: Is it good?

DR. BAKER: It's not as good as what's happened already, Ken. I don't get better.

No, I think I'll just stop right there, and I will -- it's not that good, Ken.

MR. HEYER: Save it for the discussion, all right.

DR. BAKER: We will save it for the discussion. Thank you.

(Applause.)

MR. HEYER: The final person we are going to hear from before the break is Cliff Winston, who you'll see is a long-time economist at The Brookings Institution and has done just an incredible amount of empirical work, largely having to do with regulated industries but not exclusively, and partly because he's really taken on some tough challenges empirically, he seems like a perfect person to invite to talk here, and let's just hear from Cliff.

DR. WINSTON: Thanks a lot for inviting me to this conference.

Let me, since I'm a little bit on the fringe in this enterprise, sort of tell you my context and how I was thinking about this and eventually how I synthesized what we have heard.

When Jim Taronji called me about this, my sort of immediate perception was you were planning a series of conferences that were basically assessing the antitrust activity at the federal level of DOJ and FTC, and I naturally thought this, and it turns out that -- I had just finished a book called Government Failure verse Market Failure that looks at all areas where the government intervenes in trying to correct market failures, including but certainly not limited to market power, but information problems, externalities, public good, public production and the like, and figured, well, this is right along the lines of what I have just written up, and so I can sort of look at what you're doing from this perspective.

But I also pointed out that I was going to be away a couple of weeks before the conference and literally just got back late the night before, so it would be good if I got the presentations beforehand. Otherwise, you know, I would have to be on the fly, but I thought there obviously might be difficulties in getting things to me, and I was checking my web when I was in Europe, but late last night, I realized a couple had come in, but unfortunately one was in WordPerfect, and Brookings doesn't use WordPerfect. I assume Mike does this as a protest against Microsoft. I like WordPerfect better. So, I didn't have them, but I did have a fall-back position.

What I was going to do was sort of outline a template, in general, about how I would assess the performance of a federal agency and what recommendations that I might make in terms of improving performance, set that up, say, okay, and I'll just plug in everything I hear in these areas.

So, let me outline the template and then just make a few comments on what we've heard. So, the first thing in general that I would ask and think about for any federal agency is, is there compelling evidence of a problem to begin with? That is, you know, are there some stylized facts, summary measures of welfare, you know, that something is going on, you know, information problems are costing consumers hundreds of millions of dollars a year, monopoly is causing similar kinds of costs?

Okay, the first thing, just get a big picture overview, when I do these things with transportation, it is very easy, because I can just point to graphs of the lake, there is a problem, congestion going on, airline delay, going up, there's a problem, not too much controversy about that.

The second question one would ask, you know, what is the scholarly evidence -- when I mean the scholarly evidence, I mean quantitative, welfare type calculations, and certainly counterfactuals isolating the effects of other factors, on first market failure, what do we know about how markets are performing or not performing, since they may be the source of the problem, and government failure, that is, how are governments doing in all of this, and third, government success. So, you know, here are the things you want to look at from the bottom up, the little pieces of evidence that we look at to assess the agency.

Then the third thing, since this really is a scholarly enterprise, when I ask the big picture question, where is the field going? You know, since we're getting a lot of the intellectual infrastructure from the scholars who work in the area, how does the field look at this problem? What kind of research are they doing? Where are they likely to help in the future, if at all? Are there incentives the agency could give to researchers to sort of get them focused on problems that they are interested in, so on and so forth?

And then finally, you know, given one, two and three, where do we go from here? How do we put all this together and say, okay, here is how I think you can improve your performance and your interventions, or here is what I think we, you know, we need to know before we can give confident recommendations.

So, let me go through these now with an eye toward what has been said and what has not been said about them. Okay, first, the big picture question, I didn't really hear exactly what I was looking for there, but there's a reason. It's really hard. They are trying -- and I think it is one of the big problems -- maybe the biggest problem with industrial organization, is unlike other fields in economics, there isn't this stylized fact that you're constantly facing that reminds you of what's going on out there.

It's not like in labor economics where you hear about what the unemployment rate is, okay, or the percent of people below the poverty line. You hear these numbers, you know, these are the kinds of things that researchers get to work on in dealing with this. It is not like trade where we hear what's going on with the dollar, the trade balance. Recently, it just came out about we now have sort of have negative net capital funds, I assure you now a lot of paper is going to come out about this, trying to explain it to us, what is going on, so on and so forth. You can think of a whole bunch of things, but when you talk about IO, yes, your instincts are well, we want some measure of economic welfare, but that's not presented by the Commerce Department. It's hard to construct that kind of thing.

Now, that said, there was an effort to do that. In the sixties, there was a lot of effort to think of things in terms of concentration ratios, and that was sort of our stylized fact, and there was even a Commission, the Neal Commission, you know, that met and made recommendations about, you know, deconcentration of industries that exceeded a 70 percent level of concentration, and that may not be something that people take seriously today, but there was a time when that was sort of an orientation towards thinking about IO and even antitrust policy, okay?

But there really isn't that, which is a bit of a concern, because you never sort of know, well, are you working on a problem that's really important? And the only one who talked about that was Luke in terms of motivating -- while we care about this, and he said this in terms of, you know, apparent disagreement or I would say just different approaches toward antitrust policy between the U.S. and the EU, and I just simply say, well, does that signify different concerns with the same problem?

To the extent the U.S. is less aggressive and more permissible and allows certain things to go on, does it basically feel that competition is pretty intense, and maybe this is just signifying we really don't have that much of a problem, whereas in Europe, they might feel that there is more, but this is certainly something to think about.

Okay, secondly, the scholarly evidence on the various issues, you know, first, looking at market failure -- and I agree completely with Mike, it's an excellent point, a point that is not made enough, that too much of economists' orientation on market failure is static inefficiencies, so price distortions and the like, where so much of the big gains from policy improvements are the dynamic ones, because that's the counterfactual that you don't see.

So, if you look at what we've learned about deregulation in terms of what regulation we're doing, the big ticket effects were suppressing innovation, right? So, there you get, you know, more than first order effects. You get really big effects, you know, shifts of cost curves as you completely change what you're doing, shifts of demand curves where you provide new products, okay? So, to the extent that a dominant firm is working like a constrained regulatory policy, you know, the effects can be big.

Now, that said, you know, measuring these things are very difficult, and, you know, it's not clear to me that we really have hard evidence on this kind of thing. I think the anecdotes are informative, but it would be nice if there was a really strong body of literature on the dynamic effects of delayed innovation, so on and so forth.

I would also add, though, just for balance, more emphasis on the self-correcting nature of markets. All the time you are listening to these firms, they are all dinosaurs, right? Look what's happened to them all. Mike mentioned U.S. Steel. Look what happened to them, right? And it was foreign competition, the mini-mills, right? I mean, look at the auto companies, you know, look at Ford, GM, and it's amazing. You know, go on down the line. Now, this does take time, but I think, you know, it's important to keep in mind the self-correcting nature of markets in all of this.

Along with that, then, is the parallel of government failure. Now, there are parallels of all the policies we're talking about. Antitrust is not made in a vacuum. Everything that you're talking about intersects a lot of major policies. Trade protection, for example, right? You know, more often than not we hear about, well, we need more competition in the airline industry. Yes, let's allow cabin -- oh, no, we are not going to do that. So, here you have trade policy effectively working against what antitrust policy is trying to do.

We talk about technology policy with no mention of what happened in the early 1980s with the change in the patent law, right? Patents are going up now, lawsuits are going up now, you know, talk about, you know, impact on innovation and technical changes, look what's done in technology policy. That's not antitrust policy, but it's the crazy patent system that we've got now with, you know, the change in the '82 Act.

Regulatory policy, Luke's point was fair enough about cable behavior, but again, it's a regulatory policy that's facilitating that, you know, the whole communications regulatory policy is screwed up. Again, this is not antitrust's, you know, cross to bear, but to some extent, it is. So, where you have a policy that is constantly at cross-purposes with other areas of what the Government is trying to do, it is going to make it very difficult for you to figure out to do, but I might add, the first best thing to do would be to have a technology policy, regulatory policy and trade policy that makes some sense, okay?

Government successes, you know, I think the key thing on the government successes is almost more of the learning rather than the status assessments. You know, Standard Oil was interpreted as a success, and let me just suggest that there is some controversy about that, Bob Crandall and I head our exploration on antitrust policy, and you know, our look at what the counterfactual evidence was that, you know, there was very little that we could see from changes in prices, if one wanted to use that as a measure of welfare, and it is certainly not a reasonable starting point for what Standard Oil did.

I think the more attractive thing that I would point to about antitrust is the learning just how one thinks about problems in terms of anticompetitive -- what was initially thought of as sort of knee-jerk anticompetitive reaction as to whether these things were really efficiency-enhancing types of behavior and also just the nature of dynamics, how things are changed, and I think that's where antitrust policy has gone and is certainly a lot better.

Now, the big thing about all of this and my concern about this whole area is the effectiveness of this evidence accumulated, because that's what you really want. In certain areas, just to go to a completely different area, you know, one's seen study after study about congestion policy in this country, every one of them, huge welfare losses, the Government ought to have efficient pricing, and no one is really disagreeing with that. There are obviously variations from here to there, but the evidence really builds beautifully, and you can just sort of drop it on somebody's lap and say, okay, look, deal with this, and it's easy to do that.

Here, it is quite hard. I mean, yes, there are fragments of evidence, cases here and there, and as I said, what Crandall and I attempted to do was actually get a base case for a starting point of saying that this -- and if you disagree with that, fair enough, but at least build on that, reshape it, and then start adding more, and frankly, the disappointment has been, at least in the reaction to that paper, is, you know, I could -- is predictable either pro or critical antitrust people reacting to it, but in terms of actually new evidence being added to the enterprise, that just doesn't seem to be what idle people care about these days, which leads to my third concern, where is the empirical IO field going? And there was very little mention of that here, and with good reason.

I mean, it is not clear where it is going in relationship to your interest in what is going on here. I mean, my sense, as I would say more of an observer than a participant, that empirical IO is sort of trying to get "uber" dynamic model of industry behavior, you know, that's what we're looking for, for the -- what's the word -- the Holy Grail, I guess that's because I saw The Da Vinci Code on the plane. That's what we are trying to do, and to the extent there's empirical work, it's pretty much demonstration papers, right?

I mean, a lot of them are really pretty trivial, you know, you can get data on it -- and I won't go into examples, but you know what I'm talking about, and you know, who cares? And they don't care. They just want to show, yeah, I can get something estimated with some generalized method of moments estimator and add some structural stuff and something is going to get there, and yeah, I'll talk about an industry, about some hotel off a Nebraska highway, no one cares, but you know, the results actually made sense.

The question is, where is this research going? Now, I don't want to rule this out, because this is a big ticket item. If people can succeed -- and this is I think really the positive spin on it -- in really building, you know, a structural dynamic model of an evolution -- structural dynamic model of the evolution of industry, to hell with these case studies. You have got your tool, right? You just use this, run through any policy scenario, and you could figure out, you know, where things are going, what you ought to be doing, and that is your guidance.

Well, you know, we've tried that with Keynesian models (ph), we have tried that with rational expectations, we have tried that with real business cycles, you know, in a sense it's a parallel to macro that we are really going to figure out in a big picture way analytically how markets behave, industries behave, and that will be your guidance for policy.

So, you know, that's where it's going. It's not intersecting I think small case studies will build up, it is not doing thing in terms of big picture facts, even motivating what's going on, what people view to within industry seems to be more the availability of data and possible consistency with the analytics they want to pursue.

All right, so, you know, where does that leave us? Well, you know, there are three ways to go, and to some extent you can pursue them simultaneously, you know, you can think about first looking more what the IO field is doing, the general model, that kind of work, or I would say more constructively try to focus that kind of work on the types of problems that you are interested in.

The case evidence, I guess, you know, my concern there is just whether it's accumulating, is it likely to accumulate, because otherwise it won't be all that helpful. You will continue to just have patches of evidence that just don't seem to bind together to tell you anything in general.

My interest is really going back to the first one, which was abandoned, and probably for good reason, is getting broad summary measures -- welfare measures of industries, conservation measures is obviously one, and work on quantifying the welfare loss from monopoly -- and that line of research obviously had its problems -- but there was a start of work I remember by Bobby Willig, Dansby and Willig on trying to come up with industry performance measures that I thought was promising, but I think it went out very quickly as people turned over to conduct, and so that work never went anywhere.

But I think that it might be useful to think, at least in some way, along those lines for this agency. There are broad ways of gauging industry performance, you know, is there really something systematically wrong with what is going on with U.S. industry? Are we seeing anything that is now, you know, sort of really threatening a $13 trillion economy, or, okay, there are some bad guys, we know that, every once in a while certain things are going to go on, but the truth is markets are self-correcting, the world is getting more competitive all the time, you know, what do we have to do?

I would not say at this point we're ready to say where to go. I would just sort of step back and reflect on various approaches and see what makes the most sense.

(Applause.)

MR. HEYER: Okay, we are about to take our break. We are going to be joined afterwards, there will be some remarks and discussion involving two of the other panelists, Dave Reitman and Bob Marshall. I would encourage people to think during the break about maybe picking up a little bit on what Cliff ended with some and other comments that were made about, say, the issue of empirical anecdotes and what can be generalized from them or not, should we be focusing more on case-by-case analyses, or is there some kind of broader policy guidance we can learn from the empirical work?

Anyway, let's take our break, and we will come back -- what, 15 minutes?

COMMISSIONER KOVACIC: About 15 minutes.

MR. HEYER: Fifteen minutes, all right.

(A brief recess was taken.)

MR. HEYER: Okay, so let's resume.

The way we thought we would do it is Dave Reitman and Bob Marshall are going to give short presentations before we get into what hopefully will begin with a round table discussion where maybe some of the panelists and the discussants will comment on what went on this morning and respond to one another, elaborate on one another's comments, and then if we run out of things to talk about, Bill and I will have a lot of important questions as well.

So, we will begin with Dave Reitman. Usually when people introduce others they say, "It's a pleasure to introduce so and so," even if they don't know them from a bar of soap. Dave is a pleasure for me to introduce because I know him very well, and he is relatively soft-spoken but incredibly talented economist, and he has one other thing that makes him a particularly valuable addition to this panel, I think, is that unlike most of us who have done a lot of maybe talking and thinking about some of the issues that are raised by the topic, Dave has worked in the trenches on them.

He was the Government's expert witness in U.S.

v. Dentsply and did an extraordinary amount of both theoretical and empirical work on that case in the course of testifying, and he also did a great deal of empirical work in support of our experts in the American Airlines case, which, sadly, never actually got to trial, but I'd be interested in Dave's comments both general and specific on these issues.

Dave?

DR. REITMAN: Thanks, Ken.

As Ken suggested, I just want to give a few comments today as an antitrust practitioner about the value of empirical tools, empirical work, in presenting an antitrust case. It's really become clear listening to the panel this morning that in doing a case, often we are really talking about exceptions, that even if you're convinced that exclusive dealing 90 percent of the time or 99 percent of the time is beneficial, leads to lower prices and some of the things Luke had in his slides, still we're looking for the exceptions at the time when it's used as a deterrent device or an exclusionary device, and so the question is, what kinds of tools can you bring to bear when you are looking at a specific firm in a specific industry and a specific practice?

Again, as Ken said, my background, my tenure at the DOJ, I was involved in two extremely lengthy litigated Section 2 cases, and both of them involved a fair bit of empirical work. American Airlines, I really think there was a tremendous amount of empirical support for a variety of elements of the case, and then Dentsply, the Government ended up commissioning a survey to try to measure some of the effects that were going on in that market.

Now, if you look just at those two cases, you have to say that neither of those was a great testimonial as to the value of empirical work actually going forward and presenting the case. In American, as I said, there was all this empirical evidence brought to bear, and yet the case never made it past the summary judgment phase. In Dentsply, the survey was presented and the analysis based on it was presented at the District Court level. The District Court Judge threw out the survey as being unreliable and decided against the Government. Then the case was appealed to the Third Circuit, which without the benefit of the empirical evidence, was nevertheless able to reverse the decision and decide in favor of the Government.

So, you might look at that and say, it doesn't seem like the empirical evidence contributed much. There are other cases along those lines that you could point to in recent years where you would say it's not clear that you really need to have the empirical pieces in there. So, just to give one more example, if you look at the LePage's case, where a lot of the commentators looking at that have said, it really would be nice if we had more evidence here, more data, so we could decide between these competing theories on whether this is procompetitive or anticompetitive. The Solicitor General on the cert petition before the Supreme Court really echoed the same things, we really would just like more information, and yet the plaintiff was able to present that case and win it without having done the kinds of empirical things that the commentators would have liked.

So, I'd like to just spend a few minutes looking at the American case and the Dentsply case and talk about what really is the value of going through and doing the empirical exercise, and it may be just by the magic of self-selection that in this room we're kind of preaching to the choir, but nevertheless...

Let's start with the American Airlines case. The airline industry is one where companies involved collect a lot of data themselves and the Government collects a lot of data. So, there's a tremendous amount of data that's been a mainstay of the empirical IO literature, and so it's only natural that a monopolization case involving the airline industry would have a lot of empirical work in it.

The Government's main expert in this case, Steve Berry, is a preeminent empirical IO economist, and he brought, as I said, empirical evidence on virtually every point made, and a lot of that is not in the public record, as there was no trial, but just to give a sense of the scope of the empirical effort, you may recall that what turned out to be the Government's main test for predation when the case went up for appeal was what was called Test 4, which suggests that there are at least three and maybe a lot of other tests that economists turn to to try to find the right way to take the data and to sort it out and to say this is the right way to classify what is predatory and what is not.

So, what, again, is the value of having that empirical test for predation? And to answer that, let me just go back a little bit farther in time. Not long after I started at the Justice Department, Joel Klein came aboard as Deputy Assistant Attorney General, and he was making the rounds to the different sections to introduce himself, and when he came to EAG, one thing I remember from his presentation was he quoted from "The Four Quartets" by T.S. Eliot, and he quoted, "We shall not cease from exploration, and the end of all of our exploring will be to arrive where we started and know the place for the first time."

I actually have no idea at this point what Joel's point was for quoting that, but it does seem to apply nicely to the American case. The theory of what happened, the basic story never changed from the very beginning, before the complaint was filed, which was American added a bunch of flights and routes where it competed against low cost carriers and drove them out of the market, but the understanding of the way that mechanism worked, really why it worked and what it was, really only evolved by really years of wrestling with the data and trying to get a handle on what was going on, and so the end, when we looked at sort of the final presentations and the appellate memos, we said that the Justice Department really seemed to know what they were talking about and what they thought had happened, which was that American Airlines was able to, by adding flights, was able to take demand away from its competing low-cost carriers in a way that it simply couldn't do by lowering prices or by removing fare restrictions, but the cost of that was to reduce load factors and push American up to that increasing part of the marginal cost curve to the point where the incremental cost of adding these additional flights was above both the average cost of serving the route as a whole and also the incremental revenues received from the passengers.

So, there's a test that, you know, when you arrive back at the place you started, you understand it, and I certainly don't want this panel to start to brew up a fight about whether that was a right theory or whether there really was harm there. The only point is that we really didn't understand what we were saying, what we had, until that process of wrestling with the data, really getting into it and being able to say, this is the test, which at least for this company in this industry in these markets is able to distinguish what looks like predatory behavior from all the other routes they had, which, you know, generated essentially no false positives.

So, anyway, whether that's a legal analysis is for the courts to decide, but that was the value of the test there.

If we could turn to the Dentsply case, which is sort of toward the other extreme in terms of the amount of data available, this is a market where exclusive dealing had been used for at least 15 years. Following the kinds of things Luke was saying earlier, we looked around for what we could use as a natural experiment, and one thing that may be a potential was to compare the policy in this country with other countries, but that was ruled out fairly early on by the Court. So, we were left with not a whole lot of empirical evidence to go on.

To fill in the gap, what the Government commissioned was a survey of dental labs, which are the consumers of the dental teeth that were subject to exclusive dealing, and among other things, the survey asked respondents how they would choose among brands of teeth given various prices and distribution combinations, and so from those responses, you can then map out demand, service, and estimate or quantify what the anticompetitive effects were from the exclusive dealing policy both in terms of pricing and in terms of market shares, and that quantification was important.

Dentsply has been characterized by some as, you know, as an easy case, or as in Luke's slide this morning, it's one where the aggressive behavior was bad in the proximate term and bad in the distant term, right? But the only reason we're able to say it was bad all around is because the District Court ruled that the procompetitive explanation and justification that Dentsply put forward was pretextual.

If you look at the case before the decision, before the trial, before even the decision to bring the case, it's not at all implausible that exclusive dealing would have some advantages in aligning the incentives of Dentsply with its dealers and that that would generate some benefits. You may recall the particular mechanism that Dentsply eventually put forward seemed to be inconsistent with the facts, and so given how long exclusive dealing had been in the market, it was tough to be able to say how much competition would benefit by removing the restrictions on dealers, or to say that the benefit from eliminating competition or eliminating the restriction would be larger than these amorphous benefits from aligned incentives without some sort of systematic study of customer preferences.

As it turned out in the case, of course, the weighing -- it turned out -- it proved to be easy, because we could sort of rule out procompetitive benefits, but more generally, looking forward, there's almost always going to be this kind of possible trade-offs between the procompetitive and anticompetitive story, and some quantification is vital in determining that effect.

So, that leads to a third benefit of empirical analysis in looking at these kinds of monopolist practices, which is just in terms of lending conviction about understanding what really happened or what we think is happening in that particular market. We could talk about this both in the context of American and Dentsply, but I am going to stick to Dentsply, because as Ken said, I was a testifying expert in this case, and I suppose as a testifier, there is not a huge difference between saying what could have been happening in a market and what did happen. In both cases, the disparate evidence you gather from different sources and try to piece it together in unified whole, which gives you the best plausible explanation of what was going on in the market, but at least for me, it made a great deal of difference in crossing over from could have happened to it did happen to be able to actually see that effect quantified in the survey data.

That is to say, my conviction that Dentsply's dealer criterion had actually harmed competition was crystallized just by being able to see it in the numbers after analyzing the consumer preferences that came out of the survey that had been commissioned, and it crystallized it in a way that I wouldn't have been able to achieve just by looking at documents and depositions and all the other evidence, even though all of that other stuff was consistent with the same conclusion.

Now, of course, the lessons we drew from the survey were not uncontested and will never be uncontested in this manner of case, and the level of conviction didn't seem to make much difference to the District Court, since they concluded that the survey itself was unreliable, but I do have to believe that the whole testimony was made stronger by having conviction about key parts of it that were reinforced by the survey and that empirical evidence contributed a great deal to that sense of conviction.

So, that's really all I wanted to say as sort of a little ode to the value of empirical research in these cases. Hopefully, not a eulogy, I don't think it's a eulogy, but there's value in knowing what you have, value in having confidence in that, and then just being able to quantify how much difference it makes in competition, and those things are not always going to carry the day, like they didn't in these two cases, but they are nevertheless important to preserve for future cases.

Thanks.

(Applause.)

COMMISSIONER KOVACIC: Thank you, David.

Our last presenter before we turn to a discussion is Bob Marshall, who heads the economics department at Penn State and co-directs ITS Center For the Study of Auctions, Procurements and Competition

Policy. Bob's on leave this year. He's serving during that time as a partner at Bates White.

Our interest in asking Bob to come today, again, is related to a major strain of his own research. He frequently has married both empirical work and theory, a great deal of it dealing with auctions, procurement and collusion. Bob's going to tell us a bit about lessons that might be derived from that body of work for dominant firm behavior.

Bob.

DR. MARSHALL: Thank you, Bill. If you got too flowery, I knew that means you would be late with some of the things you owe me as a co-author, so it's good to hear that it didn't get out of hand. I am going to give a brief overview and then I will get into some of the slides.

So, I do a lot of thinking about cartels and cartel behavior, so I understand Section 2 is not about cartels, but a cartel is like, I would argue in many cases, a single dominant firm, and cartels often go beyond just the suppression of interfirm rivalry in their actions. In fact, I am going to show you a number of things where they go into behaviors that we would think about as Section 2 violations. So, what we are going to try to do here is tell a compelling story that we can get some window into understanding Section 2 through the behavior of cartels, and hopefully there's some additional tractability in terms of empirical analysis that comes from that. So, that's the gist.

So, there's some fundamental difficulties of Section 2 analysis. So, benchmarks are real important in terms of doing analyses particularly of cartel behavior. We like to think we have got a period of time, for example, when firms are acting in a noncollusive manner, and then we can look at this other time period of alleged conduct to see what's going on. With ongoing dominant firm behavior, that's often not there, and that creates some difficulties with doing Section 2 type analyses.

Then there's an issue of what is legal and what is not for a dominant firm, and that usually doesn't arise in the analysis of cartels. When a cartel suppresses interfirm rivalry and then it goes off and predates and then it goes off and engages in exclusive dealing, no one calls us to say, "Well, I wonder if that predation was really predation or if the exclusive dealing was really exclusive dealing of an anticompetitive nature." The fundamental premise that cartels function under when they get together to suppress interfirm rivalry is to suppress competition.

So, when they engage in these behaviors, it's somewhat doubtful to think that they're thinking about some social good that is not about suppressing competition.

So, I have already explained that we can think of a cartel as being something like a single dominant firm, and they can be highly heterogenous. Some are struggling to maintain internal cohesion and stability. Defections might be occurring; finding a mechanism that works may be difficult. For others, those things might be easy to attain and settle in very quickly. The central goal is the elevation of prices and profits, but then we see these other behaviors that start to merge, and I will go through examples, predation, blocking of entry, exclusive dealing, bundling, tying. Again, part of cartel behavior.

So, there's some interesting empirical questions that are immediately posing themselves here. Why do some cartels engage in these Section 2 like violations but others don't? And what's the advantage of looking at this through the lens of cartels? Well, there is a rich discovery record typically in place for some cartels because they got busted, and because a lot of them got busted, it means that we're able to look at starting dates, ending dates, and we're able to say, Oh, okay, so this is when the behavior began; this is when it ended. This is when the antirivalry behavior began; this is when it ended. This is when the monopolization behavior began; this is when it ended.

Now, you may say, well, perhaps those things are coincident and difficult to separate, the antirivalry behavior and the Section 2 behavior. A lot of times what we will see as we look through some of these cases that I'll pose here is that the anti-rivalry behavior is the first thing that happens. You have got to get that set up first when there's running of a cartel. It's then later, as the cartel reaches some maturity, that it starts to investigate other sources of profit, and that's where we get to the Section 2 violations.

I do this when I teach my "Economics and Collusion" course at Penn State. These are Porter's Five Forces. Now, in business school, this is basically Business School 101, so let me explain why I put this diagram up and what it is. These are the five forces of competition that affect a firm's profits. So, this is from Michael Porter's competitive strategy book.

In the middle of this diagram is interfirm rivalry. For some reason I have been told not to refer to that as the green zone, but in the green is the interfirm rivalry, okay? So, this is whatever it may be, differentiated product/price competition, whatever this may be that's limiting profitability among the competitors in the industry.

Now, what are these other four forces on the perimeter? Well, at the top we have threat of new entry; on the right, bargaining power of buyers; down below, whether the goods produced by the firms in the industry have substitutes or compliments; and on the left, the bargaining power of suppliers. So, if we have a lot of substitutability, we have a lot of entry possibility, et cetera, well, profits are going to get hurt by that, and if we don't have those things, profits will be helped.

So, I would argue the following: Cartels at their initiation work on the green zone, they are limiting interfirm rivalry. That's the Section 1 violation. Once they get that nailed down, they then often venture out into the blue zone. So, blue is Section 2; green is Section 1. That's the way I view that diagram.

So, I want to talk about some examples here, and this is all based, by the way, on a co-authored paper with my co-author Randy Heeb and Leslie Marks (ph), who's at Duke University, and Randy is at the Bates White office here. So, what are the examples of monopolization behavior from recent cartel cases? So, I am going to give you five cases, four listed here and I will read another one, and that's not a recent one. I had to go back to Stocking and Watkins and pick up another example from there.

But let's start with citric acid. So, this is vitamins in training is a way you could view citric acid. The guy who ran citric acid was promoted to run the vitamins cartel. So, this is an important cartel in the history of Section 1 violations. And, of course, what they're trying to do, these firms, is suppress interfirm rivalry. This is a section from the European Commission decision regarding what part of the action, part of the conduct of the citric acid cartel. So, they were very bothered by entry by Chinese manufacturers, particularly into the European community, so those customers who were buying from the Chinese were targeted, and there were specific predation against the Chinese targeted at those customers. They were going to undercut those customers, and this list of customers was referred to as the Serbian list, and then there was frequent discussions that went on about how that predation activity was progressing.

Now, when you read stuff like this in European Commission decisions, it becomes very clear very quickly it's not just about the suppression of rivalry amongst themselves. Once they have got that nailed down, as members of the cartel, they start to reach out into other mechanisms that they could use to increase profitability.

Carbon brushes, this is also a story about predation, and I'll just go to the next slide quickly and show you a particular example on German reunification. There was an East German company, EKL, and there was a pesky little noncartel firm, and so two strategies were agreed. None of the members of the cartel would supply any graphite to EKL, that's the basic raw material in making a carbon brush, the block, carbon block, and EKL would be denied any market share by systematically undercutting it with all customers, so that it would not be able to sell anywhere. EKL was taken over by one of the cartel members in 1997. Again, targeted predation at a noncartel firm.

Now, keep in mind, again, this is a cartel that begins and ends. This predation begins in '92, well predating the beginning of the cartel behavior. So, we have got the antirivalry behavior, that gets established, that gets set in place, then the monopolization behavior begins, okay?

Then there is also things like standardization. The cartel implements a ban on advertising, not to advertise or participate in sales exhibitions.

In vitamins, agreed-upon elimination of competitors, and in this case, we're buying out competitors, Coors, that's the folks who make beer, and we're -- the two major cartel members here, Roche and BASF, are racking up the purchase price in proportion to their market shares.

The European Commission goes on to talk about the use of the bundling of the basic vitamins into premixes as another mechanism by which the cartel predated against downstream blenders, so you have to look -- you have to understand a little bit of what happens here.

Hogs and chickens and cattle get fed a premix of vitamins, and there were groups in the marketplace who would actually mix the vitamins together and sell the premixes to be added to the feed, and so to eliminate those pesky competitors in the downstream market, strong actions were taken by Roche and BASF to drive them out.

The European Commission notes in particular, if you go to the second bullet here, it says, "In addition," referring to Roche and BASF, "they enjoyed greater flexibility to structure prices, promotions and discounts and had a much greater potential for tying." Again, we are not talking about just the suppression of interfirm rivalry here. We are well into Section 2 violations now.

Sorbates, we're talking here about -- this is another European Commission decision -- the blocking of entry to the marketplace. And then I went back and just pulled something from Stocking and Watkins regarding General Electric and the incandescent electric lamp cartel. Together with other lamp manufacturers, it made exclusive contracts with the manufacturers of lamp-making machinery and in bulbs and tubing, binding them to sell goods exclusively to General Electric and the companies associated with it or to sell to competing companies only at discriminatory prices. So, this is part of the action of the cartel.

So, let me just as an aside say, standing issues about cartels are confusion to me at this point. Noncartel firms don't have standing because they are always the beneficiaries of cartel behavior. That seems a bit odd to me just an aside here given the fact that these Section 2 violations are existing, well documented in the record, with regard to the noncartel firms, but that's just an aside.

I would just like to say that I think that this is a rich avenue for potential empirical investigation, again, because we have got clear benchmarks in place.

We can also get a clear look at the discovery record associated with cartel behavior and start to see when these kind of behaviors, the Section 2 violations, are implemented by the cartels, look across industries, cartels in different industries, and see who was doing these kind of activities, which industries are not engaged in those kind of activities.

I'm hopeful that this illuminates as a potential or at least gets investigated as a potential some of these ambiguities that have existed in the past with just looking at single dominant firms as being the source of data and empirical inference.

COMMISSIONER KOVACIC: Thank you, Bob.

(Applause.)

COMMISSIONER KOVACIC: Before we have the more open-ended discussion among all the panelists, I'd like to give our first four presenters an opportunity simply to comment on what took place or to add additional thoughts that came to mind. Could I simply go through the order again, go with Mike, Luke, Jon and Cliff?

Mike?

DR. SCHERER: Well, lots of things I found stimulating, so I'll have to be very, very selective.

I think the thing that struck me most was Cliff's distinction between the European Union and the

United States. There are two points I'd like to make there. One is a puzzlement; one I think I understand.

It's been said by several of the panelists that the European Union has been more aggressive in some sense towards dominant firms. They have tended to pursue an abuse of dominance standard, whereas our approach has been mainly structural combined with some elements of conduct.

On the other hand, the Europeans have been severely limited because when they tried to go against abuse, as in, for example, the Hoffmann-La Roche Valium case and the Volkswagen case, they ran into big troubles ascertaining what an abusively high price was or an abusively high level of profits was, and in this sense, they are going back to the caveats that Judge Taft expressed in the Addyston Pipe case more than a century ago, but I think there's something else going on.

I think the ghost of Friedrich Hayek haunts the Europeans in the sense that Hayek argues that you simply cannot tell what an abusive price is. The European community ran into this squarely in Microsoft. They were unwilling -- at least initially, they realized in the end they had to -- but they were unwilling initially to state the fees that Microsoft could command for licenses to its intraoperability information. And even more seriously, when they required the provision by Microsoft of an unbundled version of Windows without the media player, they allowed Microsoft to sell both products at an identical price. The obvious thing to do would have been to set a price differential, but they refrained and have continued to refrain from doing this, and therefore, virtually no one has taken the unbundled version when you could get a more complete version.

The Europeans have a serious problem. When you look at our past compulsory licensing cases, you see we were much more willing to intervene and said, "Here's the reasonable royalty that you can command."

Now, the other thing about the Europeans is this: Beginning with a conference at Fontainebleau in 1965 and then the book by Jean-Jacques Servan-Schreiber and then another conference in Germany in 1976, and God knows what else, the Europeans have adopted the policy of encouraging large dominant national champion enterprises with the express purpose of competing with the United States technologically. In most respects, they have failed.

In most areas of modern technology, they have lagged the United States, and partly I think because we, on the one hand, following the sage advice of Chairman Mao, have encouraged 100 flowers to bloom. The

Europeans have tried to cultivate their national champions, and they just didn't have the diversity required to achieve technological innovations. The big exception was in a couple of high-scale economy industries. One is the provision of nuclear power plants, and the other is the provision of aircraft, although they are having trouble there now, too, but for a while, Airbus was doing very, very well.

I think there really are important lessons to be learned here, and they need to be studied much more carefully than they have been thus far.

A point that Luke made, and I think Bill Kovacic made it, too, and it is very, very important, that we should be doing follow-up studies on areas in which we have intervened. We did this, among others, in Xerox. The FTC specifically commissioned a study by Tim Bresnahan of the results of the Xerox case, which found that it had been quite beneficial. Xerox did its own study by David Kearns in a book entitled Prophets in the Dark. It found that the entry of Japanese competition, which was facilitated by the FTC intervention, had a remarkably salutary effect on prices, reliability and technical change in the copying machine industry.

Let me end with one footnote on the marginal paper, vitamins. I happened to be a consultant for

Eisai in the vitamin E case. One should not look into these things without taking into account international trade rules and how they shape the framework within which international agreements appear. Specifically, in the case of Eisai, Eisai was a newcomer to the vitamin E market. They began entering the U.S. and European markets, and the chairman of Eisai was called into a meeting by the head of Hoffmann-La Roche's vitamins operation and was told, I quote exactly, "If you yellow bastards don't join our cartel, we will drive you out of both the U.S. market and the European market with antidumping suits."

What happened after then is very complex, but there remains in my mind at least a puzzle. I couldn't find any change in Eisai's pricing behavior after they allegedly joined the cartel. The one thing observable that changed is that they began shipping more of their output to China and they began dumping their excess output in China. Why, I don't know, whether it was because China was growing rapidly or that was a cartel facilitating device, I do not know. There are interesting stories here to be explored.

Thank you.

COMMISSIONER KOVACIC: Thank you, Mike.

Luke?

DR. FROEB: Thanks. I just want to say a couple of things.

First of all, to talk about Jon Baker comments about how to balance the good proximate effects against the bad distant ones, and there's two ways to do that, you know, empirically or use some kind of model, theoretical model that helps you do that, and if you kind of contrast the way we balance horizontal, you know, efficiencies against unilateral effects, we have well-developed models that allow us to make the trade-off. I just don't know of any well-developed models that would allow us to make those kinds of trade-offs, and furthermore, if we held our prosecutions of these Section 2 cases to the same levels or same standards that we did our merger cases, I mean, I think it would be very difficult to bring good cases in those instances.

I want to talk a little bit about what Cliff Winston said about where is the empirical literature going. In economics, young IO economists demonstrate their technological expertise by building structural models and, you know, trying to estimate them, and they ignore, you know, trying to figure out, well, what's the effect of things like Wal-Mart entry, you know, what is Wal-Mart doing or what -- doing follow-up studies, because they seem so pedestrian, yeah, anybody can do that, you know, you just have to gather the evidence and, you know, control for competing factors, and so there's a natural bias in the economics literature favoring, you know, structural technical modeling, even when it's not appropriate, and we see that a lot. I think that is one reason for the dearth of good empirical evidence in industrial organization, because we have this fetish almost with structural modeling.

I want to agree with what Cliff Winston said also about the real problem is, you know, empirically, you know, antitrust cleaning up trade, regulatory or lousy patent policy. I mean, when you look at the recent acts at the FTC bringing a lot of cases that wouldn't exist but for the people abusing the patent system, or I remember when I was back at the DOJ, we challenged a merger between Westinghouse and GE in electrical generators because Toshiba was out of the market because they had been selling machine equipment to the Russians to make submarines, so the Commerce Department said, "Hey, you can't bid on electrical generators in the United States," and that, you know, would have made the merger okay, but, you know, we blocked the merger because they were out of the market.

I want to note that Dave Reitman's Dentsply case, he was able to estimate the proximate effect. He wasn't able to estimate the distant effect, which wasn't an issue in the trial because the judge said, "Hey, there's no possible, you know, beneficial effect of these exclusionary practices," but he was able to estimate the proximate effect, not the distant one, and I think the real challenge empirically is on these distant effects, these indirect strategic effects.

I think that's all I want to say, and -- well, I guess I would say to Bob, when you see these vertical restraints in these cartels, I mean, suppose I form a cartel upstream and I buy some downstream or put the downstream guys out of business or refuse to deal with them, I mean, there are certainly procompetitive justifications for that given that you have a cartel.

COMMISSIONER KOVACIC: Wally?

DR. MULLIN: I would like to pick up on this interplay between economic research, whether done at the university or a think tank, and antitrust practice. So, I've neither done any antitrust cases nor have I estimated a discrete choice demand system. However, I guess you can imagine talking about developing clinical facts, which a judge or even an antitrust enforcement agency might think are too bound up in the particular circumstances to really be admissible.

I mean, if you said, okay, here are three or four or five not tools but three or four or five, you know, examples favors saying there's predation, is that going to mean that the American case doesn't survive a summary judgment? I don't know. I would be doubtful.

The argument I guess in favor of some sort of methodology, right, is that, yeah, if the tool works, then you can use it in lots of arenas. Operating very quickly, so it's not a Section 2 example, but my sense is that a lot of mergers involve firms that produce differentiated products. The state of the art circa 1975 on estimating those models was not great. Berry Levinsohn Pakes (BLP) offered a big methodological improvement. Previously, the profession knew there were problems with the standard approach. We just kicked it under the rug and BLP took on a very difficult problem. So, from their papers you can say, okay, well, I don't just know something more about the automobile industry, I can use this in other settings.

I guess the question that I have heard others raise in other contexts in terms of the way the industrial organization field has gone in certain universities is whether -- maybe we did need to make progress on the demand side and now have a better sense of how to estimate demand, but we're industrial organization economists. We study also the supply side, at least at this point in the development of the literature, it cannot yet say okay, here are some tools in terms of supply that would allow you to make these sort of counterfactual predictions. For example, if this particular exclusive dealing isn't available, this is how the market will change and this is how firms will operate differently, which is a real cost of pursuing models on motels in Nebraska or something like that.

COMMISSIONER KOVACIC: Thanks, Wally.

Jon?

DR. BAKER: Thanks, Bill, a couple quick things.

First of all, I need to be a law professor for a moment. When Bob Marshall talked about Section 1 and Section 2, what he really is saying is a distinction between conduct that's collusive and exclusionary. Probably you would attack all of that conduct in the context of the cartel cases that Bob was referring to. The exclusionary conduct, you would probably attack it under Section 1 of the Sherman Act, not Section 2. But when we're talking about monopolization under Sherman Act Section 2, typically the conduct is exclusionary, and so that's why Bob thinks it's instructive to look at the exclusionary conduct for the cartels.

I actually think there's a close connection between exclusionary conduct and collusive conduct, because you can think of exclusionary conduct as creating an involuntary cartel or a coerced cartel. Think about it this way: The dominant firm would like to collude with a fringe rival, a prospective entrant or whatever, but the rival doesn't go along, so the dominant firm has to force the fringe rival or prospective entrant to compete less aggressively, cut back on output, not expand, whatever it would require, and it does that with a panoply of exclusionary techniques, raising rivals' costs, reducing their access to the market or whatever, and the result is that industry output falls below the competitive level, not by voluntary agreement among the firms the way a cartel would, but essentially by coercing the maverick. It's an involuntary cartel; that is how I like to think of it. So, they are closely connected.

My other comment on the conversation we have had here, have had today, is about the problems of assessing the "but-for" world. That was brought up I think by several people here, Bob and Wally and Mike I think all alluded to it, and probably everyone else did, too. To make this concrete, I started to think about the Intel case that the FTC brought in 1998, which was when I was bureau director. It was settled in 1999 I think after I had left, and it's the case that Mike was referring to where he was going to be the witness for the Federal Trade Commission.

The basic idea was that Intel refused to deal with certain customers, cutting off their access to technical information about upcoming new microprocessor products that the customers needed if they were going to be able to design complimentary products like personal computers, and they did all this as a way of coercing the licensees -- or, I'm sorry -- yes, getting the rivals to license their microprocessor technology to Intel. That was the story that the Commission told, and the rivals included Digital Equipment Corporation or DEC, Intergraph and Compaq.

So, Intel was trying to get leverage in unrelated commercial disputes involving the scope of competing intellectual property rights. The theory of the case was that what Intel did to cut off these customers from the technical information diminished the incentives of those three Intel customers, as well as all sorts of other firms that are similarly situated, whether they are Intel customers or they are otherwise dependent on Intel, to develop new innovations relating to microprocessor technology.

Just to give Intel's side of the story, they defended by saying that the conduct alleged in the complaint didn't diminish the incentive of any firm to develop new innovations of any kind. So, that was the dispute.

The case was settled with an agreement that prohibited Intel from -- I wrote it down here -- impeding, altering, suspending, withdrawing, withholding or refusing to provide access by any microprocessor customer to -- oh, dear, I don't know what I wrote down here -- some sort of information for reasons related to intellectual property dispute with such customer -- et cetera -- or basing any supply decisions for general-purpose microprocessors upon the existence of an intellectual property dispute.

So, the question is, all right, this case against a big firm, it was technically a Section 5 case, but it was basically a monopolization case, how do you tell whether the consent made any difference? That's the question I am trying to set up. The theory would have to be that this consent encouraged rivals to innovate in ways to take on Intel, and before they didn't have the incentive to do that, and maybe that makes sense.

I think that the kind of markets you're talking about are winner-takes-most generally, and it's hard to believe that Intel wouldn't keep innovating in those markets even if you did something to make it easier for the rivals to innovate, too.

But how do you prove or disprove that theory? We know that AMD, a key rival, has been successful in the last couple of years, but that doesn't settle the issue. What we have to do is somehow construct a "but-for" world and figure out how AMD would have done there. We don't know whether AMD's success has anything to do with this consent or not just from what I've recited as the facts.

I guess what I am driven to, I'm not sure what we would do. I think the best we could practically do is probably use Section 6(b) of the Federal Trade Commission Act to review the R&D plans and the marketing plans of Intel and AMD and the other firms before and after the case, assuming all the documents are still available, and depose key executives and see if Intel and its rivals changed their strategies -- we could probably find that out -- changed how they thought about innovation, the kind of innovation they went after, what they would do with them and the like.

The point of this exercise is that it shows how hard it is to construct the "but-for" world in any actual case in order to either figure out the violation in the first place, which was the point of some of my colleagues here, or to evaluate how well we did in bringing the case and remedying it.

I don't view this as a reason not to bring cases, by the way, but I know that some people do. That's my comment.

Go ahead, Cliff.

DR. WINSTON: Just two brief things, and let me sort of shape them more toward ultimately, what advice do we give Bill and Ken? Presumably at the end, they will say, what should we do to make sense of all of this?

You know, my comment on -- really about the method -- the IO methodology is just more of a caution about the difficulty of just focusing on, you know, can we pull studies together and amass, you know, a core of useful knowledge that way, and my caution was really historical.

If we turn the pages back to the sixties, the leading empirical enterprise of the day was basically concentration and profit progression. I mean, there are scores of those, and along with that was the policy issue of, you know, should we have a deconcentration policy in America as the focus for antitrust? And, you know, these studies evolved certainly from, you know, noneconometric approaches, contingency tables and the like, to more sophisticated econometric approaches, but ultimately the enterprise basically collapsed, obviously concerns of heterogeneity and concerns that, in the end, the concentrated industry is the good one, this is a good thing we should be having, and there's just none of that around at all, and no one even sort of looks at that for much guidance.

Dick Schmalensee I remember in The Handbook of IO tried to summarize that and offered, you know, 20 stylized facts that sort of stretches what you get out of it, and I'm concerned that, you know, in the sense the empirical IO we have got today may go in the same way for a somewhat different reason, but ultimately, there is a somewhat destructive nature of the enterprise. It's extremely competitive, and it's extremely easy to raise the stakes at every -- you'd be surprised.

I mean, you know, at this point I would say BLP has done a brilliant job of market share capturing, nothing short of brilliant, among the best I have ever seen of intellectual importers, and people think naturally of, well, they have a nice demand system and so on and so forth, but I think you will see, as certain other papers come out, there are real cracks in even what they've got, you know, for every model for which you want to try to capture heterogeneity, you can point out why there are problems in the way they are doing it, and so almost every study can be replied with that as the methodology pushes harder and harder and harder and excludes more and more people and almost makes it virtually impossible to understand for a lot of people in practice.

I'm just wondering where all of this ultimately is going to go and thinking, well, we can use this still, you know, the simplest thing is in courts, but we can't, because obviously the other side is going to come back and use more technical things and just smash what you do, and so I am concerned about ultimately where all this stuff is going to converge in a constructive way.

You know, that said, then, you know, what then would I say to emphasize? And I think this has been touched on, but maybe not enough, and that is the deterrence aspects of antitrust policy. I mean, sometimes, you know, I am interpreted or at least my paper with Crandall was interpreted saying we ought to abolish antitrust intervention, and that's ridiculous, we never said it, and I certainly don't believe it, but the importance really of antitrust is in deterrence, and, of course, that's your success story, but it's also the most important and difficult thing to quantify.

So, the challenge, I would suggest, at this point, where you could get help but certainly it's a challenge at this point, is trying to find the areas where there is evidence that we are clearly deterring other areas, but what for going after Microsoft, who would have known, all right, regardless of what people think on that case, you know, other things that may be done, and that may ultimately be the strength that a lot of people think of antitrust and certainly the thing that also needs to be emphasized and systematized, but at this point, obviously, that's eluded our ability to do that kind of thing.

MR. HEYER: Well, I want to give at least -- if Dave and Bob want to say a couple of words. Otherwise, we can throw out some very insightful, stimulating questions.

DR. REITMAN: Well, we could end up looping quite a bit here if we go round and round, but --

DR. MARSHALL: Fire away.

DR. REITMAN: Yeah.

MR. HEYER: Well, you guys can respond first maybe.

I had one question I alluded to at the end of the morning session that I wondered if everyone could comment on, sort of a general question about the value of individual anecdotes and studies, a number of which have already been discussed, as compared with or maybe related to what Cliff had referred to as the Holy Grail and what I know Luke, some of his work has suggested is broad policy guidance.

I mean, to what extent do folks think we are able to learn enough from individual studies to base policy and priors on versus doing what, say, serious case-by-case analyses in determining the effects on an "as it comes in the door" kind of basis?

Anyone? Professor Scherer? Luke?

DR. FROEB: I think that the broad aggregate studies suffer from, you know, aggregation bias, and it's very difficult to draw inference from the large down to the small. I think it's much easier to go from the small to the large. And the studies that we've been doing at the FTC have shown that, say, for example, when you're using census data and industry-level studies, you're missing a whole lot that's going on at the individual level, and I think you ultimately learn a lot more by going as narrow and as case-specific as possible.

COMMISSIONER KOVACIC: Mike?

DR. SCHERER: I somewhat disagree. What's the value of anecdotes? As Zui Griliches used to say, "The plural of anecdote is data." The humor of that escaped you.

DR. WINSTON: Wasn't it Stigler who said it?

DR. SCHERER: Maybe he learned it from Stigler, I don't know.

In any event, you have got to do all this stuff. You have got to do case studies. You have got to do data. You have got to integrate all the case studies. All of these things need to be done in order to get something like generalized knowledge.

Well, I guess that's all I'll say on that.

MR. HEYER: Jon?

DR. BAKER: Well, my reaction to this and to some of the other comments here is that I think the economics literature has been a little bit -- I have a different perspective, shall I say, on the development of empirical IO, which is that one of the big movements has been away from cross-industry studies, which have all sorts of problems that people here have described, to individual industry studies, where you can learn about -- which effectively control for lots of the differences across the industries. There's been a lot of learning about individual industries.

I'm just thinking of all the studies in Tim

Bresnahan's IO Handbook chapter, Peter Reiss and Frank Wolak have a recent chapter that surveys a bunch of studies, too, and there is just a wealth of knowledge that -- the unit of observation in empirical IO has shifted from the economy as a whole, across all industries, to individual industries, and we've learned a lot. Even when those structure-conduct-performance studies are still done, they are all done largely on related industries, as with the Leonard Weiss book I'm thinking of from a while back.

You can use what you learn about individual industries too, as I was saying before, to create presumptions about related industries that you can argue about what you know about retailing from retailing industries and how it works. I'm thinking of Dean Schmalensee's testimony in Microsoft. He was talking about how software markets have certain kinds of competition generally and that that observation probably applies to operating systems. Then the Government comes back and says, well, maybe that's an exception. The presumption frames the analysis appropriately.

So, there's a lot you can do with individual industry studies to learn about related industries that I think we're undervaluing here.

COMMISSIONER KOVACIC: David?

DR. REITMAN: I just want to add that I think you have to recognize that Section 2 cases are just distinct from other kinds of antitrust cases in how unique the behaviors are from case to case. So, it's hard to generalize from, for example, our merger analysis, which has benefited greatly from being able to go back and forth between cases and theory and getting a body of theory, which can then identify the cases and the time.

There is so much individuality to any particular set of bundled discounts, where a particular mechanism that a firm predates, it's hard to see that even generalizing from case studies or whatever is going to add a whole lot to the analysis of a particular case, even if it's necessary to some extent for the law. As far as the analysis goes of what's going on in a particular industry, I'm not sure how you can use that very well.

COMMISSIONER KOVACIC: David, if I could follow up on that, as you reflect on your experience with the two cases you discussed, and if you were looking ahead to try to extract more general observations from those, is there something about an investigative methodology or an analytical approach that you might derive from those experiences?

Suppose you were thinking at the time you left the Division about how to leave behind or to make more concrete know-how that you had extracted from your experience analyzing the cases and as a potential testifying expert. Are there specific lessons that you would have derived from those that you think would have informed the analysis that you would use in future cases?

DR. REITMAN: Well, the clear one I think is from the Dentsply case, that the survey that we did there seems to be fairly rare, at least on this side of the Atlantic, although if you go across to England and Europe, it seems like it's fairly routine as part of a gathering of consumer information to do it systematically through a survey, and the survey really is just that, it's -- instead of interviewing a bunch of customers, it's a way of systematically getting a representative sample and asking the same sorts of questions in a way which could be quantitatively analyzed, and so I think that technique was helpful in Dentsply. It could be helpful in a lot of monopolization cases.

COMMISSIONER KOVACIC: Do you have an impression about the arena in which, in many ways, so much of the information we're talking about ultimately has to be applied? Was the decision of the trial court simply to reject the empirical study that had been done? Is that just an outlier that we're going to encounter when we bring cases? Or is there something to be learned there about how to present evidence in a way that ensures that it doesn't simply die at the doorstep of a preliminary motion but makes its way into the resolution of the case?

MR. HEYER: Objection, calls for a legal conclusion.

DR. REITMAN: There are certainly things to be learned there about how to actually conduct the survey in order to be able to get through the hurdles of reliability that the Court needs and rightly should require. I don't think the analysis in the Court, at least in Dentsply, really went beyond that, and so I'm not sure what further lessons, but I do think you can get over that hurdle. There may be additional hurdles in terms of different sides looking at the same evidence and, you know, making different conclusions from it and the Court trying to figure out what to do with it and such that we will have to wrestle with later, but the first hurdle in terms of getting things admissible I think you can overcome.

DR. WINSTON: I would just -- one thing, and you can probably enlighten me on it, the whole discussion is sort of taking place in a political vacuum, you know, it's like antitrust policy proceeds, you know, that we do the analysis right, find out what's going on and bring the case. I mean, obviously all this proceeds with a lot of political constraints and, you know, within your department, you know, how you want to frame the case, the kind of people you want to bring in, the cases you want to go after.

I mean, I think all the things that Mike was saying I agree with completely, that you want to draw on as much evidence as possible, different sources, different people, but all of this is constrained by just political forces within and outside your agencies, and, you know, how you grapple with that ultimately may be as important as any of the analytical things that you solve.

MR. HEYER: Do you want to take this one?

COMMISSIONER KOVACIC: What forces would those be?

One reason that the FTC's anniversaries are interesting to me is that my own appointment is tied to the 26th of September. As the sands go through the glass, I have five years before the appointment comes to an end. So, one question for me, given that I have perhaps a bit more influence in how decisions get made, is how the agency should invest its resources. One possibility that Mike referred to before, and it's implicit in the comments that all of you have made, is that one way to begin to use empirical methods to assess the appropriate course in future policy making is to examine past decisions to enforce or not to enforce.

As Mike said before, my first assignment at the FTC in 1979 was to work with a young Assistant Professor, Tim Bresnahan, in the formulation of the Xerox study. I think in principle that any institution ought to go back and look at completed matters, and for purposes of some public discussion and revelation, should make the results of that process available. That's clearly a sensitive matter and I suppose political in this sense: How do you develop a norm or a standard that encourages ex post review in a way that does not raise suspicions that you're picking topics for study or examination simply to show up your predecessors or in some way to reinforce a predilection or set of preferences that you brought to the process?

I think we could agree generally that there are tremendous methodological challenges in doing such studies well. I don't put those aside as being insignificant by any means. There would be a difficulty in implementation.

My own preference would be that you would try to develop an internal norm that puts money in the budget every year to do that kind of work -- that is, that some of it be done every year, that there be an expectation such that outside observers would ask every year. "What matters are you going to look at this year? Which projects are you going to launch this year?"

Second -- you can't model this in a formal way, this is simply a matter of leadership and choice -- incumbent leadership would be willing to pick matters that could be sensitive to them. For myself, if I were to pick mergers, I would be quite happy to see in the relatively near future (that is, during my time here), an examination of the cruise lines decision. I was general counsel here when that transaction took place. The FTC and three other jurisdictions studied the cruise lines merger. I'd like to see if we got the answer right. I'd also be interested in taking other matters where we intervened and failed, Arch Coal being one. I'd also like to take up the possibility that Jon mentioned, that is at least with respect to the case study component of matters, that there always be an FTC 6(b) matter in progress; that is, that it always be part of the research agenda, perhaps with the possibility, again, of using it to examine somewhat more microscopically matters in which the agency intervened and did not intervene.

To do that in a way that creates confidence that it is being done in a technically acceptable and even-handed manner requires a great deal of political skill and judgment. One needs to make sure that the evaluation process is perceived internally and externally as being a neutral, truth-seeking exercise rather than in some sense as a political exercise. That's one thing an agency can commit itself to do.

The further question would be, what's the right forum? Should something be done intramurally? Should these be partnerships with academic institutions, or think tanks, such as the AEI-Brookings Joint Center on Regulation? Should it be done with specific centers of research within the university community? What are, in the language of international relationships, the modalities for doing this kind of work? How it should be conducted is another issue. To do it well and in a way that would be regarded as a neutral, truth-seeking exercise, as opposed to simply an effort to vindicate one's own judgments or to discredit the judgments of one's predecessors is politically a very delicate matter. It would also be a politically delicate matter to take one other matter we have mentioned here that's of keen interest to me -- to look at the question of how the antidumping system serves as the punishment mechanism for cartel coordination. To even begin to put a toe in the water in that kind of research work would require a great deal of care to see how warm the water was and to decide in what part of the pool you are going to step in first. As a general matter, I can't help but think that it's impossible to look at the question of cartel coordination at home and abroad without accounting for that.

DR. FROEB: Based on the kind of studies we did, you can't learn something from every follow-up study, and I think it's really important to be opportunistic, and I think Mike made a study of the Appellate Court decision overturning the must carry laws provided a really nice natural experiment where we could learn something, and being opportunistic on something like that, it takes a lot of judgment about are we going to be able to learn anything from this? We've talked about the difficulties of counterfactuals, and I think you have got to be very careful about that.

MR. HEYER: Let me raise another question for folks to talk about that was touched on earlier, particularly Professor Scherer got into it when talking about innovation and dominant firms.

In trying empirically to get at some of this stuff, the effects of remedies, the performance of dominant firms, I was wondering if there's anything we can usefully do empirically having to do with more long-run issues, incentive issues for firms to become dominant or for firms to be acquired by dominant firms, perhaps? I think Professor Scherer had suggested that -- seemed to suggest, at least, and maybe I'm reading it wrong -- that maybe the harms from constraining some of the larger firms, at least in the innovation arena, might not be too great, might be worth it, you could get short-run benefits, long-run maybe as well, but we can't tell.

I'm wondering if we know anything about long-run effects, whether anything empirically can be done in that area.

DR. WINSTON: Well, there, whatever you do, you are going to have to interface the patent system just in general with technology policy in this country. In other words, you know, what you first want to start with is, you know, just positive economics, you know, how is it -- we understand innovation, which is obviously very important and a very difficult thing to do, and layered on top of that is going to be, you know, technology policy, and just it does have an influence on that.

So, you know, whatever you are going ahead with, you just want to caution yourself that your answers are going to be shaped to a large extent by the institutional environment that exists in this country.

DR. SCHERER: It should be done. It is really hard. Obviously the longer time frame you deal with, the more historical artifacts you have to factor in. I think the way you get around that is to look at a broad array of cases and try to see how did it work in one case and not work in another case.

A really interesting one to study, I do not think it has been studied, is the United Shoe Machinery case. United was dominant in inventing and developing shoe machinery, but Judge Wyzanski found them guilty of monopolization around about 1955 or so. I happened to interview them in a quite unrelated context in 1958, and they said this was a case where we really had the wrong policy. Wyzanski said I'm not going to break them up now, and there were good reasons for not breaking them up, but I am going to leave the Sword of Damocles hanging over their heads. We will come back five years from now and see whether they ought to be divested.

And so here's USM sitting there with this possible divestment if they don't get their market shares down in the future. So what did I find in 1958? They were saying, we're not putting our R&D into shoe machinery. We're putting it into diversification activities. And what then happened -- and again, it's a big fast-forward -- what happened eventually was that they became noncompetitive in the shoe machinery business. Italian firms, maybe they would have done so anyway, Italian firms became the leading suppliers of shoe machinery in the world, and United Shoe Machinery gradually just declined to nothingness.

We ought to be studying cases where we clearly failed as well as cases where we think we might have succeeded.

DR. MULLIN: And this doesn't give a specific methodology, but some insight might actually come from the kind of, you know, cross-industry comparison or at least looking at the experience of other industries, even ones in which we don't think there's some problems with competition. So, for example, you know, Scott Stern and Josh Gans have a series of papers about basically licensing in biotech, as they say, licensing the gale of creative destruction. Before you look at the data, you might think, oh, they are these small people, they are going to come up with something that's going to leapfrog Lilly or something like that, a Lilly product, but in actuality, what they will end up doing is end up being acquired through some sort of licensing. Effectively their competitive advantage is innovation and not dealing with regulatory hurdles, et cetera, and it makes more sense for it to be joined with incumbent pharmaceuticals.

Now, once again, you might imagine that a different world where Lilly would shrink because it's been leapfrogged by competitors, but by the same token, you know, presumably the current system leads to innovation at the biotech level because they basically know they have got this opt-out in terms of an external capital market. They know if they get a hit, they are going to be acquired and they don't have to go through the whole costs of taking the drug to market themselves.

DR. SCHERER: Absolutely right. My daughter is research director of a small biotech startup, and she knows she can't -- if they go into Phase II testing that her firm can't do it. So, they expect either to license out or be acquired.

COMMISSIONER KOVACIC: To what extent is the set of institutional arrangements by which agencies actually bring and prosecute cases something that has to be examined as well? I think that many of you, if not all of you, have been involved in litigation episodes, either inside the agencies or outside the agencies. I was struck at David's comment about how in the course of American Airlines the basic intuition that led to the decision to prosecute remained the same over time, but perhaps the understanding of why it was a good case may have changed in significant respects over time.

I suppose in any one instance, in deciding to prosecute any one case, the agency not only makes decisions in general terms about whether there's a sustainable theory, but has to make decisions about whether to gather information, what information to present, what is ultimately going to be persuasive to a reviewing tribunal.

One element of the equation that we have to consider not simply the functionings of specific firms, industries, and economy as a whole, but the means by which agencies themselves formulate and present cases basically the mechanism by which theories and ideas are ultimately transmitted into specific cases and how those cases are pursued.

DR. WINSTON: I mean --

COMMISSIONER KOVACIC: There are larger questions of institutional capability.

DR. WINSTON: And/or institutional constraints. I mean, there has been some political economy literature about the role of Congress or, you know, funding sources and how they affect what the agency does. There was a -- I can't remember, but a while ago, wasn't there a study on -- saying how FTC cases were influenced by Congressional funding in terms of, you know, you weren't going after cases or areas where somebody was high up on a committee in Congress because that could affect your funding? That kind of stuff has been around for a number of years.

COMMISSIONER KOVACIC: Yes.

DR. WINSTON: I haven't seen recent work on that, but, you know, there's that kind of political economy reality in terms of your dealings with Congress and the President, of course.

COMMISSIONER KOVACIC: But I'm saying that, even in the instances where you've decided to go ahead, one key variable is the skill, the shrewdness, with which the institution actually pursues a given matter.

DR. SCHERER: Let me say, my greatest failure. Because I had a long connection with Detroit, when I was director of the Bureau of Economics in the seventies, I put very high priority on beginning an investigation of the automobile industry. It was clear they were headed for trouble. Who was it? I think it was Cliff who talked about how -- yeah, Cliff talked about the dynamics that got GM and Ford into their present pickle.

Well, it was clear already in the seventies that they were heading for trouble, and the objective of that investigation was not primarily to bring an antitrust case; it was to illuminate to the public and to the Congress what was going on, and the whole thing failed. If we had succeeded, I think we might have avoided some very serious mistakes. The industry might have learned some things, the public would have learned some things, the Congress would have learned some things.

I didn't see that case going into litigation. I saw it as performing the FTC's historical role of telling the public what the hell's going on in American industry.

COMMISSIONER KOVACIC: Jon?

DR. BAKER: I was going to add that in the paper I alluded to before with Tim Bresnahan, we talk about two ideas for increasing the institutional capacity of the traditional system to use economic learning, one of which is to think about limited rules for neutral experts, and another is for the enforcement agencies, particularly the economists, to identify and codify relevant generalizations about industries from the empirical economic literature and make that available to courts.

You all do try to do something sort of like that in Schering, essentially in that whole line of cases where the FTC is effectively relying on the idea that generic drugs, when they enter, the price goes down for the brandeds, and you're thinking "what can we learn from that about the importance of generic entry to create a presumption about why practices that might discourage generic entry would be a problem?" Well, taking generalizations like that and writing reports and having that available for courts is a way to increase everyone's institutional capacity.

DR. SCHERER: The fact is that the FTC's report on generic drug entry and patent extension strategies by branded drug firms was superb.

COMMISSIONER KOVACIC: I guess the humbling thing for me is Schering. The investment in the generic drug study was a major decision of Bob Pitofsky's in 2000 to start the project, handing the baton to Tim Muris, who made a major decision to continue to devote resources and make it a high priority. I think the study was enormously illuminating and an excellent example of how 6(b), which we have talked about before, ought to be part of the Commission's portfolio.

I am not asking everyone to accept the wisdom of the Schering case on the merits (though I think you should), but you had decades worth of FTC activity in this area, you had the FTC's investment in the empirical study in question, and you had related work that the Commission had done. All of this was presented to the Court of Appeals, and the FTC received exactly the amount of deference that a wayward child would receive from a parent, which was none at all. The decision of the administrative law judge was accorded great deference.

On the other hand, the decision of the Commission, with this affiliated research, received none. What is humbling when one walks into difficult areas of analysis of this type, internally we have to ask, I think, are we bringing to bear the assembled knowledge in an effective way for a reviewing tribunal? You don't get something very far saying, well, that was an error by the Court; there's another erroneous court. Yet another court has failed to get it right. They ultimately are the gatekeepers we have to work with. But in this instance, that was unsuccessful in a fairly traumatic way.

MR. HEYER: One process point that I think might be worth considering, although I'm not quite sure how to get this in front of whoever makes the determination, in talking to some international folks, they have a process in some jurisdictions where they actually have the testifying economists, maybe even the consulting economists, the Court essentially has them discuss, debate, reach consensus with one another on things that they can agree on and things that they still disagree on, and to some extent it helps cut through a lot of the confusion that any layperson or court is going to face, and, you know, there are going to be some remaining differences, but that seems like it might be an efficient thing to do, perhaps within the Division or the FTC and perhaps within courts as well, to have that sort of process.

DR. BAKER: Let me make a comment. I want to advertise something else now, which I was the --

MR. HEYER: It's not another article, is it?

DR. BAKER: No, no Tim Bresnahan on this one.

I was co-chair of a task force of the Antitrust Section of the American Bar Association on which Luke participated last year the Economic Evidence Task Force. We did a long analysis of various options like these and laid out some pros and cons. We didn't reach a consensus as a task force on it, but I think you would find it very interesting and instructive, and I believe if it is not now it will soon be available on the

Antitrust Section web site for everyone to take a look at.

DR. SCHERER: Actually, I had an experience, I was hired as an expert by Judge Will in Chicago on the glass bottles case. Part of my task was to do what you suggested. Individually I met with the experts from each side, posed questions that essentially went to their differences, and tried to see what areas of agreement could be found and what new research or what new analyses could be found that might illuminate the differences. We got pretty close to getting a rational settlement of the case, except that one economist on the final day of testimony strayed from the chosen --

MR. HEYER: The script?

DR. SCHERER: -- chosen path, and then so turned off the jury, the jury so disbelieved him, that although he was right on the merits, they disbelieved him and rendered a verdict that was totally nonsensical.

COMMISSIONER KOVACIC: I know we are close to the end of our time for today. I had a couple of closing remarks for the session, but I wanted to give our panelists another minute or so, if you have other thoughts you would like to bring up.

DR. MARSHALL: Well, I just had one comment about the implied -- well, the suggestion that you had implied, Bill, regarding the funding of research programs coming out of either the FTC or the DOJ. I'm not savvy about the political nature of all of that. I am generally quite happy with what I see coming out of the academic literature since I am not one to look down at the shoulders I am standing on and speak pejoratively about where I'm resting, but I think that if the DOJ and FTC were to somehow jointly put forward data that was of remarkable quality, you can move research programs that way.

The academics will latch into rich sets of quantifiable information and coordinate on that if it is good enough. If they see that there is lots of economic content in there that they could never get their hands on otherwise, you will move research programs that way, and that doesn't require creating some kind of, you know, NSF-like program within the FTC/DOJ.

COMMISSIONER KOVACIC: Other closing thoughts?

(No response.)

COMMISSIONER KOVACIC: Ken?

MR. HEYER: No, I just wanted to thank everyone again. I learned a good deal, and I know it's not an easy matter to come to something like this, and on behalf of the others as well, I wanted to thank everyone.

COMMISSIONER KOVACIC: As Ken did earlier in thanking June, Joe and the team at the Department, I want to thank the folks at the FTC who put this session together. Those of you who have ever organized anything, even a discussion around a lunch table, know that this doesn't happen automatically. This takes an incredible amount of work by the organizers. Jim Taronji, Pat Schultheiss, Doug Hilleboe, Elizabeth Argeris, and David Balan at the Commission were the folks who along with June and Joe, Ken, put this session together.

I also want to thank the speakers again. In some ways, to ask what we've learned, what we would like to know, and how we go about learning what we like to know are impossibly difficult questions to address in a short period of time. To do this, we could only ask people whose skills were equal to doing the impossibly difficult. That's why this group is here. I want to thank them for taking their very precious time to share their ideas with us today.

I'm grateful for everyone's willingness to have this session today. I think that it is truly the marriage of theory and practice that is so important to formulating good policy. I think that the empirical dimension, both the broader scale inquiries using the taxonomy that Cliff laid out for us, from the broader economy-wide perspective down to the industry-wide level, to the firm-wide level, down to cases, is a mix that's very important to what we have to do.

Perceptions of the past deeply influence current views about what policy should be. In many ways, they set the presumptions about what policy is today, not just at home but also abroad. There are interesting opportunities to embed within agencies, and I speak of my own institution, a norm that makes this a routine and significant part of our agenda, every bit as important as bringing the cases; doing the research on which cases rest, looking at past enforcement events or nonenforcement events as a way of considering the way ahead, collaborations with researchers on the outside, maybe the idea, on a limited basis, of regularly convening a workshop at which promising empirical work or promising paths of work are done, something that can be done inexpensively in an illuminating way, and the possibilities that we haven't talked a great deal about, though we have touched upon some, for cross-border comparisons.

It's also striking to see the number of academic centers like Bob's, like the joint project that Cliff is so deeply involved in, that have counterparts in Europe where, week-in and week-out, at different centers, interesting research along these lines are being done, so that what work was done might have a truly cross-border dimension to it.

I'm fond of the title that Earl Weaver chose for his autobiography: It's What You Learn After You Know It All That Really Counts, and that's why continuing attention to doing good empirical work strikes me as a day well spent.

Thank you all.

(Applause.)

(Whereupon, at 12:33 p.m., the hearing was concluded.)

C E R T I F I C A T I O N   O F   R E P O R T E R

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CASE TITLE: SECTION 2 HEARING

DATE: SEPTEMBER 26, 2006

I HEREBY CERTIFY that the transcript contained herein is a full and accurate transcript of the notes taken by me at the hearing on the above cause before the FEDERAL TRADE COMMISSION to the best of my knowledge and belief.

DATED: 10/9/06

SUSANNE BERGLING, RMR-CLR

C E R T I F I C A T I O N   O F   P R O O F R E A D E R

I HEREBY CERTIFY that I proofread the transcript for accuracy in spelling, hyphenation, punctuation and format.

DIANE QUADE