

OFT AND CC JOINT REVIEW OF SUBSTANTIVE MERGER GUIDELINES

A ROUNDTABLE TO DISCUSS

COORDINATED EFFECTS:
WHAT IS THE RIGHT ANALYTICAL THRESHOLD?

HELD AT THE
COMPETITION COMMISSION

ON

THURSDAY, 2ND OCTOBER 2008

THE PANEL:

Dr Peter Davis (Chair)
Professor Kai-Uwe Kuhn
Professor Bruno Jullien
Professor Valerie Suslow
Professor Stephen Davies

IN ATTENDANCE:

Dr Amelia Fletcher, OFT

Dr Chris Walters, OFT

Dr John Collings, CC

Professor Bruce Lyons, CC

Mr John Davies, CC

Dr Nicola Mazzarotto, CC

Dr Jozsef Molnar, CC

Dr Ioannis Kokkoris, OFT

Ms Carole Begent, CC

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CHAIR: We begin the afternoon session looking at the guidance or the issues around what we should write in the guidance for coordinated effects of mergers. Obviously, the potential coordinated effects of mergers has been around as a theory of harm for a very long time. The experience appears to have been that the major concerns of agencies a few decades ago seem to have reduced over the years as to its dominance as a theory of harm. Now we, and other jurisdictions, appear to spend far more time on unilateral effects theories than coordinated effects. There are questions around policy stance, about whether that is the right outcome. There has, obviously, been an evolution in the legal standard in Europe, with cases like *Airtours* and *Impala*. There has also been an evolution in the US, which our American visitors might like to tell us about, with cases like *Arch Coal*. What we have tried to do in structuring the afternoon session is, first of all, to have a discussion around whether the background for having these kinds of theories of harm is appropriately embodied in the *Airtours* tests that have been put forward in Europe or some other tests. If not that, what? And what should the right view on those tests be? In particular, whether or not the theory which underlies those tests should be informing our guidance and, if not that, then what?

During the second half of the afternoon, our intention is to spend more time on the practicalities, as it were, so in a given case what kind of evidence should we be suggesting in the guidance would likely be taken as compelling and what should we say about the kinds of evidence that we would expect would give companies the appropriate steer as to the likely outcome from competition investigation?

I just want to make just one more remark by way of introduction, which is about the CC's experience of coordinated effects cases over the last few years. The theory of harm has come up in a number of contexts in three specific merger inquiries, most recently one involving the brick industry, before that the sugar industry and also cardboard boxes or, more accurately, corrugated cardboard. It also did come up in the Groceries inquiry recently, with issues around the likelihood of coordination and, before that, in the Safeways merger inquiry, where there was some discussion of potential coordinated effects. That means there are four or five cases where it has come up over the last five years in CC inquiries, so there has been some experience. However, I think I am right in saying, that we have not yet come to an adverse finding on the basis of likely coordinated effects since the Enterprise Act, our current statute, came into effect in 2003.

Let us begin by turning first to the theory. I suppose in our current guidance we have the basic Stiglerian view, which is that the analysis of coordination should be structured by thinking about whether there is likely to be some form of agreement, some kind of monitoring activity, and enforcement of internal and external stability. The first set of questions is, is that literature from the sixties and seventies the literature that should be informing our analysis of coordinated effects? Kai-Uwe, would you like to start?

PROFESSOR KUHN: I am not even sure whether I know that literature all that well. In past years, whenever it comes to these issues coming up, both at the European level or at national levels, what we turn to tends to be theories based on repeated games. That is a very established part of the theory. Then one can ask, well, what kind of impact might a merger have on the incentives to collude, not a sense of how does it change my incentive to deviate from a potential collusive agreement and how does it affect the punishments? That is the way in which we tend to talk about this. I think that part of this is also reflected in the Airtours decision, when talking about monitoring and that sort of thing.

I think that that is a very important framework that we have, but I think that for discussion of actual policy it is important to see that it leaves out quite a few things. First of all, if you take the theory seriously, everyone who is playing the game and is playing the equilibrium, knows exactly what the other person is playing. In that sense, it is really the theory of explicit collusion. It is not the theory of tacit collusion, because in tacit collusion we somehow think that people are not talking in the first place. If what we are really concerned about is tacit collusion, and we can discuss that more, I am not quite sure whether this theory, or the comparative stats that we are doing on the basis of this theory, has very much to say about tacit collusion.

The second aspect, and that is more closely related to tacit collusion, that is problematic about this is that we have really very little to say about the second aspect of when should we expect collusion, whether tacit or explicit, actually to occur? The way in which we tend to talk about these things - and very often about coordinated effects - is, if the merger occurs, are we going to switch from non-collusion to collusion? That is really how in the policy area it is very often talked about. There the question is what determines, really, whether we have a collusive

agreement or not a collusive agreement and that tends to be completely outside of the model. The crutch that we build ourselves is, basically, to say that, well, if the parameter space for which collusion is possible is greater, we tend to think that it is more likely that we are going to get some collusive outcome. But there is a lot of hand waving involved in that. I think that some of the work, for example, that Valerie has done really suggests that the difficulties of achieving an agreement may be just as important for determining whether we can achieve collusion or not as satisfying the incentive compatibility constraint that is in our theory. For that aspect, I do not think that we really have any theory whatsoever. I think that that is a little bit worrying because our prediction of what happens is very difficult. If we take this theory of explicit collusion very seriously, then actually this distinction between non-colluding and colluding would not make any sense whatsoever, because, except for our homogeneous goods world of constant marginal cost, in every other collusion model we have there is always the possibility of getting a little bit of collusion. Then we should, actually, ask the question, well, if we get the maximum collusion pre-merger, how would that change post-merger, so, actually, look at collusion pre- and after merger and see how much it changes. There I think, from the theory work that I have done, if you evaluate how big those threats are, they tend to be fairly small.

I think that there are a couple of uncertainties here in terms of the theory. We actually know a lot less what the right framework for this should be than we think we do. We routinely use these repeated game theory models, but I think that there is a problem with interpreting that in the context of what we are all trying to do.

CHAIR: Are there other views around the table?

PROFESSOR SUSLOW: I would agree with everything that Kai-Uwe has said and then take that and flip it around a little bit differently. Suppose we start with this basic incentive constraint or participation constraint. I thought that the way in which you posed the question was fascinating because, of course, it is true in the most general sense: if you are making the decision to coordinate or not, it has to make sense to you individually and it has to be profitable. I cannot argue with that. I think that it is a separate question to ask, is it necessarily the best place to start for written guidelines or for thinking about coordinated effects in mergers? The reason why it might not be the best place to, as you said, have to do with the fact that we have been looking at things this way for quite a long time. In other words, when people think about this inequality, there

are a number of implicit assumptions that come with it. That is potentially an area for discussion. If this inequality implies to academics and policy makers that the biggest challenge for cartels is cheating, then that is not necessarily the best place to start. Connected to that, if when people think about this framework they think that what we have to focus on is looking at the extent to which companies can punish each other with severe and painful price wars, companies tend not to do that. Again, it is buried in here, but it is the direction that theory has taken for a long time and therefore that is the interpretation that many attribute to this inequality.

My other comment complementing what Kai-Uwe said is that this does not address when we should expect collusion to occur: what the participation constraint tells us is either you will or you won't. You are either coordinating or you are not. I think that everyone recognises that coordination, either explicit or tacit, is imperfect. The thing that I would add to that is that companies tolerate that imperfection and this does not help us learn anything about how long these attempts at coordination will last. But how long coordination lasts speaks directly to the concern about mergers being harmful to consumers because of potential coordinated effects. You have to ask, will the price rise for one year or ten? This is not a good starting place. It still helps us think about whether it is achieving consensus, deterring, detecting and so on, but I think that the other assumptions behind it are not verified empirically, so it is a difficult place from which to start.

PROFESSOR JULLIEN: I was going to start with the same point as Kai-Uwe and merely state it my way, but let me say something else to start with. We, as theorists, are very proud. It is a very big successful field. I think that you say in the paper that this is one of the theory that has been embedded into the practice extremely quickly. But maybe we should be concerned that it has been done a bit too quickly. To some extent, the experience I have is that sometimes a case team is much more confident with the theory than the economists would be, because we know that there are a lot of caveats, negatives and things that make it not so easy to define what is collusion. The checklist that has been given has problems, but it is a way for the case team to know that if the checklist is met, so that is fine and we are done with the case. It is a long way to go. But we should be careful as a general principle when applying the theory. It is extremely difficult to apply and I do not put it at the same level as unilateral effects where we really understand what is going on.

It is a very strange theory. As you say, we know how to stay in some state but we do not know how we get there. We have a very powerful, elegant and useful theory that explains to us how we can sustain some particular allegation. I would not agree that this is not a theory of tacit collusion. It is half of a theory of tacit collusion. It tells you that, if you get to this point, you can stay at this point and this is sustainable. We do not know how we get there, so that will be, I think, the main challenge for any guidelines, because anything that is written in the guidelines will have to account for the fact that we do not have many views on that. Here we can always say that it is possible, but we cannot predict accurately when and how it will occur. The way that we do it in theory, which for theory is a very useful way, is to use a parameter space, say the discount factor, and to say that if the minimal discount factor to support monopoly prices decreases, the merger above is more likely to create collusion. It is fine when you do theory, but, when you want to bring that to real cases, it is inoperational. It is hard to know what is the discount factor. How do you quantify these things? We will have to find a way to go from the econometrics, which says a lot of things, but in a kind of qualitative way, to guidelines which have to be a bit more precise.

Also, to react to what has been said, on this equation that you find at the beginning of your text, and which we do find in any textbook, it is a very good starting point, but it is also a very misleading starting point, because it brings the idea, that everybody knows a lot of things. For an economist, when we read an equation, there are a lot of implicit things that we put behind that. There is the latest work of Susan Athey on dynamic collusion and collusion with imperfect information. If people do not get the right information, if they do not know what the type of the other firm is, it is embedded somewhere, but to conflate that would require a lot of work.

As a starting point, I would start from that. We can say a lot about sustainability. We cannot say a lot about where and when it will occur. And what is the point? I thought that econometrics would come with an answer in a reasonable way. There will be some econometric answers on some aspects of the problem, in particular past conduct, identifying the period of tacit collusion, coordinated effects, basic collusion, but part of the question is, can you predict that there will be more tacit collusion in the future or that it is more likely to have tacit collusion? I do not see how an econometric answer can be given. It would have to be based on

analytical reasoning grounded into the facts of the case. That is the way I think that it should be conducted.

If you follow that, what does it bring? I think that any guidelines should provide a safe harbour so that a firm knows when they are on safe ground. How can we get a safe harbour? I do not think that market share would work for collusion. Market share, except in a few cases, is not very useful. Safe harbour can be done as a precise test, like checking whether there are barriers to entry or transparency, but also by giving the burden of proof to the anti-trust authority and by imposing a very strict proof. To some extent, it is kind of good that at least the court has put some bone on the process and has said that there needs to be some discipline and has tried to address the way that you should do it. I do not agree completely with Airtours as the way to make a case, but at least it provides some discipline as the obligation to specify what is meant by tacit collusion, what kind of tacit collusion is expected, is it on price, is it on quantity, how is it going to occur? That would be the first stage. Then, how is it affected by the merger?

CHAIR: You touched on the role of the theory and, in part, that tells you something, perhaps, about the internal stability of an arrangement that you have got there. There are discussions about whether it generally does tell you anything about internal stability or not, particularly in a world where information is limited. Stepping back from this question, of out of internal stability and into a world where an anti-trust authority should add to its tests (for whether or not coordinated theories should be taken seriously) whether or not there is an explicit description of the nature of coordination. If you step into a Stiglerian world where you are thinking about agreement monitoring and enforcement, should, in fact, we need to be attempting to outline the nature of the tacitly collusive agreement that the competition authority is expecting to emerge from a coordinated outcome that is generated by the merger. In general, authorities have shied away from doing that on the grounds that the creativity of the company may be somewhat greater than the creativity of those working on the case. Since that is potentially a substantive difference from across jurisdictions in guidance, let me ask the question – should agreement be in there as part of the test for establishing the likelihood of coordination?

PROFESSOR STEPHEN DAVIES: Let me come in with a couple of opening remarks, both a bit argumentative, but I think that they are important because they establish things that I would like us to come back to. First,

in the preamble, paragraph 4, it says, "However, there is evidence of coordinated behaviour in a wide range of industries". I would actually contest that. It seems to me that one of the major problems that we have is that we do not know an awful lot about tacit collusion. There is not widespread evidence that tacit collusion occurs. That does not mean that it does not, it just means that it is singularly difficult to detect. I think that you need to say that at the beginning. This is a very elusive behaviour that we are talking about here, even when it occurs, let alone when one is trying to conjecture that it might occur as a consequence of a merger. I think that that is an important opening point.

My other argumentative point is that I was really surprised to hear you say, Kai-Uwe, that you think that this is a model of overt collusion. It is certainly sold in any standard textbook treatment as a model of tacit collusion and, if one was being argumentative, I think that one would say that there is a tendency - it is a loose tendency - to assume that the same model fits all, but, in fact, we sort of pretend that the same model will tell us about tacit collusion as about overt collusion.

I would just push home the thought that, if it is a model of overt collusion, I do not think that it is a terribly good one. If we look at the empirical facts from most cartels of overt collusion, there are many cartels where there are not a few number of firms. The main members of cartels in your survey is circa seven or eight and that is what we found recently for a sample of European cartels. This theory tends to predict that we should observe symmetric market structures if we are going to observe collusion. A majority of cartels do not have symmetric market structures. It is quite unusual. It is quite a small number of cartels that have a small number of symmetric players. As I say, I am surprised that you argue that it is a model of explicit collusion.

CHAIR: Let me have a first go at that one. Just as a model of symmetric cartels, I have always interpreted these incentive compatibility constraints as just firm specific. Certainly, if you were thinking about differentiated product industries, the pay off to coordination if you have only one product looks very different from the pay off to coordination if you have ten or more products in a market, and popular products versus less popular products, but also it affects the various components of the incentives to collude (or not). It strikes me that there is quite a lot there which could be consistent with quite asymmetric theories of tacitly collusive behaviour, but it is very narrow in scope. It does only target the

feasibility of sustaining coordination, and only then internally, rather than whether you are perhaps likely to get it.

PROFESSOR KUHN: Let me say two things about that. One of the things is that I think that one has to be very careful about stating what the predictions of that model are. For example, the prediction that, if you are increasing the number of firms, collusion always gets more difficult, is actually, if you are taking incentive constraint seriously, not always true. In markets in which you have capacity constraints, it is exactly the opposite. It actually gets easier and easier as you are fragmenting the market for a given capacity.

Here is the sense in which I think that it is really a model of explicit collusion. It might not be a good one. I think that it can be a model of asymmetric explicit collusion. But the essential thing here is that everybody knows what others are going to play, so that requires a very high degree of coordination in the sense that they have all cleared what they are going to do. The reason why I am making this big distinction comes partly from experimental work that I have been doing over the last year, and continuing to do, where we compare situations that can look like a collusive model in which people can communicate about their strategies and in which they cannot communicate about their strategies. What you see is the dramatic difference in the outcomes, very non-collusive situations, where they cannot communicate, and, when they can communicate, like in the model, it is really important that they make the types of contingent statements that we expect them to make in this explicit collusive model. When it becomes successful and they learn how to do this over time, they say that, well, OK, I am going to cooperate now, but, if you cheat, I am going to do something really bad tomorrow. That understanding in these experiments actually takes quite a lot of time of explaining back and forth. There is quite a big process of establishing this knowledge of play and this agreement that that is what is going to happen. The interesting thing is that, if you just let them talk about price, but not about contingent strategies, initially, when they talk, they shoot up in collusion but it all disappears, so they cannot maintain that. These are really complex strategies. If we need to have an agreement about contingent strategies in order to sustain that, the interesting thing is - and I do not want to completely generalise from this - that in this relatively simple laboratory setting it makes a huge difference whether you can make those statements or not and they converge into that when you make those statements.

I think with regard to tacit collusion about the situation in which you cannot communicate in that way. You may indirectly communicate through behaviour on the market, but it is very, very difficult to communicate something that is contingent behaviour indirectly through trying to demonstrate it on the model.

We have qualitatively very difficult abilities to come to an agreement here. That is why I think that the difference is so big. If that is the constraining factor, then that incentive compatibility constraint is relevant for determining how much things are changing when you are merging. That is the point that I am trying to make.

PROFESSOR JULLIEN: I agree with what Kai-Uwe has said. I think we should separate the issue of tacit collusion and the issue of cartels even for the merger. Cartels are organisations that organise communication and exchange of information in order to reach collusion. In some circumstances, it could be the same whether you do tacit collusion or cartel, but the real economics are different. You can see asymmetric cartels, precisely, just when the firms need to exchange information that allow them to support tacit collusion (because they are asymmetric) whereas symmetric firms may not need explicit tacit collusion because they have a focal point and stay on this focal point, for example. It is difficult to extrapolate the information that we get from the studies of cartels to the case of tacit collusion. We do not have many studies of tacit collusion. It is not so easy to spot. You need econometrics of dynamic games, which are not Markov, to be technical, which is a big challenge and for the moment we do not have a lot of evidence.

PROFESSOR STEPHEN DAVIES: I was not suggesting that we do extrapolate. In a way, that is my point. I think that they are very different animals. What I do not think we know very much about is what pushes us to one rather than the other.

PROFESSOR SUSLOW: The other thing is that they are different animals, but we do not really have good ways of distinguishing them empirically. Therefore, I am not sure that it is productive to try to split them up for the purposes of the merger review. I think that one interesting lesson that has come out of all of the explicit cartel prosecutions is the extent to which the firms invest in elaborate mechanisms of communication, monitoring and adjustment to complete the contract. They add other complex organizational layers as they go, despite the penalties, the risk and so on. If you were making a strong statement, you would say,

“Perhaps tacit collusion does not actually happen that often or, if it does, it is very imperfect because it is so difficult to achieve.” Obviously, the cartel prosecutions that Maggie Levenstein and I study are a biased sample, but there is something that is revealed to us by how these explicit cartels have behaved.

PROFESSOR WILLIAMS: The question posed is, do we need agreement? I just wanted to pose one question in advance there, which is the implicit framework that you have here is that we have a market with, say, four firms in it which is currently non-tacitly coordinated. Then post-merger - going from four to three - it may well become co-ordinated. What about the other case where, basically, although we would not necessarily know this, the market is already tacitly coordinated and where, basically, the theory of harm is that what this merger does is move the market from a four-firm market with fragile tacit coordination to a three-firm market with solidified tacit coordination? Obviously, if that is the theory of harm, you do not need agreement because, in fact, you are already there. What you do need to do is to have methods of testing as to whether or not you think that the market is already tacitly coordinated - that is the economic question - and then the policy question is, what is the attitude to this? If you look at the test, SLC, there is no lessening of competition there. It is the defence of, “If you ain’t got nothing, you’ve got nothing to lose”. From an economics point of view, I am actually quite worried about those situations of solidified tacit coordination. One, are other people worried and, two, can you actually go for that under the SLC test?

MR JOHN DAVIES: As a purely practical point on that last point, it has always struck me as quite implausible that someone would come along and say they were already at the monopoly price, therefore, this merger is unlikely to make much difference. My sense is that it is not just economists who would have a big problem with that.

PROFESSOR WILLIAMS: They do come in and say we could not possibly raise price and, look at all this analysis, if we raise price, we will lose money.

MR JOHN DAVIES: That is true.

PROFESSOR WILLIAMS: They do come and say that, but they do not say, “And that is because we are already tacitly coordinating”.

MR JOHN DAVIES: Which is why I think the key is your first bit that you need robust evidence of the coordination.

PROFESSOR KUHN: I am not quite sure how to start, but let me take everything that you have said as given and just take issue with this idea of we do

not need agreement. If we are merging, we are changing the situation in the industry, so we do need a change of our understanding of how this is going to be played in the future. We are changing the asymmetries between firms that might, actually, make it more asymmetric. It is not that it does not matter what the circumstances are under which we might be able to come to an agreement or not. I think that looking at the change in every one of the aspects that matters for achieving collusion is something that is of relevance. Just because I have tacit collusion pre-merger, it does not mean that I have something that is like a completely contingent agreement for what would happen post-merger. One might actually say that, well, once we have the merger, everything is sunk, we are in a new game and people would have to agree again how they would behave under those circumstances, if you take that seriously.

PROFESSOR WILLIAMS: Can I come back again? As I understood the question, and I was going back to the Stigler test, you are at the competitive outcome and then you have, first of all, to agree between yourselves what tacit collusion point that you are going to move to and then, secondly, you want to stay there once you get there. As I understood it, the question was, do we, as an authority, have to write down a theory of how do we get from a competitive outcome to the coordinated outcome? I was just making the observation that maybe you do not if, in fact, you are already there. I think that that was all that I was saying and then asking the question whether a merger that actually solidifies coordination that we are already at is, in fact, something that we (a) worry about and (b) can be challenged.

PROFESSOR STEPHEN DAVIES: It depends what you mean by "solidify". I find that a bit vague. You are talking about evidence beforehand, that there is already coordination, but it is clearly imperfect coordination and not solidified coordination. If we find it really difficult to find evidence of coordination in general, is it not going to be almost impossible when it is incomplete in this way that you are describing?

PROFESSOR WILLIAMS: I do not want to interrupt too much, but, in terms of whether or not there is existing coordination, there are methods of testing; looking at whether or not price cuts would be profitable for a firm or whatever is one way of testing whether or not you are currently at tacit coordination. Price solidification could be in any number of dimensions: what is the discount, how much is needed to sustain it, it could be that that actually changes with the number of firms. There is a whole different range of ways in which it could solidify, but I have just

given one.

PROFESSOR STEPHEN DAVIES: I am worried about what you would interpret as empirical evidence if you have non-solidified collusion.

PROFESSOR SLADE: It is a relatively easy test. It is much easier than looking at the merger simulation, because there you have to know what the game is. To find out evidence of coordination, you do not have to find out how they got there or anything else. You just have to estimate the Nash level price, quantity or whatever and look at the outcome. If the outcome is quite a bit different from that, you have evidence of some type of coordination. It does not matter what.

PROFESSOR STEPHEN DAVIES: But that might not be illegal.

PROFESSOR SLADE: No, it may not be illegal. I am just saying that it is easy to come up with a test for tacit collusion.

PROFESSOR KUHN: The question is how that pricing or whatever is going to change as a consequence.

PROFESSOR SLADE: Exactly.

PROFESSOR KUHN: That is really what we are trying to evaluate.

PROFESSOR SLADE: That is much, much more difficult.

CHAIR: Suppose that you are in a world where you found the prices are above the Nash level, you are an agency evaluating coordinated effects of a merger. Mark's phrasing of the question is perhaps, do you need to explain or understand the way in which those prices are above the Nash level in order to come to a view on whether or not the merger is likely to lead to a further increase in those prices?

PROFESSOR WILLIAMS: Or a higher probability of those prices being maintained as opposed to the cartel breaking down. It is the latter interpretation that is more in my mind than a further increase in the price.

PROFESSOR SUSLOW: I would not think that you would need necessarily to understand exactly how they got there, but you can appreciate the fact that they are there. Presumably, the test for this would be over some sustained period of time, so you would need to look into how it is that they are capable of sustaining that. That is very market specific. Knowing which parties are merging and whether you think that that would affect it would be important.

CHAIR: Is there anything else to add?

PROFESSOR KUHN: Incentive conditions are still somewhat useful, because I

think that it tells us that it can constrain some things that happen. For example, one of the things that we have learned from it, just in terms of the incentives, to stick to collusion, is that a merger might make things more difficult if you are increasing asymmetries. That is why I am loath to say - if I already see something that is above, say, Cournot, therefore, it is a little bit, at least, tacitly collusive - that that makes it now much more likely that we are going to have a negative merger effect.

PROFESSOR WILLIAMS: I agree that you have to prove the second thing. What I am saying is that suppose we have prices and we all agreed that they were above Cournot, and, if I were on the agency I would want to ask the question, what is going on in this market? I agree that a concentrated merger, normally reducing the number of firms generally might make collusion more stable, but I am aware that there are models, etc, in which it can actually destabilise collusion. Clearly, you would want to be careful that you were not in one of those cases. I do not know, I am not on the agency, but, if you found prices that were seriously above Cournot levels, I suspect that most of you would wonder what is going on here.

PROFESSOR JULLIEN: Let me make a comment. We always think of a merger in terms of increase market power or not. If I have to consider an industry with four firms that are already colluding and three of them merge, the first question that I would ask is: are they limiting the chance that at some point this collusion will stop?

PROFESSOR WILLIAMS: That is my question.

PROFESSOR JULLIEN: Then I would care about the merger exactly in the way that I would care about what would be the coordinated effects. If it goes from three to two, it is much less likely that at some point there would be less collusion. You are changing the benchmark, in a sense. At the end I do not see a key difference in the conceptual approach that you would use. Even if you start from a collusive monopoly, it is not like if you have a de facto monopoly and you know that it is going to stay. If firms coordinate on monopoly, you do not want to give them the chance to support that forever.

PROFESSOR LYONS: You are talking as if it is easy to know whether the price is above a Cournot price or whatever static oligopoly model would apply. That is incredibly difficult. You need to have a very good estimate of the demand elasticity, at least, cross-elasticities for differentiated products and the whole lot. I am actually surprised hearing Margaret say that because she is very convincing that these things are terribly sensitive.

PROFESSOR SLADE: People think that it is easy to do a merger simulation and I am not one of those. This is an easier test, which is to determine whether the prices are above the static Nash. That is my point.

PROFESSOR LYONS: I still think there are problems with that.

PROFESSOR SLADE: Where you go from there is ...

PROFESSOR WILLIAMS: Basically, it is the same.

PROFESSOR WHINSTON: We have to estimate demand and with some costs ...

PROFESSOR SLADE: No, it is just that with a merger simulation in order to get the right predictions you have to have the right game, whereas here you are just saying that we do not know what the game is, although we know that it is better than ...

PROFESSOR KUHN: For the coordinated effects analysis you have the same problem.

PROFESSOR SLADE: You have to say the same thing.

PROFESSOR KUHN: On top of that you have to somehow determine what the actual behaviour is and how it changes.

PROFESSOR SLADE: I was making a very easy point and that is whether or not it is easier to find out if there is coordination.

PROFESSOR KUHN: Absolutely.

PROFESSOR SLADE: Not how it is going to change. That is much more difficult.

PROFESSOR KUHN: I feel myself in a position where I pity policymakers on trying to find standards here. For example, this incentive condition, we think, however we are thinking about it, that, if it is very hard to make this hold, we are going to think that collusion in whatever form is fairly unlikely. I can actually build a really nice defence over certain characteristics of the markets in which I think it is so unlikely, say, for example, irreversibility of investments, something like this, where it is so unlikely to hold that I say that this is a great defence. As Bruno said, for very specific cases I can build very nice and very specific defences why this should not cause any coordinated effects concerns. But for public policy, that does not help me very much if I do not have a very nice standard that somehow empirically I can support, where I say that this is above the line and I am not going to allow this merger, because the coordinated effects are likely. I do not really have a feel for what that test would be at all. I am very dissatisfied about that, but in some sense that is the current situation, that I see the economics of this being that

we have great arguments to say that this is very unlikely and we can do things - and it is being done already. I have just seen this last month it being done on a case and it being argued that coordinated effects were unlikely because here is your little Jenny and Rey model: we show that it gets so much more asymmetric, but the critical discount factor falls, therefore, it is unlikely that there is collusion. And there is some reason for that. But the positive test I am really uncertain about.

CHAIR: There are some potential stories out there, one of which was whether you could outline a coherent story around an agreement. Other stories which are, perhaps, closer to the equation, instead of compatibility constraint, would be literally to look at the incentives to coordinate: how you thought prices would rise under collusion versus non-coordination. The other test which is often looked at is whether or not you could build a coherent story around punishment. Those at some level are the lessons that are fed from the theory into the evaluation. I heard some of the discussion earlier as saying things like, well, it is not all there, there might be situations where there are other reasons to be concerned about coordination and tacit coordination, but, in terms of what we are doing at the moment, the question, in terms of writing guidance, is can we coherently say that, yes, those are sensible things for us to be looking at when thinking about whether tacit collusion is likely to be a concern in evaluating a merger. Should we be looking at the incentives? Should we be looking at the punishment mechanisms? Should we be looking at the agreements? There is a lot of angst around the table regarding concerns about where we are. You know, pity the poor policymaker, but we have a sequence of answers that have been put forward and the question is, are we at a stage where we really should be backing away from some or all of those or are we in the right place?

PROFESSOR JULLIEN: I had a reaction when I read the text about the concept of agreement: what is the agreement? I do not see the process like that. There are things that are sustainable and things that are not sustainable. That is the starting point. If something is not sustainable, we just do not think about it. We should start with sustainability. I think that the way in which you state it is starting with the current evaluation and see what you can support, without reaching an agreement on something that is not sustainable. That is why I think there is the sequence: what are they going to agree on? Do they have an interest to agree on? And the second step is also debatable. It is not clear to me that all the firms all have an interest to be part of an agreement. Sometimes some of them have to

follow. That is why it is not significant to a large extent, because, when you are in tacit collusion, you do not choose. You are part of the game and you have to follow the rules.

PROFESSOR SUSLOW: There are no rules. You can choose to follow or not to follow.

PROFESSOR JULLIEN: Yes, you can choose to be retaliated or not.

PROFESSOR SUSLOW: But they do not retaliate that often. They might match, but they do not retaliate that often. That is not a huge risk. I would take a cynical approach and say I'm not sure if you need to look at the incentive as carefully as you look at the other components, because for most firms the incentive to collude will exist. If you think about for whom the incentive would not exist, there are two cases: if you can be a small fringe player and get away with it, you should; or if you think that you can monopolise, then you would want to go it alone. There are many companies that are quite dominant in their market but do not have a chance of becoming a monopoly. For example, ADM's goal was to capture a third of the market and then fly to Japan and negotiate the cartel. Even with a third of the market, knowing that they could not monopolise, they still had an incentive to coordinate.

CHAIR: That would suggest looking at feasibility first, with some tests around feasibility, and would you write the guidance in a way that was informed by punishments or not?

PROFESSOR SLADE: I think that there is a real problem, at least in the theoretical models, with applying the punishment, because often it is almost doing something like flooding the market, so excessive capacity, but that also leads you to undercut. You are not going to undercut if you do not have excess capacity, because it is not going to do you any good. It works both ways. It is quite hard to determine which is going to ...

PROFESSOR JULLIEN: I can answer to that, because I have been in a case like that. It is very easy to find a punishment because you do not need to rely on retaliation. We have this very fancy theory applying the optimal penal code on players, giving the maximum punishment on the deviator, which is a very complex story, because to do that you have to give optimal punishment if he doesn't. I am sceptical on how they would coordinate on that. But to run a case it is sufficient to run the old theory of collusion, which is: firms collude on high price and if one deviates, they go back to Nash. That gives you the retaliation right away. It is a straightforward mechanism which is working pretty well. To run a case,

the retaliation usually would be pretty easy to find. The hard part, I would guess, would be the ability to identify deviation and to know when you need to retaliate or not, but the simple mechanism would give you retaliation almost in any case. I am not convinced that the retaliation part would be so difficult to make.

PROFESSOR KUHN: We have to be clear. The retaliation is always the difference between what you can get from sticking to the cartel and switching to whatever you are switching to. If one does that one would be bound ...

PROFESSOR JULLIEN: It is because of that, that I said at the beginning that I believe that the anti-trust authority should explicit the theory of collusion. If they do not do that, it is extremely ...

CHAIR: If I understand correctly, what seems to be emerging around the table on this point is first that there will often be an incentive to coordinate. And second, given that incentive to coordinate, and almost by definition with grim strategies, there is also the opportunity to retaliate. That observation, perhaps, provides a rationale for emphasising that there may well be cases where you would spend more time thinking about transparency and monitoring and perhaps agreement rather than the retaliation element of the feasibility constraint.

DR PADILLA: I had a very small point on retaliation. It comes from present cases. We tend to assume retaliation in our models, because our models typically involve symmetric firms. Everybody that is being cheated retaliates. In reality, the world is one of asymmetries and there are interesting problems that may emerge in the retaliation phase. Who retaliates? Which company punishes the retaliator? This is particularly relevant when, for example, the retaliation happens, say, in a local market and you suspect the local competitor, the one that is the stronger, to retaliate, but perhaps it is not well positioned to do that, because of capacity constraints or whatever. I think that it is interesting to keep in mind that those symmetries that think about retaliation could potentially be causing problems and also because, perhaps, the company that has the greater ability to monitor, detect the retaliation and punish maybe capacity constrained. In reality, the punishment phase is a little more subtle and interesting than the models would suggest.

DR FLETCHER: I was going to say something similar about market sharing. There are models of market sharing where, if you are attacked in one of your markets, what you do is retaliate in the other market, where you are

smaller, the other guy is bigger, and so you can impose a lot more harm on him than you actually suffer yourself. I should probably leave this to Valerie to say, but I was very struck by Valerie's work looking at the information-sharing and behavioural aspects of cartels. She described, based on empirical analysis, how a large part of building a cartel seems to lie in building trust and a feeling of a kind of friendship and being part of the community. Her work relates to properly explicit cartels which go beyond the level of 'explicit' that Kai-Uwe was describing. The idea is to develop a feeling of community and a feeling that you are part of something. In that kind of set up, economics (unless we are going to get into behavioural economics) does not work very well in terms of understanding the role of retaliation, because it is hard to characterise the importance of simply being chastised. I was very struck by a cartel case in Brussels a couple of years ago where a party came in for leniency. (Incidentally, there is an interesting question here as to how leniency fits into all of these models and changes incentives). In this case, the party came in for leniency and was told "OK, but remember that in order to get your 100 per cent leniency, it is key that you must not tell the people in the cartel that you have blown the whistle, until we have been able to carry out raids and gather relevant information". Shortly afterwards, and well before DGComp had had a chance to organise raids, the leniency applicant phoned up and said, "I am really sorry but I had to tell everybody". When DGComp said, "Why? You have now lost your 100 per cent leniency". He said, "But they are my mates". In that context, I wonder again whether we need to think about this in quite such an economic and rigorous way. On a slightly different, but related point, we are looking at a cartel case at the OFT at the moment, where one of the things that the companies involved are most upset about is the impact of our investigation on the standing in the community of the firms or the heads of the firms that we have accused of being part of the cartel. Many seem at least as concerned about that as about any fines that we could impose upon them.

PROFESSOR KUHN: Actually, I think that this is very, very important. We did something very preliminary on it but we want to go on. We ran the same thing with renegotiation. Renegotiation did exactly what you thought renegotiation should do with rational people. Even after deviations, they renegotiated to the best continuation equilibrium. But at the beginning they colluded much better. Actually, when we allowed for renegotiation, collusion went up dramatically. What you would see happening is they

talk, they play, someone deviated, they talk again and the other person starts by saying, "How could you do this?" And they tell each other off and they kind of apologise and tell some story why this was not really because they were mean, but they thought that the other guy would deviate. "See, I undercut by so much, I would not have done that if I thought that you were not sticking". There are all these stories that are being told that give you this impression that it is embarrassing that you have just undercut this other guy. Then they all go, "OK, let's do the good thing".

This is an experiment and a very simple thing, but I think that these features are really important for real cartels. I am not sure that we are at any point where we could build this into a structure in which we would be evaluating coordinated effects of mergers. To some extent the best that we can do is really what Bruno has suggested and try to plug something into this incentive constraint, such as, look, we are going to go with the simple Nash here, but it is somewhat of a shot into the dark. We want to see how much could they raise prices if they come together and can we somehow evaluate what the change in the incentive would be to stick to this. That does require a lot of information. That requires at least as much information as you do with your usual merger simulation analysis, because without having the demand information you are not going to be able to calculate anything that are Nash punishments or something like that. Therefore, that would be very involved. To some extent you would like to have a shortcut. When I was being so pessimistic, the shortcut, the nice kind of screen that you would want to do in order not to have to go all the way, they are much more uncertain about, whether we can have something simple that would say that, well, this is enough. I think that a lot of the other things that we also have, like, how easy is it to observe what the other guy does? If it is very difficult, I think that that would be enough to dismiss the case. If it is not so difficult, does that add anything to our knowledge of the change in the incentive constraint? I think that most of the things that we usually consider would go under the category of negative tests, while we would want a very small set, a kind of positive criterion, that says that, well, if there is nothing that overturns these, then we are going to say that there are coordinated effects. That would be a very small set of cases.

DR MAZZAROTTO: Actually, Kai-Uwe has made one of the points that I was trying to make. I was just going to intervene to express a growing sense of anxiety from the point of view of a policymaker having to deal with a

number of issues that go from free riding on retaliation and the complexity of a retaliation mechanism to the issues of trust that are behind the incentive constraint. Kai-Uwe made the point that, well, the world is more complex than the economic models, but, maybe, that is true for a whole set of models not necessarily just for coordinated effects models and, maybe, we can agree on a way of handling coordination cases that has a default assumption, like reverting to Nash, subject to us being able to understand some degree of what Nash looks like, and work on that basis. And, maybe, accept that there are all these complexities, but, perhaps, not carry the full burden of proof that all things are in place for coordination to emerge, including the free-riding problems that Jorge was talking about and including all these issues of trust. I think that at least some of these issues go beyond coordinated effects and have to do just with the way that we apply IO models to the real world.

MR JOHN DAVIES: Nicola is the guy who has to write the first draft of the coordinated effects chapter of the revised guidelines, over the next couple of weeks!

CHAIR: There is one anecdote by way of reassurance that comes from a talk that Scott Hammond, who is head of cartels at the DOJ, gave to a conference in Korea recently. Specifically he reassured the audience, which included various Chinese, Korean and Japanese businessmen, that, despite the scepticism around whether or not leniency applications would be effective in overcoming social networks in Asian economies, he reassured the audience that, in fact, there was no shortage of leniency applications coming forward in the various jurisdictions. In that case it seems social networks had not, actually, served to keep people from revealing information. I do not know whether that anecdote from enforcement on the other side of the Atlantic gives you some reassurance, but perhaps it does.

PROFESSOR SUSLOW: I have one quick comment to make, connecting what Amelia said and what Kai-Uwe said when it comes to trust, as well as to renegotiation. For those merger cases where there is a history of past explicit coordination, whether it succeeded or failed, you should take it very seriously. Some agencies do and others do not. The elements of trust are there and patterns of behaviour are there that could then be potentially continued in a tacit way. They learn from failure just as well as they learn from success.

PROFESSOR STEPHEN DAVIES: It is a good idea in principle, but, in practice, I

think that we rarely find these cases. We did a little bit of pilot work on just that idea of busted European cartels to track out how much merger activity there had been in those markets and there were singularly few.

PROFESSOR SUSLOW: This is something that I have only looked at anecdotally so it may be that I have noticed the view and wondered, oh dear, is this a common problem, so perhaps it is not. I have certainly noticed companies coming up for merger review post-cartel prosecution, but it is not right away. There is a lag, so it is hard to tell then whether they are connected.

PROFESSOR STEPHEN DAVIES: I'm pretty sure that it was often argued (maybe by George Symoneides) that the wave of mergers in the UK in the 60s was partly driven by the banning of restrictive price restrictions in the 50s and 60s.

PROFESSOR SUSLOW: Yes.

PROFESSOR WHINSTON: There are elements of the discussion that I find a little puzzling. The general idea of what you want do is clear. If you could use historical data and know what the model of competition is, you would simulate that, whether they are behaving unilaterally or they are behaving in some repeated game or tacit collusion or whatever, they are groping their way to something good. The concern about the coordinated effects at some level has this little bit of the flavour that we know how to model unilateral effects and we have this tool box that has a lot of discipline in it. Then there are coordinated effects and we do not really know how to model it. We can write down these incentive constraints but we do not know how they select equilibrium, how they are going to find their way and is any argument valid once you start to open the box? I guess that I am almost posing the question back. If you are going to start to have a coordinated effects case, what is it that you regard as valid evidence? They may be coordinating and that gives a bigger effect than if they were behaving unilaterally. If the unilateral model is not right, we know how to test that - I think that we do - then what? If it is not right, are we free just to say that, oh, I think it is going to have a really big effect on prices because they are going to start coordinating really well? Do we have some tools to bring to bear actually to provide evidence that you would regard as convincing? Some of you may have been involved in cases like this. I was almost a little confused when you were talking about thresholds in the sense that is it is threshold to open this Pandora's box? I am not quite sure how you guys are viewing this.

CHAIR: Who wants to pick that up?

MS BEGENT: Shall I? I do not think that we really are here discussing the threshold, actually, at the moment. I think that the fundamental purpose of this discussion is to identify what factors are particularly pertinent to coming to a view on coordination. Thereafter you can move on to thinking about what are the types of evidence, as a matter of practice, that may be useful. Then the whole issue of the level at which you have to get to to form a conclusion that you have met your theory and you are satisfied that you have got a competition problem is the last thing at the end of the track. I think that, really, what we were aiming to do was to find out what the effects were that would form your view.

PROFESSOR SLADE: One of the most important factors seems to be missing, homogeneous products. They are also very important.

DR MAZZAROTTO: The only reason why I did not put that in is because of the sort of market sharing type coordination that could take place. We were trying to find features that would work across a range of markets. I did not think that we could be as confident that, because of horizontal product differentiation, in particular, I guess, or even vertical, there would not be opportunity for a significant co-ordinated behaviour or sort of a geographic differentiation, being the easiest one, with geographic market sharing, but I guess I did not think that it would necessarily be difficult to coordinate on market sharing for other than product differentiation.

PROFESSOR SLADE: Again, I am thinking about the evidence. I have seen a lot of evidence that homogeneous products are priced down, but, if you look at the differentiated products, where the static Nash seems to do reasonably well in predicting, one of the problems with coordination with differentiated products is that often these are consumer products and transparency is not there to compare the pattern of one firm and another and so forth. It really complicates life quite a bit.

PROFESSOR STEPHEN DAVIES: Yes, but does that elevate it to the level of ... I get very jumpy with lists like this, because some of them seem to me to have almost the status of necessary conditions.

PROFESSOR SLADE: Yes, I would agree with Kai-Uwe.

PROFESSOR STEPHEN DAVIES: I would have thought with the heterogeneity thing, yes, there may be a general tendency which you might explain in terms of more likely transparency.

PROFESSOR WHINSTON: The way we are talking now is almost like it is a

threshold test for us even to think about coordination. If I am understanding Margaret correctly, that it is very differentiated, there is not much information about what competitors are doing - then maybe we are just going to look at unilateral effects, we are going to say that we do not think coordination is likely, period, and so we can stick to simple models that we understand well. That leaves open the question that suppose all these factors are there, it is homogeneous products and all the rest of it and, just like Kai-Uwe said, the question then is, how does that affect the impact of the merger, not do we have tacit coordination now?

CHAIR: It is not always easy to spot the difference between a differentiated product and a homogeneous product industry. Consider for example, items like bricks, that the CC has looked at. On the face of it you might think that bricks are bricks, but, when you dig into the detail, it turns out that there are hundreds of types of bricks and where you draw the line between what is, in fact, a homogeneous product and a differentiated product in a given instance is not always easy. If you draw it as the line, OK, high cross-price elasticity between products produced by firms and a high own price elasticity, which sounds a bit like a homogeneous product industry, even though it is, in fact, differentiated in some sense, then you can get some quite differentiated product industries which will have the characteristics of homogeneous in terms of the relative trade off of unilateral versus perhaps coordinated effects. As we think through the impact of saying homogeneous, I guess, in practice, it strikes me that it is not always as easy as it looks at first glance.

PROFESSOR KUHN: Let me actually get back to Mike's point. It sounds like you are stumbling over the same problem that I have, which is that we are talking about all these characteristics that might make it easier, but, in the end, they are kind of characteristics, when we are saying that, oh, this makes it really difficult, we do not worry about it. We have lots of characteristics that give us negative tests. What we are really missing is some kind of good empirical basis on which we are saying that we are satisfied enough to intervene in this market to say that we are intervening because of coordinated effects. I think that part of the reason for that is because we do not have much empirical evidence of what is happening there. Margaret, you have a paper where you are trying to do this in one industry.

PROFESSOR SLADE: I did not find anything.

PROFESSOR KUHN: Right. It looks really strange.

PROFESSOR SLADE: Why?

PROFESSOR KUHN: Don't the prices go ...

PROFESSOR SLADE: No, it is not a merger, you find that Nash does very well.

PROFESSOR KUHN: OK. There you find that Nash does very well. Do we have anything that would predict it? I have sometimes thought that, well, since we are so bad with the positive effects, maybe we should just have a market structure test where we say that, if it is really, really concentrated and it is not asymmetry-increasing, then we are just going to say that the default is that it has coordinated effects and everything else that we have should be rebuttals to that simple market structure test, because we do not have a good empirical test.

DR MAZZAROTTO: I suppose this relates to what we were saying earlier about history of past coordinated behaviour. History of past coordinated behaviour could be added to the structural test to strengthen it up.

PROFESSOR KUHN: Yes.

PROFESSOR WHINSTON: Taking a symmetric industry, in models of collusion, a reduction in the number of firms gives a bigger price increase than in a unilateral effects model? That seems to be the presumption that is going on here.

PROFESSOR KUHN: It actually gives a smaller price effect.

CHAIR: It is deeply ambiguous, is it not?

PROFESSOR SLADE: Yes.

CHAIR: I see that we have six people trying to compete to make a contribution to the discussion, so I am afraid that I am going to have to impose some order. Bruno.

PROFESSOR JULLIEN: We wrote a report two years ago to the European Commission on this and we tried to think about what we can do. The only thing that we thought was that at least we can put a hierarchy on factors and this is not very often done. There are three types of essential factors that were suggested. There were very few. There should be barriers to entry, otherwise there is no point; there should be transparency; and there should not be too much innovation in the industry, because, when there is innovation, it is hard to collude. That would be the prerequisite. Then there are factors that affect collusion and that are affected by the merger. Those are the ones that you want to

focus on: the number of firms, capacities and things like that. Then there are factors that are at the third level, which are environmental factors which are not affected by the merger, but which tell you whether collusion is more likely or not. If you make this distinction, it could make the analysis a bit easier because then you start with the main factors and you do not need to spend two months in deciding whether this particular feature of the model is important, because it just goes beyond. I think that also past evidence is very important. Now economists are able to run tests to see whether the past was coordinated or not. I mean, if there are now techniques that allow you to tell on the basis of past data whether collusion is possible, maybe not before 1981, but remember the thing with Bajari and Ye...

CHAIR: I think that it is about auctions, but also going back to Bresnahan and Lau, that is right.

PROFESSOR JULLIEN: So they can run tests to see from the past and how likely it was that there was some coordination in the past.

CHAIR: Identification stories for homogeneous product contexts are obviously easier in terms of demand rotations or demand shifts in special cases; in differentiated products the identification theorems are much less clear, in a sense, for exactly what it is that would allow one equilibrium to be distinguished from another. In a homogeneous product industry, I guess that it is clear that that does give you some bite.

PROFESSOR SUSLOW: Later it would be interesting to hear what people think the essential factors are if we were to whittle it down to a list of three or so. To address Mike's point, it is sad to say but it really is true that it is a very complex flow chart when you start thinking through the logic. Should homogeneous or differentiated products be a factor on the list? As Margaret was saying, if it is a consumer good and it is differentiated, then coordinated effects might be quite difficult. If it is differentiated, going to what Nicola was saying, and it is an intermediate good, then customer allocation, geographic market sharing, and other sorts of rules are fairly commonplace. Therefore, the fact that it is a differentiated product may not be a barrier to coordination at all. That is what makes listing difficult.

PROFESSOR LYONS: Can I build on one of the points specifically that Mike made, which others agreed with too readily? He asked: can you not just catch these things in unilateral effects?

DR FLETCHER: Would you not stop the same mergers, anyway?

PROFESSOR LYONS: It would stop the same mergers. A typical merger - well,

not typical, but a case I could certainly imagine here would be one where you have a market structure with shares of 60:20:20. The two twenties are proposing a merger and there are some reasonable reasons to expect a certain amount of efficiencies, which would be just enough to mean that no outputs would change under unilateral effects, so that you would end up with 60:40. There are no unilateral effects there.

PROFESSOR WHINSTON: Why would that ...

PROFESSOR KUHN: He is positing there that there are enough cost efficiencies.

PROFESSOR LYONS: There are enough cost efficiencies that would just outweigh that the enhanced market power, so there would be no effect on outputs, on market shares or prices. You would not have any reason to block that. I guess that most of us would have a severe worry that this is exactly the sort of merger that that would facilitate coordinated behaviour.

PROFESSOR WHINSTON: You are making an assumption about how much they are colluding now, how successful they are now and how successful they would be in future.

PROFESSOR LYONS: You have reason to believe that they are currently acting unilaterally.

PROFESSOR WHINSTON: That is why I am saying that there is a little bit of an element of it that is throwing open the door. It feels like, once we say coordinated effects, we are going to assume that it is unilateral today and then tomorrow we are going to assume that it is collusion.

PROFESSOR LYONS: We do not have to do that, but you were implying that maybe we could do everything we wanted to do by just looking at the unilateral model. I think that there are certainly cases where ...

PROFESSOR WHINSTON: No, I do not mean that. I just mean ... I will stop.

CHAIR: Amelia has been trying to say something for some time.

DR FLETCHER: Actually, my intervention may be off the point too, because I had read what you were saying in the same way as Bruce. What I was going to say on this was that there is another example where I think we might treat the two differently in practice. This is where we think that there is not coordination today, but only because there is a maverick undermining the potential coordination and we are fairly clear that all the others want to coordinate. The purchase is of the maverick, who may be quite small, which is why he has different reaction functions and is interested in being a maverick. In such markets, the market shares of the

potential coordinators may not be that high and the maverick may be fairly small. As such, we would not find against the merger on the basis of unilateral effects, but we might find an effect on coordinated effects grounds.

PROFESSOR WHINSTON: No, I did not mean that all, but I thought there are not situations where - there would be in a merger that has a bad effect, because it has coordinated effects that say it does not because it is unilateral. It is more what are you going to do to prove that. That is the question. When I was hearing people talking about the threshold case, I was asking myself, the threshold for what? For proving they are not guilty or for starting to consider coordinated effects?

PROFESSOR KUHN: Starting to consider.

PROFESSOR WHINSTON: To consider it. Right. Then you have to ask yourself, then what do you do?

PROFESSOR KUHN: Exactly.

PROFESSOR WHINSTON: You cannot really talk about the threshold if you do not have an answer for what are you going to do.

DR FLETCHER: It is the negative point.

CHAIR: Kai-Uwe, do you want to come in?

PROFESSOR KUHN: At this point, since the word "maverick" has come up, I strongly advise to strike the word "maverick" out of any merger guidelines.

PROFESSOR KUHN: Actually, I have no idea what a maverick is.

PROFESSOR JULLIEN: A maverick is someone who has not been to the same business school as the other!

PROFESSOR KUHN: I remember in UPM Kymmene/Norske Skog/Haindl, which was a paper merger where both Bruno and I were involved, I do not remember exactly what the guy said any more, but there was the lawyer for Haindl there. Haindl was there and the lawyer got up and said, "How dare these people call my client a maverick? He is an upstanding German businessman and a serious guy". Just calling something maverick really begs the question. If it is about a firm that has very different incentives, then let us say that it is a firm that has very different incentives and why it has very different incentives. I think that trying to ask the question, "is this a firm that has at the moment a particularly limiting effect on the ability of others to raise price?", that is a reasonable question to ask. In

the sense that Baker has raised this issue, I think there might be something reasonable in that test to see to what extent is one of the merging parties limiting the ability to collude of others, for example. I did not want to specify what exactly it is.

CHAIR: One way to interpret the maverick, is that this is a firm, who is facing a participation constraint that does not bind for some reason. For example perhaps they are particularly small. Firms internalise the pricing externalities so they get nice high prices, and the maverick, the small guy outside, benefits from that, so much so that they do not have an incentive to participate. But is that what we mean by a maverick?

PROFESSOR KUHN: How a small guy can have a dramatic limiting effect on the ability of others to raise prices is not quite clear to me either.

DR MAZZAROTTO: I think that, if we accept what Valerie was saying earlier about the ways in which coordination comes about, having to do with something other than the incentive constraint per se, and so having to do with something other than, perhaps, the cost structures of the firm, but being something that has to do with broader social issues of trust, then I think that maybe the maverick can capture something along the lines of what Bruno was saying earlier. It is something that we cannot really relate to cost asymmetries or the size of the firm or innovation in a way that is pinned down within the economic model, but it is a way of saying that, well, there is something that is a little bit more intangible out there that in practice we might recognise by looking at market behaviour, perhaps we can see from internal documents that firms are concerned about a particular competitor, even though we cannot perhaps really trace it down to the essential elements of ...

PROFESSOR STEPHEN DAVIES: But that intangible, that indefinable, is that going to carry a lot of weight with the judge?

PROFESSOR LYONS: You can define it in terms of them having very different business models, whether they pick that up from business schools or whatever. Someone was telling me the other day of the example of the Aldi brothers in Germany. Kai-Uwe probably knows about this better than I do. Apparently, they had a disagreement over strategy. One wanted to go for very low price and the other wanted to go for a bit more quality. They ended up having a terrible argument and splitting the business. There is now a north German Aldi and a south German Aldi. Interesting market segmentation, by the way. They just had a genuine disagreement over business strategy. They probably also had other disagreements.

That is the point that we are never going to pick up in our economic models: people's judgments about the market and what the market will take. I think that there is something, whether we call it maverick or people with a variety of business strategies, which is real out there.

PROFESSOR JULLIEN: Can I intervene on this point?

CHAIR: Actually, Margaret has been waiting to get the floor.

PROFESSOR SLADE: I am much more comfortable with maverick, although I am not sure why it was capitalised, than I am with, say, the capacity issue. I do think, particularly looking at, say, gasoline retailing, there are firms that are known to cut price, lead price wars and so forth, and they are always small, but not all small firms do this. If we are going to share the market, as Nicola said, I do not see why we have to share it equally. We can have small shares and big shares. Some small firms are quite willing to go along with that, but there are firms who tend not to go along with that model.

PROFESSOR WILLIAMS: Again, do mavericks exist? Yes, they do. I go through my clients and one in 20 of them are mavericks. Also, when you look through the internal documents, the strategy documents, etc, from time to time, and I am sure that the CC people have seen this as well, when discussing their competitors you will see that one of them is marked out as "this guy is a nutter". This is the guy who is going to destabilise the market or whatever. They are normally the bits that the lawyers in the room like to black out or say are foolish or whatever, but you do see these documents from time to time and there are people who other people in the market regard as unreliable in some way.

PROFESSOR JULLIEN: You have to be careful about the interpretation. If you have a firm that is badly managed, and the guy is dumb and he is always pricing below cost, of course ...

PROFESSOR LYONS: That is the 'stupidity' of low-cost airlines, yet they have grown to take over.

PROFESSOR JULLIEN: What do you do? What is the normal answer of the market to firm with a bad manager? You buy it. You run the firm. That is the normal thing. If you see a merger on the maverick, it could just be that you are buying a badly-managed firm. It is not even because you find internal documents that this guy is winning the market or is doing harm to everybody, that it means that they want to collude, it could be just that it is really doing that.

DR MAZZAROTTO: You can still assess the effect on consumers that that has.

PROFESSOR JULLIEN: Is it to the benefit of the consumers that the firms are losing money?

PROFESSOR SUSLOW: A maverick is not necessarily losing money.

PROFESSOR JULLIEN: Unless you can define the reason for which the firm is a maverick, like it has different market conditions, it is producing in another country or with a different technology...

PROFESSOR WHINSTON: It is a low discount factor.

PROFESSOR SUSLOW: Yes, exactly.

PROFESSOR JULLIEN: And that is why one identified specific feature is how to make a judgment on what is a maverick.

PROFESSOR KUHN: Yes. Exactly that direction I do not want to go in, to say that we have identified a real nutter here and you should not merge with nutters. I think that that cannot be the right standard.

PROFESSOR WILLIAMS: No, that is not the argument. The argument is that this is a man who is destabilising the guys who want a cosy arrangement. The internal business documents are saying that this is the guy who is ruining the market, he will not play ball, etc and, if this guy is eliminated from the market, there is a real prospect that prices will go up. That is all we are saying.

PROFESSOR SUSLOW: Or, predictably, if they are one of the larger firms - I do not know if this has come up, but let us just say - then you would not have to worry very much about the effects of the merger, because, predictably, they will continue to behave as a maverick.

PROFESSOR WILLIAMS: There are other cases where, basically, part of the merger defence is that there is somebody out there in the market who is always going to keep the market honest.

CHAIR: I think that where we have got to is that there are some supporters of mavericks and some less enthusiastic. I am conscious that we should probably take a break at some point during the afternoon for coffee. I hesitate to break into an animated discussion, but I am going to anyway. Shall we bring that to a close for now and come back in maybe 15 minutes and continue with the discussion? Thank you everybody for your contributions.

(Short Adjournment)

CHAIR: In the earlier session we were talking about the theoretical framework

and whether that had much to say or the places where it had things to say about the tests that we might put into the guidance. I think that my general impression was that we started off with a view that it was incomplete, at the very least, in various dimensions. A lot of the discussion was, in fact, informed by the theoretical framework which is familiar, for good and ill, and also its limitations elucidated by the empirical work that has been put forward.

At the end we were getting into a discussion of the features that might be put forward as either ruling or perhaps increasing the likelihood of coordination. We had quite a discussion on the interpretation of maverick and whether homogenous products was an important feature that may make coordination more likely. We did not explicitly talk about asymmetry as a discrete topic. I think that it would be quite good to say a few words about asymmetry, if there are comments to be made about that, and then move the discussion on to, perhaps, the tools and the practice for evaluating the extent that those are less available and distinct from the checklist which has been outlined. So views on asymmetry or indeed other aspects of the list that we have or haven't included.

PROFESSOR STEPHEN DAVIES: Buyer power does not seem to appear at all. Is that deliberate?

DR MAZZAROTTO: Not necessarily. I was just wondering whether that is something that you would put in as a discrete factor as "absence of buyer power".

PROFESSOR STEPHEN DAVIES: I would have thought one would. Is that not already in the guidance?

DR MAZZAROTTO: I am trying to play devil's advocate and see whether it works or not. I can see two main sources of buyer power. One would be related to the ability to switch between firms, so you have buyer power if you can switch, and the other is if you are going to integrate backwards or sponsor new entry, for example. I would see sponsoring new entry and integrating backwards as being captured within the umbrella of barriers to entry. As for the ability to switch, I think that that would be precisely at the heart of whether firms would be able to coordinate or not. If the firms that you are supposed to switch between are those that are able to coordinate, then that ability is somewhat taken away from you.

PROFESSOR STEPHEN DAVIES: I do have in mind a specific case that the Commission looked at, which was a merger upstream between two firms making private-label cola. We are dealing with the Sainsburys, Tesco's

and Asdas of this world. Certainly, the Commission said in that case, pretty strongly, that there is no way that they can deal with any effective coordinated behaviour here because the buyer power was with the main players.

DR MAZZAROTTO: I would imagine that a way to run that argument would be to specify why would buyer power would be effective and that would imply understanding where that comes from.

PROFESSOR KUHN: There is another buyer power argument that is specific to collusion, which would, basically, say that, if you are actually a large firm, what you can engineer is getting your firm to deviate with a long-term contract. You are, basically, making a better offer and making it for a long time, therefore, you are basically delaying punishment.

I think that one of the dangers with this is, if you have a really, really long list, I think that it is better to shorten these and to focus them on some of the things that are most important. For example, I do not like heterogeneity very much, because homogeneous goods and differentiated goods very much has a difference. When it comes down to it, the argument most of the time is something like, well, it is much less transparent. That is really the reason why we think collusion is more difficult. On the basic collusion model, if you are just changing our product differentiation parameter, that is actually not what is coming out of there. It gives the impression as if it would. I think that going to the more fundamental issues of transparency - and I think that asymmetries are a more fundamental issue, for example, because they mean that at least some firms have tighter incentive constraints than others, and, if you are changing these asymmetries, you are either tightening or relaxing it for the firms that are limiting the ability to collude, I think that those are like higher order points.

I am a bit radical on these things, I guess. I take the multi-market contact point out, simply because I cannot see a way of proving it properly. Also the way that people have been trying to do this empirically with kind of counting the number of contacts in markets is something that, from the point of view of the theory of that, is actually nonsensical. I do not think that you can get very far with something like that. I think that the only role that it might have is to say that, well, if I have multiple geographic markets, actually, I want to evaluate coordinated effects at the aggregate level of the market and see whether the symmetry is increased in that area, but that is the only thing out of the multi-market

literature that I think has a strong ...

DR MAZZAROTTO: If you had, for example, a merger between two retail chains that are present in slightly different geographical areas and both compete with a larger chain and they are now going to meet in a higher number of locations compared to the two previous cases, that is something that you would ...

PROFESSOR KUHN: Suppose that you have one chain that has 70 in market A and a 30 market share in market B and you have two others that are active in both of the markets, they are merging, and now at the aggregate level they look exactly the same and suppose the demands would be the same in those, then I would say that that would be supporting greater symmetry in the incentives and that would be a reasonable criterion to use. If we systematically look for multi-market contact and, basically, say that now we are seeing them occur more often in similar markets, I think that that does not have any good basis in theory and I am not convinced of the empirical work that is out there enough that notes something else is driving the results that they are getting there, because I cannot interpret what they have formulated in the empirics in terms of the underlying ...

PROFESSOR STEPHEN DAVIES: The trouble is that it is a double-edged sword, is it not? The other side of it is what used to be called mutual forbearance or what Bruce referred to earlier as segmentation. That is sometimes evidence that there already is a collusive outcome. You do not have the multi-market contact precisely because you have ceded the territories to each other.

PROFESSOR JULLIEN: I agree completely. An anti-trust authority should not put it in the primary list. It is a difficult theory to apply. There are some cases where multi market contact is going to be a problem. There are some cases where it will not be a problem. Full symmetric distribution across 20 markets will not change anything. It is like the maverick, it is not in the main list, but it could be in some specific place where you say that there is this particular type of concern about the maverick or the multi-market contacts that could be analysed, but they are not in the main checklist to start with.

CHAIR: You would draw a clear distinction between the repeated interaction across time and the repeated interaction across markets, in a geographic market sense or just in the product space?

PROFESSOR JULLIEN: In one case you act and you react and in the other case

everything happens at the same time and you react after on all the markets, so it is just having a lot of action at the same time and then you would react. This paper was very explicit about when you can apply and when you cannot apply.

PROFESSOR STEPHEN DAVIES: If we are on to symmetry, is there a straightforward story that comes from that? Clearly, we know the theory and it is in terms of asymmetries of cost, capacity or whatever, but the reality of a competition authority is often that they will be looking at market shares as a reduced form of that. But one of the most striking results that comes out of the experimental literature - and I know that it is only very indirect evidence - is that, with just about any asymmetry, collusive outcomes break down. The classic example recently is Hans Normann's paper, which is a sort of simulation of Compte et al. If you introduce any asymmetry, then the collusion disappears. Interestingly, that is exactly the model that you would imagine that the European Commission has applied. In our study of all the cases, all markets, where they have decided that there is a coordinated effect, the only one exception is, is it just two firms for a start, but all of the cases involve very, very symmetric market shares of the top two. That is not really evidence, it may simply mean that they are very cautious in how they interpret symmetry. In the UK we have not had any cases.

DR MAZZAROTTO: Would we not be worried, for example, for those cases that Margaret and Valerie mentioned earlier? When for example we are thinking about geographically differentiated products, presumably size in itself does not matter as much, because you can have small guys that go along with a small share, some other small guys may not, but some small guys may be happy to collude just to keep their patch and just be happy with that agreement. I guess I am warning against relying too much on symmetry.

PROFESSOR STEPHEN DAVIES: I agree. I was simply saying that I think that the reality is that the only thing you guys will often be able to observe unambiguously is market shares.

DR MAZZAROTTO: Yes.

PROFESSOR SLADE: If any asymmetries cause collusion to break down ... But I am not convinced about the capacity asymmetries. Suppose that you have three large firms and one small one and two of the large firms merge, the only reason that the small firm's incentive constraint would change is if they actually raised the price. But it does not make anything

worse off. If they continue with the same price, the small firm, you have bigger asymmetries but no difference in incentive constraint.

PROFESSOR JULLIEN: But it is the incentive of the big firm to defect that changes ...

PROFESSOR SLADE: But often people talk about the small ones as being the ones who are going to ...

PROFESSOR JULLIEN: It depends on the model.

PROFESSOR SLADE: It does say here cost asymmetries, it does not say cost of the two biggest.

PROFESSOR JULLIEN: I think that it is the Compte, Jenny, Rey paper.

PROFESSOR SLADE: Maybe then that should be in here.

PROFESSOR KUHN: I think that cost asymmetry is a much more complicated issue than the capacity.

PROFESSOR SLADE: I agree.

DR MAZZAROTTO: So, perhaps, we should not be including cost asymmetries in the list of the key factors. Is that the message that I am getting?

PROFESSOR KUHN: I do not know whether other people agree, I just happen to think that the cost asymmetries are a much more touchy thing and it is much less clear that they will directly show you that there are differences in incentives. What you really want are some indicators that the incentives to collude are quite different between the firms. If firms are fairly similar, except that their capacities are very different, you have a very clear large thing that affects the incentive and that is different.

PROFESSOR LYONS: But this gets at how detailed you need to be in guidelines. Is it sufficient to say that asymmetry is a profit incentive? That is really what the issue is.

PROFESSOR KUHN: I think, yes.

PROFESSOR LYONS: Then there are all sorts of models understanding different types of asymmetry, capacity or cost differences or whatever ...

PROFESSOR KUHN: I agree, and I would say substantial asymmetries.

CHAIR: In some models you introduce asymmetries and, if you move away from the world in which there is collusion, you are testing the supportability of tacit collusion in terms of complete collusion. It is quite easy to get outcomes which involve almost complete collusion, even though you have quite considerable asymmetry. Even though in the extreme case, where

you are requiring perfect collusion as the outcome that needs to be supported, you get breakdowns in collusion coming from that asymmetry.

PROFESSOR KUHN: You can get even reverse effects with asymmetries, the large firms who are pricing above monopoly prices in order to kind of yield enough market share to the smallest firm to keep the price a little bit further up. It is weird stuff.

PROFESSOR SUSLOW: Without going through every element of the list, if I can just make a few comments and throw in some additional thoughts here, in no particular order. Buyer power: I assumed that it was a deliberate decision not to include it because the empirical evidence is mixed. Many times large buyers can destabilise the cartel, but other times what really matters is their price relative to the other buyers in the industry, so that they can negotiate a discount from the cartel, which many of them do. Whether the price goes up or not is not the issue, it is their price relative to their competitors. But I would add a new thought and that is on the buyer side. It is from work that Maggie Levenstein and I have done. We look at international cartel prosecutions and attempt to determine why they fail. You can tell, for example, if it is due to a leniency application and anti-trust intervention. Of those cartels which did not end due to amnesty, several ended because of a customer complaint. The duration of those cartels ending due to a customer complaint is short relative to the other cartels. When there is a very large "Wal-mart type" buyer, when there is a buyer that wants to push prices down, that can have a very limiting effect on cartel duration. A small number of firms, I would actually keep on the list, but it is in the sense that we have been talking about before. Holding concentration constant, cartels with a relatively small number of firms, five or fewer, tend to last longer. Based on the data, the likelihood that a cartel would be sustainable is higher with fewer firms. I would not necessarily put innovations on the main list. Cooperation can reduce R&D or slow it down, but that does not mean that you can say that high R&D industries do not try to coordinate, because there are too many ways that they can suppress the innovations. They can agree to a standard, for example, which does not favour the innovation.

There is the existence of firms that are near bankruptcy, that is, highly-leveraged firms. There are theoretical models as well as empirical evidence that support this. It is back to the discount factor. In airlines you can have unilateral effects, you can have dominance of a route or a hub,

but some airline is always on the brink of collapse and it makes it difficult for coordination to be sustainable over a period of time.

Barriers to entry. I would qualify that a bit and say you have to have in mind serious, viable, uncontrollable entry. China, for example. It is not enough for there to be one Russian producer or similar entrant that the cartel is worried about. That is why we get merger cases. Acquisition is an alternative strategy to coordination. But entry is the other main factor, I think, that makes coordination over any period of time unsustainable.

There are the other things that we were talking about before. If there is a fairly significant producer that has not been behaving cooperatively historically, whether we call it a maverick or not, assuming that their behaviour will continue that way, this is also a factor.

Summarizing, main factors would be the history of collusion, high concentration with a small number of firms, barriers to entry, and a failing firm. That is a very short list. All the other factors are still important, but at a secondary level.

PROFESSOR STEPHEN DAVIES: Do you not think transparency is a necessary condition?

PROFESSOR SUSLOW: It is critical, but the problem is that it is somewhat endogenous -- firms can work on raising transparency.

DR MAZZAROTTO: I wonder what everybody else thinks about the R&D point, which is something that struck me in all this. PROFESSOR KUHN: I think that I would not put it in as the R&D point. I am very sympathetic to Bruce's attempt to get this into a somewhat more aggregate category, like heterogeneity and profit incentives. I think what this speaks to is anything that tends to frequently change the relative incentives of the firm and the industry. Essentially, what R&D does, if it is on cost, it just means that the relative costs switch around quite a bit or the relative attractiveness of the products change. I think that anything that changes in the environment is relatively nice and it also yields itself to a little bit of a more empirical test that says, well, let us look at how much market shares before the merger are actually changing from period to period, and, if that is very volatile, that is going to be an environment where we think that relative incentives actually vary quite a bit and that I would think would make it more difficult to include.

DR MAZZAROTTO: Does it also fall a little bit under point (b), which is infrequent interactions and irreversible decisions? Is it kind of related in that sense to those aspects?

PROFESSOR JULLIEN: Related, but it is ...

DR MAZZAROTTO: It is not quite the same thing.

MR JULLIEN: When I say R&D I had in mind something like video games. It is hard to imagine any collusion in the video game industry at any point in time.

DR MAZZAROTTO: So the leapfrogging kind of innovations.

PROFESSOR JULLIEN: Yes. Of course, there are other industries where there is a constant flow of innovations which is predictable and does not raise the same type of issue. This would depend on the type of R&D. There is destabilising R&D and you could even make the case that sometimes it is stabilising.

PROFESSOR STEPHEN DAVIES: It would take out the whole of the pharmaceutical sector if you add this in. It seems to me to be a bit rash to write that.

PROFESSOR JULLIEN: I was hesitating to say that because blockbusters sometimes shift competition markets.

PROFESSOR STEPHEN DAVIES: But a lot of innovation in drugs is actually producing competitive drugs. They are patented, of course, so they may be different, but they are, essentially, alternative treatments of an ailment or whatever it is.

CHAIR: A related question is market growth.

PROFESSOR JULLIEN: Yes. In Gencor/Lonrho I think the market growth was a factor that made collusion more difficult. You have to be very careful with the list of factors. I think this Gencor/Lonrho list of factors has been put, as such, in the European Directive for the electronic communication market. The regulators until now had to apply this list for the definition of collective dominance in the electronic communication market, telecom and things like that. It is a bit updated, that is all. When you make a list, that is a good argument to make it short and focus on those factors that you really believe are important.

On the demand, there are two aspects that are very difficult to put in the list. I believe the reason why they put it in Gencor/Lonrho was that they did not get was that with demand growth goes demand instability. I have

in mind that demand instability is going to be something that makes collusion difficult because it is hard to predict the future and, at the same time, you have instability when demand is growing. These are two different factors. You can specify the two factors, demand growth should make collusion easier, but I do not know any practical case where you can find stable, predictable demand growth and no instability in the future.

CHAIR: I suppose, relatedly, in the models it would be profit growth rather than perhaps demand growth, per se, that would feed into the net present value of profits.

PROFESSOR KUHN: It depends on the context. For example, this usual growth or declining demand is going to be different. For example, declining demand is going to be different if you are in a model with capacity constraints. If they are falling below the capacity constraints, actually, suddenly collusion might become easier because the punishments are ... I mean, you can get that. If people see growth opportunities and they think that they can actually shift market shares in the long run very strongly through this, if their switching costs are ex-post, you are going to get kind of this irreversibility effect coming in that might be dominating the demand growth effect.

CHAIR: I guess the flavour of that discussion is the growth that you put into the secondary list rather than a primary list.

PROFESSOR JULLIEN: One thing to keep in mind is that you do not get the sum of the two, switching costs and demand growth. If you have an example like that, you have to be careful to remember that two factors together may not give the same conclusion as what you would get if you look at one and you look at the other separately.

CHAIR: That comes back to our life is complicated theme of the afternoon - and indeed the morning.

PROFESSOR KUHN: What I am somewhat missing on the list, again, and I am coming back to that theme, is that with most of these list points I can see them as elements where you would say that, ah, if this element is here or if it is very untransparent, I am going to forget about this case and so on. I think that what you do need in order to make anything effective in any way is something that creates a presumption where you say that, well, if I am observing the following in the market, then our default is going to be there. We are going to say that it is coordinated effects. After that I apply all kinds of other things that are telling us, well, although we have

the presumption, there is this other factor, so let us not look at this. We were discussing that in the break a little bit with Amelia as well. I think that the best things that we come up with, and the most convincing things for me, are suggestions where we do have a history of collusion in the market that might be breaking down either because of an anti-cartel enforcement or because something in the industry has changed and the response to this very shortly afterwards seemed to be mergers.

That may not be very many cases, and that is fine, but I do not think that we are going to get that many cases with a coordinated effects instrument either. I think that that is something which is from the pre-merger data. There is so much history there in the industry that I think that the presumption would be justified.

CHAIR: Let me just be clear. Where we are on the necessary factors in the list is that we have got barriers to entry of some form, the transparency seems to be playing quite a prominent role, the not too much innovation and then there is the history, so you think that history is informative about whether you are likely to see coordination or not. Are there other factors that others would add?

PROFESSOR STEPHEN DAVIES: I am worried about the fewness. Valerie was saying five or fewer, but, if that is the criterion that we are putting in, it is not really worth it because - I do not know - 95 per cent of all cases that come before the Commission involve markets post-merger which would have fewer than five. Again, I do not see the evidence out there in the real world of tacit collusion.

PROFESSOR SUSLOW: That is the thing. My conclusions are drawn from evidence of explicit collusion. Just by necessity, I can only infer from that. I do not know what the evidence is on tacit collusion, except to go back to what I said before. I have to be careful here. The overwhelming majority of the international cartel cases are in highly-concentrated, global industries. Yet they have at least attempted - I cannot say how successfully - to collude for long periods of time, which makes one worry about the probability of tacit collusion in similarly concentrated industries, but I have no direct evidence.

PROFESSOR STEPHEN DAVIES: One of the most recent cases that we have had in this country is the Safeway merger. I think Paul Geroski was the actual leader of that case and he was quite brazen throughout the report, "four to three means coordinated effects". That is singular really. I have not come across cases like this.

MR JOHN DAVIES: That raises for me a question that Kai-Uwe raised. If we are only really comfortable finding coordinated effects as a problem in a merger when we have got pre-existing coordinated effects (and I am reasonably comfortable with that creating a rebuttable presumption) then the problem is that, in a sense, we are always going to be one merger behind. If we say that, we will always be one merger behind, so we will not stop the four to three, but, when we see the three colluding, we will stop the three to two. That is not very satisfactory from the policy point of view. Or, as you say, potentially one has to be very bold. I think that the answer to Steve's question is maybe you do have to be bold and brazen if you are going to block a merger when there is no pre-existing coordination – on the grounds this might change the rules of the game sufficient to achieve co-ordination. I think that that is very difficult. That is what we keep coming back to in this discussion, it is very, very hard.

PROFESSOR KUHN: I think that the problem with the brave and the bold is that you might get something like an Airtours case, where you lose the case because of insufficient evidence. The only way that you get around that is if you have some kind of an objective standard and then you are back to some market structure test for a coordinated effect and that may not be very satisfactory. But that is, essentially, the choice that you have to make.

MR JOHN DAVIES: That might get you through the court, but it might be wrong. Really, we are interested in getting it right.

PROFESSOR KUHN: I think that something important about the coordinated effects instrument is that you are using it in a way that does not get discredited immediately when you have the first case, because then you do not have the instrument any more.

PROFESSOR LYONS: There is a very interesting paper by Baker in the New York University Law Review 2002, which talks about a number of cases, and the one that comes to mind was something to do with airlines, where there were a number of airlines and the author was looking very closely at the price patterns and the price signalling over time, so seeing that airline A put price up and others followed. A few months down the line airline A put price up and someone did not follow. He was using this in terms of talking about the maverick analysis, but he was actually talking about cases, which were essentially of tacit collusion, sometimes (I was surprised) with five or six firms. That was surprising for me coming from the sort of European perspective whereby, without great empirical

evidence, we think that anything above two or three is almost laughably impossible in tacit collusion. I do not know what conclusion to draw out of this.

PROFESSOR JULLIEN: The theory is not so clear about the number of firms. I would not be insisting so much on that compared to the unilateral effects. In the unilateral effects, we know how to interpret the assumption, I think. We know that very clearly as you see the number of firms that are being impacted, particularly when you take three or four firms. Is that true for collusion? It depends. Sometimes it does not have a big effect.

DR MAZZAROTTO: If that is the case, the other thing that I am wondering is, suppose we have a presumption based on a history of collusion. I think that we would still want to check those factors which might arise from a merger and that might disrupt the competitive outcome. For example the creation of a strong asymmetry. That is something that we would have to check.

PROFESSOR KUHN: That is the way it could be rebutted.

DR MAZZAROTTO: Yes, fine. I was wondering whether checking for whether the merger increases or decreases asymmetry is perhaps more meaningful than just referring to the fact that it decreases the number of firms by one.

PROFESSOR JULLIEN: Can I add something on that? If the number of firms matters, it is not only for the standard stated in the question, but it is for transparency. I think that the market will be more transparent usually, especially if some products are going to be removed from the market.

PROFESSOR KUHN: That is hard to evaluate.

PROFESSOR JULLIEN: I think that that would be a bit more transparent. For example, going from three to two, if you think about a bargaining theory, it would be much easier to coordinate. Three is going to start to be difficult, because there are three people to coordinate. I think that going from four to three makes the market more transparent. Sometimes there will be one case where going from four to three would make the market less transparent, for whatever reason, and still we could apply the transparency criteria.

CHAIR: There is the feasibility point but there is also the transparency point and then also, presumably, there is the bargaining point, which ...

PROFESSOR JULLIEN: But in tacit collusion they are not supposed to bargain. It depends whether you are talking about cartels or tacit collusion.

CHAIR: Perhaps I should say bargaining in a broad sense. Presumably in cases where you are sustaining imperfect coordination and there is some imperfect outcome and, in a world where there are asymmetries, coming to that agreement will be more difficult.

PROFESSOR SUSLOW: That was a component in one of the airline cases with the shared computer reservation system. They posted price pre-announcements in the footnotes and they were bargaining without technically talking.

PROFESSOR JULLIEN: If you think about that, if you have four firms, one big firm and three small firms, and everybody agrees that we should coordinate on what the big firm says, now, there is a merger and there are two big firms, so who is going to be the coordinator?

PROFESSOR KUHN: I am worried about the number of firms. Think about the transparency point. How much does transparency change? Or I could go the other way and say, well, if we are going from three to two, there has got to be less leakage when we communicate. So it is much less risky that, when we are actually colluding, anything slips out. There it makes it easier. So we can have a lot of arguments on it, but the question is how much does that matter? How much transparency is enhanced and how is that increment in transparency affecting the increment in collusion? I have no idea how to evaluate that.

DR MAZZAROTTO: The same goes for the other features.

PROFESSOR KUHN: Yes, this is why I think of a lot of these list points more as negative tests, where someone says - and this is how they are used most of the time - well, no one knows what these prices are set at, they are individually to each customer, no one has an idea of what the price is, you cannot say that this is transparent, everybody nods, and then you are not going for coordinated effects. But these are virtually never used as a positive criterion. Then I cannot quite see the use of the number of firms criterion.

DR MAZZAROTTO: OK. Perhaps, there is a case for the number of firms, but I think that the reality of an investigation is likely to be that something will happen after the negative test. Whether it goes down a track that involves a presumption that needs to be rebutted or whether it means the authority will check whether the merger makes a difference, there will be some dialogue about the effect of the merger. Hard as it is, I do not necessarily see an alternative to conducting a dialogue by reference to the equilibrium conditions that we have discussed at length at the beginning.

And I think that that is something that you could do by reference to some features of the market that may or may not be affected and assess whether that inequality is more likely or less likely to be met. That may be very imperfect, but I do not necessarily see an alternative.

PROFESSOR KUHN: But you have to differentiate between different features here on your list and how you can relate them to empirical data and quantify it, for example. If I am looking at capacity heterogeneity, that is actually easy to put into a model like this and kind of try to do some calculation and think about what would actually happen. I have seen that being done and people saying that, well, that is not perfect, but at least gives us some guidance. When you do that with a criterion like transparency, I would be lost how to do that. It is something that is much less quantifiable in real proceedings. I think that that is a relevant criterion on how to rate what you are permitting as good evidence.

DR MAZZAROTTO: You are saying that some criteria only lend themselves to negative tests not to positive tests?

PROFESSOR KUHN: Yes.

PROFESSOR JULLIEN: I think that the way to proceed, at least at the conceptual level, is the following: suppose that we have transparency, we know what occurred before, we know the cost, you could ask the question, what other ingredients do we need to be able to simulate collusive agreement? If you get all the ingredients that allow you to simulate a collusive agreement, then you may start to talk about collusion. If you do not, do not even start. Of course, transparency is hard to quantify, but, if you ask somebody doing the simulation, is the market transparent enough that you can be confident in the assumptions that you are putting in your simulation? You could get an answer...

PROFESSOR KUHN: That is essentially what I am saying. Transparency is a kind of qualitative big test that lends itself to be a negative test. The asymmetry tests, some of them, you could not imagine putting them in a model. That is why I like capacity. It is somewhat quantifiable, so I think that it should have a different ...

PROFESSOR JULLIEN: It is a bit more than that, because, if you answer, "I can simulate the collusive agreement with a reasonable level of confidence", you are already saying that to some extent collusion is possible.

PROFESSOR KUHN: Yes.

PROFESSOR JULLIEN: So you are already on the kind of presumption that ...

PROFESSOR KUHN: But I am saying that, if I say there is not enough transparency, then I am not even going to go there, right. That is why I like negative tests, but I think that transparency is kind of the ultimate negative test.

MS BEGENT: I think that I would probably disagree with that, but I think that what concerns me with this conversation is that sometimes we differentiate, and I can see quite a bias towards quantitative analysis and I suspect I know why, but, actually, I would just draw us back to the fact that the law does not really point to that bias. The law actually requires the members here to consider overall the evidence that is before them. They are entitled to consider the qualitative evidence. Then the view is how much weight that they attach to it, but they are allowed to consider it.

CHAIR: Margaret, do you want to say something?

PROFESSOR SLADE: I was going to say, rather than having things like R&D and entry and so forth, one might have a more blanket category of frequent changes in market share in market structure and that would capture all of these things and would be easy to check.

DR MAZZAROTTO: Yes. I was trying to draw a difference between market features that we are trying to evaluate and evidence that may help us to do so. I was finding it hard to sort of merge the two categories and I thought that it was more confusing. But perhaps this discussion is suggesting that we should in fact be looking at aspects of the market more generally than just structural features.

CHAIR: I suppose that you also do have to be a little bit careful with volatility in general, in the sense that you could be in a world where there is quite a lot of demand shocks and quite a lot of cost shocks that you would expect to be translating into market share variation, but it is precisely the fact that they are not translating into market share variation which might impact the deal, that what you have got going on is some kind of market sharing.

PROFESSOR SLADE: Yes, that is why I said that, if there are frequent changes, it is unlikely that ...

CHAIR: It is unlikely that there is some ...

PROFESSOR SLADE: Either that it can be sustained or that it is happening.

PROFESSOR SUSLOW: At the broadest level, that makes a great deal of sense: looking at market share changes, and one level beneath that is an analysis

of customer switching. Looking at norms of customer allocation is important.

PROFESSOR STEPHEN DAVIES: Again, that is a double-edged sword. I am always struck by Jo Harrington's claim that very often before cartels are formed you get a sudden drop in price, so the cartel is a response made to the breakdown of tacit collusion or whatever. Again, just because you have a market which is turbulent over a period of time, that could be the thing that is prompting a merger which is intended to dampen competition. It is the incentive for the merger, just as it might be the incentive to form a cartel.

CHAIR: In this world where we have got lots and lots of theoretical possibilities - and I suppose I get some sense of agreement in general on the important factors, if not on each of the individual specific instances along the checklist - is it right to say that, in the absence of a fully-specified simulation model, which seems unlikely in terms of a screen that we are likely to apply, that we are inevitably in this world where we are going to have to go down this list of various features and say yes or no and, in light of the discussion this afternoon, take a view on which of these survive to either a core list or a subsequent list. Or are we indeed in a world where there is just so much disagreement about the likely factors that we should really be stepping away from that? It strikes me that that is probably not the modal view around the table, but I want to make sure that that is, indeed, a correct inference. On each individual outcome there has been quite a discussion about how far it really gets you, the number of firms, asymmetry, but I do not get a sense that there is a desire to step away from that approach in terms of trying to clarify the general stance. Is that right?

PROFESSOR JULLIEN: We all agree on a few factors. A lot of people did agree on the other factors. You could say that these other factors are important, but you have to apply them in a more targeted way. The weight applied depends on the case. Asymmetry matters. Everybody agreed that it matters, but you cannot just say that, if it is symmetric, it would be good. For each particular case it is how asymmetry applies that matter. There is a distinction between the key factors - like we all agree that transparency is a key point - and factors that will have to be analysed in the second stage... It may not be very difficult to do.

CHAIR: If you were to take the stance, that one role of guidance is trying to establish safe harbours, then perhaps we are in the world of the short list,

And then there's the role of guidance for case work where we will have to take your longer list, where there has been more discussion this afternoon, and try to play out exactly in the context being analysed which of those features are, in fact, likely to be driving a coherent story in that particular context.

PROFESSOR KUHN: I think that that is a very good summary.

DR MAZZAROTTO: That puts some emphasis on the detail with which one may have to describe the collusive behaviour and collusive strategies, I guess, which raises the question of to what extent we can be expected to really get to the bottom of some behaviour, such as the way in which firms exchange information that in some cases may be very complex. Valerie mentioned a couple of cases earlier that raised some questions as to how good can we be at doing that part of the job. Maybe it is sufficient to only describe some key aspects of coordination in order to be able to apply these features and to read the changes correctly. For example, what the relevant variable is, what you coordinate it on, and so on.

PROFESSOR STEPHEN DAVIES: Can I ask a really innocent question and I do not know the answer? You cannot write this in guidelines, clearly, but to what extent is the Commission able to take into account informal information exchange, something which would not persuade a judge that there is an explicit cartel going on here, but, nevertheless, there are information channels which were available to the parties, at a trite level, such as playing golf together. We all know that that is what, effectively, pushes out the range of feasible structures.

CHAIR: I think that we can refer you to Ms Begent's earlier response, that the members have to come to an expectation that the merger is likely to lead to a problem. So mechanisms which would facilitate informal transfer of information or, indeed, mechanisms which facilitate side payments, both of those might go into the weighing of evidence in coming to a review on whether or not you thought coordination was, in fact, a serious concern, given the range of evidence that is available.

MR JOHN DAVIES: If you wanted to keep it to coordinated and not go anywhere towards concerns about explicit collusion, that would speak to transparency. I think that that could be taken into account at the time when considering transparency.

PROFESSOR LYONS: Because it is moving towards the safe haven stuff that Peter said, how far would people go in terms of explicit safe havens, in terms of, let us say, two things, it is not possible to have coordination

post merger if there are at least five firms and there is not transparency of prices?

PROFESSOR SUSLOW: Is there a trade association?

PROFESSOR LYONS: What is it that you need in that list for dead safe? This is really what I am getting at.

PROFESSOR STEPHEN DAVIES: That would rule out retail electricity in the UK, which we all know is tacitly collusive.

PROFESSOR LYONS: So there are no safe havens, is that what you are saying?

PROFESSOR JULLIEN: I would think transparency. The number of firms, whether it is five or four, is relevant to transparency. It is unlikely that two firms would be non-transparent completely.

PROFESSOR STEPHEN DAVIES: So transparency is the only necessary condition?

PROFESSOR JULLIEN: I think that it is one necessary condition. The problem is that to evaluate transparency is already very complex.

I had another question. How far are you willing to go in assessing coordinated behaviour on non-price dimensions? A lot of people tend to believe that beyond price it is not possible to coordinate. I have seen such a statement in the academic literature. Can we consider coordinated effects on capacity, coordinated effect on investment decisions or are you willing to go this way?

CHAIR: That is a question for the Commission.

DR MAZZAROTTO: Market sharing is not necessary just a price dimension. I think that you can think of it as entry ...

PROFESSOR JULLIEN: I understand that you are willing to go to for price and quantities, but these are very short term.

CHAIR: There is a pretty clear answer. Have we considered a case on those grounds? Yes, we have in the sense that there was some work on things like capacities in the bricks case. There was some work done. Whether all of that work went to other aspects of supporting price alone, I do not recall, but, as a statement of principle, it does strike me that you would not want to rule out going for coordination on capacity as an ex ante, you would be thinking about the facts of the case.

PROFESSOR KUHN: I think that you have got it implicitly in here by making the distinction between reversible and irreversible decisions. Irreversible comes in when it is capacity decisions and when it is advertising

decisions. I think that that is where the point comes in. I think that also the economic literature says that it is much, much more difficult to collude on those decisions in the long term. It is irreversible. I think then, with capacity, the question would be are these short-run decisions. "I am stocking up and that is my capacity".

PROFESSOR JULLIEN: There is another view that this is dynamic collusion because it is short-run capacity. "I have to reach this capacity for one year", basically. In this case you would consider the possibility of collusion.

PROFESSOR STEPHEN DAVIES: Peter, Nicola had put in a nice little question at the end. Are you going to wind up literally at five o'clock?

CHAIR: I do not think that we are going to wind up literally at five o'clock, but we are, obviously, moving along, slightly in a meandering fashion, through the set of questions that are here for discussion.

Going back to the transparency discussion, everybody agrees that transparency is an important issue. There is a sense that came out from some of the remarks at the end of that exchange. The stance of how much transparency becomes necessary to lead you into the safe harbour becomes quite a difficult question, potentially. Obviously, the question that came up in Impala, for example, was whether or not the fact that the numbers were published weekly in Billboard Magazine was enough to establish a level of transparency that would get you into a world where, in that case, you would consider blocking or not. Transparency is there in terms of a necessary condition, but are there views around the table about how much or should we say anything about how much? Do you need full observability of everything or is it just that you need some kind of transparency and, if so, over prices, quantities, capacities?

MR JOHN DAVIES: In particular, it has sometimes struck me that there is confusion about what needs to be transparent. You do not need to observe prices, presumably. Particularly, if you have a three to two. In a two-player industry, if you lose a sale and demand is reasonably flat, you know the sale goes to the other guy. That automatically gives you significantly more transparency as a result of the merger. You do not need any sight whatsoever of prices in order to achieve that.

DR MAZZAROTTO: It is probably in the details. Does anyone disagree with that? I think that it is going to be hard to say what the right level of transparency is a priori.

PROFESSOR JULLIEN: I have just one comment on the kind of transparency that

you are mentioning.

PROFESSOR KUHN: I would say 14!

PROFESSOR SUSLOW: I say some.

PROFESSOR JULLIEN: Some transparency could be solved by a simple remedy. If you are concerned about publication every week, you do not need to do a lot. You just put it within the remedies to stop them doing that. You make a commitment not to transmit information.

CHAIR: But this is guidance in part for giving people clarity about when they need to be concerned that we are going to investigate and/or block mergers, so saying "some transparency" may not meet the threshold in terms of providing guidance, although I recognise that it is late and we may not come up with a perfect formulation today.

PROFESSOR KUHN: I think that it is relative to the frequency of actions and ability to infer what other people have done in terms of their actions, which is relatively close to the frequency of activity of others. I think that, if one writes it in that sense, both the investigating and the defending parties have a similar sense of what that means.

PROFESSOR SUSLOW: In the US, there is some guidance provided to companies. Firms can publish historical data, but current data must be aggregated. Publishing individual sales is over the line, whether it is weekly, monthly, or quarterly.

PROFESSOR KUHN: Sometimes the data just comes out as it is, but I think that one could say that, if the data identifiability is clearly beyond where we would restrict explicit information exchange, that would be a clearly transparent market. I think that actually tying it to explicit information exchange rules is a really good idea to give a standard.

PROFESSOR SLADE: I am confused about what is left. It sounds to me that only transparency is in the list now. That could open up all retail, small restaurants and so forth; their prices are completely transparent, so they are unlikely to be a target. But what is remaining?

PROFESSOR JULLIEN: They are unlikely to collude?

PROFESSOR SLADE: I think so.

PROFESSOR JULLIEN: A restaurant?

PROFESSOR SLADE: A small one, yes.

PROFESSOR SUSLOW: But it is not just price transparency.

PROFESSOR SLADE: What are we left with?

PROFESSOR KUHN: This is the strongest negative test that we have.

PROFESSOR SLADE: Exactly, but, as a negative test, we have thrown out the number of firms, the market structure, the turbulence ...

PROFESSOR STEPHEN DAVIES: Yes, but it is not a sufficient condition, it is a necessary condition that we are talking about.

PROFESSOR SLADE: But there is only one left.

DR MAZZAROTTO: I do not think so. I do not think that anyone disagreed with the need for frequent interactions and the need for the absence of significant irreversible decisions, such as big commitments to capacity or advertising, or radical "game changing" innovations in the market, such as those that can really change the terms of the interaction between the firms. However I guess that it is hard to separate them all out, because some might also influence, as we were saying earlier, the degree of transparency or the degree to which firms can read into market outcomes the effect of each other's behaviour.

PROFESSOR SLADE: Well, Steve certainly objected to the changes in market shares and market structure.

PROFESSOR STEPHEN DAVIES: No, I did not object.

PROFESSOR SLADE: But you were saying that that should not be necessary.

PROFESSOR STEPHEN DAVIES: It is clearly not a necessary condition. But something much more generally is worrying me here. If you really do come out with a set of guidelines where there is now one, when there had previously been ten, or whatever it was, are you not going to make your own jobs rather difficult in the future? If I was in front of the Commission, I would say, "You have changed your mind on firm numbers, haven't you, because previously you said that this was a quasi-necessary condition. Now you have not even mentioned it".

DR MAZZAROTTO: I do not think that we are suggesting or we are envisaging an approach whereby there are some features that have a clear strong effect on the market and others that do not have any effect. I was reading the advice before to be one that said that you can refer to a small number of features, where more or less everyone agrees on their effects on coordination. There are other features where that effect will depend more on the specifics of the market. I think that we may still want to mention those, like the number of firms in certain situations, but we may want to caveat them a little bit more. This is the kind of thing that I had in mind, but not necessarily eliminating a lot of these things.

PROFESSOR SLADE: I am still not sure which of these are staying. (a) and (b) and what else is staying?

DR MAZZAROTTO: I would say a version of (g) in the top tier - and (e) I think as well.

PROFESSOR SLADE: so heterogeneity is going to stay. We are throwing out maverick, multi-market contacts and the number of firms?

CHAIR: Let us be clear. As far as I understood, the proposal here was that the first stage is a test of, essentially, if you do not have transparency, if you do not have barriers to entry, then you are likely to not run into a coordinated effects concern. Then there is a second list which gets you into the world where, OK, these may be concerns or may be mitigating factors, but there is a condition on the circumstances within the industry ...

PROFESSOR SLADE: So what is on the first list? I realise there were two lists.

CHAIR: There is some degree of transparency, how much there was some discussion of; there are the barriers to entry ...

PROFESSOR LYONS: There is sufficient to make inferences.

CHAIR: Sufficient to make inferences, OK. There was the barriers to entry point, which I have not heard anybody disagree with.

DR MAZZAROTTO: That is (d) I think.

CHAIR: There is some version of, if there are an awful lot of other things going on in the market, in particular R&D, which is leading to changes in ...

PROFESSOR LYONS: Sufficient stability in the market.

CHAIR: Stability, yes.

DR COLLINGS: On that I thought that a very important point was made. As a member who has sat through inquiries where we have been looking at it, I wrote it down as "market subject to unpredictable change", which I thought captured not a big one-off event but just regularly things happen. As Bruno said, it is a destabilising. I think that that is an extremely helpful point.

CHAIR: There was one other as well, was there not, which is the history that, if you have got a history of coordination, then you are unlikely to be in that safe harbour world?

PROFESSOR KUHN: I thought that it was worse than that. It actually creates a presumption. You will need something that creates a presumption.

DR MAZZAROTTO: Otherwise you are not going to find anything.

MS BEGENT: Are you implicitly drawing out the criterion from Airtours? They refer to "punishment", we do not, actually, we use slightly different phraseology in our current guidelines.

CHAIR: You are about to open a conversation that went on for some time.

MS BEGENT: I am sorry, but, if this discussion just now was to summarise where that first list was, then ...

PROFESSOR KUHN: I think that, really, the Airtours point about incentives to deviate and punishment, really, comes in the second list, because those are the points where one has to much more carefully look at that in the circumstances of the case. That is where one would probably exactly use that criterion, I think.

PROFESSOR LYONS: The first list is no realistic prospect.

PROFESSOR KUHN: Yes.

PROFESSOR LYONS: The second list is, can you form an expectation?

MS BEGENT: I think that that is the proposition that is for consideration, is it not?

CHAIR: We are in danger of coming to a consensus which is a very nice place to come to, although, as I say that, I see various faces around the room which are questioning exactly what that consensus was; no doubt in revisiting the transcript we will pick out precisely where the consensus was.

I am conscious that it is five-past five and we probably should bring the discussion to a close fairly soon. Steve, you did mention that there was a question.

PROFESSOR STEPHEN DAVIES: It is a nice question of remedy. Suppose you have a case where you are pretty sure there is already coordination, there is already tacit collusion, you have your history, and now there is another merger, which maybe can fix the problem of collusion. I guess, if it creates an asymmetry, as people have said before, there the worry is that, well, if it is creating an asymmetry in an already concentrated market, one suspects the guy who was asymmetrically big has almost certainly gone, so I am not sure that you would want to let the merger through anyway. But there is the nice issue of would there not be some cases where, actually, you can use the remedies, maybe, to dampen the coordination which was actually there already, because you can divest

the overlap and is it not at least conceptually possible that, in divesting the overlap, maybe between more than one firm, you create a market structure which is not only better in terms of asymmetry than what would be happening as a result of the merger, but, arguably, even better than the pre-merger situation. It is the dream case, where you do not just solve the problem caused by the merger, you solve the competition problem that was even there before the merger.

MR JOHN DAVIES: Well, you call it a dream - and you have made a point of this lately in a couple of places, Steve. It is not our job, either in law, or, I think, quite rightly in principle either, to go out there and use the merger control regime to create more competitive market structures than were there prior to the merger.

PROFESSOR STEPHEN DAVIES: No, but you have the opportunity to do it.

MR JOHN DAVIES: I still do not think we should. We are not here to optimise the economy. We are here specifically to intervene when there are mergers that create SLC and, if there is not, we do not. It is a wider discussion.

CHAIR: I think that we have probably reached the end of this discussion, which has been wide ranging and helpful in terms of taking the draft guidance forward. There has been a degree of consensus around the table on both the ambiguity that is coming out of the economic literature and the empirical evidence and also those areas where there is less ambiguity. It does allow us to set up a framework which will let us move forward, but there is still one place where I remain concerned in terms of that framework, which is on the topic of agreement which, again, when I raised it, ran into a discussion of whether that was necessary or not. I am not sure that in that discussion we fully addressed the relative asymmetry in terms of the creativity of the case handlers versus the creativity of the firms in coming to an agreement. With that piece aside, I think that we have taken great strides forward this afternoon. Let me thank everybody for coming today and for what has been, both this morning and this afternoon, a very interesting set of discussions. Thank you to everybody around the table.

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