FTC-DOJ Conditional Pricing Practices Workshop
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Segment 4
Discussion on the Economics of Conditional Pricing Practices
Transcript

DANIEL P O'BRIEN: All right. Wow, did we hear some complicated economics this morning. And now, right after lunch, it's our job to kind of try to synthesize some of this into what it means for how we deal with loyalty discounts. So we're going to do the best we can. And we'll see what happens.

So this conference is about departures from linear pricing, departures from simple per unit pricing. When are they anti-competitive and how can we sort this out? So this morning's sessions pointed to three main types of departures from simple per unit pricing. We talked about all units discounts or retroactive rebates, the discounts that have the cliffs that one of the Mikes, Michael Salinger, talked about. These are discontinuous tariffs, right?

We talked about prices that depend on rival's quantities. Mike and Mike gave a thorough discussion of that. And then we talked about bundling. Mike and Mike also covered that. And these three types of departures from linear pricing are not mutually exclusive.

So here's the thing-- these issues tend to arise in intermediate markets where firms have market power. Those are the contexts in which we're dealing with on most antitrust cases. So they have market power in the sense that they downward-sloping demand. Ben said everyone has downward-sloping demand so they have market power.

So it's well known that linear prices are inefficient in such markets when the firms are complements. And this came up in various ways in the discussions. So we're faced with the following-- in determining whether departures from linear pricing are a good thing or a bad thing, there are two propositions that we have to deal with that are difficult.

We know there are motivations for departures from linear pricing that have nothing to do with anti-competitive effects. Those motivations exist. And, moreover, the use of whatever departure from linear pricing is chosen in those environments, holding constant or holding aside competitive spillovers, are probably good things. So against this backdrop, I'd like to just jump right into one of the strategies that was discussed this morning as a way to try to sort out the good from the bad and ask the panelists, what is the role, first, of cost-based tests in sorting through these things?

And, when you answer, let's bear in mind the three types of departures from linear pricing that we're talking about. What is the role of cost-based tests in determining the net anti-competitive effect of these practices? What do they tell us about the potential benefits and harms? And I guess I'll turn to the one Mike that we have, first.

MICHAEL WALDMAN: So I'm not going to answer the full question. Let me just answer the question in terms of the multi-product brand loyalty discounts, which was what I focused on this morning. And Mike Whinston can talk about that, I'm sure, later, concerning single-product brand loyalty discounts.

I'm not a big fan of cost-based tests for the following reason-- as I talked about this morning, there are lots of different possibilities for what could be going on, in particular if you think about it as a substitute for time. Many of those result in either improvements in social welfare and some result in decreases in social welfare.

And so, if I'm thinking about a cost-based test, then a cost-based test would make sense if somehow the cost-based test mapped into that taxonomy, that if you passed the cost-based test, it's more likely to be welfare-improving and, if you don't pass it, it's more likely to be welfare-decreasing. And I don't know any analysis that suggests that that's true. Maybe it is, but I haven't seen any analysis like that.

And so it seems to me that a cost-based test, at least for multiple-product brand loyalty discounts, seems problematic because I don't see why that's going to be a good way to think about how we get the highest welfare that we could possibly get.

DANIEL P O'BRIEN: OK. So, if not cost-based tests, what are some alternatives?

MICHAEL WALDMAN: Well, you know, my sense is that the main focus, particularly if you look at the cases, is kind of this leverage argument and exclusion argument. And those arguments tend to hold, at least the main part of the theory says they tend to hold, under a certain set of conditions. I think Dennis Carlton and I and Patrick Greenlee have a paper that kind of maps that out. You can just sort of look-- does the case satisfy those conditions?

Now I think that, in our paper, we maybe hadn't thought-- Dennis and have a new paper in Economic Journal in 2012 which, I think, sort of expands the set of conditions in which the leverage argument might be problematic or might apply. And so I think that other paper may not have talked about the set of conditions exactly correctly.

But, basically, it's saying, we have a theory. This is the theory that we're really worried about. Do the facts of the case match the theory? I would be more comfortable with that than a cost-based test.

DANIEL P O'BRIEN: Yeah, Ben?

BENJAMIN KLEIN: I don't know if we want to make it free--

DANIEL P O'BRIEN: Free-flowing.

BENJAMIN KLEIN: So I guess I don't really think, from an economic point of view, there's a big difference between bundling and single product. I mean, obviously there's a huge difference in the law in terms of whether you want call it time. But in terms of the economics, it's the time good you can think of in a single product case as inframarginal sales.

And the question, I agree, it's this question of leverage. And it's the question, are you taking advantage of your dominant position and using the consumer surplus on the non-contestable sales? Which can be the inframarginal sales if you're a dominant firm with a single product or it can be the other products when it's a bundling case. So I think that's the way we should be looking at this.

And in terms of the price cost, I think that's one of the hooks that you have to look at. I mean, how do you take advantage of the consumer surplus on the inframarginal product? You make an all or nothing demand. So you can do that either contractually-- so you do it like densebuy or something like that. It becomes an explicit, exclusive dealing arrangement because the distributors have to have the densebuy products. So you make an all or nothing demand.

How do we see, economically, whether you're making and all or nothing demand if you're not actually doing it contractually? Well, you look at attributed price cost. And as I was trying to say this morning, there's an efficiency reason for why you want to do these types of things. And it's not just firms with what we would call market power because, like in the drug industry, all you need is a product with a very low marginal cost.

And every firm wants to sell more units of their product. And, therefore, they're going to have contracts which lower the prices for the marginal units. And the question is, is there effective competition for those incremental units by a rival firm? And so it doesn't have to be a symmetrical case.

It could be a dominant firm with 70 and a rival has 30. And the buyer has the ability to, let's say, shift 20% by what they can do, by making it the preferred thing on the formulary or whatever they're doing. And so, just as long as there's open competition for that contract, there will be the 90-10 or, if the rival wins, it will become 50-50. And the question is, how do you know if there's open competition for that?

Well, I think it might be difficult to measure contestable sales and to do it. But, in principle, I think that's what we should be looking at, attributed price relative to cost. And that would mean an equally efficient rival could compete for that contract, for those 20%.

So, I mean, Steve-- where is Steve?

MICHAEL WALDMAN: He just walked in.

BENJAMIN KLEIN: There's Steve. Steve is going to tell us that a less than equally efficient rival could have an effect. Which is obviously the case. But I would say, in these cases-- I mean, one of the benchmarks I like-- there's no woman with the sign now. You tell me when to shut up. But if he uses a benchmark, what if the firm just engaged in price discrimination on just those units?

And just as they had price above marginal cost, we basically would think it's OK. It makes it more difficult for the rival to compete if that's what the firm is doing. But it doesn't raise the rival's costs, and the rival's going to have to lower prices to get the switching. And just as long as the contract is not made all or none in an economic point of view, I would say that that's just competition for distribution for the place to have the eye-level shelf space of to be on the formulary or whatever.

DANIEL P O'BRIEN: Does anyone have views on the single product loyalty case? Is that different than the multi-product loyalty case in terms of how we think about whether we want to use price cost tests or maybe we want to wait until the later panel this afternoon to hit on that? Unless someone has some views on it? Yeah, Matt.

BENJAMIN KLEIN: Well, certainly, I have views but I'm not--

[LAUGHTER]

MATT BENNETT: I mean, it's difficult because, if we think that all of these things have very different theories of harm, then it's quite difficult to get any kind of one single test that covers all the theories of harm. And I accept that completely. But when we're thinking about exclusion and the type of cases that, at least in Europe, we deal with most of all, then it seems like multi-product discounts or bundled discounts are a lot easier to handle than single product because, normally, it's fairly clear what the assured base is, the must-have product is and what the contestable base is.

Whereas I think one of the difficulties when you're trying to do these retrospective rebate tests and the effective price test, if you like, is determining exactly what is the contestable portion of demand and what is the assured portion. And the problem there is that the tests entirely turn on that because as soon as you have the entire base is contestable, then you're no longer really having to look at an effective price test, you're looking at essentially a predation test. You're just looking at competition on the two bundles. And you're looking at whether one person is pricing below the cost of the entire bundle rather than on the effective price, if you like.

DANIEL P O'BRIEN: So with respect to all units discounts, if you had an environment where you have a large dominant firm and a very small player coming in and the buyer is operating just past the cliff, then the marginal price of the increment for the buyer would be negative. Do people on this panel feel that that would be a sufficient basis to condemn, say, a firm that had a 90% share or something, that kind of a discount?

I would say, no. I don't know if this works, but-- I don't have a green light. My response, immediately, would be no because there are a number of issues that are important in terms of aligning the incentives between the downstream firms and the upstream firms. So, for example, in that confections case that I talked about earlier, you may not want 90% of the cost of bad service to fall on the upstream firm.

BENJAMIN KLEIN: More generally, we have to think about it as competition for the general contract and not for a particular buyer and not for a particular unit. I mean, you have a thing, if it says you get 80%, you get a 20% discount and you're at 79, we know the price of that incremental unit is going to be negative. But that's not the useful way to look at it economically.

We should look at what the rival can effectively compete for. Like on the Sanofi [INAUDIBLE] case, they were able to switch hospitals by offering large discounts for getting the hospitals-- say, they're going to have 50%-- 70% of the sales. Even though Sanofi was the dominant overall in the marketplace. So I don't know if I answered your question, but I get upset when people talk about, oh, for that one unit, yeah we have one unit.

I mean, obviously if you're at 79.9%, obviously, that next unit you're going to buy.

DANIEL P O'BRIEN: That's why I asked the question, Ben, because I knew you'd get upset.

[LAUGHTER]

Matt, you had some--

MATT BENNETT: Just on that, I think there's another condition that you need to worry about, and that's essentially, is there an effect. Is it foreclosing-- if you're thinking about the foreclosing case-- a significant portion of the market? And, again, this is something that we had in the Office of Fair Trading [? Idex ?] case where we said-- there was a particular product. It was a veterinarian diagnostic test.

And it was clear that it was a must-have for people who thought that their dogs had this pancreatic cancer test. The problem was-- the alleged theory was that they were trying to leverage it into the wider diagnostic market. And what we found was that, actually, the portion of people that had a demand for the two of these tests jointly was very insignificant as a proportion of the demand for the wider diagnostic market.

In other words, there was only 10% percent of these people that were actually trying to buy it jointly, and 90% percent of the people in the wider test didn't want it jointly. And, therefore, it was never going to have any foreclosure effect. So even though it failed the price cost test, it wasn't going to foreclose because 90% of the market was still open.

BENJAMIN KLEIN: I mean, a lot depends on how you define the market. It seems ambiguous in your case. But that's one of the things that I find upsetting about LePage's. I mean, the plaintiff had 67% of the private label tape market at the time the case brought. I mean, even if it failed the attributed price test, which it [? didn't ?] with 3M's discounts, we're talking about some major buyers. But still they're not going to foreclose them from the market, LePage's from the market.

So I think that's the next-- if you're going to use this attributed price cost test to determine if it's de facto exclusive dealing, you then have to go through the exclusive dealing analysis and look for anti-competitive effect in the market.

DANIEL P O'BRIEN: Just one more follow up on this, following up on what Matt said. In exclusive dealing, we generally don't think about using a price cost test. But exclusive doing is really a special case of a loyalty discount. So should that tell us something? And it seems, in this discussion here, it is telling us something that. Is there a feeling among the panel that, in thinking about the exclusive dealing aspects of these problems, in a lot of cases, the price cost test is not going to tell us that much?

[LAUGHTER]

PATRICK GREENLEE: Ben would say, yes without any of those qualifications.

BENJAMIN KLEIN: Well, no. I mean, the thing is, just because it's exclusive dealing and it's not predatory pricing, doesn't mean the price cost test is irrelevant. That's just a non sequitur. OK? I mean, it's not predatory pricing, but it does not mean that the price cost test is irrelevant.

The other mistake that I think people fail to recognize is that, just because it's exclusive dealing, they then look for the exclusive dealing efficiencies and say, well, are the efficiencies protecting specific investments, preventing free riding or-- you go through the list. But just because it's exclusive dealing and that's the anti-competitive analysis we're going to do, doesn't mean that we're limited to those efficiencies of exclusive dealing. And, in particular, you have the efficiencies of just price discounting here, which is, like, the best efficiency.

MICHAEL WALDMAN: Let me go back to an earlier question. I think it was Michael Salinger's theory, which is if you have kind of a 90% base-- you get this price discount if you have a 90% percent share. Then you can set it up by basically saying, OK, we're going to keep the price high, and they can compete at this lower price or they can compete at the higher price. They can compete for more than 10% of market share by lowering the price a lot or we can keep a high price and stay with 10%.

And so I don't think the price cost test addresses that very well. And also going back to something I mentioned and something Randal Heeb mentioned, which is, if you have a dynamic setting where there's R and D investments and product improvements and having a small market share today has an effect on your ability to build your product and your market share over time, then kind of keeping this 90% market share-- maybe that might not be so bad for today. But going down one or two generations of the product, it could make the firm much less competitive and so could actually hurt much more in the future.

And that's kind of what Dennis and I sort of worked out in a particular case in this 2012 paper. So, again, I think there are issues with the price cost test which don't, in my mind, map that well into when is it welfare improving, when is it not welfare improving?

FRANCINE LAFONTAINE: What I'm hearing from you is in part that you want to use the price cost test as an exclusion-- is there exclusion or not, as a test of whether there's execution or not. So maybe that would be the counterpart is to say, is the rival able to compete for the contestable part of the market as a question as opposed to being a price cost version of that question? Does that make any sense for what you-- because you want to use it as a screen for exclusion.

BENJAMIN KLEIN: Well, I didn't say safe harbor, but I think you're right I am inferring that. I guess I agree with you if I understand.

FRANCINE LAFONTAINE: I'm trying to clarify what you're doing.

BENJAMIN KLEIN: If what you're saying is, do I want it to be safe harbor? Mike has things why it shouldn't be a safe harbor. That's what he's saying. His first point was that the firm could raise the list price is basically what he's saying. If they raise the list price a lot and give the discount, then it's going to fail the attributed price test. And if it doesn't fail the attributed test-- I mean, the bottom line is all the cases I'm familiar with, not just Eaton and Sanofi and LePage's and PeaceHealth, in all those cases, they didn't raise the list price. 3M did not raise the list price of the Scotch tape.

So it's a theoretical possibility, and there's reasons that it could go in that direction. But I would say that's one thing that we should look, empirically. The other point about why it shouldn't be a safe harbor-- basically, you were saying you could have a rival that has higher costs and it's this dynamic story. The rival then is going to have lower costs but it could not compete effectively now--

MICHAEL WALDMAN: It could have lower costs for some small quantity.

BENJAMIN KLEIN: Then it has lower cost-- but is it minimum efficient scale or minimum viable scale, that quantity? So it gets driven out. And the question is this dynamic question that over time

MICHAEL WALDMAN: It's kept small.

BENJAMIN KLEIN: Right. Well, I would say the burden-- in the competitive process, I get uneasy making quote "welfare"-- I would say, in a competitive process, what we should be doing, is that rival, if there's dynamic efficiencies over time if they can grow, that rival has to make an investment and take some losses because it has higher costs now. But the question that we should be careful about is, is the dominant firm, at this point, taking advantage of its dominant position and using it in a way that is quote "disadvantaging" the rival?

I would say just as long as the price is above the marginal costs of that firm, I would say that that's OK. So I guess agree.

AUDIENCE: Just to make the record clear, you said there should be a safe harbor or not?

[LAUGHTER]

BENJAMIN KLEIN: I'm saying it should be a safe harbor. And you'll say, what's wrong with my answers to Mike's-- OK. You want to go onto the next question?

PATRICK GREENLEE: So we heard from Tim Brennan this morning about really should be thinking about these cases or one way to think about these cases is that the dominant firm or the firm with a significant share signing up a bunch of retailers. The idea there-- should we really be thinking about that as being rather analogous to just monopolizing or monopolizing the use of that retailing market? Should we just be thinking about that complementary market, focusing on how much of that market is still available to other firms?

I just was interested in what the reaction the panelists had about Tim's approach to thinking about loyalty.

FRANCINE LAFONTAINE: So for vertical restraints for the-- non-price, I guess, vertical restraints. For quite a while, in some sense, the way that the rules have been applied have focused on what's happening in either the upstream or the downstream market in terms of competition level. So, to me, that's very consistent, what he's suggesting there, with that kind of approach.

We will worry about these vertical restraints if we see that the increase, the possibility of market power being exercised within one or the other of these markets.

PATRICK GREENLEE: Anyone else? Tim, you've got five votes.

[LAUGHTER]

Ultimately, though, when we're thinking about trying to assess effects, then we really have to think about, well, what's the equilibrium? What's the predicted outcome going to be if a certain pricing practice was not being used? When we think about merger simulation, we use simple linear pricing. There's a pre-merger equilibrium. There's a change in the ownership matrix, and we let people re-optimize, see what sort of price effects we have.

When we're thinking about these types of cases, if we're going to intervene some way or think about intervening, the question really, then-- we'd have to figure out what the equilibrium is going to look like if the strategy is not in place. And if that's the case, what strategies, what restrictions? What is that but-for world? What are the strategies or pricing strategies that we would contemplate for the firm that was under investigation? Matthew.

MATT BENNETT: I mean, I guess we have a kind of a threshold that the harm has to be significant in mergers because otherwise you would end up basically, unless you could prove efficiencies, you would ban every single merger. So we have this kind of substantial-- at least in Europe, we have the substantial lessening of competition-- and I see that as the kind of equivalent that we might want to think about with regards to these type of practices as well.

So if there is not going to be substantial foreclosure, then it's unlikely that you're going to get the substantial increases in prices. And, therefore, we shouldn't worry about those too much. So I think there's an analogy there that we might usefully draw.

JULIE MORTIMER: I would just add to that-- there can be several challenges to calculating those new equilibrium linear prices. And so I guess two comments on it. One is that, when we are discussing these very wide range of vertical restraints that have been kind of put on the table today, one of the things that is obvious from the wide ranging discussion is that these contracts, they get very, very complicated. But one silver lining to that is that they also induce a lot more opportunity for flexibility.

So one of the things that happens when you sort of do the counterfactual linear pricing equilibrium is that you lose some of the anti-competitive inefficiency effects but you also lose some contractual flexibility. And that can have important impact on its own. In many of the cases where I have worked or cases I'm familiar with empirically, another point about but-for pricing that strictly is the sort of simple linear pricing kind of format is that that's often the basis for price discrimination across different channels of distribution.

So one of the big issues, for example, for vending, is that we don't really recalculate new equilibrium linear prices. The reason for that is that it's very difficult for manufacturers to try to police across different distribution channels how the goods move. And the goods that go through the vending channel tend to have very different retail prices than goods that move through grocery channels, for example, or convenience stores. So they're facing constraints oftentimes that we haven't really fully appreciated from the perspective of outside researchers or analysts of those industries.

PATRICK GREENLEE: So then suppose there was an antitrust investigation, maybe it's vending or what have you, and you've evaluated it. There's some efficiencies there, but it does look like something bad is happening and if we need to specify what the bad is, we can do that. I guess the question, not too articulately stated, is would we expect that targeting the investigation, what kind of strategies would we allow them or would we contemplate that they'd be using, absent the strategy that got them in trouble initially? So part of what I was hearing you saying was, well, if we compare with linear, there's a lot of other problems that you might be creating or efficiencies you might be throwing away.

I guess the question is, would we be assuming that if Intel's found guilty of doing something that we should just expect that they're going to go with simple linear pricing on all of their

DANIEL P O'BRIEN: I think Patrick's basically asking, what is the but-for world and to what extent does the theory and empirical work-- although, I gather there's not been that much in this area-- tell us about how to think about what the most likely but-for world is because isn't it the case that we would have to make some conjecture about what that is in order to analyze this stuff?

FRANCINE LAFONTAINE: So the more recent empirical work that Mike Whinston referred to and that Julie described does exactly that. It looks at what would happen if-- and the same thing with price discrimination, the more recent price discrimination empirical literature says, OK, so we have these tools. Now we'll see what happens if we remove one of them or we add something else.

So, presumably, you end up in court because something has changed or something has happened that has led to the dispute. So maybe that's one way of defining the but-for is to say, what if that change didn't occur?

DANIEL P O'BRIEN: Yeah, but in many cases, we have practices where something's been in effect for 20 years and we've decided it's gotten to the point where we just can't tolerate this anymore and we're going to go after it. I mean, a lot of the exclusion cases I have worked on are that way. What do we know about thinking about what the but-for world is likely to be?

I mean, we're talking about departures from linear prices, but whether or not non-linear contracts are some substitute, maybe imperfect substitute, or sort of where they're going to go if we don't let them do what they're doing. I mean, how much do we really know about that and how should we get at that? Are we left with sort of, oh, it says in these documents that if we didn't do this, they were going to try that?

I've seen those, but beyond that, in terms of predicting next-best strategies--

JULIE MORTIMER: It would be different for every industry.

FRANCINE LAFONTAINE: It would be different for firms within industries even. That's the point I was trying to make earlier when I said there are alternatives, and they'll look for an alternative that gets them as close as possible to what result they were hoping to get with the one that they have now. So but my question to you back would then be, so what has made it become intolerable? If it has been going on for 20 years, why now?

So something has changed, I presume, in the market or something.

DANIEL P O'BRIEN: Usually, somebody has complained.

BENJAMIN KLEIN: I mean, we know that it's likely to be some form of price discrimination with regards to the incremental contestable sales, right? I mean, so I think the reason they don't go to more direct price discrimination is not, as I said this morning, because of the Robinson-Patman so much but because it's very difficult to measure the incremental and contestable sales. It's going to vary across buyers. It's going to vary over time.

And so you're going to get a more quote "inefficient," less perfect price discrimination type of contract. But we know, in general, that's what we're going to move to. But I agree with everybody it's going to vary depending on how best you can measure what you're trying to measure.

MICHAEL WALDMAN: Well, it also depends on how wide you have the antitrust ruling, right? So if you have a narrow ruling that says, this narrow thing is illegal, let's open sort of more substitutes than if you say this wider class of things is illegal. So the ruling itself has an effect on what we would expect as a result.

FRANCINE LAFONTAINE: And even the possibility of a suit, what kinds of things are more likely to get them to be looked at.

DANIEL P O'BRIEN: So let's talk a little bit about the empirical literature and what we think the body of empirical literature in the area tells us about how we should be approaching our analysis on cases. Are there significant insights that are generalizable across industries? Is it that we're just not very far along yet? Are there some major gaps that you think would be useful to fill before we can say we get much out of the empirical literature?

Is all of this stuff kind of case by case, within case, doing our own empirical work within the case because there's nothing generalizable? Where are we in that whole spectrum?

FRANCINE LAFONTAINE: OK. Should I start? Go ahead.

JULIE MORTIMER: Well, I think there are a couple of key takeaways. You also asked, are there gaps in the literature? There are gaps in the literature you can drive a truck through at this point. So I gave a couple of multi-product examples. Mike Whinston, in his slides, talked about a couple of single product cases that are more exclusive based. There's a little bit more work on exclusive dealing per se. But there are not a lot of-- I can't think of any empirical studies that have really detailed data on a contract that references rivals or a contract where we're also dealing with issues of collusion as a result of the contract.

I think the couple of guiding principles that I've taken from empirical work in this area is that the substitutability of the products is going to be really key on the demand side. On the supply side, having a star product in your portfolio can make a big difference in the multi-product cases. And also the sort of the permanence of dominance. In a lot of discussions of industries there's taken for granted this notion that we can categorize firms into dominant and competitive fringe or dominant firm and then entrant.

And in a lot of industries that's a sensible way to look at it, and in other industries, the nature of dominance is always changing and is always in flux. And so I think understanding the nature of competition there, we've got some examples in both cases. But it's important to kind of distinguish between those.

And then also just the role of the downstream firms. I think another important gap in the empirical literature is our ability endogenize downstream effort and what role that plays in inducing the contracts to be written in the first place and in terms of what kind of welfare effects those contractual obligations end up having.

FRANCINE LAFONTAINE: So I'm just going to complement a little bit what Julie just described. I would say it's not just that there are gaps. I think it's a huge gap. There's very little--

DANIEL P O'BRIEN: It's a huge opportunity.

FRANCINE LAFONTAINE: It's a huge opportunity. No, I totally agree. Because there are lots of different practices, lots of different ways to think about them, lots of different industries where they occur. So you need an awful lot of evidence in order to be able to make sense of that. And we don't have close to enough for that.

Having said that, we learn from two main sources of information, really, and many of you here have learned a lot from cases that you've been involved with. And those cases-- you get access to some details about the contract and all that. That's great, but they are a very selected set of things. There's a reason that these cases were brought on.

And so it's not representative of all of the kinds of contracts that we see out there and what their usage is for. So when you think about the broader set of contracts, first, I agree with Julie. I don't know of any study that really has kind of the referring to rival. Actually, yours technically refers to a rival because there's a 90%-- no, it was 90% of your thing from last year.

That's right. OK. So even the 90% didn't work. So there are studies that have looked really at loyalty discounts the way that we are describing them and the way that they've occurred in cases. The studies that we do have are about mostly exclusive dealing and or tying. There are only a handful.

And they're in settings that don't end up in court systems very much. They're in settings where the downstream market tends to be fairly competitive. And because of that, I think they don't find negative effects on consumers.

The one that I think is an exception to that is the work by Crawford and [INAUDIBLE] that looks at the cable industry, where there's less competition there than in other contexts. And it's a more structural model and all that. And one of the main effects that they see from removing the bundling there is that it affects the bargaining process upstream. And because of that, at the end of the day, removing that doesn't benefit consumers. So they're able to look at things like that with that.

So I think those are the main things I would say to complement what she said.

JULIE MORTIMER: I mean, it is an opportunity, but the challenge of getting the data remains an important challenge and a difficult challenge and one that I think, as we move into more Big Data settings becomes, at some level, it's more well-organized. On the hand, the access challenges becomes even more difficult. So people who have access can do this but it becomes more difficult to get access if you're outside of that realm.

DANIEL P O'BRIEN: We just have a couple minutes. Just maybe in closing we could ask, from the perspective of economic theory and sort of where we are in understanding these practices, I'm wondering what people think are the urgent needs in terms of moving forward with the economic literature and thinking about these things to help us resolve how we should be treating these practices. Anyone have any thoughts on that? Yeah, Mike.

MICHAEL WALDMAN: So going back to the multi-product brand loyalty, Patrick has a very nice paper which shows how it can related, you can do a tie or something close to a tie. But the literature hasn't really sort of fleshed out the similarities, the differences, the subtleties in terms of commitment and some other issues. So I think it would be really nice to get that settled and those details because I think, in terms of moving forward, really understanding the theory a little bit better than you can get out of the current literature.

Because there's a lot of literature on tying but there's not a lot of literature on multi-product brand loyalty discounts. And not a lot of literature connecting the two to make sure that we understand all the nuances there.

DANIEL P O'BRIEN: Anyone else? OK. That's it. Thank you.

[APPLAUSE]