

[Introduction]

JOANNA TSAI: Hi, everyone. My name is Joanna Tsai and I am vice president in the competition practice of Charles River Associates based in Washington, DC.

The topic we are going to explore today is cartel deterrence. There is a consensus that deterrence is the principal reason why sanctions are imposed for competition law offenses. How can we best deter cartel offenses? How should legislatures, competition authorities, and other policymakers analyze this important issue? These issues are important in setting and revising penalties, but also relevant to other issues like the structure of leniency programs.

The particular questions that we will explore on today's program include: Should we penalize the firm, the actors, or both? What specific penalties should be employed? Should the existence of private damages be considered?

With us here today, we have three world-renowned economists to share their insights on these topics. The panelists, in the order of presentation, are Dr. Frederick Jenny, who is Professor of Economics at ESSEC Business School, former judge on the French Supreme Court and Chairman of the OECD Competition Committee.

Next, we have Dr. Dan Rubinfeld, who is the Robert L. Bridges Professor of Law and Professor of Economics Emeritus at UC Berkeley and Professor of Law at New York University.

Finally, we will also have Dr. Jorge Padilla, who is Senior Managing Director and Head of Compass Lexecon EMEA.

Welcome, everyone.

Fred, to kick off, could you start by giving us an introduction to the economics of crime and the literature in this area.

[The Economics of Crime]

DR. FREDERICK JENNY: Thank you, Joanna. Yes, I will give a short introduction to the analytical framework that economists use to think about crime and punishment. The second thing I want to do is to give some insight from this very simple model and, finally, to leave you with two or three issues that we may discuss later on.

The economist who actually set up the framework to think about crime and punishment is Gary Becker, who wrote a celebrated article on this. And Gary Becker starts by looking at the cost of crime or the cost of violation, and if we think about cartels, for example, the cost of cartels. And he devised a cost of violations into three categories. The first is the damage from the violation itself, when the prices go up, some people are not able to buy the thing anymore, other people have to pay more than they would. They have a damage, and this is the first dimension of the social cost of this violation.

The second cost of the violation is the cost of the enforcement of the law, which prohibits this violation. That requires a competition authority, it requires courts, it requires investigators, it requires time, et cetera. And this second cost, the cost of enforcement, in a very simple way, is a function of the number of violations and the standard of proof, if the standard of proof is very high; it's going to be very costly to get a conviction in terms of public resources. And, finally, it is a function of the probability that the violators will be caught. If there's a very low level of enforcement, there's a very small probability that violators will be caught and enforcement doesn't cost very much because it's not undertaken. So we've got three variables there, the quantity of violations, the probability of finding a violator and sanctioning the violator, and the standard of proof.

The third type of cost, interestingly enough, is the cost of the sanction itself. The fact that when you sanction someone there may be costs associated with it. One of the practices that we

know in the US is that a cartelist may end up in jail for, I don't know, let's say, two years. So that's 700 days in a jail. I don't know what the cost of a day in jail is in the US, but I know what it is in France. It's about 1200 Euros. So that's 700 multiplied by 1200 Euros, which is a lot of cameras and a lot of guards and not much luxury, but that's what it costs. Okay. So that's the cost.

Or if I take another example, in competition law, if we impose an injunction, for example, on violators, well, this injunction has to be monitored to make sure that the firms, in fact, abide by what they should abide by and this is, again, a cost of sanctioning.

Okay. What is going to be the cost of sanctioning a function of? Well, it is going to be a sanction, again, of the number of violations; second, the number – the probability of people being caught; and it is going to be also a function of the type of sanction which is used and, as I just suggested, prison time is more expensive for society than some other types of sanctions.

Finally, the last element is that at the heart of the model of Gary Becker is the idea that the violators are rational people. They are people who make kind of a computation between the risks and – of losses and the probability of benefits from committing a violation. So they know that they can be caught with a certain probability. We know that they know, at least they are assumed to know, what the sanction is going to be in that case if they would be on the losing side. But they have one minus that probability of not being caught and of getting a profit out of their violation.

Now, the point that Gary Becker is trying to make is what should society do, given this framework. And his main point is that society should try to minimize the cost of violations for society, minimize the set of the three costs which I have mentioned, the cost of damage, the cost of enforcement, and the cost of sanctioning.

And what are the tools to minimize this total cost of violations? There are two tools. One of them is the probability of violators being caught because this is the intensity of the enforcement activity of the states. So that seemed to handle the states. How much resources does it give and how efficient are the competition authorities or the courts to find the violators? So probability of sanction. And, second, the severity of the sanction, which is usually something which is written into the law. If you cartelize, if you participate in a cartel, this is the kind of sanction that you're exposed to.

To make a long story short, to make sure that violations are not committed, that there's a deterrence aspect to the enforcement, there's one condition that must be made, and that condition is the fact that the sanction of the violation must be larger than the profit to the violator divided by the inverse of the probability of him being caught. So, for example, if a violator gets a gain of 1,000 and he has a probability of 1 over 10 of being caught, then the sanction should be at least 10,000. A more common sense way to say that is that crime should not pay. Okay. So public institutions have to play with probability and sanction to make sure that crime doesn't pay.

So having said that, what are the insights that we get from this model? The first is that the sanction – if a sanction must be related to the gains that the violator has gotten from the violation that suggests the competition authority should be interested in assessing this gain. By how much has, there been an overcharge, for example, in the case of a cartel? Because this is the gain and ideally, at least, we want to divide this gain by the inverse of the probability of being caught. But that means that the kind of information that the competition authority should look for is not only the total sales, but also the increase in price to get some sense of – when the violation has led to an increase in price, some sense of the importance of the gain to the violators.

The second insight that I want to talk about is linked to the first one. In many competition

laws, there is in the law the maximum sanction. A maximum, which is either as a percentage of turnover or sometimes, in some countries, as an absolute number. Now, this is very strange and this is not really in line with the economic reasoning because the economic reasoning said, you know, it should be the benefit divided by the inverse of the probability. So whatever that is. So it may be much higher than the ceiling that you set once and for all.

So there is a disadjustment there with the idea that maybe, particularly for cartels, the sanctions are not always sufficient because the law prevents the people from making them sufficient.

The third insight is that clearly in the model I have in mind, the sanction of the violation is the monetary loss or the equivalent of the monetary loss to the violator. Now, the monetary loss can come in different forms. It can be an administrative sanction, but it can also be the damages that are paid to the victims who sue once they have the proof of the violation. So there's an economic argument to say that for deterrence, we should treat damages in the same way that we treat sanctions and we should aggregate them both to know whether there is deterrence or not.

Now, let me finish with the issues that I wanted to mention. The first issue is the fact that in most countries, including in the US, there's a legal principle of proportionality of sanction, which, for example, the US basically says that there shouldn't be excessive bail or excessive fines imposed, and this is part of the amendments of the Constitution but it is the equivalent in the legal system.

So the judges have a notion that there should be a proportion between the violation and the sanction. And the economists, as I explained, say there shouldn't be a proportion or the proportion can be enormously different from – you can get a huge sanction from a very small damage if you have a very small chance of being caught. And this is one of the reasons why, in

many countries, courts tend to overturn decisions of competition authorities because they think that the sanction which has been imposed, even though it's probably not even a deterrent, but are too high. I mean, they don't respect this principle of proportionality. So we have a slight disconnect between the legal theory and the economic theory.

The second thing is linked to if we were to follow the economic model, we should – competition authorities should use optimal sanctions. Now, some economies have computed what those optimal sanctions should be. They have taken the gains of the cartelists and they have divided that by the – an estimate of the inverse of the probability of being caught and have come up with the fact that most firms would not be able to pay those amounts. And this has been one of the arguments which has been presented to say that the sanctions for cartelists should not be administrative fines, but they should be prison terms, because if you impose administrative fines on firms, either they're not going to be a deterrent or they are not going to be able to pay and they're going to go bankrupt which is not going to help competition.

And my last point is related to the second one. When we think of an administrative sanction, we move away from the very simple model of Gary Becker where it's an individual who violates the law, then he pays and he has a benefit. We're talking about a corporate body. And the question really there is who pays the fine, who pays the sanction. Is it the executives? Probably not, unless they are fired. Is it the shareholders because they will have fewer benefits? Is it the consumer because in the end the firms will increase their prices to recoup the losses? So this is also an argument, which is used to say that administrative sanctions are not necessarily a very good way to sanction cartels.

JOANNA TSAI: Thank you, Fred, for that very clear and interesting discussion on the economics of crime and detection – deterrence.

Dan, anything you would like to add to that? Any reactions?

DR. DAN RUBINFELD: Yes, just a couple comments. Thank you, Fred.

So as you stressed, the Becker model, which is one that most economists follow to a large degree, stresses the rationality of the actors and the goal here is deterrence. It's very important to realize that we're trying to deter and we're deterring people from engaging in activity that essentially has no social benefit. So, you know, in a – if we were – if we had a perfect world where the – where deterrence is working perfectly and we never made mistakes, we would probably sanction incredibly high penalties for cartel activity. That's one thing to realize.

So why don't we do that? Well, one of the reasons is that the world is not perfect and we may make errors and we don't want to impose a penalty on someone who in fact was not responsible. And the process of determining whether someone who's been involved in the cartel activity, particularly the individuals versus the firm, can be very costly and very difficult. And so that more or less supports, to some extent, the idea of proportionality that Fred was talking about. There may be some reason to be – to consider whether fines are too high.

But generally the evidence that I've seen from the literature, people who have studied this, suggest that, as Fred suggested, that we're actually under-detering, that the fines are way below what would be optimal. And that's based partly on the fact that there are huge social costs and the belief that we've been pretty accurate in prosecuting cartel activity.

In the US, which I've followed over the years, there's substantial belief that there's much more cartel activity, including bid rigging and as well as more traditional price-fixing cartels, much more than we've actually been able to prosecute. So I hope we take into account those considerations as well.

JOANNA TSAI: Thank you, Dan.

With respect to – of Fred’s discussion, Fred, I was wondering if you could talk a little bit about there’s this probability of detection that you mentioned and this – you know, this comes out of these economic – this economic model. In practice, how do jurisdictions evaluate the probability of detection in cartel cases? As you know, you know, we don’t know what we don’t know, right? And so maybe you could talk a little bit about – you know, about in practice and implementation, you know, how that’s been treated.

DR. FREDERICK JENNY: I think there are several issues in your question. One of them, first, is from the theoretical point of view, there are techniques to try to estimate – to have some estimate of what the possible number of cartels around are. For example, you can base yourself on the length of time of cartels, how long they’ve been going on, to assume that there are some other cartels which are going on, et cetera, and then to mathematical means, you can, like this, get an estimate of how many there are.

I’ve never seen personally a competition authority make any calculus whatsoever on what the probability of being caught was. What I’ve seen is competition authority referring to articles in the literature. For example, for a long time, there was the idea that possibly what if we talk about price fixing. Maybe one in ten was something reasonable to assume. Okay. So sometimes competition authority will take this as a ballpark and say, well, it means that a sanction, which would be ten times, the amount of the gain, would not be out of line because, roughly speaking, they’re probably being called as one in ten.

But there is another problem, which is the fact that the competition authority, through its enforcement action, determines what is the probability of being caught. So that’s why competition authorities don’t usually go very far in the analysis of those probability because if they come up with the fact that the probability of being caught is very small, they’re likely to be

found to be not doing their job. So they leave it to the academics to decide where the probability could be. So it's not a terribly precise job. But we do have, through economic studies, some interesting and mostly converging ideas about an order of magnitude, you know, very vague and I wouldn't vouch for it. But it gives you some sense.

JOANNA TSAI: So in summary, we don't need to be, you know, exact or precise necessarily, but rather than in terms of degrees of the probability of detection.

DR. FREDERICK JENNY: It would be great if we were, but...

JOANNA TSAI: Maybe that's an area for future research.

[What Types of Sanctions Should ...]

JOANNA TSAI: All right. Let's move on to our next topic on the type or types of sanctions that should be employed.

Dan, could you present the issues to us and discuss the costs and benefits of the different types of sanctions?

DR. DAN RUBINFELD: I'd be happy to. So in the brief time I have, I'm going to talk about the possibility of sanctioning both individuals and sanctioning of the firm and also considering sanctions that are in terms of fines or possible prison sentences. And also I want to brief – just briefly give reference at the end to the possibility of compensating victims through private actions, which have been growing – growing around the world.

So how do we think about what type of sanctions should be employed? We, of course, in the background, are going to rely on the Becker model that we've talked about. But to think about the type of sanction, we have to introduce a different area of economics and that's the theory that talks about the relationship between principals and agents, so-called principal/agent theory. And the reason that's important is that the principal that we care about is the public, the

owners of the firm if we're talking about a firm that's going to be – I shouldn't say the public – the owners of the firm that is at issue and the agents are the employees, the managers of the firm. And there are going to be some cases where the agents and the principal are the same thing. If I happen to run my own business, consulting business, I might be both the principal and the agent.

But if we're talking about large corporations that are involved in a lot of the activity we're talking about, there is a sanction between the principal and the agent. And the principals are typically – if it's a public firm, they're typically the shareholders of the firm, and the agents are the managers of the company and there's a real question as to whether the agents are always acting in the interest of the firm. The agents may be more interested, to some extent, in their ability to get promoted or increase their salaries or increase their job opportunities and those are things that are not likely to be of concern to the firm, the owners of the firm who would like their share prices to continue to increase in value.

So when you have that distinction, we have to think about how to – who to penalize and that takes us into the different types of sanctions and we want to see how those sanctions relate in terms of principal/agent theory. So for individual sanctions, it makes some sense to sanction both the individuals who are managing the firm and – as well as the firm itself. We want to sanction the individuals because we want to make sure that their incentives are to worry and to be concerned about the impact of the firm and their interests might be otherwise concern their compensation.

On the other hand, we may want to sanction the firm as well because we want to give an incentive to people who – to the shareholders to make sure that they're hiring and promoting the managers who have the interest of the firm in mind. And so with that in mind, individual sanctions makes some sense and most – many jurisdictions allow for individual sanctions and as

well as sanctions on the firm. The US – in the US, that has been the tradition for a substantial period of time.

So we talked about deterrence as one of the goals of the program we're talking about, but another goal is to try to create incentives for the firm to introduce and seriously make sense of compliance programs in the firm. I recall when – many years ago when I was at the Department of Justice and we were investigating certain cartel activity, I was surprised to find that a number of the firms we were prosecuting had no compliance programs of any kind. That's changed over the years because I think the US has been quite active in this area and I think you would find that almost every firm has at least one individual concerned with monitoring compliance.

So just to take the US as an example – well, I should add – I should add, first of all, that – I should add that we also need to talk seriously about custodial penalties as well where we, in fact, impose prison sentences. And so in the US, as an example, the US has imposed fines on both individuals and firms and the US has also been probably the leader in imposing custodial sanctions, that is, prison time. Now, as far as I understand it, speaking more worldwide, there are many countries that have prison sanctions as an option on their books, probably over 30 countries have that possibility. But to my knowledge, only three countries have actually imposed sentences that involve people serving prison time, and the US is one of these.

And the US has continued to be active in actually imposing prison sentences. And the reason is that it – there's reason to believe that the fines, as Fred suggested, are – that are actually imposed will not be sufficient to generate deterrents for various reasons. But there's nothing like imposing a sentence on one or more individuals in a firm to cause them to be penalized.

And I can just give a couple examples of how this has worked. At the time we're speaking, there's a case that's just been resolved where an individual who was the CEO of one of

the canned tuna companies in the US, Bumble Bee, decided to go to court, and he was prosecuted individually even though the firm had paid substantial fines itself. And this case went to trial and the individual lost the trial and the court imposed a \$100,000 fine on the CEO of the company, as well as 40 months in prison. Now that case is being appealed, so we don't know how it will finally be resolved, but at least at the moment it looks like there will be a prison sentence.

The other thing I wanted to mention briefly is that we do have private – we do have in the US the right for private individuals to – their goal is primarily deterrence – primarily, excuse me, compensation, but there may be a deterrence component as well. And those – those penalties can be very, very substantial on firms brought through the private sector. And that's been true not only in the US, but also in many countries around the world.

For example, I happened to be involved a couple years ago in a case in Australia where the two largest makers of cardboard boxes were substantially fined for their joint cartel activity. Fines were in the – I believe over – in the \$100 million range and penalties were imposed on the CEO of the company, as well as the general manager, again with the goal to find deterrence and apply it both to the firm and to the individuals to deal with the principal agent problem.

That's it for me.

JOANNA TSAI: Thank you for that, Dan.

Fred, any reactions or thoughts to Dan's thoughts on the types of sanctions and prison terms?

DR. FREDERICK JENNY: Well, I think that I tend to agree with everything that Dan said. There has been quite a bit of discussion, certainly in Europe, but not only in Europe, recently of individual sanctions and, in particular, for example, disqualification where a senior executive is banned from the industry or possibly banned from any industry for a number of

years. So this is a personal sanction. It has an advantage in the sense that it is less costly to implement than a prison sentence and also it has the advantage that it cannot be easily passed on to someone else as a fine would be. The UK and Australia have been particularly active on this front as being one type of sanction, sometimes an additional sanction to the more traditional ones.

I wanted to just make two comments. One of them is on compliance programs. One of the questions that competition authority face in many jurisdictions is what to do when they catch a violator who has a compliance program. And in spite of the fact that there was a compliance program, there was some violation. When it comes to sanctioning the firm, should the existence of the compliance program be an aggravating circumstance or should it be an exonerating circumstance? And I would say that the jury is still out on this. I mean, of course, the business community thinks that it should be proof that the firm was – meant well and that it must have been rogue employees that were doing this. But the proof that it was a rogue employee or set of employees is not always there easily. So this is something to think about probably on a case-by-case basis.

The second thing is that in Europe, what seems to be coming, even though Europe has been well known for meting out extremely – I mean, the commission – very large administrative sanctions, more and more I get the feeling that what deters the firms are the risk of civil suits in courts and the efforts that the commission has undertaken to facilitate class action in order for victims to be able to get damages has been quite changed – has led to quite a change in the attitude of firms.

This raises another issue, which is the issue of the relationship between the competition authority and the courts because, very often, the competition authority has all the elements that

would help the courts to find that there is a violation and, therefore, to award damages. But the question is to what extent does the court have access to some of this information. And I know of a few competition authorities who are decidedly not on the side of helping the courts, which lowers the possibility for the plaintiffs to make their case in court, and because the competition authority has the economies, it has the experts who are able to help with the evidence, also it has the powers of evidence which the courts don't always have to the same extent. So that question for the deterrence of the system is also an important one, the competition authorities helping the courts, at least at the level of establishing the violation.

DR. DAN RUBINFELD: Can I jump in and add a comment to what Fred just said, Joanna, just briefly?

JOANNA TSAI: Sure.

DR. DAN RUBINFELD: I was just thinking of an example of a cartel case that I happened to be working on where I was doing some work for the defendant and the case eventually was going to be settled between the parties and the government that was prosecuting said that, as part of the settlement, I would have to personally agree to provide all of the work I had done to the relevant parties, both the government and any private parties that were concerned. And I thought that was an interesting demand as part of the settlement because absent such an agreement – and I did do that, I actually spent some time briefing people on the work I had done. And I think part – without that settlement, the information that was gained by the government, the prosecution would not have been passed on to those that were pursuing the case privately.

JOANNA TSAI: On the topic of the type of sanctions and the ones that are imposed, have either of you, either Dan or Fred, found situations where the jury or the judge finds it harder to

impose, say, a prison term as opposed to monetary fines? Or, you know, as Fred had said, you know, maybe perhaps, you know, the – barring someone from working in an industry again, you know, could be, in some sense, a cheaper alternative in terms of the cost on the system, on the government system, but also at the same time could have – be effective deterrence without it being so difficult to send someone to jail.

DR. DAN RUBINFELD: Well, I would say the cases that I'm involved in, I do see – I do see concerns along those lines and this goes back to when I was in the government when we were prosecuting the Lysine cartel. We had some questions as to who we ought to impose – who should be the person who is subject to these custodial penalties and it wasn't obvious – necessarily obvious who was the right person. In the particular case I'm talking about, the key executives were not in the United States so it was not easy to prosecute them. And so eventually the individuals who were prosecuted would be further down the line. They were involved in the cartel, but they were currently not the persons who really, I would say, organized and supervised the cartel.

So there's an underlying concern of proportionality. And I've seen the same thing in other cartel cases where a certain individual happens to be chosen to serve the custodial penalty. When that individual may have been involved in the cartel activity, it probably wasn't one who took the lead. And so there is a sense of discomfort in that we're not really achieving a goal of proportionality here.

JOANNA TSAI: And in some sense, you know, if you've got this great tool that would be very effective at deterrence, but on the other hand, if it's rarely actually used, then it would not achieve the effect of actually becoming that deterrent that we need.

DR. FREDERICK JENNY: One of the interesting questions is whether jail terms really

have a deterrent effect, which is far superior practically. And where economists, I think, are very short on answers is that it's very hard to assess whether a sanction has, in fact, not in theory – in theory it's easy to think about it – but in fact whether this has led to a decrease. And we have had this kind of discussion for jail versus administrative fine. This is between, let's say, the US and the EU.

[Should the Firm or its Agents be ...]

But we've also had the discussion about whether leniency programs are a deterrent effect or not. The problem is that the evidence is not there that there are that many fewer cases than there used to be, but it may be for other reasons that there are not many fewer. So assessing the reality of the deterrence is not so easy from the economic point of view.

JOANNA TSAI: I want to move on to should the firm or its agents be punished. Jorge, can you talk about – you know, can you talk about whether it should be the firm or its agents that should be punished and why.

DR. JORGE PADILLA: Thank you, Joanna. I'm going to try to answer that question within the framework that we have been developing and that Fred started with earlier today, which is the goal of deterrence. You know, we are thinking about who should be punished, thinking that, you know, basically time to make sure that we achieve that deterrence goal, that we are really effective in stopping cartel activity. There is nothing in what I'm going to say that relates to compensatory damages that should be set aside.

Now, if your objective is to deter cartel activity, then it seems pretty obvious that you should punish those that make the decision to cartelize and, if anything, you should also punish those that help the implementation of the cartel. So you should go for the real agents, for the actors in the movie. Who is making the decision to cartelize, who is organizing this cartel, and

who are the – those that are helping the cartel to materialize and to be effective?

And so the question is, are they shareholders or are those actors more likely to be the managers? And within the managers, we're likely to have top managers and middle managers playing roles in these – in a cartel situation. Now, it seems to me that in most instances, the shareholders would not be the ones that organize the cartel. They may be happy if they see their profits going up, but they may not really understand what has been – you know, how the sausage was made, if I may put it in those – in those terms. What is it that explained those high results? They may incentivize the managers to provide them with high profits, but they are not going to be the ones that decide – typically the ones that decide how the cartel is going to be organized and to implement the cartel.

Now, if I am right, then fining the shareholders only makes sense in limited circumstances and, in particular, only makes sense when you think that, you know, having received that – the fine being the subject of that fine or that the fine will incentivize them to take a number of actions that stop top management and middle management from engaging in cartel behavior.

Now, is that something that is easy to happen? Can we expect that shareholders, you know, feeling the risk of a very significant fine or having experienced one will adopt measures to stop top management and middle management? Well, they will try to do some things. In fact, they may adopt compliance programs and force their top management and middle management, in fact, everybody within the company to try to, you know, understand what the consequences of cartel activity are. But that seems like soft action, very – an action that may not be able to deter the cartel. I mean, there are plenty of companies that have compliance programs, some of them fairly sophisticated and, yet, they find themselves in the middle of cartels.

Now, the other thing that shareholders may be able to do is to try to, you know, for example, reduce the bonuses of top managers and middle managers, make their pay less contingent on profits so that they reduce the incentives of those managers to try to engage in cartel activity that increase profits, but that would run counter to some extent to the main objective of those shareholders, which is to align the incentives of those managers with their own incentives in terms of increasing profitability of the company. It may actually run counter to the solution of the principal/agent problem Dan was mentioning before. How on earth are you going to incentivize them to work hard to maximize profits when at the same time you don't want them to maximize profits just in case they engage in cartelized activity? And as a shareholder, you don't know how to distinguish what is the – you know, what drive – what drove, what explains those kind of profits.

Now, if I'm right on all this, I think that then the fines should be sent elsewhere, should not be placed on shareholders, on the firm, but should be directed to or targeted to the managers. Now, in my experience, top managers and middle managers typically work almost like a team when it relates to cartel activity. Some of them are in the coordinating committee, typically the top managers, agreeing what the objectives should be, who's going to participate and what are the broad objectives of the cartel.

But then you need the implementers and those typically are the middle managers. Those are the ones that perhaps don't go and meet in the super fancy hotels, but meet more regularly in second-tier restaurants or hotels to try to see – you know, monitor what's going on, see whether there have been deviations, establishing, you know, some retaliation in case there have been deviations, ensuring, after all, that the cartel is delivering what it was meant to deliver. And so if those two groups of managers act as a team, then I think that we need to punish them both and

we need to try to act on their incentives, reduce their incentives to participate in those cartels and the cartel activity.

Now, that means that we need to understand what drives their decisions to participate. Is it because they get very high bonus – bonuses? Is it because they have stock options whose value is going to increase if they increase the profitability of the firm? Is it that they are concerned that if they don't achieve certain goals, they are going to be, you know, fired? Is it that they believe that if they don't get outcomes that are very similar to those of their competitors in the marketplace, shareholders are going to take action against them, again fining them? What is their concern? And depending on the concern, we should act one way or another.

So for example, if we think what drives them is pecuniary incentives, then again, you know, what we have to do is, to some extent, is apply the logic of the Becker model and set fines so that the crime doesn't pay, so that, you know, we fine them so much that the expected gain equals the fine. And that's going to depend, obviously, on what is the probability of detection and enforcement.

Now, when we think about managers and we think about the dirty managers, then it becomes very clear that that probability may be – may not be or need not be the objective probability of detection, but the subjective probability that the individual thinks that – with which it will be – it will be caught. And one thing that we have learned over the years when understanding the psychology of people that engage in crime – and a cartel is a criminal activity, like many others – is that they tend to underestimate the probability that they will be caught. They are optimists. I mean, we are all optimists. That's why we all tend to think that none of us is going to suffer from the virus. But I think that criminals tend to be more optimists than others. And that means that, you know, we will have to impose very significant pecuniary fines on those

people to stop them, which may make that route, you know, unattractive or ineffective because these guys may run very quickly into financial constraints and inability to pay.

And that means that we need to go in another route. And that's why we – when we typically fine individuals or punish individuals, we consider actions such as custodial sanctions, as Dan was mentioning before, you know, incarceration or solutions like the ones that we have seen in the UK which is director disqualification as an alternative. So I think that those are the punishments that we would have to target on those managers to stop cartel activity.

I think that there are a number of advantages if you punish managers as opposed to shareholders or the firm. One was mentioned before by Fred when he said that, you know, if you – if you punish the firm, the risk is that the fines end up being passed on to consumers. Some people say that's not possible because the fines are fixed costs, but we know what fixed costs may be passed on when firms are, for example, in financial distress or they may be passed on not perhaps in the form of higher prices, but they may be passed on in the form of lower investment and quality or investment more in general. So I think that the – punishing managers has the advantage that there is less transferability of the fine and, therefore, perhaps the deterrence is going to be more effective.

If we punish the middle management and top management, we may create also some interesting prisoner dilemma, like dynamics, between the firm – the firm that even if it's not fined in the administrative proceeding will still be concerned about damages. The top management and the middle management, all of them trying to get some leniency, some forbearance and fighting with each other or gaming with each other, and that may facilitate actually detection and may enhance, you know, the possibility of the tension.

I think that leniency programs at the moment are tailored thinking that the fines are

imposed on the firms, and if we move to fine managers, top managers or middle managers, we may need to adapt some of the leniency programs. But I think that that is, in any way, needed because leniency programs, at least in Europe today, are under severe stress. They're under severe stress. They are not working as they were a few years ago after the introduction of private damages. People seem to be more reluctant; firms seem more reluctant to go forward. And I think that, you know, maybe readapting those leniency programs, together with reorganizing the way that we punish so that we punish the managers, could help.

A final word, the last word, if despite everything that I have said in favor of punishing top managers and middle managers, you think that shareholders shouldn't get away with the – this and you want to do something in that respect, perhaps a solution that I think that would be worthwhile exploring is not the sort of fines that we have been imposing thus far, but are remedies or interventions that we have seen in other areas, like, for example, in banking regulation these days. Like the one that I have in mind precisely is, you know, prohibitions or bans on the distribution of dividends, which are, you know, perhaps much more likely to be affecting directly the interest of shareholders and much less likely to be transferred to consumers than other forms of fines. But we need to – we need to think more about that. It's not of use and I guess that there may be some cons in that proposals.

But fairly interesting I hope that you have found this, you know, shedding some light on the issue.

DR. FREDERICK JENNY: I just wanted to add one comment to what Jorge was saying. It's interesting, by the way, because at one point he had talked about criminals and talking about the violators and there's a question about whether they are criminals or not, which doesn't mean that if they are not criminals they should be pursued for having violated the law. But I've always

been struck by the fact that many participants to cartels, at the operational level, I mean, the people who go to meetings and – very often they do this because they want an easy life or because that’s the way that it’s been done traditionally in the firm and they don’t want to rock the boat and – so in a sense, they are – it’s disappointing. I mean, they are not there because they want to maximize profit for the firm or anything like that, but because it simplifies decisions. Okay. That is not to say that they shouldn’t be punished and that – and I quite agree on the idea that trying to get at the managers who are actually responsible for those practices is quite important.

My experience has been, however, that it raises the standard of proof quite a bit. You can get relatively easily the people who went to a cartel meeting because, by now, there’s a jurisprudence in many countries that just the fact that you were there is enough to say – even if you didn’t say anything, is enough to make you a part of the agreement. But what about the boss of those people? And having served on the OFT, I mean, I’ve seen a number of cases where the question was whether the boss knew or should have known that his employee was doing this when the boss was arguing that he didn’t know, that he had no idea what was going on.

And there you get into the very difficult issue of proof. Or if you simplify the problem by saying, well, I don’t have the proof that you knew, but you should have known, sometimes you get into questionable practice. So at least it should be – the criteria for the “should have known” should be very clear so that managers are very aware of the fact that – if their subordinates engage into those practices. But it’s, in a sense, easier to sanction corporate bodies because you don’t have to go in the body to look at personal responsibility so much or personal behavior.

So I still agree with that Jorge said, but it’s not always so easy to find the people who should – in the line of command, where you should stop when you want to punish the people.

And what you don't want to do is only punish the last guy, the guy who went to the cartel meeting and is usually the lowest employee very often without any decision-making power. But he's the one that happens to be at the meeting and not having said I don't want to hear about this.

DR. DAN RUBINFELD: If I could just add a comment to what Fred said. In the US, the first major prosecution we had of a cartel along these lines was the Lysine cartel which we prosecuted when I was at the Department of Justice around, I think, just before – I think the year 1997, 1998. In that case, we had the advantage of films of the cartel meetings, which are still available today on YouTube if anyone wants to watch them. And there we could see who was organizing the cartel because the CEO, for example, of a major US company was at each of the meetings trying to make the cartel work. So in some sense, that was easy. But ultimately who went to prison and how long they served became very complicated.

But as the years have gone by, we've faced more and more cartels that fit Fred's description where often the people who actually attended the cartel meetings were not the key people who organized the cartel. Some of them were charged with simply taking minutes in one cartel I can think of. And so it – so my own belief is that we need these custodial penalties because we're never going to have fines that deter sufficiently. But still we have the problem that they may be imposed in a way that is not very equitable.

DR. FREDERICK JENNY: But if I may add one thing on the comment of Dan on the comment that I made, just to go back to the Becker model, as we saw in the different costs and in the eventual result of deterrence, everything is interlinked. So if you change one thing, you're going to change an incentive. This is going to change the supply of criminal activity or the supply of violation, which itself is going to – I don't know – sort of lower the cost of damage but maybe increase the cost of sanction or maybe increase the cost of finding out. So one has to think about

this as a general system.

The second thing I wanted to say is we have had the conversation where nobody among us has questioned the fact that deterrence was the objective of the law. You have a lot of legal minds out there who don't believe that deterrence is necessarily the objective of sanction. You can have a rehabilitation, you can have incapacitation, you can have all kinds of different retribution. And the problem is that competition laws themselves are very silent on what is the purpose of the sanctions. I mean, they don't – so it's a construct by the economists that if there are sanctions, they should be there to be deterrent. But it's not necessarily shared by everyone and that goes back to what I was talking about – about the difficulty between proportionality and deterrence that I was mentioning between economists and lawyers.

JOANNA TSAI: Isn't it the case that a lot of the offenders aren't – are not necessarily repeat offenders? So to the extent that, you know, rehabilitation is another option you mentioned, but, you know, that some argue could be an option, how do we – how would that necessarily prevent first-time offenders from committing the crime?

DR. FREDERICK JENNY: It's my recollection that early on – I don't know if it has been done recently, but some violators were sentenced to go and talk to universities and business groups about the ills of cartelization and the virtues of competition. I don't know whether this is very effective, but this is a way at least to disseminate knowledge about the competition law and to say I've been there myself, I have been caught, so I'm telling you, you should be aware of the fact that there is this law, you should be aware of the fact that there's a good reason for the law and okay. So, I mean, that would be one example where you would – that would be close to rehabilitation, for example, as a possible goal of the law and you would have one instrument that would lead to rehabilitation.

Some of the personal sanctions that we've talked are pretty close to incapacitation. When you tell someone that he cannot exercise any function on a board for the rest of his life, I mean, that's it. I mean, he cannot be in a position to decide – to have a corporate decision of that kind. So but we're not always clear. I mean, economists only think in – only think in terms of deterrence. Just the legal specialists think in broader terms of possible different objectives.

DR. JORGE PADILLA: Joanna, you mentioned repeat offenses, and I think that there is quite a bit of evidence in Europe of repeat offenses. I think that there are companies that have built a track record and recidivism is one of the elements that is taken into account when calculating fines over here. And I think that that indicates that – it can indicate several things. Maybe, as was commented earlier on, that fines are set too low. The second thing is that maybe we are imposing the fines on the wrong entity, on the corporation rather than individuals. But I think that we should reflect upon recidivism as a problem that indicates that there are things to fix in the system.

JOANNA TSAI: I would like to – I think we've talked about – we've talked about the theory from Becker and, as well, you know, some enforcement examples in the different jurisdictions. I was wondering if, you know, maybe starting with you, Jorge, you could talk about whether there are key empirical studies that inform upon optimal deterrence and enforcement and what they show.

DR. JORGE PADILLA: So the only studies that I'm aware of our work, for example, done by Professor Motta and others things to determine whether we were setting optimal fines or not. And I think that they conclude that we are setting fines that are way too low. And I think that – as I mentioned, I think that this is consistent with evidence of recidivism, et cetera.

I think that there is a lot of scope for additional work. I don't think that that is conclusive

because I think that, as Fred mentioned before, you know, it's a complicated exercise. And I think, in particular, there is one dimension that I want to highlight, which is that when we look at the effects of fines on cartel activity, we treat all cartels as if they were born equal and they're not, especially in some jurisdictions. The definition of cartel has got quite broad, especially in Europe. You have from blatant, naked price-fixing arrangements to somewhat complicated and unclear information sharing schemes. And when we try to put everything together, we have – we have problems. We may have that, you know, companies that in the past were involved in price fixing cartels, now they are involved in other types of activity and we conclude that that means that they are repeat offenders and our fines were too low. I think that, unfortunately, we are quite short of what we should be in our understanding of whether we are fining correctly or not and the way in which we could improve the current situation.

JOANNA TSAI: Dan, Fred, anything more to add on that?

DR. DAN RUBINFELD: Well, I would say the evidence I've seen is consistent with what Jorge had said, which is that fines – fines imposed on firms are likely too low and often, by the way, they're not working quite well because the owners of the firm are changing overtime, as shareholders move in and out of the company. So it's not even clear that you're imposing the fine on the appropriate person. If your goal is broader than deterrence, you're not going to achieve it very well by imposing a large fine.

So the real area we need to work on is to understand better how prison sentences really work in terms of deterrence. My informal sense is that they're quite effective, that they do make a difference. But there's even there a debate about how long the prison sentence should be. Early on, some – Greg Werden and others thought we didn't need a very long custodial penalty, just the signal of going to prison would be enough. I'm not sure that's right. I think it may be that we

have to think about longer custodial penalties because most of them are, in practice, relatively short because even if there's a – say a three-year sentence imposed, the person will not serve the full three years, at least in the US. So that's a really open area for further work.

DR. FREDERICK JENNY: I think that – first of all, I think that criminal sanctions have – in any case, they have a function in the sense that they justify high fines. If the violation could land you in jail for a number of years, then it's properly justified that I won't send you to jail, but I'll give you a very high fine. And there is quite a bit of this. I mean, the symbolic value of putting people in jail, I think, is quite important. This explains how the Justice Department of the US would do anything to get cartelists to – foreign cartelists to come to spend some time in jail. You would go to a really nice jail and it could have tea every afternoon and okay. And I've had some lawyers describe to me what those jails were like. But at least I can say that those people have been in jail and that creates a feeling that it's really serious.

And I think that this has worked, in fact. That the fact that in the US, in particular, there's been an insistence on jailing people has made many other countries more severe about their cartels. And this has slowly but surely been accepted by the judges who are the most reticent because of their idea of proportionality.

On the effectiveness, I'm a bit less enthusiastic about the – than Jorge about the work which has been done by economists. For example, if we talk about recidivism, there has been huge controversies in the US between Werden and others about how one counts them, whether it's the result of mergers and, therefore, all of a sudden one part of the firm used to be sanctioned for something which has nothing to do with what is really at stake. And in Europe, at least or at least in France, I mean, there's been huge controversy between people like Kohm and others who have used the John Connor kind of approach to argue the fact that the sanctions were

under-deterrent and some quite respectable economists from Toulouse, who have shown that – I mean, questioning largely the assumptions and the results that have been done.

[Conclusion]

So I think that I tend to agree with Dan Rubinfeld that more work is needed. But I think that economists should not claim that they have really gotten very far in terms of the measuring or even being certain of the deterrence aspect of the sanctions that they put.

JOANNA TSAI: Wonderful. Well, Fred, Dan, and Jorge, thank you very much for this very informative discussion today. This concludes our program.