Economists’ Roundtable

M O D E R A T O R

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JONATHAN BAKER: I would like to start with a question to Phil Nelson. Phil, you were at the Federal Trade Commission for nearly a decade during the 1980s. How have the ways in which you analyze economic and antitrust problems and make presentations or testify changed since then?

PHILIP NELSON: I don’t think that the way in which I approach antitrust issues has changed significantly. However, I think that lawyers are more receptive to economic analysis today than they were in the 1980s. A little history focusing on barriers to entry, as an example, will highlight the changes. I came to the FTC right around 1978. Around 1980, I started serving on the merger screening committee. I remember the very first merger screening committee meeting that I attended. We were reviewing a memo written by a lawyer which recommended that an investigation of a merger be expanded because the lawyer thought that the merger raised significant competitive issues. I noticed that there was no mention in the memo of the issue of barriers to entry. At the Merger Screening Committee meeting, I inquired about the nature of barriers to entry and was told that you really didn’t need to address entry as a prima facie part of the analysis. A lawyer suggested that it might cost around $5 million to enter this market and then asked: “Isn’t this enough?” We continued the discussion somewhat from that point, but the gist was that barriers to entry didn’t have to be a particularly significant issue to at least prompt additional investigation.

Subsequent to that, the FTC and DOJ issued Merger Guidelines. Those Guidelines and some case decisions under the Reagan Administration started to move entry analysis in a very different direction, towards what economists will recognize as Stiglerian barriers to entry, where the issue is whether there is an asymmetry between the incumbents and the potential entrants. More recently, there was further clarification of merger standards in the Bush [1992] Merger Guidelines. Those guidelines moved away from a narrow Stiglerian approach and called for a more detailed inquiry into such matters as the likelihood, timeliness, and sufficiency of entry. This evolution brought substantially more attention to the facts relating to entry conditions and has encouraged antitrust attorneys to pay more attention to this issue and what economists have to say about it. Today, the analytical approach to entry appears to have stabilized. Indeed, the recently issued draft EU Horizontal Merger Guidelines articulate an entry standard that parallels the one laid out in the 1992 Merger Guidelines.

Entry is one example, but market definition and other parts of the Merger Guidelines reflect similar trends. In sum, my sense is that lawyers now pay significantly more attention to fundamental economic issues than they did when I started at the FTC and that this is largely attributable to the substantial economic content of the Merger Guidelines and case precedents that articulate similar standards.

BAKER: Dennis, have you seen any notable turning points in
how economists practice before the agencies and the courts? Do you have the same reaction as does Phil that things have changed a lot?

DENNIS CARLTON: Yes and no. I think that the hallmark then, as well as now, of a good analysis is having a solid microeconomic theoretical and empirical analysis. Having said that, there is no question that both economic theory and econometric methods have improved, and our knowledge based on empirical studies has improved.

I would distinguish between the courts and the agencies. The agencies, like the whole profession, have gotten very sophisticated in their understanding of theoretical and econometric methods. On the theory side, game theory has improved people's understanding, in particular, of things like strategic behavior and, most recently, of the importance of strategy in a dynamic game. For example, in the Microsoft case, we can now understand how tie-in sales can be used to cement a market position. Better theoretical tools have improved our ability to analyze market situations.

On the econometric side, people have used and applied new econometric techniques. People in industrial organization have been particularly focused on structural demand estimation. Combining these new econometric methods with the availability of new data—particularly scanner data—has improved our ability to estimate price elasticities. The only caveat is that these new econometric methods should be used only as complements to what I would call good old-fashioned University of Chicago microeconomics, in which you test microeconomic propositions about competition with the data. In particular, I think there has recently been a movement away from what economists call a reduced form estimation, which basically can be summarized as a direct test of, for example, whether markets with fewer firms are less competitive than markets with more firms. I still think that the relevant antitrust question can often be answered with a reduced form estimation.

The final thing I will say is that we now have more empirical studies. In particular, we now know a lot more about the entry and expansion process of firms, how likely it is that firms that enter an industry will expand rapidly, how hard it is for entry to occur, and what is the probability that an entrant will fail. That has improved our understanding of the entry process, about which people often had strong beliefs but little evidence. Now we have much stronger empirical evidence.

BAKER: Do you have any examples in your recent testimony or presentations in front of agencies where you used a game theory model or structural demand estimation or a study about entry to help make a point?

CARLTON: I have done at least two or three types of studies that I can think of recently. One had to do with entry into the airline industry. The Department of Transportation was promulgating proposed new guidelines for airlines for predatory pricing because it was concerned that incumbent carriers were pricing too low and driving out new start-up entrants. I wrote a report with Chip Bamberger that appears in the record of the Department of Transportation proceeding. We empirically estimated the likelihood of entry, and the likelihood of failure once an airline has entered, depending upon whether it is an established carrier or a new carrier. We showed that many of the assumptions that had been made by the Department of Transportation were, in fact, false. Another case was a merger case before an agency. We did an entry study. We went through telephone books, identified new firms, and examined how long it took for new firms to enter in different situations. Using that study, I was able to persuade the government agency that there was no problem with a proposed merger.

So, yes, I have used studies to show when entry is likely. I would add that I think it is a good development that the FTC, the Department of Justice, and the courts do not just assume that entry is easy, but demand proof. I think that is entirely appropriate.

BAKER: Janusz, do you agree that we have become more sophisticated in the use of game theory, econometrics, and entry studies in ways that are useful in explaining to the agencies and courts how markets work and the competitive consequences of business conduct and transactions?

JANUSZ ORDOVER: It is hard to disagree with that generalized statement. Obviously, the way people practice antitrust economics now in front of the agencies and the courts is an improvement over what we observed years ago in terms of both the foundations and the methods. The question for me always is, what is the net benefit from any extension of the analytical techniques, both in terms of the game theoretic foundations as well as in terms of very fancy econometrics that are frequently required in order to engage the economist on the other side in a useful conversation? As economists, we like to think about costs and benefits. There are costs and benefits to advancement. The costs come from potentially very, very delicate modeling of a lot of complicated issues which game theory always invites. Frank Fisher pointed out in a RAND symposium a long time ago that once you move away from the non-strategic to a strategic view of markets, you are much less constrained in terms of what predictions can be drawn from the information that is available to the analyst. It is frequently difficult to determine clearly which of the models is more probative of the actual circumstances. Therefore, it is important for economists on both sides to lay out their modeling clearly and to provide some guide to the empirical evidence that would help assess application of the model to the matter at hand.

The same is true with complex econometrics. One can become caught up in the econometric techniques and exhibit a certain degree of, perhaps, irrational exuberance about
one's results. And that's probably true on both sides, at the agency level, as well as the client level. But the benefits from sound econometrics are, of course, also substantial.

We are now able to understand a lot of market phenomena that previously seemed murky. And we are able to apply more rigor to some statements, such as the ones regarding entry barriers, for example, or unilateral effects. So, yes, we have experienced a great deal of progress. But progress seems often to come at a cost. I think it is important that during this conversation we also focus on some of the potentially negative consequences of what many appear to be an overly theoretical and overly technical approach to antitrust analysis. Although I would hardly be the one to discourage such, I just want to make sure that we understand what it is that is being done.

BAKER: That is where I would like to go next. Let me follow up with you for a moment, Janusz. You spoke about one value of econometrics as engaging the economists on the other side in a productive conversation. Yet the current leadership at the Federal Trade Commission has been raising questions about the appropriate use of econometrics as a basis for bringing cases and raising technical issues with respect to some commonly employed methodologies. They have suggested that simpler forms of analysis might more easily be appreciated, not by the economists, necessarily, but particularly by the non-economist decision makers. What do you think about these concerns? Have they led you to adjust how you have approached the FTC, the Justice Department or, even, the courts in particular cases?

ORDOVER: The answer would be, yes, with respect to DOJ or the FTC. People are not comfortable presenting at the same level of technical complexity to a judge or jury as in front of economists at an enforcement agency. While there undeniably is utility in presenting a complex model in front of the courts, there is also the danger of losing the judge or the jury with things that are way beyond most people's comprehension.

In front of the agencies, my best latest experience has been in connection with the Carnival Cruise Lines merger. Even though the amount of data and economic theory we generated was huge, it was quite clear that the best way to cut through a lot of complex issues was not to fall back on somewhat inadequate econometric tools, but rather to go back to the first principles. We needed to go back to the good old Chicago School economics of understanding the industry, understanding the business practices, understanding how firms operate, and describing the competitive interactions among firms in the context of a particular industry, with continuous forays to the pool of pertinent economic theory, such as yield management, the ability to coordinate on things such as capacity, the importance of the fact that the berths on ships are perishable commodities, and so on and so forth. We did a huge amount of empirical work, but none of it was of the degree of technical complexity that one would find in unilateral effect modeling for consumer goods.

BAKER: If I heard you correctly, that was driven by the nature of the data, rather than the concern that the FTC leadership has raised about the use of econometrics: is that right?

ORDOVER: Well, I think it was both. We obviously had problems in trying to perform the kind of studies one could do for bread, or tissues, for example. But, at least I was of the view, which we all came to appreciate, that in order to get the deal through, we had to present a picture that cannot be readily or easily summarized through simple, or even complex, econometrics. In many of his recent speeches, [FTC Bureau of Economics Director] David Scheffman has stated that in some cases a more comprehensive view of an industry is important and required. We all felt that we were on a similar analytical wavelength in trying to meld complex economic theory with a fairly micro-detailed level of analysis of the competitive concerns.

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—Philip Nelson

NELSON: Let me expand on that a little bit. In talking with Dave Scheffman and others at the FTC, it is clear that they have come to embrace the notion that there may be specific events that provide natural experiments that will give you some empirical insight. With respect to the cruise merger (on which my firm worked with Janusz), in one of his speeches Dave Scheffman highlighted the use of one “natural experiment” in the FTC’s analysis of the merger. Specifically, Dave indicates that there was a particular period when a lot of new cruise ships came on the market. The FTC tested whether the associated shift in the supply curve affected price. It was observed that those cruise ships filled up without a significant effect on price, which gave the FTC—at least according to a presentation Dave made—some comfort that the market might be broader than cruise ships or, at the very least, that the demand curve was very elastic at pre-merger prices.

The FTC and DOJ are looking continually for that type of natural experiment. It carries over to very different industries, like in the retail sector, where the FTC has been debating whether box stores will compete with traditional grocery stores. In the case of grocery stores, the FTC has looked to see how entry by a box store into a market where there are traditional grocery stores affected pricing at the traditional grocery stores. If you go back to the Staples/Office Depot case, the
FTC looked to see what happened when a new office superstore entered a market where a rival office superstore chain previously had the only stores to determine if there was a significant price effect. These types of event analyses have been used for some time by economists. Nonetheless, it is worth noting that they have been receiving substantial attention in recent investigations.

**CARLTON:** I would agree with all that. I think the current FTC view is a perfectly sensible one. It is easy to get caught up in the latest fads and to fail to obtain a full understanding of the marketplace. I think that the best presentations and best analyses use a variety of approaches to understand an industry. Again, a good, solid microeconomic theory combined with empirical analysis, which is a hallmark of the University of Chicago approach to antitrust, is always appropriate. Identifying natural experiments that can either confirm or deny your view about competition is precisely what you want to do. Examples involving entry are good. For example, Phil gave the example of entry in the Staples/Office Depot matter.

Another example in which a study of the consequences of entry has been used is in the toy industry. I was involved in the *Toys R Us* case. Even though I think the decision in that case was incorrect, it provided an excellent opportunity to look at what happened when Wal-Mart expanded into areas of the country where it had not been previously. What was good about that experiment is that the decision to enter was not driven by just Wal-Mart's view of toys, because Wal-Mart sells many products. That is an important point to which I don't think enough attention is paid. That is, these experiments have to be true experiments. That means the decision to enter has to be independent of the pricing of toys; otherwise, it's not a sufficiently controlled experiment from which to draw interpretations. When such experiments exist, one can look not only at how price changes, but also at how advertising and promotion change. In industries involving yield management, you could look at how utilization rates change. So, there are many types of situations that you can analyze to confirm your view about how competition operates in the industry.

A lot of these new econometric techniques, though complicated, can allow you to answer questions and confirm your analysis from your previous investigations. However, they should be viewed as only a complement, not as a substitute, to these traditional types of analyses. I have been called into cases at the very end where they had been using some very complicated new econometric estimation. You look at the econometric results and you get ridiculous substitution patterns among the products. That's because, in order to be tractable, these complicated econometric techniques often require certain simplifications, such as simplifications in the notion of how many products are competing with each other or the type of competition that exists pre-merger and post-merger. These simplifications can sometimes lead you to errors. The best approach is actually a combination of approaches. The FTC and the Justice Department are justifiably skeptical of relying just on the latest technique.

I organized a symposium for the Federal Trade Commission, which I believe is published, in which a group of six or seven academics went through what we thought were the lessons that should be followed in antitrust. One lesson that kept coming up was exactly this: Do not over-emphasize the latest new trick. The analyses that people used to do are still sensible, and basic microeconomic theory is what you should always be relying on.

**BAKER:** I would now like to move away from econometrics and ask about some other aspects of economic analyses in antitrust that have recently been debated. Janusz, do you think we need more rigor in assessing whether a merger would make coordination more likely or more effective?

**ORDOVER:** How can one say no? We would like to have similarly strong foundations for coordination analysis as we have for the unilateral effects analysis. Since you gave me an easy question, I will say that you, Jon, took a great deal of leadership in trying to at least make some sense out of the coordinated effects analysis by focusing on the acquisition of a maverick firm as one way of capturing the likelihood of post-merger coordination. Recent work by DOJ's Andrew Dick also sheds some light on what kind of economic forces bear on whether coordination will be more extensive, more stable, or more complete in such contexts.

But, frankly, after that, there is very little as to what exactly one is supposed to do when confronted with the merger in which unilateral effects are perhaps less relevant, but coordinated effects are potentially critical. The good old statement that the fewer the firms there are, the easier it is going to be for them to reach some kind of tacit agreement on the relevant dimensions of competition, just is not likely to be satisfactory to the economists who are trying to present the case and to the analysts on the agency's side. Thus, I am extremely pleased that both the FTC and the DOJ are taking the lead on developing some of that understanding, which has to be very much based on empirical experience from past transactions. The agencies have a much more recent and much more complete empirical understanding or experience with transactions and their economic effect than perhaps do outside economists who have access to only limited data and data that often is rather stale by the time it becomes public.

This type of research at the agencies is an extremely worthwhile project. I don't know exactly what the end result of the project will be, other than perhaps somewhat more comprehensive checklist of the factors to look for and perhaps a better understanding of how one weighs or trades off the various components of the checklist. But this is a very important development, in part because, to some extent, the unilateral effects focus—I don't want to call it...
fad—is beginning to sort of run its course and people are going back to the source of initial concern about concentration.

BAKER: Phil, what about exclusion cases? Should the courts and agencies still be involved in challenging cases where the allegation is anticompetitive exclusion, as through raising rivals’ costs?

NELSON: There are circumstances where raising rivals’ costs and other exclusion theories make sense. There have been cases that have gone up to the Supreme Court, and the Supreme Court has decided that there was merit to the exclusion allegation. I think the issue among economists is whether all of the factual prerequisites exist for making out such a case in a particular circumstance. As a result of game theoretic modeling and other advances in economic theory, it is now possible to prove, at least at a theoretical level, that exclusion can make sense and that it can undermine the competitive process. Put differently, one can show that the prevention of exclusionary activities in certain circumstances would not simply benefit competitors, but might benefit competition. Assuming that a well-defined and internally consistent economic theory is developed, the issue then becomes whether the facts support the theory.

BAKER: Dennis, do you want to add anything on exclusion or raising rivals’ costs?

CARLTON: I have something to say about both. On the likelihood of coordinated interaction after a merger, the real hard question is how the nature of competition will change because of the merger. In the empirical approaches that economists use routinely, they solve for the equilibrium prices before the merger occurs and after the merger occurs, and then compare prices. When they do that, they assume that the competitive game played before and after merger is the same game—for example, Bertrand or some other form of competitive game—and that just the number of players has changed. But that begs the question. The real question—and it’s a hard one—is whether the nature of the game will change.

The only way I know to try to answer that question empirically is to look at the industry, perhaps in a cross-section, and ask, for example, whether there are any, say, states—if a state is a relevant geographic market—in which the number of competitors is different. I would then do a cross-sectional analysis to see how price competition differs across states, adjusting for other relevant factors. This is a reduced form analysis, and it seems to me to be quite relevant. You have to be careful when you do that analysis that you understand the reason why the number of competitors differs by state. You can make reasonable predictions about competition from such an analysis as long as you can claim that the reason for the differences across the states in number of competitors is what an economist calls exogenous—that is, independent of the current price. The railroad industry would be a good example where most people would say the number of railroads in existence today on a particular route was probably predetermined a long time ago and not dependent on today’s price.

The only other thing I would say on the likelihood of coordinated interaction and empirical effects is that I don’t think the work of John Sutton has gotten enough attention. He specifically looks at industries where the type of competition and concentration interact, and that interaction has not received enough attention.

BAKER: How would that matter?

CARLTON: To give a simple example, Sutton shows that if firms are behaving very competitively, that’s an industry that surprisingly will have lots of concentration. Because the price is so low, there is not a lot of entry, so it is a concentrated industry. Unless you understand the interaction between the fierceness of competition and the incentive to enter, and the resulting effect on concentration, you can get a completely inverted logic as to what inference to draw from concentration about the competitiveness of the industry.

Sutton makes another important point that I don’t think merger analysis has paid enough attention to—that is, that dimensions of competition other than price can matter a lot. For example, if two newspapers compete with each other, one way in which they compete is by lowering their price to subscribers. Another way they can compete is by lowering their advertising rate. A third way they can compete is by raising the quality of their newspaper. Suppose a city with two newspapers gets larger, so that it could support another newspaper of like quality. That is certainly one outcome. But another outcome is that the two existing newspapers simply invest more and become higher quality and therefore there is room now for only two newspapers, even though the city is larger. Understanding these other dimensions of competition is very important to fully understanding and assessing how competition and concentration are related.

Regarding raising rivals’ costs, the real question is what you mean by that. Certainly, in some sense, there is no question that exclusive territories or exclusive dealing, for exam-
ple, by a dominant firm could raise a rival's cost. I think everybody understands how that mechanism could lead to an anticompetitive outcome. The danger I see in theories based on raising rivals' costs is that, unless you are very careful to specify what costs are raised and how they are raised, you get into models of strategic behavior in which a rival is harmed, but that may or may not be procompetitive.

There are so many theories of raising rivals' costs in which you cannot predict whether it is good or bad for consumers that it worries me to base policy on this general notion of raising rivals' costs. In my textbook with Perloff, I have presented many examples of strategic behavior that could be characterized as raising rivals' costs. I use simple examples to show that consumers can be much better off as a result of it. The simple point is that, by creating a profitable incentive for an incumbent firm to engage in strategic behavior, the firm undertakes investments that can ultimately benefit consumers. With respect to antitrust theories based on raising rivals' costs, I would want much more than just theory before acting, because the effects on consumers in these models can be very ambiguous.

BAKER: Your last comment raises a more general issue lurking in our previous discussion of econometrics. I hear you saying that complicated economic techniques or theories have to be used with care because they can readily be misunderstood. That theme came up in our discussion of econometrics, and it seems to me you are suggesting it here, as well, with respect to raising rivals' costs. It also came up when Janusz spoke about game theory. This leads me to ask whether economists will shy away from using complicated econometrics, game theoretic models, and raising rivals' costs analyses even where they are appropriate to use for fear of being misunderstood by decision makers?

CARLTON: I don't know if that would be the appropriate outcome. The fear I was expressing is not that these analyses would be misunderstood, but that they can lead to crazy results sometimes because so many simplifications are required to implement them. Therefore, they alone should not be relied on to make decisions, but rather should be viewed as a complement to the traditional tools we use in microeconomics.

The issue about complication really arises when you are thinking of whether to present something in court. When you are presenting something to the agencies, it is clear the agencies have very sophisticated economists and that the lawyers know lots of economics and are used to doing these sophisticated analyses. When you are presenting testimony in court, however, where you may have a judge or a jury that is unfamiliar with econometrics, you obviously cannot make the same type of presentation. That does not mean that you can't make any presentation. I have been very successful in relying for some of my testimony on complicated econometric analyses because that is what an expert should do. You just have to lay much more groundwork. So, I am not worried so much that a complicated analysis will be misunderstood as that it will be misused.

The real question has to do with exposition. In a court, you have to be careful how you explain what you have done. You may not want to go through all the nitty-gritty details of how you have checked your complicated model. You start out with the basics—what your intuition is and why, what the facts show—and then you can explain briefly what you have done in order to show that the sophisticated modeling supports your position. When you are before an agency, they want to know every last little thing you have done. Therefore, the presentation is different. But I certainly would not shy away from using what I think is an appropriate technique to confirm my analysis.

BAKER: Phil, do you talk differently in presenting your economic case, for example, to the agency economists, who speak the same economic language as you do, than you do to the agency lawyers?

NELSON: While it is possible that in some cases you do, I guess it would be relatively rare. By and large, the presentations are constructed in such a way that you try not to lose any part of your audience. In some cases, the presentation has a sufficiently narrow focus that the economists are the key audience. For example, it may involve a discussion of technical aspects of an econometric study.

Let me make one related point: I think one of the things that is better now than it has been in some years is that there is a little more transparency as to what the agency economists are thinking about, particularly with respect to their econometric models and their thoughts about your model. In particular, there appears to be somewhat more dialogue between the inside and outside economists now than in the past. There really is an effort by the current regime to be somewhat more transparent, and that has helped the dialogue.

BAKER: Janusz, let's do what Dennis started to do a moment ago, and move from the agencies to the courtroom. In your experience, how are lawyers most effective in helping you prepare your case for the courtroom? Have they, for example, helped you suggest areas where economic analyses is needed, or ways you can frame your arguments?

ORDOVER: I believe in interplay. In many instances, I view myself as being helpful to the lawyers in getting their case across. Of course, lawyers are helpful in getting the economist's case across as well, for a variety of reasons. Many of the fine litigators have been in the courtroom more often than most economists. They are better able, first, to guide an economist to a level of exposition that is consistent with the legal principles that one has to abide by, even though economists may bristle at the idea.
Second, especially when you are dealing with a jury, they help you to explain to a group of people whose base of knowledge is quite different from that of people—such as undergraduates at University of Chicago or NYU—to whom we normally talk.

Also, it is very useful to me that the lawyers have lived through many more months, potentially a year or years, looking at the facts, dealing with the depositions, dealing with the kind of information that may be relevant. This does not mean that one should not do one's work independently. Just the opposite! But the lawyers are frequently an extremely useful source of information. I view it as a sort of dynamic process with lawyers and economists interacting to fashion a case that an economist—acting as an independent expert—can effectively present.

I want to go back to something that Dennis said about courtroom presentation. The danger with overly sophisticated theories is not that people will shy away from using them. I don't think anyone can tell Dennis or me or many of us: "You are not allowed to say that." What may happen is that, in the effort to crystallize the issues, the important nuance that often exists in the game-theoretic model—strategic models of behavior—and in well-crafted econometrics can get lost. What is left can be a fairly blunt statement that may or may not define the full economic analysis; we hope it is good economics, but it is shorn of the delicacy of the argument that one really is making. This is where I think the danger lies—that complex arguments get reduced to slogans. In bad testimony, and even in good testimony, there may not be time enough or room enough to be expansive about the foundations from where one's analyses spring.

**BAKER:** Dennis, let me keep you in the courtroom, too. How has *Daubert* [v. Merrell Dow Pharmaceuticals, 509 U.S. 579 (1993)] and its progeny changed what you do in preparing for a trial?

**CARLTON:** I have not found that *Daubert* has had a material effect on how I prepare for trial or testify. I have always tried to take care that my testimony is based on applying sound economic logic to the facts of the case. So I have not been affected by *Daubert*.

To follow up on something Janusz said, one of the benefits I have found dealing with litigators is that they are often well trained and have fine expository skills. It can often help clarify your thinking as an economist to summarize to the litigators what you think are the important economic forces and what you think are the important economic arguments to make. If you read any of George Stigler's articles you are immediately struck that you often understand the key insight just from reading his introductory two or three paragraphs. That seems to me a tremendously valuable skill. I think it helps simplify and clarify exposition. That is a benefit I have found in working with lawyers. They are trained to help you present something in a clearly understandable way.

**BAKER:** *Daubert* has not led you to be less willing, for example, to rely on unpublished working papers or models that are not in the literature yet, but are created for the case?

**CARLTON:** In my experience, *Daubert* has not had that effect. I always try to do what I think is a thorough analysis. I tell people what I have done, and it is up to them to judge. I have never had a problem with *Daubert*, and I am going to keep following this approach that, at least, has worked very well for me.

**BAKER:** How about problems that lawyers have created for you as a testifying economist?

**CARLTON:** One piece of advice I would give a lawyer who is employing an economist is that it is useful if the lawyer knows some economics, so that he or she has an understanding of what the economist can and cannot say. I also find it useful if lawyers engage an economist earlier rather than later, so that the economist is exposed to more aspects of the case. The lawyer should not try and confine the economist to some narrow issue when there are other economic issues in the case on which the economist may well have views and where it may well be important for the economist to understand those other aspects of the case in order to give an opinion about the parts of the case that the lawyer really wants the economist to talk about. You really want to give the economist pretty free reign in searching out data and making him or her aware of what is going on in all relevant aspects of the case.

**NELSON:** To echo and elaborate on one of those points, if you limit the role of the economist too much, you may be missing something. The way economists go about analyzing economic problems can sometimes lead them to see inconsistencies in a line of argument if they have a broad enough view of the case, which they would miss if the lawyers restrict their participation in the case. As a result, one thing an economist can bring to a litigation effort is an analytical approach that can help make the overall argument internally consistent. In some cases, economists can identify a slightly different line of argument that will allow a basic point to survive and be consistent with other points and the factual record.

**ORDOVER:** Let me say one word about *Daubert*. I agree with Dennis. I certainly have not been affected by fear of a *Daubert* motion being filed against me. The appropriate effect of a *Daubert* motion is not to scare an economist from pursuing creative economic analyses, as long as they are grounded in economics upon which people participating in this roundtable (or a similar roundtable) would agree. The purpose of *Daubert*, properly deployed, ought to be to dissuade economists from putting forth gibberish. It is not that the economist's analysis has to be founded in the latest econometrics or in the latest paper that appeared in *Econometrica*,
The purpose of Daubert, properly deployed, ought to be to dissuade economists from putting forth gibberish.

— JANUSZ ORDOVER

the RAND Journal of Economics, or the Journal of Economic Theory. An economist should not be dissuaded by Daubert from presenting even a radically new economic model if other economists would agree that this is a fine piece of economic thinking. Maybe it is novel, maybe it is not, but it is good economics, as opposed to bad economics, or no economics masquerading as economics.

BAKER: Of course, what is written about in economics journals changes over time. This leads me to a question for Phil about experimental economics, for which Vernon Smith was recently awarded a Nobel Prize. Is there anything in that literature to date that you have found sufficiently reliable and useful to influence antitrust analysis?

NELSON: It is interesting to go back to some of Vernon Smith’s early work. In *Ethyl*, the FTC hired Smith and others to run experiments to test the FTC’s facilitating practices theory. I believe they came up with what they viewed as some support for the FTC’s theory. But the FTC did not introduce it at trial. My understanding is that the issue of whether the analytical approach would be accepted by the Administrative Law Judge was one factor weighed in deciding whether to introduce the experimental evidence at trial. However, there has been more experimental work since then, so it may be more acceptable today than it was in the 1980s.

In some ways, experimental economics is helpful because it provides an existence proof. An issue will always be whether the experimental design carries over to the particular industry and fact pattern that is at issue at the trial. But it certainly provides some information. I think that it is sufficiently expensive and novel that lawyers will continue to worry about it. But I think we are getting closer to the day where somebody will see it is worthwhile to use experimental economics to establish some limited part of an argument. But, at least today, I think you would want to have other evidence to go with it.

CARLTON: If I could just add one thing. I have the highest respect for the experimental economics literature and think it has been very valuable in explaining how rapidly competition works and where it works and where it might not work. But to echo what Phil said, it would be very dangerous to claim that a particular experiment conformed with a particular fact situation in the real world. Take *Ethyl*, for example. I was a witness in the *Ethyl* case. I think the case was ultimately correctly decided. The evidence in that case was overwhelming that the practices the FTC was complaining about and the consequences the FTC claimed followed from those practices had absolutely no support whatsoever in the evidence, and I testified as such.

The study by Smith of the practices in *Ethyl* was designed to show in an experimental setting that those practices could have an effect. However, the relevant question was not whether those practices could have an effect, but whether they did have an effect, and that is an important difference. To use an experimental study to show that a practice did have an effect is a huge leap from establishing that it could have an effect. In general, it would be very hard to duplicate complicated, real world fact patterns in a way that could convince a jury or a judge or an enforcement agency that the experiment conformed closely enough to the industry to be reliable. In sum, experimental economics may be useful as perhaps a last piece of evidence in a case, but I would be surprised to see it having widespread application.

There are, though, other areas where experimental economics could be useful. It could be used, for example, in the design of simple auctions. Figuring out the rules of an auction that maximize revenue might well be addressed by some experimental studies. But, in terms of antitrust cases, at this stage, it would be premature to rely on that type of evidence in a very strong way.

ORDOVER: Let me second something that Dennis mentioned. I was going to say something along the same lines, which is that, in analyzing something fairly simple, such as an auction, one could go back to experimental economics and try to examine whether or not a particular auction could generate the observed patterns of behavioral outcomes. One could go back and forth between the particular auction and a particular set of observables and run experiments in that simple setting where the environment is relatively confined.

Interestingly, in the AT&T Broadband/Comcast cable merger case that I was involved in for AT&T, the FCC said there was reason to use experimental economics to test whether or not the monopsonistic concerns that this transaction briefly raised could be confirmed through the experimental analysis of bargaining for content contracts. There were a couple of publications out of the FCC commenting on the important work that DOJ economist Alexander Raskovich did on the subject as foundation for examining the competitive effects on the content buying side from the aggregation of AT&T and Comcast Cable households. That may have been an environment in which experiments could be effectively and informatively run, though we (on the AT&T side) doubted it. But now, especially after last year’s Nobel Prizes, I expect people will try to push a little bit more in seeing where, in fact, such analyses could be employed, whether successfully or not, or insightfully or not. I predict a greater demand for that kind of work than in the past.

BAKER: Let me ask you the same kind of question about another area that has gotten attention lately in economics literature, which is behavioral economics. Is there anything from behavioral economics that might matter in antitrust? Two possibilities that occur to me are endowment effects, and
other regarding preferences, which might be important in analyzing buyer switching costs when trying to understand demand substitution. Are these things we ought to be thinking about in the future in our antitrust work?

NELSON: I'll start, simply because I did a doctoral dissertation on behavioral theories of the firm at Yale under Richard Nelson, Sidney Winter, and Richard Levin. I think it depends on what you have in mind when you say behavioral economics, because it is a very broad tent. There are a lot of concepts highlighted in behavioral theories of the firm studies that are also part of more traditional economics, such as search costs, incomplete information, and the like. Those types of real world phenomena are important and should be recognized by antitrust economists. I would think that even Chicago School economists would embrace those types of behavioral concepts.

ORDOVER: I agree that it is not exactly clear what behavioral economics covers: Is it merely a statement that a simplistic utility maximization model, which underpins much of microeconomics, is the wrong model for analyzing consumer behavior market outcomes? Or, is it just a collection of often very amusing anecdotes to tell your undergraduate students in order to keep them awake? Still, it strikes me that there might be something useful to be learned from examining whether or not, on the whole, individual economic agents are as responsive to market stimuli as the foundational model teaches us. That may lead us to one set of conclusions, such as that people are perhaps much stickier with respect to the firms from which they buy, or less willing to experiment with alternatives, or maybe that people are completely irrational and switch suppliers without any provocation.

There may be some interest in trying to understand managerial behavior in the way firms operate in terms of pursuing their objectives, whether it goes under the rubric of behavioral economics or something else. There is a lot of work on agency theory. There is a lot of work on internal behavior of the firm. There is a lot of interesting work on managerial incentives and how managers respond to those. Hence, there is room for expanding our ways of looking at markets and how agents in these markets respond to incentives.

CARLTON: I think behavioral economics has the potential to better enable us to predict how people will behave in certain situations. I would distinguish, say, switching costs and habit persistence, which you perhaps could explain based on incomplete information or on the existence of search costs, from some of the other aspects of behavioral economics which show that consumers may not be fully rational. I would distinguish those two strands of literature. To the extent that there are certain patterns of behavior that may not be rational for one reason or another, if they are important, and you are trying to predict market behavior, you should be cognizant of them. Empirically, how important those are is a matter of debate right now. But to the extent the behavioral literature has some insights to offer, we obviously should take advantage of it. Already there are some instances in which behavioral economics have shown us how, for example, by phrasing a question differently, people can be induced to save larger fractions of their income in retirement accounts. If those types of factors affect behavior in a particular market that is being analyzed in an antitrust case, you would have to be aware of them.

BAKER: Dennis, do you want to follow Janusz's suggestion and go inside the black box of the firm to look at the incentives of individual managers, in order to understand how the firms will behave or perhaps whether collusion is likely?

CARLTON: To some extent, we do that already. A large fraction of the literature in finance deals with the principal-agent problem and involves analyzing how the types of financing and financial instruments people use constrain how far agents can deviate from profit maximizing behavior. So, that analysis actually has been going on in the literature on the theory of the firm. In terms of how it affects the incentives to collude, tacitly, or even explicitly, I think it does matter, in the following sense. Suppose we're talking about explicit collusion. How would you implement explicit collusion? When you look at how to keep explicit collusion secret, you have to look within the hierarchy of the firm, at how many people have to make decisions in order to explicitly collude with others. Depending upon whether the firm is centralized or decentralized, you might come to very different conclusions about the likelihood that the collusion could be kept secret.

Industrial organization economists have not spent enough time looking at the internal structure of a firm when they try to come to conclusions about whether, say, a price-fixing conspiracy is likely or not likely. I learned in the Ethyl case and have seen repeated over the years that many times price discounts given to a buyer are secret, not just from rivals, but from many of the employees within the seller's firm. That is consciously done because the seller knows that its employees talk to others and that if the discounts became public, there could be a competitive response from rivals. Therefore, sometimes a seller will go to extraordinary lengths to limit the number of its own employees who know something. That just reinforces the notion that how a firm is structured in its decision making, and who has access to what information, can have significant effects on the form of competition.

BAKER: Phil, I would like to stick with collusion and ask you a different question. Suppose you are working on a case in which the plaintiff's theory was that the firms were raising prices in parallel, but there is no direct evidence of agreement. Are you comfortable in such a setting testifying as to whether or not the firms had, in fact, agreed, as opposed to merely
identifying various facts that are consistent or inconsistent with collusion?

NELSON: There may be aspects of a particular case that provide more information than your hypothetical suggests are available. But, as a general proposition, if all you see are price movements, it is hard to distinguish tacit and explicit collusion.

BAKER: Have any of the three of you ever testified that the particular parties in a case have engaged in collusion, as opposed to testifying, “Here is how the industry or market works and these facts are consistent, or inconsistent, with collusion”?

CARLTON: I don’t recall testifying on behalf of a plaintiff that there must have been a conspiracy. But I have testified on behalf of defendants that the evidence cited by plaintiffs in favor of conspiracy does not in fact prove conspiracy, but is instead perfectly consistent with non-conspiratorial oligopoly behavior. In fact, I have written a paper with Rob Gertner and Andy Rosenfeld on almost exactly the question you raise. It was in the *George Mason Law Review* in the Spring of 1997, and was titled “Communication Among Competitors: Game Theory and Antitrust.” The point of the paper is that economists and lawyers use the same words, but often with different meanings, which can lead to hopeless confusion. When an economist uses the word “collusion,” it is important to ask whether he or she means tacit or explicit collusion. When lawyers use the word “collusion,” it is usually in a derogatory sense, and they usually mean explicit collusion. What I will say is that, absent unusual pricing behavior that you could not explain other than through explicit detailed price communication, it seems to me what Phil said is exactly right. Most of the time it would be very hard to distinguish ordinary oligopoly behavior (what economists sometimes call tacit collusion) from parallel pricing achieved through explicit collusion.

BAKER: What is the appropriate role of an economist when the legal issue is, “Did the firms agree?” In such a setting, does economic expertise permit you to have an opinion as to whether the firms actually agreed, or does economic expertise bear only on the foundational elements?

CARLTON: Isn’t the real question what the word “agree” means? If you mean, was there an explicit meeting in which, for example, firm one tells firm two, “Let’s charge $10.00,” and firm two says, “Yes, let’s charge $10.00,” most economists would say that is explicit collusion. Suppose, instead, we’re talking about a situation in which you have two gas stations across the street from each other. They see each other’s pricing and realize they have to be at the same price or otherwise they won’t get any customers. Those two gas stations will charge the same price in an equilibrium. Most economists would classify that as ordinary oligopoly behavior and would distinguish that case from the one of explicit collusion. If you are asking whether I would use the word “agreement,” I have just described two situations without using the word “agreement.” I am reluctant to add a new word, because that might just introduce some confusion. The economist can say whether the resulting price behavior is consistent with there having been explicit price communication, but can also answer the more relevant question: “Is the resulting price behavior consistent with there having been no meeting at which there was explicit communication back and forth about price?”

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—Dennis Carlton

NELSON: To add another layer of complication, there may be a meeting where there is a conversation and an explicit agreement, but when the meeting breaks up, the businessmen go back to their offices and immediately chisel on the agreement. There is then an issue about whether there is any effect of the agreement. Obviously, economists get involved in looking at price data to determine if chiseling occurred.

CARLTON: That is a good point. In fact, one of the things I should have mentioned is that trade association meetings occur all the time. Let’s suppose I say to someone at a trade association, “Boy, prices are low.” Is that explicit communication of price? I think most economists would say knowledge that your rival thinks prices are low is not specific enough information to alter the equilibrium that would otherwise occur. Therefore, whatever communication is being alleged in an antitrust suit as evidence of explicit collusion, the right question to answer is what the price would have been without that communication.

ORDOVER: That goes to a question of information exchange. But let’s assume that we are watching those two gas stations and the price has been $2.00. Starting the next day, out of the blue, all of a sudden the price goes to $2.10, $2.20, to $3.00. As Dennis points out, because they are right across the street, you cannot price higher than your rival. But you surely could price lower than your rival. What does the economist make out of the fact that price has gone up by 25 or 30 percent without there being a cost shock? Obviously, if the price of crude oil goes up, or the wholesale price of gasoline goes up, you would expect that to happen. But suppose that there is nothing to point to that would trigger a 25 or 30 percent price run up. Then, what is the poor economist supposed to
testify to? Look, I can't find anything in the underlying cost data that would explain it? I can't say they agreed. I can't say that they didn't. But I can say that economic evidence that I would normally rely on to explain reasons for price increases is not present.

CARLTON: But couldn't you say something additional? That is, let's suppose you looked at the history of the industry over time and observed that there are instances in which the industry was more competitive and times when it was less competitive, and it may not have had to do with anything like an underlying cost shock. It may just be that they start competing more at some times and less at other times.

ORDOVER: I can understand that kind of behavior. If there is a history of these cycles, there must be something interesting that we could try to explain. We would begin to delve a little more deeply as to what is going on. Maybe there is not an issue of a cost shock, but there may be a demand shock.

CARLTON: I think that is right, Janusz, but don't you think we have plenty of oligopoly models in which you can have observable demand and supply factors constant and you just have randomness in the market in some way? Sometimes prices are higher and sometimes prices are lower. In fact, I think where economists have a fruitful area of study is precisely how the competitiveness of an oligopoly may change over time.

ORDOVER: That is where I was heading. When you observe price movements over time, which is all that you are observing as an economist, you would want to construct some kind of heuristic vision of that marketplace in which this price behavior is actually consistent with a fairly innocuous set of explanations, such as fluctuations in demand. Then you can test that hypothesis because we know of models in which prices move around in a way that may not be obvious to someone who had not looked at the underlying sources. But, from the economist's standpoint, there is a huge amount of danger in saying "I conclude, based on this evidence, that there is no other explanation but agreement."

CARLTON: Yes, I agree with that.

ORDOVER: That is a suicide mission, and it is almost equally a suicide mission on the other side. I remember one case in which a famous economist testified that there was absolutely no way that the observed price behavior was consistent with agreement. Whereupon, the lawyer whipped out a paper from his or her briefcase and, showing the exhibits, said, "Well then, what do you make out of this meeting that took place on X, where they talked about fixing prices?" Again, there are dangers on both sides. There is a limited amount of testimony that one can offer as to what is going on based purely on the observables of the sort that we were just discussing.

BAKER: I want to ask a final question. Dennis, what do you make of Judge Posner's view that a court could infer an agreement on price in a parallel pricing setting, or at least find liability, through the chain of logic that the first firm's decision to raise price for no good reason could be called an offer, and its rival's decision to follow constitutes an acceptance—therefore, your two gas stations have agreed?

CARLTON: I think you are referring to the High Fructose Corn Syrup decision. That decision has generated some debate as to exactly what it means. I am actually involved in a case now in which someone is using that decision as their basis for asserting that there was a price-fixing agreement. How you interpret the decision, I will leave to the lawyers. However, one interpretation of Judge Posner's opinion is that he was saying the antitrust laws are broad enough to allow cases to be brought based on all sorts of things because, for example, every contract in restraint of trade could be an antitrust violation. Because the context of that case was explicit conspiracy, not a tacit agreement, I don't know whether it is fair to interpret Judge Posner's decision as saying that tacit collusion is illegal, rather than just offering a possibility that the antitrust laws are quite broad.

If you went the route of saying that ordinary oligopoly behavior—namely, parallel pricing—could lead to antitrust liability (for example, in the case of the gas stations I gave you earlier), that would be terrible. There would be no guidance you could give firms as to how they should behave. You could not tell a firm to do what it thinks is in its best interest. It would be impossible because, by doing what is in its best interest, the firm would be violating the antitrust laws. Judge Posner's article in the 1969 Stanford Law Review articulates a notion, or has been interpreted as articulating a notion, that any deviation of price from marginal cost could be viewed as an antitrust violation. I don't think that is how I would interpret what he is saying in the High Fructose Corn Syrup case. Nor do I think it would be very good antitrust law, because I don't think it would be practical to implement, and it would lead to tremendous concern among firms as to how they can price.

ORDOVER: I think the colloquy in Stanford Law Review was occasioned by Markovitz's work, and I think Posner may have come close to agreeing that any behavior that is a deviation from a single shot Cournot-Nash equilibrium could be viewed as a source of concern from the antitrust perspective. I think that it would be a bad public policy to constrain firms in concentrated markets to behave "as if" they were engaged in a single-shot Cournot (or Bertrand) game. Firms must be allowed to implement strategies that are geared to long-run profit objectives, say in the areas of research and development, marketing, promotional pricing, as such strategies conduce not only to firms' profits but also to competition and consumer welfare.