

# OPUS 2

## INTERNATIONAL

Sainsbury's Supermarkets Ltd v. (1) MasterCard Inc, (2) MasterCard International Inc, (3) MasterCard Europe S.P.R.L.

Day 16 Redacted

February 25, 2016

Opus 2 International - Official Court Reporters

Phone: +44 (0)20 3008 5900  
Email: [transcripts@opus2.com](mailto:transcripts@opus2.com)  
Website: <http://www.opus2.com>

1 Thursday, 25th February 2016  
 2 (10.30 am)  
 3 (Open session)  
 4 MR JUSTICE BARLING: Morning.  
 5 MR HOSKINS: Straight to Dr Niels unless there is anything  
 6 you want to --  
 7 MR JUSTICE BARLING: The only thing is just to let you know  
 8 that there are people -- I am sure everyone is aware --  
 9 who want to listen to the proceedings and there is  
 10 a particular group of students tomorrow morning coming  
 11 from a university to listen.  
 12 Now, I appreciate it is very difficult to give  
 13 precise indications of when we are likely to be in --  
 14 this is really probably more for Mr Brealey, really --  
 15 MR BREALEY: It applies to me, really.  
 16 MR JUSTICE BARLING: -- in camera, but insofar as you are  
 17 able to give any indications in advance at any time,  
 18 that would be helpful. Any pre-indications to the court  
 19 at large, but also if it were possible by say the close  
 20 of play to give us an idea of how you see tomorrow  
 21 morning panning out, simply because we have a group.  
 22 MR BREALEY: Yes, sure, I understand.  
 23 MR JUSTICE BARLING: So we are obviously in open court as  
 24 things stand.  
 25 MR BREALEY: Yes. So they are due tomorrow morning?

1

1 MR JUSTICE BARLING: I think they are due tomorrow morning.  
 2 MR BREALEY: For just an hour?  
 3 MR JUSTICE BARLING: I'm not sure. I don't know, Ms Boyle,  
 4 do you know how long? About an hour at the beginning of  
 5 the morning. Probably after an hour I imagine the eyes  
 6 will glaze over.  
 7 MR HOSKINS: Can I call Dr Niels, please.  
 8 DR GUNNAR NIELS (affirmed)  
 9 Examination-in-chief by MR HOSKINS  
 10 MR JUSTICE BARLING: Thank you, Dr Niels. Make yourself  
 11 comfortable.  
 12 MR HOSKINS: You need D3, please. If you go to tab 3, there  
 13 should be a document entitled "Expert report of  
 14 Dr Gunnar Niels"; is that correct?  
 15 A. Yes.  
 16 Q. If you go through to page 419.  
 17 A. Yes.  
 18 Q. Is there a signature there?  
 19 A. Yes.  
 20 Q. Can you confirm it is your signature?  
 21 A. Yes.  
 22 Q. Then still in this bundle, if you go to the next tab,  
 23 3A.  
 24 A. Yes.  
 25 Q. It should be the "First supplemental report of

2

1 Dr Gunnar Niels"?  
 2 A. Yes.  
 3 Q. And at page 447.17, is that your signature?  
 4 A. Yes.  
 5 Q. Then D3.1 at tab 6, you see "Second supplemental report  
 6 of Dr Gunnar Niels"?  
 7 A. Yes.  
 8 Q. The signature should be at 636.  
 9 A. Yes.  
 10 Q. Can you confirm that's your signature?  
 11 A. Yes.  
 12 Q. Can you confirm that contained in these three reports,  
 13 they set out your independent professional opinion?  
 14 A. Yes.  
 15 MR HOSKINS: Mr Brealey has some questions for you.  
 16 Cross-examination by MR BREALEY  
 17 MR BREALEY: You can put D3.1 away for the moment. Let's  
 18 just concentrate on your first report in D3.  
 19 I know you have been at Oxera for a long time. How  
 20 long precisely?  
 21 A. Nearly 17 years.  
 22 Q. Was MasterCard an existing client of Oxera's or did you  
 23 bring MasterCard with you?  
 24 A. No, we started -- Oxera started work for MasterCard in  
 25 May 2000, and actually it was the UK member banks of

3

1 MasterCard who were united back then in MEPAC and later  
 2 they became MMF. But they became a client when -- after  
 3 I had started at Oxera.  
 4 Q. So you say -- I'm looking at paragraph 1.5 of your  
 5 report -- that you advised the MasterCard UK members.  
 6 It is at page 214. You advised MasterCard UK members  
 7 during the OFT investigation, correct?  
 8 A. Yes.  
 9 Q. And that began some 16 years ago?  
 10 A. Indeed. 16 years ago. In March 2000 this was the very  
 11 first notification of the OFT under the new Competition  
 12 Act 98.  
 13 Q. So MasterCard at this time was a new client to Oxera and  
 14 you had basically just started, I think?  
 15 A. Yes, I had started nine months earlier.  
 16 Q. What was the advice that you gave? What was the sort of  
 17 advice that you gave to the UK members of the MasterCard  
 18 scheme during this time?  
 19 A. Yes, so this was from 2000 to 2005, basically the OFT  
 20 investigation, and thereafter, after the OFT decision,  
 21 came the CAT appeal. So we were here in this place.  
 22 The kind of analysis that we did was actually very  
 23 similar to the current case; the same issues that we  
 24 looked at are relevant to the current case. So  
 25 article 101(1), 101(3), the economic analysis, applying

4

1 economic principles to the case on the interchange fee  
 2 on article 101(1) and 101(3).  
 3 Q. I know that you have been in court a lot and you are  
 4 quite close to the case, but we have seen economic  
 5 reports during this time from DotEcon, Edgar Dunn,  
 6 Professor Weizäcker. What reports did Oxera submit?  
 7 A. Maybe it is also worth clarifying. We advised MEPAC, so  
 8 the UK member banks, alongside us in the OFT proceedings  
 9 but actually separately officially was MasterCard. So  
 10 I advised the UK member banks.  
 11 So the submissions for DotEcon, and Mr Koboldt was  
 12 here earlier giving factual evidence, he advised  
 13 MasterCard at the time. We were the economic advisers  
 14 to the UK members.  
 15 I think in this long process there were a few  
 16 submissions from Oxera on merchant surveys and  
 17 cardholder surveys. There were a few submissions on the  
 18 theory of interchange. One of my colleagues, Dr Helen  
 19 Jenkins, I think presented a few times at oral  
 20 hearings etc. That's about it in terms of Oxera reports  
 21 or Oxera named reports in the OFT stage.  
 22 Then Dr Jenkins, my colleague, was the expert  
 23 named -- or the expert for the UK members in the CAT  
 24 proceedings.  
 25 Q. Just again to recap, what was your role in all this?

5

1 A. Well, I was in all that time --  
 2 Q. You were quite young probably, but what was your role in  
 3 all this?  
 4 A. As a youngster, I was pretty much working with Dr Helen  
 5 Jenkins. I was, if you like, second in command.  
 6 Q. You would review the submissions by the other MasterCard  
 7 companies, MasterCard Inc, to ensure consistency,  
 8 I guess?  
 9 A. There were certainly working groups together and we  
 10 would review each other's submissions. I think I have  
 11 seen most of the work by MasterCard's economic advisers.  
 12 Q. Then in 2006, as we know, the OFT opened a new  
 13 investigation. You were a little bit older then. You  
 14 say you were involved in it. What was the extent of  
 15 your involvement?  
 16 A. Well, I can't -- it was certainly a lot less, and  
 17 I can't remember whether it was actually very active  
 18 because the OFT I think, at that stage, took a bit of  
 19 a back step and the European Commission case became the  
 20 leading case.  
 21 I think the UK member banks, so our clients at the  
 22 time, were not that active in the European Commission  
 23 state. So, certainly, our involvement dropped a little.  
 24 Q. So you say it dropped a little, but you do say at one  
 25 point, by 1.6, that you worked intermittently throughout

6

1 the EU investigation. What was your involvement in the  
 2 EU investigation?  
 3 A. Yes, so I think Oxera advised the Royal Bank of Scotland  
 4 as one of the intervening parties when the -- during the  
 5 appeal by MasterCard to the European Courts, to the  
 6 court of first instance at the time. There was a -- at  
 7 that time, Oxera performed a study on incremental spend  
 8 and that was put in as evidence I think on behalf of  
 9 RBS, if I recall correctly, as an intervening party.  
 10 Q. That's the one that the Commission rejects in the annex  
 11 to the decision.  
 12 A. Yes.  
 13 Q. We will come on to the appeals in a minute.  
 14 As far as the EU investigation was concerned, let's  
 15 start with a Visa exemption in 2002. Were you involved  
 16 in that at all, reviewing that?  
 17 A. We were not involved, I think, as MasterCard, but  
 18 certainly it came out during that period, so it was  
 19 a relevant decision to look at at the time.  
 20 Q. But MasterCard, did they get involved in the Visa  
 21 proceedings?  
 22 A. I don't know.  
 23 Q. Did you liaise with Professor Weizäcker again, and  
 24 Mr Koboldt and Mr Sidenius at the time?  
 25 A. Yes, all of them were involved at the time and we had

7

1 various interactions with all of them.  
 2 Q. What was the nature of these interactions?  
 3 A. I think because we were economic advisers to the UK  
 4 members and Mastercard International and there were sort  
 5 of working groups, if you like, so there were also  
 6 interactions between the economists, lots of interesting  
 7 brain storms I remember.  
 8 Q. What, relating to the MIT-MIF and the issuer's cost  
 9 methodology?  
 10 A. Certainly related to interchange and the theory, also  
 11 the EDC methodology. I think MIT-MIF, none of us had  
 12 heard of MIT-MIF back then.  
 13 Q. After the infringement decision, did you get involved  
 14 with the undertakings, the 2009 undertakings that  
 15 MasterCard gave?  
 16 A. No, I didn't and I think Oxera did not at that stage,  
 17 because at that stage it was pretty much a MasterCard  
 18 issue and the UK member banks were very much in the  
 19 background, not so involved, I think.  
 20 Q. So after the 2009 undertakings there were the appeals,  
 21 and I think if we go to paragraph 115 of the report,  
 22 where you say "The documents that you have reviewed", it  
 23 is the normal stuff: The legal pleadings, the witness  
 24 statements. Out of interest, why do you review the  
 25 witness statements as an expert?

8

1 A. I think that's in general terms common practice, and  
 2 actually good practice because it means as an expert you  
 3 are -- you can make sure that your economic analysis is  
 4 rooted in the facts of the case.  
 5 Q. Then you have looked at the internal documents relating  
 6 to interchange fees, and then six bullet points down you  
 7 have looked at the relevant decisions. Why have you  
 8 looked at the relevant decisions, the Commission  
 9 decision in particular? Why are you looking at that?  
 10 A. I think, again, that is important context for my  
 11 economic analysis of this case.  
 12 Q. Then the court judgments. Why are you reviewing the  
 13 court judgments?  
 14 A. I think for the same reason.  
 15 Q. You say in the last bit of that bullet point that you  
 16 have looked at the number of submissions leading up to  
 17 the judgments.  
 18 Now, as you probably know, we haven't seen these.  
 19 Did you take part in these submissions? Did you kind of  
 20 review them?  
 21 A. I did not take part in them. Whether I reviewed them  
 22 sort of as part of this case, I can't actually recall  
 23 the detail what I reviewed, what I referred to here.  
 24 I think certainly one of the things I referred to is the  
 25 Oxera study on the incremental spend, which went into --

9

1 well, the General Court proceeding.  
 2 Q. Were you acting for MasterCard in these appeals or any  
 3 interested issuing bank, or no one?  
 4 A. So we did act for Royal Bank of Scotland.  
 5 Q. You did, yes.  
 6 A. In the court of first instance. But I can't recall  
 7 whether that was still the case for the ECJ or whether  
 8 it was still relevant at that point.  
 9 Q. If you look over this history, this 16-year history, it  
 10 is quite clear that you have fought quite a lot of  
 11 battles with MasterCard.  
 12 A. That's one way of describing it. I think I have to say  
 13 I find the economics of interchange fees fascinating.  
 14 I have always found it fascinating. In a way I'm  
 15 pleased that the issues we looked at back then are  
 16 relevant issues in the current case as well.  
 17 Q. Let's go to a few documents, if we can.  
 18 Can we go first to E2, tab 6. I want to go to  
 19 page 338, paragraph 102. Before we do that, tab 6, just  
 20 to identify the document -- it is page 326 -- this is  
 21 an appeal against Mastercard International Incorporated  
 22 Europe.  
 23 Now, you were acting for the UK members, as  
 24 I understand it?  
 25 A. Yes.

10

1 Q. Did they put a separate appeal in?  
 2 A. I can't remember, but I should think so, yes.  
 3 Q. They are certainly referred to in the decision. This is  
 4 the sort of document I think that you have just said you  
 5 would have reviewed to ensure consistency, correct?  
 6 A. This is the sort of document I would have reviewed to  
 7 inform myself, yes.  
 8 Q. So if you go, please, to page 338, paragraph 102, and  
 9 read paragraph 102 and footnote 103.  
 10 A. Yes.  
 11 Q. You are a very quick reader.  
 12 It says, 102:  
 13 "For these reasons the OFT is not entitled to simply  
 14 conclude that higher interchange fees lead to increase  
 15 in retail prices. Such a significant conclusion  
 16 requires evidence. The OFT does not produce any. In  
 17 fact, it is evident that higher interchange fees might  
 18 just as well lead to lower or unchanged retail prices."  
 19 Then footnote:  
 20 "For example, there is no evidence that the almost  
 21 50% reduction in credit card interchange fees in  
 22 Australia that resulted from the Reserve Bank of  
 23 Australia's regulatory intervention has any impact on  
 24 retail prices."  
 25 Was this something that you shared? This is a view

11

1 that you shared at the time?  
 2 A. I can't recall whether at the time we really got  
 3 involved into this question on pass-on, but I think my  
 4 views -- my views on pass-on are clear. I mean, I have  
 5 set them out for the purposes of the current case.  
 6 Q. Obviously we will come to these, but I'm trying to work  
 7 out with you whether you shared the view of MasterCard  
 8 back in 2005 about the experience in Australia, for  
 9 example.  
 10 A. I think what I can say about this is that I would share  
 11 the view up to the point where it says there is no  
 12 evidence. And, indeed, looking at it more closely there  
 13 is no good evidence. And therefore I have not relied on  
 14 the Australia evidence on pass-on and instead formed my  
 15 own views.  
 16 Q. But this footnote does not suggest a strong economic  
 17 presumption, does it?  
 18 A. This footnote, it is -- it says what it says. It  
 19 doesn't suggest that there is high pass-on.  
 20 Q. It is what it is, but it does refer to the evidence and  
 21 the Tribunal has to look at the evidence. And this is  
 22 not just an allegation, this is someone having a look at  
 23 the experience of Australia and saying there is no  
 24 evidence.  
 25 Anyway, you have accepted that this evidence is not

12

1 wholly consistent with a strong economic presumption of  
 2 pass-on?  
 3 A. I accept that this statement is not consistent with  
 4 a strong presumption on pass-on. I think this statement  
 5 says more that there is no evidence, rather than that  
 6 there is evidence one way or the other.  
 7 Q. Can you put that bundle away, please, and go to  
 8 bundle E2.1. This is at tab 10. Just to identify the  
 9 document, this is a letter from Jones Day enclosing the  
 10 MasterCard's response to the European Commission's  
 11 letter of facts. This is March 2007.  
 12 Were you involved in this submission at all?  
 13 A. No.  
 14 Q. Did you review it?  
 15 A. No.  
 16 Q. Did Oxera play any part in it?  
 17 A. No, I don't think so.  
 18 Q. So what was the role of yourself and Oxera at this time  
 19 then, 2007, just before the infringement decision was  
 20 adopted?  
 21 A. I think we actually had no particular active role at  
 22 that stage, if I recall correctly, because this was very  
 23 much, at that stage, MasterCard dealing with the case  
 24 rather than the UK members, and MasterCard had its own  
 25 economic advisers.

13

1 Q. Let's go, if we can, with that proviso, to page 938. If  
 2 you want to read paragraph 316 to 324. I will just ask  
 3 you a few questions about this.  
 4 A. Yes.  
 5 Q. Have you seen this document before?  
 6 A. I can't recall that I have. I think not, actually.  
 7 Q. This was not shown to you when you produced your report?  
 8 A. It probably was in the overall material available to me,  
 9 but I can't now recall if I looked at this specific  
 10 submission.  
 11 Q. You can't remember whether you saw this document when  
 12 you were intermittently involved in the EU  
 13 investigation?  
 14 A. I think I'm pretty certain that I did not see this  
 15 document back then.  
 16 Q. If you go to --  
 17 A. But I can read this.  
 18 Q. Yes, of course. (Pause)  
 19 You mentioned a moment ago that you weren't  
 20 interested in Australia because there was no evidence of  
 21 pass-on. I think you said it was evidence of absence.  
 22 But if you see at paragraph 324, the third bullet point:  
 23 "A review of the annual reports of some of  
 24 Australia's largest retailers suggests there is no  
 25 direct correlation between changes in retailers' cost

14

1 base and consumer prices. But rather, retailers tend to  
 2 absorb small cost changes regardless of the direction of  
 3 the cost of change."  
 4 Just pausing there. I would suggest that is a  
 5 degree of positive evidence as to what is happening,  
 6 correct?  
 7 A. I think it is an assertion in here. And reading this,  
 8 I would agree -- I would not agree with this assertion  
 9 and it is not in line with my analysis of what has  
 10 happened in the UK.  
 11 Q. Then the following table contains data extracted from  
 12 Woolworths and Coles.  
 13 Then, if you go over the page, this is the evidence:  
 14 "It shows clearly that there is no correlation  
 15 between cost reductions, reduced merchant fees and  
 16 retail prices. Indeed, retailers often take cost  
 17 changes to ...(Reading to the words)... that influence  
 18 their prices."  
 19 So that is something that you disagree with, or  
 20 what? This is MasterCard putting forward a positive  
 21 case based on evidence at the time.  
 22 A. I would say this is not conclusive evidence on pass-on  
 23 one way or the other. The conclusions that are drawn  
 24 from it in this document, I would therefore not agree  
 25 with. I have tried to look at more detailed evidence in

15

1 the specific UK Sainsbury's context and draw different  
 2 conclusions.  
 3 Q. But would you agree at least that this positive case  
 4 here is inconsistent with a strong economic presumption  
 5 of pass-on?  
 6 A. This -- the argument made here is inconsistent with  
 7 that, yes.  
 8 Q. If you can put that bundle away, please, and go to E5.4,  
 9 tab 54. This is something that we have referred to in  
 10 the evidence in these proceedings. This is the report  
 11 by Europe Economics, "The economic impact of interchange  
 12 fee regulation in the UK, 28th June 2013".  
 13 A. Yes.  
 14 Q. Have you seen this document?  
 15 A. I hadn't seen it before the current proceedings.  
 16 Q. But did you see it before you drafted your first report?  
 17 A. I think yes.  
 18 Q. Because this, as I understand it, is on the website, on  
 19 that website.  
 20 A. It may be, yes.  
 21 Q. So we know that you saw this before you drafted your  
 22 first report.  
 23 If we go to page 1341, the executive summary:  
 24 "Headline findings and impacts for the UK if  
 25 interchange fee regulation is introduced.

16

1 "In Spain and Australia the regulation of  
2 interchange fees (IFs) resulted in a transfer of cost  
3 from retailer to consumers. Retailers' costs fell as  
4 they paid merchant service charges. But this  
5 ...(Reading to the words)... the form of lower retail  
6 prices."  
7 Then the basis for this, as we have seen there, is  
8 two examples, one in Spain and one in Australia,  
9 correct?  
10 A. Yes.  
11 Q. So if we go to section 3 of this report, the one which  
12 starts at 1357, this chapter is entitled "Past  
13 experiences regulating interchange fees".  
14 A. Yes.  
15 Q. Section 3.1 relates to Spain.  
16 A. Yes.  
17 Q. 1357. The authors of this document, they go through the  
18 caps, the impact on card payments in the banking sector.  
19 And then at section 3.1.4, at page 1360, it looks at  
20 impact on consumers. Page 1360, page 20, section 3.14,  
21 "Impact on consumers".  
22 So:  
23 "The intended effect of imposing a cap on  
24 interchange fees is that they would translate into lower  
25 prices of goods and services."

17

1 If we go on:  
2 "As reported in Iranzo et al 2012 ..."  
3 Can you just tell me, is that a firm of economists,  
4 Iranzo et al?  
5 A. I think they are three economists or academics. I think  
6 I looked also at the Iranzo et al study to see where  
7 does Europe Economics infer its conclusions from? My  
8 own assessment of these studies, so both Europe  
9 Economics and Iranzo et al, is that there is actually no  
10 good basis for them to conclude, based on the evidence  
11 that they have looked at, that there is no pass-on. The  
12 evidence is inconclusive either way, and that is why  
13 I decided not to rely on it.  
14 Q. Let's just get this straight. You say you saw this just  
15 before you drafted your first report, yes?  
16 A. Yes.  
17 Q. You actually looked at this report and then you actually  
18 went to the Iranzo study and decided that it wasn't good  
19 enough; is that right?  
20 A. Yes.  
21 Q. So when it says in section 3.1.4:  
22 "As reported in Iranzo, this chain of effects did  
23 not take place in Spain. Although the reduction did  
24 result in lower MSCs, no evidence of it having been  
25 passed through to a degree ...(Reading to the words)..."

18

1 was found by the study. The authors found no evidence  
2 of an improvement ..."  
3 So you have studied this and come to the conclusion  
4 that you don't agree with it. That's essentially your  
5 evidence to the Tribunal?  
6 A. Yes, indeed. Because the general theme in this study  
7 and the Iranzo study, and also in Australia, is there is  
8 no evidence of pass-on, and MasterCard then made a lot  
9 of that.  
10 Indeed, the principle I put forward is the fact that  
11 you find no evidence of pass-on doesn't mean that there  
12 isn't pass-on. So the absence of evidence isn't  
13 evidence of absence.  
14 Q. Then we go to Australia. 1362, section 3.2, "Impacts of  
15 regulating interchange fees in Australia".  
16 Then the footnote. This is at page 1362. I don't  
17 know if you have it?  
18 A. Yes.  
19 Q. This is after there is no evidence that retail prices  
20 were reduced in Spain.  
21 We get to Australia, 3.2:  
22 "Impacts of regulating interchange fees in  
23 Australia. The summary presented," this is at  
24 footnote 26, "next is drawn from  
25 CRA International 2008."

19

1 Did you go and have a look at that report?  
2 A. Yes.  
3 Q. You will see over at 1368 at the top, "effect on  
4 prices". This is what CRA -- CRA are a fairly respected  
5 firm of economists, aren't they?  
6 A. Yes.  
7 Q. They are your competitors?  
8 A. Yes, they are.  
9 Q. So again, they say:  
10 "RBA [this is the second paragraph] expected the  
11 decrease in IFs to be passed through to consumers as  
12 lower prices thanks to vigorous competition at the  
13 retail level."  
14 Now, is that something that you disagree with there,  
15 that there was vigorous competition at the retail level?  
16 Did you analyse that?  
17 A. I haven't analysed the Australian retail market, whether  
18 there was vigorous competition.  
19 Q. Just pausing there. So if you take that at face value,  
20 isn't that inconsistent with a strong economic  
21 presumption of pass-on in the present case where you  
22 rely on vigorous competition?  
23 A. Yes, the RBA statement here, or the expectations by the  
24 RBA that a decrease in interchange fee would be passed  
25 on to consumers because of vigorous competition, that is

20

1 in line with my economic presumption of high pass-on.  
 2 I think then the debate in these studies here is about,  
 3 well, is there actually evidence for it.  
 4 Q. "As in the Spanish case, no evidence was found, neither  
 5 for a reduction in retail prices nor of an improvement  
 6 in the quality of product. CRA also explain this as  
 7 a consequence of the very small reduction in the price  
 8 per transaction if passed through from MSCs to prices  
 9 would have taken place."  
 10 So CRA here are saying there's no evidence of  
 11 pass-on even though there's vigorous competition, and it  
 12 may well be due to the small nature of the MSC. Is that  
 13 something that you disagree with?  
 14 A. Yes, so there is two points being made here. One,  
 15 again, the theme of there is no evidence on pass-on and  
 16 it is my absence of evidence point. To be fair to  
 17 perhaps CRA, it is very hard to observe pass-on,  
 18 especially with public data. I mean, it is hard enough  
 19 in the current case, as we will no doubt come to, but in  
 20 the current case at least we have much more detailed  
 21 evidence from the retailers themselves.  
 22 I think the way CRA and also Europe Economics looked  
 23 at it was much more at the aggregate level, and there  
 24 you cannot -- it is very difficult to observe either way  
 25 whether there is pass-on or not.

21

1 The second point that CRA make here about it being  
 2 a small cost item and therefore it won't have been  
 3 passed on, I disagree with.  
 4 Q. You can put that bundle away and go back to your first  
 5 report please. This is D3. I would like to go to  
 6 page 383, I think, paragraph 8.53. I'm looking at  
 7 paragraph 8.53, page 383 of your first report at D3,  
 8 tab 3.  
 9 At 8.53, you say:  
 10 "There is a large body of literature assessing the  
 11 extent to which different types of cost change are  
 12 translated into changes in final prices. In this  
 13 section I present an overview of this literature to  
 14 complement the insights presented in the previous  
 15 sections. I have not been able to identify specific  
 16 studies that provide a robust empirical assessment of  
 17 the extent to which merchants passed changes in the  
 18 interchange fee/MSC onto their customers. In this  
 19 section, I therefore focus on empirical pass-on studies  
 20 for other cost items such as VAT and wholesale prices."  
 21 Now, why did you say that you have not been able to  
 22 identify specific studies? Is it simply because you did  
 23 not regard the studies as robust enough?  
 24 A. Yes. I think that sentence very much refers to that.  
 25 So there were the Europe Economics and NERA and CRA

22

1 and Iranzo studies. But, yes, indeed, the reason why  
 2 I say I have not been able to identify specific studies  
 3 that provide a robust empirical assessment of the extent  
 4 of pass-on is that. I accept that I should probably  
 5 have footnoted the fact that I refer here to the studies  
 6 that I did see.  
 7 Q. So you do accept that. Why do you on reflection now  
 8 accept that you should have footnoted a reference to the  
 9 studies that you have seen?  
 10 A. Just to clarify my statement here that -- which is  
 11 a correct statement -- I have not been able to identify  
 12 studies which provide a robust empirical assessment of  
 13 pass-on.  
 14 Q. But when you drafted this report, Dr Niels, this  
 15 evidence was supposed to be given in the High Court.  
 16 You know that, don't you?  
 17 A. Yes.  
 18 Q. And it is now being given to the Tribunal. Do you not  
 19 believe that it was your duty to refer the court or the  
 20 Tribunal in your first report to these studies and then  
 21 set out the analysis that you say was flawed? Do you  
 22 not consider that you should have been upfront about  
 23 these studies?  
 24 A. I think I should have been -- I think I should -- yes,  
 25 I think I should have been clearer about those studies.

23

1 To put my section 8 in context, there is a lot of  
 2 bits of evidence that I looked at in pass-on to build  
 3 the overall picture of what I call the economic  
 4 presumptions. So I looked at a lot of studies and a lot  
 5 of empirical studies, and I didn't comment on everything  
 6 in here. But I accept, having seen now also how all the  
 7 evidence has been presented in the hearings, that it  
 8 would have been helpful if I had specifically mentioned  
 9 the reasons why I didn't think that the studies that we  
 10 just went to were sufficiently robust to be worth  
 11 mentioning.  
 12 Q. If you go on, here at 8.55 you say:  
 13 "I have reviewed a number of academic papers that  
 14 estimate the rate of pass-on, provide an overview of the  
 15 estimate obtained in those papers in appendix A1.  
 16 I have selected only papers that assess pass-on in  
 17 retail markets that are sufficiently comparable to the  
 18 market Sainsbury's operates in."  
 19 Do you not consider that the retail markets in Spain  
 20 and Australia were at least sufficiently comparable to  
 21 the market Sainsbury's operates in?  
 22 A. Here I made the selection of academic papers. So that  
 23 is already another selection criteria that I applied.  
 24 So the other studies in Australia and Spain were not  
 25 academic papers, or not -- certainly not published

24

1 academic papers.  
 2 Q. Then, in 856:  
 3 "I provide a summary of these studies. Some of them  
 4 relate to retail markets in the UK. I have also  
 5 included findings from other countries."  
 6 So you are obviously not adverse to taking some  
 7 analogy from other countries, are you?  
 8 A. No, because some of these academic studies, like the  
 9 ones for the US, have done a detailed study on pass-on,  
 10 for example in certain products in the US, like cars and  
 11 some agricultural products. And for the reasons that  
 12 I have set out here, I consider that relevant  
 13 information or relevant analysis for what I call my  
 14 economic presumption of pass-on.  
 15 Q. If we go to page 420, this is the information in  
 16 appendix A1 that you are putting forward to the High  
 17 Court and now to the Tribunal as to why there is strong  
 18 economic pass-on. So:  
 19 "This summarises the results of my review of the  
 20 empirical academic literature pass-on as discussed in  
 21 section 8."  
 22 You go down this, this is at page 420. So this is  
 23 what you are putting forward to the Tribunal as evidence  
 24 that you are relying on. And you look at it, and:  
 25 "Origin of pass-on, wholesale US gasoline, tax,

25

1 wholesale prices, tax on alcohol, tax on gasoline, tax  
 2 on cigarettes, tax on alcohol" again.  
 3 I suggest to you, Dr Niels, that a study of pass-on  
 4 of interchange fees by retailers in Australia and Spain  
 5 is going to be of greater assistance to the Tribunal  
 6 than some regression analysis of gasoline tax in  
 7 America. Do you not accept that?  
 8 A. No, I disagree because these are all academic studies.  
 9 So there is a certain element of rigour to it. That was  
 10 the criterion that I applied in this bit of my evidence,  
 11 so the existing academic literature on pass-on.  
 12 I did try to select, as I said earlier, markets that  
 13 are reasonably closely related to retail markets. Of  
 14 course I accept these are different markets and also  
 15 different nature of cost changes to those markets, but  
 16 nonetheless, for my overall picture or at least my own  
 17 analysis of what do I conclude on pass-on, I find this  
 18 to be relevant literature.  
 19 The previous studies that we talked about, they are  
 20 not -- they don't deserve to be in here from the --  
 21 applying the criterion of robustness.  
 22 Q. Let's just get it straight, can we? You say that the  
 23 studies that you have relied on, which relate to, for  
 24 example, tax on US gasoline, that study is more relevant  
 25 than the study on whether or not interchange fees have

26

1 been passed on by retailers in Spain and Australia?  
 2 A. Yes, that is my view. So these studies inform my  
 3 analysis on pass-on because they show how does pass-on  
 4 in these types of markets work? What sort of pass-on  
 5 rates do you observe.  
 6 Of course this is not my only or even my main  
 7 evidence. I then look also at Sainsbury's specific  
 8 pass-on behaviour and evidence on also these types of  
 9 costs so it is not overly dissimilar. But that leads me  
 10 then ultimately to my conclusion about high pass-on.  
 11 So this literature is informative. If there had  
 12 been an academic study on pass-on of interchange fees or  
 13 merchant costs, merchant service charges, then of course  
 14 that would have been relevant. But my criterion, as we  
 15 discussed earlier, was that there aren't any robust  
 16 empirical academic studies on this.  
 17 MR BREALEY: Just whenever you want to break? I can go for  
 18 another 10 minutes --  
 19 MR JUSTICE BARLING: You think this is a natural point,  
 20 do you?  
 21 MR BREALEY: I'm going on to another paragraph, but I can go  
 22 for another 10 minutes.  
 23 MR JUSTICE BARLING: We will go a bit longer, thanks.  
 24 MR BREALEY: We were in appendix A1. Could we go back in  
 25 your report to page 373. This is where, in these pages

27

1 here, you cite various passages by, for example, the  
 2 European Commission and the retailers all giving the  
 3 impression, or giving, you say, support for your strong  
 4 economic pass-on, correct?  
 5 A. Yes.  
 6 Q. So at 8.14, you say:  
 7 "Examples of the Commission's conclusions and  
 8 reasoning can be seen in the following statements."  
 9 Then you set out some of the statements, yes?  
 10 A. Yes.  
 11 Q. All with a view to supporting the strong economic  
 12 pass-on. But you personally, as an expert economist,  
 13 I think agree that pass-on has to be considered on  
 14 a case-by-case basis, correct?  
 15 A. Yes.  
 16 Q. I think you also know, you also accept, that the EU  
 17 Commission believes that pass-on must be considered on  
 18 a case-by-case basis, correct?  
 19 A. I don't know if the Commission believes that in  
 20 an official manner, but it is -- I think it is accepted  
 21 wisdom that you need to assess pass-on on a case-by-case  
 22 basis.  
 23 Q. Just to put some context to that, you will need D3 open,  
 24 but could you go to bundle D2.1, which is  
 25 Mr von Hinten-Reed's second report, at tab 3.

28

1 A. Sorry, which number?  
 2 Q. It is bundle D2.1, tab 3, and it is page 590. We won't  
 3 go through it all, but it is paragraph 795 to 799.  
 4 As I understand it, you are both agreed that pass-on  
 5 should be assessed on a case-by-case basis? That's what  
 6 you have just accepted.  
 7 A. Yes.  
 8 Q. And here are some of the passages that he has cited as  
 9 authority for that. One of them is your book, but one  
 10 of them is 796:  
 11 "This view is supported by the Commission in its  
 12 practical guide."  
 13 And it says:  
 14 "It is not possible to establish a typical pass-on  
 15 rate that would apply in most situations. Rather,  
 16 careful examination of all the characteristics of the  
 17 market in question will be necessary to assess pass-on  
 18 rates.  
 19 "In a specific case, the existence and degree of  
 20 pass-on is determined by the range of different criteria  
 21 and can therefore only be assessed having regard for the  
 22 conditions of the market in question."  
 23 So you would accept what the Commission is saying?  
 24 A. Yes, I agree with that.  
 25 Q. So if you can put him away for the moment and just pick

29

1 up bundle E1. At the end, almost at the end there is  
 2 a tab 22 which is actually a European Commission  
 3 document, it starts at page 459, dealing with the  
 4 interchange fee regulations. So dealing with the very  
 5 thing that we are talking about in these proceedings.  
 6 Have you seen this document before?  
 7 A. I can't actually recall this document.  
 8 Q. There are quite a lot, but let's have a look at it then.  
 9 A. Yes.  
 10 Q. Have you read Mr Harman's report?  
 11 A. Yes.  
 12 Q. Well, it was exhibit 103 to his report. This is where  
 13 I got it from: Exhibit 103 to Mr Harman's report. This  
 14 is a policy brief. We will just flag the pages.  
 15 So page 460, internal page 2, gives a summary of the  
 16 problem with interchange fees. Page 461 explains the  
 17 business stealing effect:  
 18 "Merchants and consumers are problematic. They  
 19 didn't have sufficient counterweight to match the power  
 20 of card schemes."  
 21 It goes on.  
 22 Then the next page deals with the solution.  
 23 Page 463 deals with why the regulation is necessary. It  
 24 is the last page I just want to draw your attention to:  
 25 "What are the benefits of the interchange fees

30

1 regulation?  
 2 "Creating a level playing field for interchange fees  
 3 will facilitate market entry of new players."  
 4 This is at 464:  
 5 "It will offer better prices to merchants with  
 6 benefits for both retailers and consumers. Lower  
 7 interchange fees will ...(Reading to the words)...  
 8 retailers will pay less and so will be encouraged to  
 9 accept card payments. They will also have more  
 10 possibilities and be in a better position to choose  
 11 an acquiring bank.  
 12 "Consumers overall will benefit. Consumers using  
 13 low cost means of payment, such as cash or debit cards,  
 14 will no longer subsidise the use of ...(Reading to the  
 15 words)... compete on their own merits."  
 16 This is the point I want to just refer you to:  
 17 "Due to the higher competitive pressure in retailing  
 18 than in retail banking, it is likely that cost savings  
 19 to merchants will be passed on to consumers through  
 20 lower retail prices more than the benefits of high  
 21 interchange fees were passed on by banks to their  
 22 customers. However, many factors influence retail  
 23 prices. The pass-through would depend on the retail  
 24 sector considered, the size of the merchant, its use of  
 25 payment instruments and the basket of purchases/basket

31

1 of goods and services being bought by the consumer."  
 2 Again, I suggest to you that is a clear steer from  
 3 the Commission that you have got to look at this on  
 4 a case-by-case basis.  
 5 A. Yes, I agree.  
 6 Q. If you put E1 away. I hope you would accept -- so from  
 7 8.14 where you cite the Commission's statements -- that  
 8 this gives the impression that pass-on is almost  
 9 inevitable, whereas you have just accepted with me in  
 10 your evidence to the Tribunal that it is not inevitable,  
 11 you have got to look at it on a case-by-case basis,  
 12 correct?  
 13 A. You have to look at it on a case-by-case basis. The  
 14 weight I gave to all these statements by the authorities  
 15 is that -- actually, what I say is in line with my  
 16 economic understanding of pass-on: that you would, in  
 17 markets like these, expect high pass-on. But also the  
 18 other factor that I'm giving weight here is that it  
 19 has -- it is very much at the heart of the theory of  
 20 harm by the authorities, both by the OFT and the  
 21 European Commission, that interchange fees by loading  
 22 costs to merchants lead to too many credit cards in  
 23 society and the economy, and that's a market failure.  
 24 So competition not leading to the right outcomes.  
 25 That's very much at the heart of the concern, and

32

1 the pass-on comments are in line with that. Because we  
2 saw that earlier in the documents, the comment about  
3 cross subsidy. That is precisely the pass-on comment.

4 So retailers face these higher cost payment systems  
5 and then all consumers pay for it because these high  
6 costs are passed on by the retailers to prices.

7 That's the context in which I read these statements.  
8 The OFT called it the tax on consumers, so that's  
9 another statement in line with this. To me, that is  
10 helpful context, but still I agree with the proposition  
11 that one then has to also try to look at the evidence in  
12 each specific case.

13 Q. If we go to paragraph 8.19, this is after you have  
14 referred to the Commission's statements.

15 You say:

16 "Statements made by retailers and by the retail  
17 associations, such as BRC, over the last 15 years paint  
18 a similar picture of high pass-on. Again, these are not  
19 empirical evidence as such, and I'm aware that card  
20 schemes have at times sought to challenge these  
21 statements."

22 So:

23 "... I am aware that card schemes have at times  
24 sought to challenge these statements."

25 Just pausing there, you set out in this report,

33

1 which, as you know, is supposed to be independent,  
2 impartial and of assistance to a court or tribunal --  
3 having set out what the Commission is saying, you don't  
4 set out what the card schemes have said and which we  
5 only got to know about because of the specific  
6 disclosure application. Why did you not set out the  
7 statements by Mr Perez and Mr Douglas? Don't you think  
8 this gives a slightly imbalanced view on it when your  
9 own client has been disagreeing with these statements?

10 A. Yes, I think I have been clear in -- where I present the  
11 statements that there are statements from these three  
12 sources and I don't consider them to be evidence, but  
13 I consider them to be helpful background. I have also  
14 made clear that I do put a bit more weight on the  
15 statements by the authorities because that was very much  
16 at the heart of their theory of harm, as I explained.  
17 Also I have explained why I would put a bit more weight  
18 on the statements by retailers, because at the end of  
19 the day retailers are probably in a better position than  
20 the card schemes to judge how they -- or to give  
21 an indication how they see pass-on by themselves.

22 And part of my consideration here was also that,  
23 yes, I was aware of MasterCard's statements to the  
24 contrary, but yes, quite frankly, I thought -- and we  
25 saw the evidence that that wasn't very strong --

34

1 I thought they weren't very supported statements.

2 But by no means -- I knew those statements were all  
3 in evidence, so by no means I'm trying to create the  
4 impression that there are only statements one way.

5 Q. So you have just said, and I think this is consistent  
6 with what you said in 8.19, that retailers are in  
7 a better position than the card schemes to give a view  
8 on pass-on, but you are aware that the card schemes have  
9 been -- they have instructed economists to help them.  
10 It is not just the view of the card schemes themselves.  
11 I mean, card schemes have instructed and relied on firms  
12 of economists.

13 Why is it that retailers are in a better position  
14 than card schemes when they rely on views of their  
15 economic advisers?

16 A. I think the studies we just looked at, Europe Economics,  
17 CRA, they did not have good access to data and therefore  
18 could not perform a proper analysis of pass-on. I'm in  
19 a different position because of this case, there is much  
20 more information from the retailers themselves.

21 So I think I have now been able to do more analysis  
22 of pass-on than the previous sets of economists have.

23 Q. But why is it that retailers are in a better position?

24 A. That's, I think, just a general proposition that  
25 retailers -- or the information on how retailers set

35

1 prices exists within the retailers. And, indeed, in  
2 this case everyone looked at a lot of evidence from  
3 Sainsbury's to infer conclusions on pass-on.

4 Q. So if retailers are in a better position than card  
5 schemes, would you accept that Mr Coupe and Mr Rogers  
6 are in a better position than yourself?

7 A. They are in a good position to comment on from their  
8 business perspective. What I have done is to look at  
9 the economic analysis and the evidence in the round, and  
10 I have drawn my conclusions on pass-on from that.

11 MR BREALEY: It is probably a good moment.

12 MR JUSTICE BARLING: All right, we will have a short break.

13 Dr Niels, you know the form, don't you, about not  
14 talking about --

15 A. Yes.

16 (11.40 am)

(A short break)

18 (11.50 am)

19 MR BREALEY: Dr Niels, could we go please to bundle 3,  
20 tab 2. It is not your report, it is the report of  
21 Mr Harman. D3, tab 2.

22 It is not your report, it is the report of Mr Harman  
23 which starts at page 16.

24 A. Yes.

25 Q. What I would like to go to is section 9. Have you read

36

1 this section?  
 2 A. Yes.  
 3 Q. Have you discussed his evidence?  
 4 A. To a limited extent. I think Mr Harman and I pretty  
 5 much did our analysis independently, but there was  
 6 certainly communication between us.  
 7 Q. Well, in section 9, as I think you will appreciate, he  
 8 goes through a fairly detailed account of the effect of  
 9 a lower MIF on Sainsbury's costs. Do you accept that?  
 10 A. Yes.  
 11 Q. And so I won't go through it all but just highlight some  
 12 passages. If you go to paragraph 9.4, 106.  
 13 MR JUSTICE BARLING: Is there anything confidential in this?  
 14 MR BREALEY: I am most grateful.  
 15 MR JUSTICE BARLING: Are you going to be able to ask  
 16 questions about it without ...  
 17 MR BREALEY: This is actually quite important. I'm really  
 18 sorry to the court, the Tribunal, but this is all in  
 19 yellow, isn't it? Yes.  
 20 MR JUSTICE BARLING: Well, a lot of it is in yellow.  
 21 MR BREALEY: It is not going to be the same if I just ask  
 22 Dr Niels to read it and me not make any submissions on  
 23 it -- well, not submissions --  
 24 MR JUSTICE BARLING: You don't think you can conduct your  
 25 questioning, or that Dr Niels can give his answers

37

1 properly?  
 2 MR BREALEY: No. I honestly would say yes if I could, but  
 3 I really -- I'm going to get to the meat, I'm going to  
 4 go to a document in a minute, for example, which is all  
 5 yellow.  
 6 MR JUSTICE BARLING: I'm sorry, then, for those not in the  
 7 confidentiality ring. We will take the notice off the  
 8 door as soon as we possibly can.  
 9 This is Sainsbury's confidential material. There  
 10 may be people who are not able to hear MasterCard  
 11 material but are able to hear Sainsbury's. I don't know  
 12 whether that applies to anyone here.  
 13 (11.53 am)  
 14 (End of open session)  
 15 (Beginning of yellow confidential session - REDACTED)  
 16 (12.45 pm)  
 17 (End of yellow confidential session)  
 18 (Open session)  
 19 MR JUSTICE BARLING: Could we take the notice off the door.  
 20 MR BREALEY: Dr Niels, if you go to tab 7, the  
 21 bundle page 856, 21 at the top right.  
 22 A. Yes.  
 23 Q. I referred Mr Abrahams to the "make Sainsbury's great  
 24 again" initiative that kicked off just as he was  
 25 leaving. Have you read this transcript?

38

1 A. I think I read it at the time. Where are you on the  
 2 transcript?  
 3 Q. Sorry, page 856, top of 856:  
 4 "Great food at fair prices supported by strong  
 5 promotions."  
 6 A. Yes.  
 7 Q. We don't need to go to it, but he said:  
 8 "Answer: As I say, I was aware of the general  
 9 initiative ...  
 10 "Question: Would you, reading that, accept that  
 11 improving customer offer would essentially include  
 12 quality, service and price ...  
 13 "Answer: Well, it doesn't say quality, service and  
 14 price."  
 15 I asked again:  
 16 "Question: What would you understand ... by that?"  
 17 He said:  
 18 "Answer: Quality, service, price, availability, all  
 19 of those different things."  
 20 Just pausing there.  
 21 Do you accept what he is saying there, that that's  
 22 what supermarkets do: they compete on quality, service,  
 23 price, availability all of those different things?  
 24 A. Yes, I agree with that proposition.  
 25 Q. Then if we could go to page 27, which is top right, 862

39

1 bottom right.  
 2 So you remember that what Mr Abrahams was talking  
 3 about is that lower interchange fees can go into prices.  
 4 It can go into marketing. It can go into promotions.  
 5 Yes?  
 6 A. Yes. From those previous paragraphs, actually, I found  
 7 those paragraphs to be kind of consistent with my  
 8 economic assumption of high pass-on given the dynamics  
 9 he describes there.  
 10 Q. Okay, we will come on to that then.  
 11 "Question: So what would marketing involve? Can  
 12 you assist the Tribunal, what is involved -- what type  
 13 of marketing would you be observing?"  
 14 If you could read that.  
 15 "Answer: It could be anything from new ranges being  
 16 launched in the stores. It could be new ways of  
 17 rewarding customers, it could be advertising on the  
 18 television, radio, papers. It could be any of those  
 19 things."  
 20 Let's just pause there.  
 21 Now, here we are talking -- you say in your report,  
 22 what would happen if Sainsbury's got 20 million less in  
 23 interchange fees? What is it going to do with?  
 24 In your report you say the exam question is: would  
 25 that 20 million go into lower prices? That's what you

40

1 are trying to ascertain, isn't it?  
 2 A. Yes, my analysis focuses mainly on pass-on into price  
 3 levels, yes.  
 4 Q. What you are saying is that if you can show that prices  
 5 would have been lower, what you are saying is that if  
 6 the interchange fees had been higher, then the prices  
 7 would have been higher?  
 8 A. Yes.  
 9 Q. So we see that Mr Abrahams has said, well, what will  
 10 happen if you get a decrease in interchange fees -- and  
 11 I'm asking them this -- we will come on to it in  
 12 a moment, but let's just pause there.  
 13 If Sainsbury's took that 20 million and had a new  
 14 television advertising campaign, didn't put it into  
 15 lower prices and had a 20-million advertising campaign,  
 16 is that pass-on in your view?  
 17 A. Again, I think that's an interesting question. I am not  
 18 sure actually if I can give a view on that, give  
 19 a comment on that.  
 20 Q. Well, you are here to assist the Tribunal, Dr Niels.  
 21 A. Yes.  
 22 Q. This is actually a key point. I mean --  
 23 A. But I'm saying this because it is partly probably  
 24 a legal question, as we discussed before, what is  
 25 pass-on. So instead of -- In this case, a lower cost we

41

1 are talking about. So instead of lowering your price,  
 2 which would be pass-on, you spend it on marketing. So  
 3 it is the question, again, who bears the burden or who  
 4 gets the benefit in this case.  
 5 I can't really say whether that's -- whether one  
 6 would consider that to be pass-on. I think if --  
 7 marketing is probably more difficult than other costs,  
 8 as I mentioned earlier. Economics can still say  
 9 something about the effect of consumers of quality. So  
 10 some of these other dimensions of competition between  
 11 supermarkets. So quality, if, as a result of the extra  
 12 money available, I don't know, Sainsbury's invested in  
 13 making the shop look really nice, then in an intangible  
 14 way consumers benefit from that as well. So that would  
 15 be actually a way of pass-on to consumers. For  
 16 marketing I think it is just a bit less clear.  
 17 Q. So --  
 18 MR JUSTICE BARLING: Economic theory doesn't help really on  
 19 that?  
 20 A. Not much. Only to the extent that relationships between  
 21 cost and prices and other factors that consumers look at  
 22 like quality. Up to that point it can help.  
 23 So one reason why I have focused on price in my  
 24 analysis is that that is the realm of economic theory.  
 25 The other reason though is that while supermarkets

42

1 compete on many dimensions, price is a very important,  
 2 if not the main, or probably the main dimensions at the  
 3 end of the day.  
 4 MR JUSTICE BARLING: It would be a pretty odd situation,  
 5 wouldn't it? Or would it? I don't know. No, sorry,  
 6 that is not a fair question to put to you. It's not  
 7 a fair question. It is not appropriate for  
 8 an economist.  
 9 MR BREALEY: But again, it may be that you can't assist the  
 10 Tribunal and economic theory doesn't help, but if there  
 11 had been a positive decision in the light of increased  
 12 interchange fees -- this is a hypothetical now -- to cut  
 13 the quality of a certain product, so you were getting  
 14 premium beef from Aberdeen and now you are getting it  
 15 from somewhere else, but you have cut the quality of the  
 16 product. Now, the customer hasn't got the quality that  
 17 it used to have, but you cannot say that the customer is  
 18 bearing the financial burden of that higher interchange  
 19 fee. The person who has suffered is the farmer, if  
 20 anything.  
 21 A. I think you can say that because price and quality are  
 22 just two aspects of a product. You can raise price or  
 23 you can lower quality. In essence, the consumer suffers  
 24 in the same way. Economic theory can say something  
 25 about that.

43

1 If, instead of your beef costing -- instead of the  
 2 price of your beef going up, as in the example, it is  
 3 actually now lower quality beef or maybe a reduced  
 4 quantity or whatever, that is a detriment to the  
 5 consumer. And therefore, that is a way for the supplier  
 6 in this case to pass on the cost increase, because  
 7 presumably lower quality means cutting costs.  
 8 So rather than shifting the price up or putting the  
 9 price up, it reduces its cost by providing that same  
 10 consumer lower quality. That would, according to  
 11 economics, still be pass-on.  
 12 Q. It may be a question of law, but I put it to you if the  
 13 rationale for pass-on is unjust enrichment, and we  
 14 established that pass-on concerns the financial burden,  
 15 so if you reduce the quality where is the customer  
 16 bearing the financial burden of that? Where is the  
 17 customer paying the overcharge to the retailer?  
 18 A. It is paying it in qualitative terms. So the company,  
 19 rather than pass-on the higher cost to higher prices,  
 20 has maintained its financial position by just cutting  
 21 corners or cutting costs and offering lower quality  
 22 meat. The consumer pays for that, in this case in  
 23 intangible ways.  
 24 So this is where you can't quantify it directly in  
 25 financial terms, but it is a burden that has been passed

44

1 on to the consumers.  
 2 Q. But not a financial burden?  
 3 A. Unless one were to quantify the detriment in quality,  
 4 which sometimes economists can also try to do.  
 5 Q. But in monetary terms it is not a financial burden?  
 6 A. Correct.  
 7 Q. Correct. There is no transfer of money from the  
 8 customer to the retailer, correct?  
 9 A. Correct.  
 10 MR BREALEY: I think that is a very good place to stop.  
 11 MR JUSTICE BARLING: Is it?  
 12 MR BREALEY: Yes.  
 13 MR JUSTICE BARLING: Right, we will see you again at  
 14 2 o'clock.  
 15 (1.00 pm)  
 16 (The short adjournment)  
 17 (2.00 pm)  
 18 MR BREALEY: I think we are in open court.  
 19 MR JUSTICE BARLING: Yes, we are.  
 20 MR BREALEY: Good afternoon, Dr Niels. Moving on to  
 21 something new: exemption. Do you accept the need for  
 22 robust and convincing evidence for the application of  
 23 article 101(3)?  
 24 A. Yes, I think that is always desirable. If you have  
 25 robust and convincing evidence.

45

1 Q. I asked whether there was a need and you said  
 2 "desirable". I do not think there's anything between  
 3 us. There is a need, isn't there?  
 4 A. Well, as an economist I would say as robust as one can  
 5 do with available data. The need itself, that I think  
 6 is a legal question.  
 7 Q. Okay. On the legal question, if you can go to E1, it is  
 8 a legal consideration as to the threshold that your  
 9 report has got to satisfy. E1, tab 15, which is the  
 10 General Court. Again, you participated in various  
 11 proceedings I think you said earlier on. I think you  
 12 were acting for the Royal Bank of Scotland or for  
 13 MasterCard or --  
 14 A. Yes, Oxera advised the Royal Bank of Scotland.  
 15 Q. And they intervened in these proceedings?  
 16 A. Yes.  
 17 Q. It is E1, tab 15. If you could go to page 343.  
 18 Because, as you probably know, this was a ground of  
 19 appeal, a complaint by MasterCard that the Commission  
 20 had adopted too high a burden for MasterCard to prove  
 21 exemption. Is that correct? Do you remember that?  
 22 A. I don't remember the details of that.  
 23 Q. At 343, the second plea, infringement of article 1(3),  
 24 you can just read 194, 195. Then, when we get to 196,  
 25 you see the General Court saying:

46

1 "The undertaking or association of undertakings  
 2 claiming the benefit of article [what is now 101(3)] is  
 3 to bear the burden approving that the conditions of that  
 4 paragraph are fulfilled."  
 5 So that is the burden of proof.  
 6 Now we have the standard of proof:  
 7 "Consequently, a person who relies on article [what  
 8 is now 101(3)] must demonstrate that those conditions  
 9 are satisfied by means of convincing arguments and  
 10 evidence."  
 11 So convincing arguments and convincing evidence.  
 12 A. Can you just guide me, which paragraph you are on?  
 13 Q. I'm sorry, 196.  
 14 A. Yes.  
 15 Q. So convincing evidence. That is the standard that the  
 16 General Court has set out, that both -- well, the burden  
 17 of proof of course is on MasterCard, correct?  
 18 A. Yes.  
 19 Q. And so your report, which is essentially the evidence  
 20 that MasterCard is putting before the Tribunal, must  
 21 adduce convincing evidence. Is that the standard that  
 22 you have tried to attain?  
 23 A. Yes. Well, I always try that my economic analysis is as  
 24 robust as possible, and therefore hopefully also as  
 25 convincing as possible.

47

1 Q. You can put E1 away if you want. You know that 101(3)  
 2 has four conditions?  
 3 A. Yes.  
 4 Q. You refer to them in your report?  
 5 A. Yes.  
 6 Q. I just want to see how you have approached these four  
 7 conditions. If you go to bundle E2.2, tab 11. This is  
 8 the Commission's decision. It is page 1186 I would like  
 9 to go to. 1186. This relates to the first condition.  
 10 Have you familiarised yourself with what I'm going  
 11 to take you to, 670, 671 and 672? Would you like to  
 12 just read through that. This is pretty standard stuff  
 13 when it comes to what you have to show on the first  
 14 condition of 101(3). So if you want to familiarise  
 15 yourself with it and then I can --  
 16 A. No, I'm -- it is standard, yes.  
 17 Q. It is standard, isn't it?  
 18 For example, in paragraph 670, you see it says:  
 19 "Firstly, it follows from the case law of the Court  
 20 of Justice that only objective benefits can be taken  
 21 into account. This means that efficiencies are not  
 22 assessed from the subjective view of the parties."  
 23 That is, as you accept, standard?  
 24 A. Yes.  
 25 Q. That's what the European Court dictates:

48

1 "Cost reductions that do not produce any  
2 pro-competitive effects on the markets...(Reading to  
3 the words)... profits are therefore irrelevant from the  
4 point of view of article 101(3)."

5 You have accepted that what this said at 671 is  
6 standard.

7 Can I just go to 672, which again, is in the  
8 guidelines, as we will see in a moment:

9 "All efficiency claims must therefore be  
10 substantiated..."

11 And I put in brackets:

12 "... (by convincing evidence) so the following can  
13 be verified."

14 This is what you have to show as an exemption for  
15 the first condition, you have to show the nature of the  
16 claimed efficiencies, correct?

17 A. Yes.

18 Q. The link between the agreement and the efficiencies,  
19 correct?

20 A. Yes.

21 Q. The likelihood and magnitude of each claimed efficiency,  
22 correct?

23 A. Yes.

24 Q. And how and when each claimed efficiency could be  
25 achieved, correct?

49

1 A. Yes.  
2 Q. Have you attempted to satisfy all those conditions when  
3 drafting your report on article 101(3)?

4 A. I have attempted it and I think there is convincing  
5 evidence of the efficiencies that credit card schemes  
6 bring and that the MIF brings, because the MIF is what  
7 allows credit card schemes to exist and to remain  
8 competitive and to be more competitive vis-a-vis other  
9 payment systems.

10 That is the nature of the efficiencies in  
11 a nutshell. So I have tried to review the evidence and  
12 put forward the evidence that is available on that.

13 There is I think, as also in other cases, there is  
14 only so far that one can go with economic analysis in  
15 very precisely quantifying or analysing the four  
16 conditions, so these conditions and also the others.  
17 Therefore, the bulk of my analysis under the exemption  
18 condition is about the acceptable methods to determine  
19 an exemptable level of MIF, so the cost base and the  
20 MIT -- the cost base method and the MIT. I accept that  
21 those methods do not directly, but I think they do  
22 indirectly, but do not directly address each of these  
23 conditions in such a logical step as is set out here.

24 Q. That is one of the criticisms, as you know, that  
25 Mr von Hinten-Reed makes, which is that you kind of

50

1 group it all together, say they are all satisfied, but  
2 without going through whether it improves efficiency,  
3 fair share, whether it is indispensable. You take that  
4 criticism on board, do you?

5 A. I think I try as much as possible also to put it in  
6 those four conditions, so the fair share, the  
7 efficiencies. And there is evidence on fair share that  
8 I discuss at length, and the efficiencies. But  
9 ultimately, I think both experts then try -- and even  
10 the Commission, actually, when it comes to okay, well,  
11 there is now a practical method to get an exemptable  
12 level of MIF, have to come up with some sort of proxy  
13 method, some rough method to an acceptable method to  
14 determine the exemptable level of MIF.

15 At that stage, yes, the refinements of where are  
16 each of the four conditions, they are not that clear any  
17 more. But I have in my report also tried to discuss the  
18 four conditions individually.

19 Q. But when you refer to the proxy, I take it that you are  
20 not excusing yourself from adducing robust and  
21 convincing evidence of the satisfaction of the link, the  
22 magnitude and all the things we have just gone through;  
23 that is correct, isn't it, or is it not correct?

24 A. It is correct, I'm not excusing myself. I think there  
25 is a link because both methods have inherent in them --

51

1 I mean, they are not just methods plucked out of the  
2 air. They both have inherent justifications for them in  
3 terms of efficiencies, the first condition, in terms of  
4 fair share, the second condition as well. So they are  
5 not completely divorced from the four criteria.

6 The two methods, I would say that is where most of  
7 the robust evidence has come in from both sides'  
8 economists. But they can be translated into the -- or  
9 translated back into the four conditions.

10 Q. But you have not analysed the four conditions  
11 separately?

12 A. I have in my report analysed the four conditions, one by  
13 one, before going into the two proxy methods. That's in  
14 section 4 of my report.

15 Q. That, with respect, is a general description of what you  
16 are doing, rather than setting out one by one how each  
17 methodology satisfies each of the four conditions, which  
18 is a general introduction.

19 A. I think it is more than an introduction. It sets out my  
20 key arguments. It is also in the joint statement.  
21 I have summarised the key arguments as to why I think  
22 each of the criteria is met. But I do accept that once  
23 I discussed the two methods, so it is in sections 5  
24 and 6 of my report, I don't go back to the individual  
25 conditions. Because at that stage I think I have taken

52

1 the approach that also the European Commission had  
 2 taken: there is an exemptable level of MIF and now let's  
 3 try to come up with a sensible method that would  
 4 approximate that exemptable level of MIF in line  
 5 therefore with the four criteria.  
 6 Q. Staying with the first condition, I think we may need  
 7 E2.2. I can't promise it, but I'll put it to one side  
 8 for the moment. Could you pick up bundle E1, because  
 9 I want us to stay with this first condition for  
 10 a moment. I would like to go to E1.19. This is in the  
 11 context of the evidence you just gave. It is E1, tab 19  
 12 at 436, and it is paragraph 232. Again, I would hope  
 13 you are familiar with this because of the evidence you  
 14 have just given.  
 15 A. Sorry, paragraph which number?  
 16 Q. 232, page 436 of the bundle. 232. This is the ECJ, the  
 17 main Court of Justice:  
 18 "In the present case, it was open to the  
 19 General Court to find in paragraph 120 without erring  
 20 that the MIF was not objectively necessary for the  
 21 operation of the MasterCard system. In the light of  
 22 that conclusion, the General Court also correctly  
 23 concluded in paragraph 207 of that judgment that  
 24 analysis of the first condition laid down in  
 25 article 81(3) called for an examination of the

1 appreciable objective advantages arising specifically  
 2 from the MIF and not from the MasterCard system as  
 3 a whole.  
 4 "It follows from this that the argument of the  
 5 General Court wrongly ignored the advantages to  
 6 cardholders resulting from the MasterCard scheme cannot  
 7 be accepted."  
 8 I just emphasise the point, the first condition laid  
 9 down in 101(3) called for an examination of the  
 10 appreciable objective advantages arising specifically  
 11 from the MIF.  
 12 Now, is that something that you have attempted  
 13 to do?  
 14 A. Yes. In my report, my analysis, my logic is very  
 15 much -- and I described this in detail in sections 2 and  
 16 then section 4 -- my analysis very much is that without  
 17 a MIF you wouldn't have four-party card schemes, or they  
 18 would not be as competitive or as successful as they are  
 19 today.  
 20 Therefore, in my logic, the benefits, the  
 21 efficiencies that come from having four-party schemes  
 22 but also having competition between schemes, so those  
 23 efficiencies can be attributed to the MIF. I think I'm  
 24 quite clear on that in my report.  
 25 Q. Again, I'm just referring to the evidence you gave a bit

1 earlier on which led me to this, when I asked you:  
 2 "Have you attempted to satisfy all those conditions  
 3 when drafting your report on article 101(3)?"  
 4 You said:  
 5 "Answer: I have attempted it and I think there is  
 6 convincing evidence of the efficiencies that credit card  
 7 schemes bring and that the MIF brings, because the MIF  
 8 is what allows credit card schemes to exist ..."  
 9 What actually is your evidence relating to the MIF  
 10 specifically?  
 11 A. So in section 2 I have set out extensively the basic  
 12 principles of two-sided markets, of four-party card  
 13 schemes, and in my opinion very much it is the MIF that  
 14 allows four-party card schemes to be competitive and to  
 15 exist.  
 16 So the logical step in my mind is clear, that  
 17 without a MIF you wouldn't have so much competition  
 18 inter-scheme and you wouldn't have four-party card  
 19 schemes to the same extent.  
 20 Therefore, the efficiencies that come from card  
 21 schemes, and the various efficiencies, and you know  
 22 there are a number, can be therefore attributed to the  
 23 MIF. That is my opinion. And I have been clear on that  
 24 in section 2 and also in the joint expert statement.  
 25 Q. Let's just tease this out a bit. Clearly -- and you

1 were part of the interested party, so you were part of  
 2 the Royal Bank of Scotland team, as I understand it.  
 3 Clearly, MasterCard, and as I imagine the  
 4 Bank of Scotland, were arguing that the scheme created  
 5 efficiencies, and that was rejected. So what was the  
 6 argument that was being advanced there? In other words,  
 7 what is the difference between efficiencies from the  
 8 scheme and efficiencies from the MIF? There seems to  
 9 have been a massive point of principle here.  
 10 A. I'm not sure exactly what was argued. I'm also not sure  
 11 if what you were saying was followed, that the  
 12 efficiencies were rejected. I think what I read in here  
 13 is that one does -- or the court says one does need to  
 14 distinguish between the efficiencies of the MasterCard  
 15 scheme as a whole and the efficiencies of MIF.  
 16 In my mind, in my analysis, those two you cannot  
 17 distinguish because it is the MIF that allows the  
 18 MasterCard scheme to thrive in the first place.  
 19 Q. In other words, the argument was the scheme produces  
 20 benefits, efficiencies. That was rejected. But you  
 21 say, well, I have looked at the MIF because the MIF is  
 22 necessary for the scheme and the scheme produces the  
 23 benefits? Is that how it goes?  
 24 A. You are saying the argument that the scheme produces  
 25 benefits was rejected?

1 Q. Was rejected.  
 2 A. Sorry, I had not understood that. I don't read that in  
 3 here, unless I'm mistaken.  
 4 Q. Let's look at it again:  
 5 "The General Court also correctly concluded that  
 6 analysis of the first condition laid down in  
 7 article 101(3) called for an examination of the  
 8 appreciable objective advantages arising specifically  
 9 from the MIF and not from the MasterCard scheme as  
 10 a whole."  
 11 That is exactly what the Commission said in its  
 12 infringement decision. You have got to look at how the  
 13 MIF creates the efficiency gain. It is not good enough  
 14 just to say that cards are of a benefit.  
 15 A. Yes, I see that. But what it doesn't say here is that  
 16 the court or the Commission rejected the fact that the  
 17 scheme itself had benefits.  
 18 I think what I'm reading here is that it says here  
 19 that that in itself, the fact that the scheme has  
 20 benefits, is not enough. You need to look at the  
 21 specific benefits of MIF.  
 22 But I can't see -- the question put to me has been  
 23 twice that the fact that the scheme has benefits has  
 24 been rejected here. I just don't read that in here.  
 25 Q. Dr Niels, we are certainly not saying that a payment

57

1 card scheme does not produce benefits. It produces  
 2 benefits to all of us. They are a fantastic thing. But  
 3 that doesn't mean to say that the fact that the scheme  
 4 produces benefits, that MasterCard gets home on  
 5 article 101(3). Because I'm trying to establish with  
 6 you and ask whether you have done this, whether you have  
 7 analysed whether the MIF itself has produced the  
 8 efficiencies that you claim in your report. Have you  
 9 gone down to that level of granular --  
 10 A. Yes. So I think I would agree that the scheme produces  
 11 benefits. They are a great thing, credit cards.  
 12 From my analysis it also follows you wouldn't have  
 13 all those benefits because you wouldn't have the scheme  
 14 without a MIF. Four-party schemes, first of all,  
 15 wouldn't have existed in the first place without any  
 16 MIF, as you can read in the fascinating history of  
 17 schemes in the Baxter article. But also more recently  
 18 and in the current environment, I have shown in my  
 19 analysis, in my report, that without the MIF certainly  
 20 MasterCard wouldn't have been able to compete with  
 21 three-party schemes and other payment methods.  
 22 So it is the MIF that allows four-party schemes to  
 23 be competitive. I have discussed that also in detail in  
 24 section 2 where I go back to the basics of interchange  
 25 fee and two-sided markets in competition between

58

1 schemes.  
 2 In a nutshell, in two-sided markets like payment  
 3 cards you get this skewed pricing structure. So there  
 4 is a pot of money to be earned on the side of merchants  
 5 and that then grows the scheme because you can give  
 6 a good deal to cardholders so you grow. Amex does that.  
 7 A four-party scheme does it, but the only way  
 8 a four-party scheme can do it is by having this internal  
 9 transfer. I know this also veers into the discussion on  
 10 article 101(1), objective necessity, but from  
 11 an economic perspective, to me that is quite a clear and  
 12 convincing logic.  
 13 Q. But just to kind of nail this one down, does  
 14 article 101(3) call for an examination of the  
 15 appreciable objective advantages arising specifically  
 16 from the MIF and not from the MasterCard system as  
 17 a whole? Do you want me to say that again?  
 18 A. I think what you have just read out is the legal test,  
 19 and I have no reason to disagree with that.  
 20 Q. Right. That's the legal test. Is that the test that  
 21 you have tried to comply with?  
 22 A. Yes, I have tried to comply with that test and generally  
 23 with the various legal tests under 101(3). But as  
 24 I said earlier, there is only so far that you can go  
 25 with the economic evidence in terms of precise analysis,

59

1 precise of each of the criteria under 101(3). And  
 2 therefore at some stage -- I have discussed them one by  
 3 one, but at some stage I have taken the same approach as  
 4 the Commission and tried to come up -- okay, what is the  
 5 question, what is a good method of an exemptable level  
 6 of MIF? And that's where the bulk of my analysis  
 7 under 101(3) has taken place.  
 8 MR SMITH: Dr Niels -- sorry to interrupt, Mr Brealey -- you  
 9 said several times now that it is the MIF that allows  
 10 credit card schemes to exist and to remain competitive.  
 11 Why is it that one needs a default rate? Let's assume  
 12 for the moment that some sort of price is necessary for  
 13 the scheme to operate. But why can't that be  
 14 a bilaterally agreed price?  
 15 A. Yes, I think -- well, that is a very good question.  
 16 Possibly also -- well, a big theme and a long answer,  
 17 but I try to keep that short.  
 18 I think in my logic -- as I said, two-sided market,  
 19 you want to charge a bit more on the merchant side and  
 20 a bit less on the cardholder side because that's the  
 21 optimal. Let's say for the sake of argument that that  
 22 optimises the size of this scheme. So Amex does that  
 23 without any need for a MIF. In a four-party scheme you  
 24 do need a MIF. The four-party scheme is organised such  
 25 that when producing the activity of the scheme, certain

60

1 costs fall on the issuers. That's by scheme design. We  
 2 have been through that in the evidence.  
 3 So some of those costs fall on the issuing side. At  
 4 the end of the day, when you have -- if you still look  
 5 at the scheme as a whole, you have got revenues on one  
 6 side and costs on one side and revenues and costs on the  
 7 other side. As if to make the scheme work, you want  
 8 a transfer between the issuing and the acquiring side.  
 9 So an interchange fee, I hope that's reasonably clear,  
 10 is required, some transfer.  
 11 The next question is, okay, can you do that  
 12 bilaterally or multilaterally? I think there are  
 13 several advantages over multilateral. First of all, it  
 14 is the transaction cost side of things. So if you have  
 15 many acquirers, many issuers, it is much easier to do it  
 16 at the scheme level. It saves transaction costs. In  
 17 particular for international schemes that has been a big  
 18 factor.  
 19 But also, and this is perhaps a more detailed  
 20 discussion and a big theme under article 101(1),  
 21 bilaterals you have that inherent problem, as has come  
 22 up before, of this issue of -- so bilaterals without  
 23 default MIF. You have that problem of the hold up, or  
 24 hold out, or a Cournot complements problem.  
 25 I can go into details on what the problems of that

61

1 are, but in a nutshell that is not very attractive and,  
 2 if anything, leads to even higher interchange fee  
 3 levels. That's why the preference in most systems, even  
 4 from a commercial perspective, has been a multilateral  
 5 arrangement.  
 6 MR SMITH: Thank you. I understand the hold-up argument and  
 7 I am sure Mr Brealey will come to it.  
 8 MR JUSTICE BARLING: Following on from that, you do explain  
 9 in your report, I think, you certainly discuss it in  
 10 your report, but why do you say in simple terms why  
 11 would it be necessarily be higher? Presumably what we  
 12 are envisaging here, someone is not having a MIF for  
 13 whatever reason, whether regulation, so imagine the  
 14 scheme without a MIF and others have a MIF, or the  
 15 three-party scheme have something equivalent, so you  
 16 have that imbalance there. And that's the background to  
 17 what Mr Smith's question raised, was a question of  
 18 a negotiation.  
 19 You say, well, that negotiation, economic theory  
 20 suggests, would lead to something higher than whatever  
 21 the MIF would have been?  
 22 A. Yes.  
 23 MR JUSTICE BARLING: What is the reason for that?  
 24 A. Back to basics on that and so most economic theories  
 25 would agree that if you have no multilateral, so just

62

1 bilateral, so no default, you get negotiations.  
 2 In those negotiations the logic is that  
 3 an acquirer -- with the honour all cards rule, which is  
 4 another important aspect of a four-party scheme, with  
 5 the honour all cards rule once the payment has been made  
 6 at the merchant and that merchant's acquiring bank then  
 7 has no option but to clear the payment with the issuing  
 8 bank. It is at that stage that each issuing bank has  
 9 a degree of market power, of monopoly power. It is  
 10 perhaps the equivalent of the holder of a patent that  
 11 you can't go round.  
 12 Economic theories say in that situation every  
 13 individual issuer would try to extract a bit of  
 14 that market power and therefore would negotiate  
 15 an interchange fee that would be higher than what it  
 16 would have been in the multilateral setting.  
 17 There are some follow-up questions that have come up  
 18 in this case like, okay, does that lead the scheme to  
 19 collapse or not? And thirdly -- the next follow-up  
 20 question is: does a scheme therefore have to do  
 21 something, like this ex-post pricing prohibition? I am  
 22 sure we will come to that later, but the basic logic is  
 23 it is this hold up, this market -- this individual  
 24 market power by individual issuers at the point of the  
 25 acquirer not having a choice but to deal with that

63

1 issuer to clear the payment.  
 2 MR SMITH: It may be a question of law on which we will be  
 3 asking the parties' assistance, but suppose on the  
 4 proper operation of the MasterCard scheme the issuing  
 5 bank can't make a deduction to the monies that it remits  
 6 to the acquiring bank without agreement. In other  
 7 words, if there is no agreement the payment is nil. In  
 8 other words, there is no hold-up.  
 9 If that's the position, and I underline the "if",  
 10 then all you are saying about the difficulty with the  
 11 bilateral "ifs" is that they involve transaction costs,  
 12 there is no other disadvantage?  
 13 A. Yes, that is right. If a rule like that existed, then  
 14 that's true. Then this market power would be  
 15 constrained in a way.  
 16 Now, the difficulty I have with such a rule is that  
 17 it is effectively saying -- it is also a restriction.  
 18 It is effectively saying the interchange fee has to be  
 19 zero. And it would again be a centrally imposed rule in  
 20 my mind.  
 21 MR JUSTICE BARLING: But if that was the result of the  
 22 negotiation, if you had that rule but you had  
 23 negotiation as well, you still have the possibility of  
 24 bilateral agreement, then everyone, on what MasterCard  
 25 says, just migrates to the one that pays the MIF. You

64

1 have zero MIF in one, you have ordinary MIFs in another.  
 2 But is that necessarily something that would have no  
 3 effect in a negotiation? Do issuers want that? Why  
 4 aren't issuers willing to pay something to avoid that if  
 5 they would otherwise?  
 6 A. Yes, I think so --  
 7 MR JUSTICE BARLING: So why aren't acquirers willing to?  
 8 A. So you are positing a situation where there is this rule  
 9 that you can't -- the issuer can't impose a charge or  
 10 deduct anything but you can do a bilateral.  
 11 I think no issuer would have any particular  
 12 incentives than to try to -- or let's put it first the  
 13 acquirer. The acquirer wouldn't have any particular --  
 14 if the acquirer can get a zero MIF on an interchange fee  
 15 in essence because of that rule, the acquirer wouldn't  
 16 have any reason to then enter into the bilateral  
 17 negotiation and say, well, do you want to bid more than  
 18 zero?  
 19 MR JUSTICE BARLING: The issuer would have a strong --  
 20 A. The issuer has an incentive, but if the acquirer doesn't  
 21 then you don't necessarily get --  
 22 MR JUSTICE BARLING: Then the acquirer ends up paying the  
 23 MIF. They go to the wall and the acquirer ends up  
 24 paying the MIF of the people who have a MIF. Wouldn't  
 25 they realise that and think, well, we have got to pay

65

1 something? Wouldn't that lead to possibly a lower, but  
 2 still --  
 3 A. I'm not so sure because I think from the issuer's  
 4 perspective, the easiest thing would be to go to another  
 5 scheme where, actually, you do get a MIF. So having --  
 6 it is not very attractive for the issuer either to --  
 7 MR SMITH: Dr Niels, aren't you assuming that effectively  
 8 the acquiring banks are negotiating on behalf of the  
 9 merchants because the interchange fee is passed down the  
 10 line, we all understand, to the merchants and it is they  
 11 who bear the cost?  
 12 So although the negotiation of the interchange fee  
 13 would be between issuing and acquiring banks,  
 14 effectively the acquiring banks would be responding to  
 15 pressure from merchants to have a low or zero  
 16 interchange fee. Would that be fair?  
 17 A. In that situation, yes.  
 18 MR SMITH: Now, we have all agreed, we have heard Mr Brealey  
 19 say this, that this card schemes are wonderful things.  
 20 Presumably merchants and therefore, through them,  
 21 acquiring banks would be appreciative of the advantages  
 22 of the schemes and the benefits of schemes. And  
 23 wouldn't it be a little bit irrational of them simply to  
 24 say, well, no, we are not going to negotiate, we will  
 25 only have an interchange fee of zero? Why would they do

66

1 that?  
 2 A. Well, irrational or not, there's something about the  
 3 collective, whether each individual incentives versus  
 4 what they would collectively be the best outcome. Also  
 5 I can't see this hypothetical where you have  
 6 a negotiation, but one side -- so the issuing side has  
 7 effectively their hands tied behind their back because  
 8 they can't impose -- the default remains a zero.  
 9 Because that's your hypothetical position, isn't it?  
 10 MR SMITH: Yes, my hypothetical is there is no MIF  
 11 effectively.  
 12 MR JUSTICE BARLING: Or zero MIF.  
 13 MR SMITH: So if there is no MIF it is zero. So unless  
 14 something is agreed one way or the other, the issuing  
 15 bank gets nothing. That is the assumption.  
 16 A. Yes. So I think individually no acquirer would really  
 17 be so enlightened to say, well, we do want this scheme  
 18 to survive especially if there are competing schemes out  
 19 there. So I'm going to be a bit more generous and allow  
 20 this particular issuer to charge more than zero if I can  
 21 actually get away with zero. I can't see --  
 22 MR JUSTICE BARLING: The issuers would want a payment  
 23 because they don't necessarily want to immediately -- so  
 24 they would want a payment and they would want as much as  
 25 possible. The acquirer would have muscle because he

67

1 knows the MIF is zero, so the acquirer has some -- but  
 2 the acquirer would surely realise, and so would his  
 3 merchants, that if he pays nothing, then on MasterCard's  
 4 argument you have the cliff, they fall off the cliff and  
 5 all the market share goes to the one that keeps a proper  
 6 MIF. Surely that's highly undesirable also for  
 7 merchants because they are no better off?  
 8 Whereas if the acquirer agrees to pay something,  
 9 albeit not necessarily as high as the other MIFs in the  
 10 market, who knows, but leave aside the question of  
 11 whether they have to pay more than (inaudible) in the  
 12 market, but it seems to me it is an odd thing. You are  
 13 saying they pay more in one sense, and then you say they  
 14 will be able to get away with paying nothing, which  
 15 means that that disappears and they end up paying Visa  
 16 or Amex who may have a higher MIF.  
 17 I just find it -- I struggle too to understand this  
 18 game play.  
 19 A. It is an interesting question. I think the difference  
 20 must be in what an individual acquirer has an incentive  
 21 at the moment versus collectively what would be good for  
 22 all of them.  
 23 I agree collectively they may think if we all are  
 24 too harsh then this particular payment scheme may  
 25 collapse, and therefore we are worse off. But I don't

68

1 think individually when an acquirer does this  
 2 negotiation in that setting will be so enlightened  
 3 because the acquirer will think, I can either get zero,  
 4 which means very low interchange, which means I can give  
 5 a good deal to my merchant, or it can think, no, if  
 6 I pay a bit more then the scheme will survive and  
 7 therefore me and all my rivals are better off.  
 8 I haven't thought it through in detail, but I  
 9 think --  
 10 MR JUSTICE BARLING: There are only half a dozen of them,  
 11 aren't there?  
 12 A. Sorry?  
 13 MR JUSTICE BARLING: There are only half a dozen rivals.  
 14 It's not as though we're dealing with a huge mass of  
 15 people.  
 16 A. They are fierce rivals, so what is collectively good for  
 17 them is not necessarily what they would be driven by  
 18 when they negotiate individually.  
 19 I think somehow I feel that the key is there. It is  
 20 a bit actually the flip side of the bilaterals  
 21 situation, the situation where the issuers do have some  
 22 bilateral market power without the multilateral  
 23 interchange fee. Again, the logic of the models is,  
 24 individually, those issuers would actually price very  
 25 high, but collectively they might think but if we all

1 price too high then, like patent holders, for example,  
 2 if we all price too high then we collapse our own  
 3 scheme.  
 4 So there is that -- it is a bit of a mirror image of  
 5 that.  
 6 MR SMITH: Let's assume one of the big acquirers -- as the  
 7 Chairman has said, the market seems to be quite  
 8 concentrated, there are about six large acquiring banks  
 9 if MasterCard's table is to be followed -- and we have  
 10 a negotiation between an issuing bank and an acquirer,  
 11 and the issuing bank is saying you have got to pay me  
 12 something, I would like a positive interchange fee with  
 13 money going my way. Of course you are right, the  
 14 acquirer could say no, it is in my interests to offer my  
 15 merchant's the lowest price and so I want to cut the  
 16 interchange to zero.  
 17 Wouldn't an acquiring bank have two thoughts at this  
 18 stage? One would be the Chairman's point, that issuing  
 19 banks can simply drift away to Visa from MasterCard and  
 20 MasterCard effectively collapses as a scheme and the  
 21 period of zero MIFs is a short and perhaps happy one,  
 22 but very short. So in a sense one is destroying  
 23 competition in the market for a very short-term benefit.  
 24 There's that consequence, which acquirers would have in  
 25 mind.

1 Secondly, wouldn't there also be an impetus on  
 2 MasterCard to cut back some of the benefits that  
 3 merchants receive through the operation of the card  
 4 system? I'm thinking in particular of the guarantee of  
 5 payment in the case of fraud or where the account holder  
 6 doesn't have enough money in his or her account, these  
 7 benefits. I'm leaving on one side things like the  
 8 30-day credit, but that too could be regarded as  
 9 benefit. You would get a scaling back of the scheme.  
 10 Again, isn't that something that an acquiring  
 11 sophisticated bank would bear in mind?  
 12 A. Yes. So we are talking here actually about a scheme  
 13 that is potentially quite -- so quite different from the  
 14 existing one. So we have made a few changes. So there  
 15 is this zero default. The default interchange fee is  
 16 zero so you can't charge. I'm still struggling a little  
 17 bit with that one, what the benefits of that would be.  
 18 But let's say if that were the rule, I do still think  
 19 that the individual acquirer would -- in individual  
 20 negotiation -- because the zero is there for grabs.  
 21 That is the default. No effort required. I do not  
 22 think any acquirer individually would be so generous as  
 23 to think to the greater good of everyone for the  
 24 survival of the scheme.  
 25 Partly -- there is a bigger question of okay, what's

1 the acquirer's incentives here in the first place, but  
 2 the acquirer is usually acquiring a multiple scheme.  
 3 They offer payments for multiple schemes. So this  
 4 choice -- the competition between payment schemes, the  
 5 competition between, say, MasterCard, Visa and Amex is  
 6 much starker at the issuing level where issuers have to  
 7 make a choice: do I issue this or do I issue the other?  
 8 So in terms of incentives, the incentives are --  
 9 MR JUSTICE BARLING: Some issue both, don't they, or  
 10 several?  
 11 A. They do, but then they can switch. This bit of  
 12 customers gets Amex and these get -- they do have both.  
 13 But on the issuing side, the question "Which scheme do  
 14 I prefer" is much more a live question than for  
 15 acquirers. I think in general terms that is sort of the  
 16 first bit of the question.  
 17 The second bit goes into the -- what other changes  
 18 can the schemes make? Or shall we stick to the first  
 19 one?  
 20 MR SMITH: I was simply articulating that as a possible  
 21 consequence of an acquirer insisting on a zero MIF.  
 22 I wasn't suggesting as a counterfactual a dramatically  
 23 scaled back scheme.  
 24 The only assumption I was asking you to make was  
 25 only a bilateral interchange fee could be agreed and

1 there would be no default, or a default of zero, if you  
 2 like. That's all I was putting to you.  
 3 But can I ask you one last question. Again, it is  
 4 accepted by everyone that actually the acquirers are, in  
 5 terms of their monetary gain or loss, indifferent as to  
 6 the level of the interchange fee because they pass it on  
 7 to the merchant. Doesn't that suggest that they might  
 8 have in mind a more nuanced longer term view of what the  
 9 interchange fee should be? Because after all it doesn't  
 10 affect their bottom line; all they are seeking to do in  
 11 negotiating the best interchange fee is something that  
 12 is in the best interests of themselves, vis-a-vis the  
 13 merchants who are their customers.  
 14 A. Yes. I think generally the position of acquirers -- and  
 15 this goes back to Professor Beath's question a few weeks  
 16 ago: where are acquirers in this? Why are they so  
 17 apparently passive? I think collectively acquirers,  
 18 yes, they pass it on, the MIF to the MSC. But I have to  
 19 bring in analogy.  
 20 Let me bring in the analogy of petrol stations as  
 21 acquirers, if you like. So petrol stations, there is  
 22 certain competition between petrol stations and that's  
 23 the same whether, say, the government duties on petrol  
 24 are 30p or 100p, the competition stays the same. And  
 25 you would be rightly saying, well, it doesn't really

73

1 matter to the competition between these petrol stations  
 2 or acquirers whether the MIF is 30 or 100.  
 3 But on the whole though, if anything, petrol  
 4 stations would prefer it if the government duties  
 5 were 30p rather than 100p because then the price would  
 6 be lower and more fuel would be sold.  
 7 So in general, acquirers are probably on balance  
 8 keener on the lower interchange fee than on the higher  
 9 one, and that's why in these committee discussions, as  
 10 we have heard, usually it is the acquirers who say,  
 11 well, keep the interchange fee -- don't put it too high.  
 12 But individual acquirers are a bit I think genuinely  
 13 more indifferent when it comes to choosing between  
 14 schemes because it is not directly their bottom line, it  
 15 is much more on the issuing side of the bank, say a bank  
 16 is an acquirer and an issuer, that the bank has to  
 17 choose between the two schemes.  
 18 MR SMITH: Thank you very much, Dr Niels.  
 19 MR JUSTICE BARLING: Sorry, Mr Brealey.  
 20 MR BREALEY: No. Very interesting.  
 21 I'm not sure I have got any questions out of that.  
 22 Thank you very much.  
 23 We were talking about the MIF. So we went from MIF  
 24 to bilateral. If we can come back to MIF, and I took  
 25 you to the ECJ and you had a look at the MIF

74

1 specifically, correct? And we were looking at whether  
 2 the scheme creates benefits, and I think you said  
 3 something like, well, the MIF is necessary for the  
 4 scheme to produce the benefits. Does that ring a bell?  
 5 That you have to wrap up the MIF and the scheme in order  
 6 to --  
 7 A. Yes, to get those benefits from the four-party schemes.  
 8 Yes.  
 9 Q. Again, it may be a legal analysis, but it is still quite  
 10 important for where your report is coming from. Can  
 11 I ask you to go to bundle E3.10, which is the Deloitte's  
 12 survey, tab 202, page 4307, which gives a fairly neat  
 13 summary of at least the Commission's analysis of what  
 14 you should be looking at.  
 15 A. Yes.  
 16 Q. I'm particularly interested in paragraphs 50 to 54.  
 17 Again, this is in the context of we know from the  
 18 ECJ that the wrong question is whether the scheme  
 19 produces the benefit. We are now looking at what you  
 20 regard as a relevant question, which is that the MIF and  
 21 the scheme are all wrapped into one to create the  
 22 benefit.  
 23 Essentially what you were saying is that without the  
 24 MIF, the scheme won't exist. I mean, it could not  
 25 compete. And that's where you were coming from, yes?

75

1 A. Yes.  
 2 Q. So this is how at least the Commission analyses it.  
 3 At paragraph 50 we get the normal prohibition on  
 4 agreements which distort competition. Then at  
 5 paragraph 51:  
 6 "In the MasterCard, the Commission concluded that  
 7 the cross-border MIF infringed by creating the de facto  
 8 floor and restricting the competitive interaction  
 9 between acquiring banks."  
 10 That relates what I described in opening to the  
 11 three anti-competitive vices. So you have the  
 12 collusion, you have the anti-competitive vices in 51.  
 13 Then at 52:  
 14 "A restriction of competition may ...(Reading to the  
 15 words)... for the existence of an agreement of that  
 16 type."  
 17 That's essentially what you are talking to.  
 18 "In MasterCard, however, the Commission concluded  
 19 that a collective mechanism that shifts costs between  
 20 acquiring and issuing banks is not indispensable for the  
 21 operation of a four-party scheme because issuing banks  
 22 and acquiring banks can recover their costs directly via  
 23 their respective customer group. Indeed, the MasterCard  
 24 decision identified five comparable payment card schemes  
 25 that successfully operate in different member states

76

1 without a MIF."  
 2 Just pausing there. Do you disagree with  
 3 the Commission's analysis there?  
 4 A. I disagree with the Commission's analysis there.  
 5 Q. Then going on to paragraph 53:  
 6 "Although a MIF is not necessary for the operation  
 7 of a four-party payment scheme, in principle some MIFs  
 8 may enhance the efficiency of a scheme and benefit its  
 9 users. According to 101(3), restrictive agreements  
 10 [that is the MIF here] that are caught by 101 are  
 11 nevertheless valid if they contribute to improving ..."  
 12 And it sets out the conditions for 101(3).  
 13 Then 54:  
 14 "The MIF is an instrument that shifts the costs."  
 15 Then it talks about balancing, but then it also  
 16 talks about:  
 17 "If you are going to claim these efficiencies, it  
 18 must be based on robust and compelling analysis that  
 19 relies...(Reading to the words)... the relevant  
 20 consumers to consider for analysis of efficiencies on  
 21 merchants and their subsequent purchasers."  
 22 Assuming that you are wrong on paragraph 52 and that  
 23 you can have a four-party scheme without a MIF --  
 24 I think that then deals with your point about how you  
 25 have to wrap up the MIF and the scheme -- do you then

77

1 accept that you have got to look at the MIF specifically  
 2 to determine whether there are efficiency gains under  
 3 article 101(3)? In other words, forget the fact that  
 4 the MIF and the scheme are wrapped up into one, do you  
 5 accept that you have to look specifically at whether the  
 6 MIF produces the efficiency gain?  
 7 A. Yes, I agree.  
 8 Q. That was the first condition.  
 9 Can we go on to the second condition now of  
 10 article 101(3). To do that -- you probably want to put  
 11 those bundles away -- we will need bundle E1. I don't  
 12 know if you have E1 there.  
 13 Just coming back to the evidence you gave a moment  
 14 ago about why you disagreed with the Commission on the  
 15 necessity for the MIF, if the EU regulators had reduced  
 16 the MIF to zero, banned it completely, both Visa and  
 17 MasterCard, would you say that the two schemes would  
 18 collapse?  
 19 A. I think they would struggle in the competition with Amex  
 20 and other three-party schemes that may arise. So in the  
 21 hypothetical situation, you are saying if the -- well,  
 22 the EU regulator, but also any MIF was zero, so also the  
 23 UK MIF. Is that what you are --  
 24 Q. Yes, I'm saying that let's assume the UK regulator or  
 25 the UK Government said Visa and MasterCard can't have

78

1 a MIF. Amex can, but they can't.  
 2 A. Yes, my position is they would both -- both schemes  
 3 would certainly lose a lot of market share to  
 4 three-party schemes. I don't know where it would end up  
 5 ultimately.  
 6 But also the competitive situation would be a lot  
 7 worse, I think. So competition in the interscheme  
 8 market would be a lot worse. Competition in the issuing  
 9 market would be a lot worse. Looking at it in the  
 10 round, I wouldn't say it is a more desirable competitive  
 11 outcome, that situation.  
 12 Q. But would they collapse? The competitive outcome is  
 13 a completely different matter. Would they collapse?  
 14 Are they absolutely necessary for the operation of  
 15 a four-party scheme, that is the test?  
 16 A. They may collapse. You don't know where it ends up.  
 17 Certainly if they exist in their current form they may  
 18 avoid collapse by actually making changes to the nature  
 19 of the scheme. In essence they could, from credit  
 20 cards, try to become debit cards. In my mind that's not  
 21 a very informative counterfactual, but those kinds of  
 22 things are possible in the world where both of them had  
 23 to set a zero MIF.  
 24 Q. If we go to E1, tab 2A, these are the guidelines from  
 25 the European Commission. Again, MasterCard has referred

79

1 to these in the skeleton, so I take it that they are not  
 2 in dispute. But I need to take you to them to see how  
 3 you have approached your economic evidence.  
 4 You are familiar with these guidelines, I take it?  
 5 A. Yes.  
 6 Q. And we will come to them a bit later on on other  
 7 matters, but if we go to paragraph 38, for example,  
 8 38A.7, so page 38A.7, this is at the start of the  
 9 principles of the application of article 101(3). Some  
 10 of them you have already accepted because they are in  
 11 the Commission's decision.  
 12 If we go over the page at 38A.8, we have the first  
 13 condition, and we will see there at paragraph 50 and 51  
 14 those same efficiency claims.  
 15 So at 51:  
 16 "All efficiency claims must be substantiated."  
 17 And we get again the nature of the claimed  
 18 efficiencies, the link between the agreement -- here the  
 19 MIF -- and the efficiencies, the likelihood of  
 20 magnitude, how and when. So this is where  
 21 the Commission is talking about the efficiencies.  
 22 If we then jump to paragraph 83, this is what I want  
 23 to ask you about, which is page 38A.13:  
 24 "According to the second condition of  
 25 article 101(3), consumers must receive a fair share of

80

1 the efficiencies generated by the restrictive  
 2 agreement."  
 3 You accept that, of course?  
 4 A. Yes.  
 5 Q. Then it gives at 84 what is meant by "consumers", but  
 6 I want to ask you about 85:  
 7 "The concept of fair share implies that the pass-on  
 8 of benefits must at least compensate consumers for any  
 9 actual or likely negative impact caused to them by the  
 10 restriction of competition found under article 101(1).  
 11 In line with the overall objectives to article 101 to  
 12 prevent anti-competitive agreements, the net effect of  
 13 the agreement must at least be neutral from the point of  
 14 view of those consumers directly or likely affected by  
 15 the agreement."  
 16 And it sets out the authority for it.  
 17 "If such consumers are worse off following the  
 18 agreement, the second condition of article 101(3) is not  
 19 fulfilled."  
 20 Now, that is based on the court's jurisprudence. Do  
 21 you accept that that is how you have approached your  
 22 report?  
 23 A. I accept that this is the criterion, how one looks at  
 24 fair share. As I said earlier, there are inherent  
 25 limitations as to how precise one can get in this -- the

81

1 restriction and does it fully compensate.  
 2 I think my analysis overall -- so to start with,  
 3 I don't actually think there is a restriction of  
 4 competition, for reasons I won't go into now, but that  
 5 sort of is a starting point. But there are clearly  
 6 efficiencies, as we have also established. And I think  
 7 merchants benefit as well as pay this higher cost from  
 8 the cost shifting and interchange, but merchants  
 9 benefit. And I think both methods to come up with  
 10 an exemptable level of MIF. So the cost-based method  
 11 and the MIT-based method tried to capture the notion of  
 12 merchant benefits.  
 13 I know it is a bit of a round about way of getting  
 14 there, but I think once you accept that the number that  
 15 comes out of the method, you call that the exemptable  
 16 MIF, and inherent in that is the fact that merchants in  
 17 their benefit as well, because merchant benefits do come  
 18 in explicitly under both methods.  
 19 Q. Then at paragraph 87, again I do not think it is  
 20 controversial because it is supported by authority, but  
 21 I just want to ask you whether you have adopted this in  
 22 your report.  
 23 At paragraph 87, the first sentence:  
 24 "The decisive factor is the overall impact on  
 25 consumers of the products within the relevant market and

82

1 not the impact on individual members of this group of  
 2 consumers."  
 3 You adopted that approach in your report?  
 4 A. Well, "adopted" may be a big word, but I think I'm aware  
 5 of this criterion.  
 6 Q. Have you attempted to follow it?  
 7 A. Yes, I have looked at the overall impact on merchants.  
 8 Now, there is of course a discussion in there about  
 9 individual merchants and -- so the individual benefit to  
 10 merchants and the aggregate benefit to merchants.  
 11 I don't think that translates one-to-one with this  
 12 distinction between overall and individual because  
 13 even -- the business stealing argument. I don't think  
 14 that translates exactly, maps onto here exactly, because  
 15 I think there is a situation where even if -- I think  
 16 merchants also benefit overall because they each benefit  
 17 individually despite business stealing. So this  
 18 aggregate merchants where you cancel out business  
 19 stealing effect. I have a whole discussion on that, but  
 20 I don't think it is the same as these two criteria here,  
 21 overall versus individual.  
 22 I have, to answer the question more shortly, looked  
 23 at what is the effect on merchants basically.  
 24 Q. As a group?  
 25 A. Overall, yes.

83

1 Q. That is the second condition. What do you understand is  
 2 meant by the third condition?  
 3 A. The indispensability?  
 4 Q. Correct.  
 5 A. Well, my understanding is that you have to show that  
 6 the -- that bit in the agreement itself, or the  
 7 agreement is --  
 8 Q. The restriction --  
 9 A. -- is indispensable.  
 10 Q. The restriction is indispensable?  
 11 A. Is indispensable to obtain the efficiencies.  
 12 Q. In other words, if the efficiency would occur anyway,  
 13 the transaction would occur anyway, the restriction is  
 14 not necessary?  
 15 A. Correct, not indispensable.  
 16 Q. So in your report you have calculated the exemptable MIF  
 17 in two ways, as you have said. Basically I can call it  
 18 the issuer's cost methodology and the adjusted MIT  
 19 approach. Yes?  
 20 A. Yes.  
 21 Q. Can I go first of all to the issuer's cost methodology.  
 22 I think you can put all the bundles away, but you will  
 23 need your first report, bundle 3, tab 3.  
 24 A. Yes.  
 25 Q. The exemption section, as you said earlier on, I think

84

1 starts at section 4, but this is the adjusted benefit  
 2 cost balancing approach, which I will call the issuer's  
 3 cost methodology. It is in section 5 at page 287.  
 4 A. Yes.  
 5 Q. This takes up the whole of section 5.  
 6 A. Yes.  
 7 Q. At 5.1 you say that the two-sided markets often exhibit  
 8 skewed pricing, which I think everybody in the room  
 9 would agree with.  
 10 But then there is an issue between the parties as to  
 11 whether this skewed pricing that results from the  
 12 collective pricing arrangements is inherently  
 13 pro-competitive.  
 14 You then go at 5.3, where you take our famous  
 15 friends, the three heads of issuer's cost. So for  
 16 credit card, MasterCard, takes three heads of issuer's  
 17 costs, processing costs, payment guarantee costs and the  
 18 interest-free period also called funding costs, as  
 19 a proxy for the cost revenue in balance.  
 20 "I note that the European Commission in its Visa  
 21 exemption decision of 2002 accepted these three heads of  
 22 costs as benefiting merchants and forming a basis for  
 23 setting the exemptable intra-EEA MIF for credit cards."  
 24 Just pausing there. Why did you mention the  
 25 European Commission's exemption decision?

1 A. Because it was a noteworthy decision at the time, in the  
 2 overall context also of the OFT investigation. And what  
 3 I also found noteworthy is that the solution that the  
 4 European Commission came up with at the time was exactly  
 5 the methodology that MasterCard had followed with EDC  
 6 since the NaBANCO case in 1987.  
 7 So I just mention it there. Actually, also perhaps  
 8 a bit for the avoidance of confusion because there is  
 9 sometimes a bit of confusion including, in some  
 10 documents in this case but also in the European  
 11 Commission stage, that somehow MasterCard introduced  
 12 this after Visa. But the MasterCard method, or at least  
 13 the cost study method, has existed since the 1980s. And  
 14 what I find noteworthy, and therefore I quote it here,  
 15 is it is the same three heads of cost and the Commission  
 16 explicitly said that the Commission can see that these  
 17 heads of cost also benefit merchants.  
 18 Q. But again, with the greatest respect, Doctor, it doesn't  
 19 really give a balanced impression because, as I am sure  
 20 you are aware, footnote 44 of that exemption decision  
 21 specifically gives a caveat on domestic MIFs. But you  
 22 don't mention that?  
 23 A. No, I don't. It mentions it, I believe indeed for the,  
 24 if I'm not mistaken, interest-free period.  
 25 Q. You don't mention the fact that there are documents in

1 the case where clearly the Commission, quote:  
 2 "... regarded that the issuer's cost methodology as  
 3 unsound and was not going to renew the Visa exemption."  
 4 But you don't mention that?  
 5 A. I think I mention that this was in place until 2007.  
 6 I'm very well aware of it, and at that stage  
 7 the Commission did not continue this method and instead  
 8 favoured the other method.  
 9 Q. Don't you think, just on reflection, you could have put  
 10 in brackets "but I appreciate in 2004/2005  
 11 the Commission no longer regarded it as benefiting  
 12 merchants and that was confirmed by the Commission in  
 13 its 2007 infringement decision"? It is just a matter of  
 14 impression, I put to you. No?  
 15 A. I don't see a particular need on that one, to be honest.  
 16 Q. All right, okay. So.  
 17 At paragraph 5.4, you say:  
 18 "I consider the cost studies carried out by  
 19 MasterCard, or rather independently from MasterCard, by  
 20 Edgar Dunn & Company (EDC) to be a useful ...(Reading to  
 21 the words)... for the current case. I have no reason to  
 22 doubt that these cost studies have been carried out in  
 23 a robust and objective manner. Indeed, I understand  
 24 that they were subject to an independent audit by  
 25 Ernst & Young."

1 There you footnote reference to the witness  
 2 statement of Peter Sidenius, correct?  
 3 A. Yes.  
 4 Q. Then throughout this section, you refer almost  
 5 exclusively on the data compiled by Edgar Dunn. I will  
 6 just take you through it.  
 7 So paragraph 8.15 on page 290, it starts at 5.15  
 8 at 290, where you set out Edgar Dunn's credit card cost  
 9 studies. This is at page 290, 5.15, and then at 5.16  
 10 what they have done.  
 11 And 5.18:  
 12 "I understand from the witness statement of  
 13 Peter Sidenius there are two studies."  
 14 And you refer to the 2005.  
 15 That's the first bullet. Then you refer to the  
 16 MasterCard worldwide 2008 study, correct?  
 17 A. Yes.  
 18 Q. Then we can go on, paragraph 5.20 -- I take it this is  
 19 not blue or anything?  
 20 MR HOSKINS: The detailed figures are in that table.  
 21 MR BREALEY: 5.20 summarises the credit card interchange  
 22 cost findings, a breakdown of the main cost categories  
 23 and then you set out the results.  
 24 We can cut this short, but you go at 5.82, towards  
 25 the end of your report, conclusions on the exemptable UK

1 MIF based on the Edgar Dunn cost study, a UK MIF etc:  
 2 "Based on the Edgar Dunn studies for credit cards, a  
 3 cost revenue balancing for credit cards would be around  
 4 ..."  
 5 Then you give a percentage. I don't know whether it  
 6 is confidential or not.  
 7 If you go over the page 5.84, 5.85 you set out a  
 8 table, table 5.2. Again, the results, and the source:  
 9 based on Edgar Dunn studies.  
 10 Then at paragraph 5.89, again the exemptable level  
 11 of UK MIF based on the 2008 study would then be between  
 12 whatever it is.  
 13 So it is fair to say that this whole section is  
 14 squarely based on the 2005, but more particularly, the  
 15 2008 Edgar Dunn cost study?  
 16 A. I used the Edgar Dunn cost study as the data source for  
 17 my cost-based approach. That is correct. So I rely  
 18 heavily on the 2008 in particular Edgar Dunn study.  
 19 You referred to the whole section. There is also  
 20 a long bit in the middle of section 5 which discusses  
 21 the evidence on merchant benefits which then informs me  
 22 in my assessment of, okay, I take the EDC cost data as  
 23 given and as a starting point, and then I form my own  
 24 view on how to allocate that to -- into a MIF with  
 25 an eye on what's the evidence on merchant benefits.

89

1 Q. Staying on 5.89 then, we have, with greatest respect,  
 2 a very long passage about the cost studies. And then  
 3 the punchline, as it were, is at paragraph 5.89 where it  
 4 says:  
 5 "Given the important benefits that merchants derive  
 6 from these costs, it would be reasonable but  
 7 conservative to attribute at least 25% or 50% of these  
 8 costs to merchants."  
 9 So before we get to the costs themselves the  
 10 punchline is that one paragraph, and on what basis does  
 11 any reader get from this as to why you consider it would  
 12 be reasonable to attribute a quarter or a half of these  
 13 issuer's costs to merchants? What is the basis for it?  
 14 A. Yes. So as I have set out in the paragraph above that,  
 15 we have these costs and we have evidence on merchant  
 16 benefits. One has to take a view. It is clear one  
 17 can't -- there are no hard and fast lines here, but I'm  
 18 giving my view on this evidence.  
 19 I think it would not be right to attribute all of  
 20 those costs of credit write-offs to merchants because  
 21 clearly also cardholder benefits. So there is  
 22 an element of judgment here on the fair share. But nor,  
 23 importantly, do I consider it correct to say none of  
 24 these costs should be included because none of them  
 25 benefit merchants.

90

1 In my analysis, clearly these costs do benefit  
 2 merchants. And then it is a matter of judgment, but  
 3 actually in my table 5.2 I showed the whole range. So  
 4 at the end of the day it is perhaps not for me to come  
 5 up with the right judgment, but I'm showing in my  
 6 table 5.2 what the resulting exemptable level of MIF  
 7 would be under different weights you give to the extent  
 8 to which merchants benefit.  
 9 So, in my view, indeed I cannot do more than say  
 10 zero would be too extreme, 100 might not be right  
 11 because cardholders benefit, so let's be conservative  
 12 and say it is between 25% and 50%. That to me is  
 13 a reasonable number.  
 14 Q. I think the Tribunal would understand that, that that is  
 15 your estimate of what is reasonable. But what is it  
 16 based on?  
 17 A. It is based on the logic I have just set out. There is  
 18 strong, convincing evidence in my mind that merchants  
 19 also benefit from the credit extension, the extension of  
 20 credit and the interest-free period to cardholders. And  
 21 therefore, the logic of this cost base method is to look  
 22 at three heads of issuer cost that also benefit  
 23 merchants, and then it just comes down to a question,  
 24 well, to what extent do they benefit merchants?  
 25 And one has to come up with a value judgment there.

91

1 That's as far as I can go, is to give my judgment at 25%  
 2 to 50% is conservative. There is at that stage no hard  
 3 and fast rules to draw the line somewhere, but I am  
 4 clear that it shouldn't be zero.  
 5 MR JUSTICE BARLING: Is that a convenient moment for a short  
 6 break?  
 7 MR BREALEY: It is.  
 8 (3.17 pm)  
 9 (A short break)  
 10 (3.27 pm)  
 11 MR BREALEY: If we could go back, what have you got there?  
 12 D3?  
 13 A. Yes.  
 14 Q. If you go back to paragraph 5.4, which we saw a minute  
 15 ago, it is the last sentence of 5.4:  
 16 "I have no reason to doubt these cost studies have  
 17 been carried out in a robust and objective manner.  
 18 I understand they were subject to an independent audit  
 19 by Ernst & Young."  
 20 Now, that may be true but do you accept that these  
 21 cost studies are not robust for you to undertake  
 22 a calculation for these proceedings?  
 23 A. No, I don't accept that. I think this is -- to me this  
 24 is robust and relevant evidence. This is after all the  
 25 method that has been in place for more than 30 years,

92

1 and the people carrying it out have a lot of experience  
 2 carrying it out.  
 3 As I said, I have no reason to doubt that these  
 4 numbers are robust and objective, and therefore I feel  
 5 I can rely on the outcome of the studies.  
 6 Q. But you consider that they would be sufficiently robust,  
 7 for example, to calculate a MIF for 2010?  
 8 A. Yes, 2010 still. If you are referring to the time  
 9 period -- is that the question? It is 2010 as opposed  
 10 to 2008, is that the question?  
 11 Q. As you probably know -- have you read the transcript of  
 12 the evidence of Mr Sidenius?  
 13 A. Yes, I was here that day.  
 14 Q. So let's just remind ourselves of what he said. Let's  
 15 have a look at the 2008 cost study and what he said.  
 16 So the cost study is at bundle E3.6, tab 126. Let's  
 17 familiarise ourselves with the document. You will also  
 18 need the transcript bundle, J2, tab 11 at page 1390.  
 19 That's page 19 of the transcript, tab 11.  
 20 A. Yes.  
 21 Q. First of all, to identify the document, this is the  
 22 document that you relied on as evidence to give your  
 23 opinion on the level of MIF that should have been  
 24 payable from late 2006 to today.  
 25 A. Yes.

93

1 Q. Did you look at any underlying documents or did you just  
 2 accept what Edgar Dunn had done?  
 3 A. I did not look at underlying documents of Edgar Dunn.  
 4 So I relied mainly on this document itself and then  
 5 my understanding of the method which had come across  
 6 before.  
 7 Q. Let's see what Mr Sidenius said about the robustness of  
 8 this data for use over such a period of time. How many  
 9 years are we talking about?  
 10 A. So we are talking here about a damages period of nine  
 11 years, end of 2006 to -- or end of last year.  
 12 Q. So at page 1390, page 19 of the transcript, so I asked  
 13 the question it is dated 2008, probably relates to 2007  
 14 data.  
 15 It is line 7:  
 16 "Answer: That is correct."  
 17 That is at paragraph 35.1 of his statement. There  
 18 was -- it was a January 2006/2005 study:  
 19 "Question: ... Would that have related to 2004 data  
 20 or 2005 data?"  
 21 He says:  
 22 "Answer: The 2005 report would have been 2004 data  
 23 ..."  
 24 So I asked the question in line 15:  
 25 "Question: So why are you updating the data? One

94

1 is 2004, one is 2007. Why are you updating it?  
 2 "Answer: Because -- you are asking a question that  
 3 goes back nearly 40 years in time ..."  
 4 Then he goes on, and I let him go on, if you  
 5 remember, about the NaBANCO case, which is fair enough.  
 6 But then we get to page 1392, so page 21 of the  
 7 transcript.  
 8 At line 7:  
 9 "So every time you wanted to revisit on a periodical  
 10 basis the interchange in the market to ensure it was  
 11 correct, there would be a requirement to undertake  
 12 a cost study."  
 13 This is his evidence:  
 14 "Answer: So from Edgar Dunn's perspective that is  
 15 where our methodology originated from. We looked at if  
 16 there is an imbalance in the card payment system, it  
 17 must because there is probably something on the issuing  
 18 side that is of value to the acquiring side. We tried  
 19 to quantify those; we came up with the methodology we  
 20 currently apply.  
 21 "Whenever this methodology was applied in the given  
 22 market we believe, and we strongly advised our clients,  
 23 that it would be wise to apply this periodically to  
 24 update the numbers to ensure you were in line with the  
 25 market. Because there would be things that are changed,

95

1 such as interest rates in the market, so the cost of  
 2 funds, the bad debt, the fraud, these things need to be  
 3 updated periodically to ensure you are in line with what  
 4 happens."  
 5 So I said.  
 6 "Question: The last point you just made, which  
 7 seems to be a very valid point, why is it that the last  
 8 Edgar Dunn cost study is 2008? Why hasn't there been an  
 9 update?  
 10 "Answer: That was because of the European  
 11 Commission case and the OFT at that stage basically  
 12 stating that they did not believe the application of the  
 13 methodology was correct anymore, and therefore  
 14 MasterCard deemed that it would be -- there was no value  
 15 in undertaking a cost study that would be rejected  
 16 immediately.  
 17 "Question: And that's the reason you did not do  
 18 a further one?"  
 19 I asked.  
 20 "Answer: Yes.  
 21 "Question: But had they not intervened, you would  
 22 have advised your clients strongly to update the cost  
 23 studies?  
 24 "Answer: Yes. That would have been very nice for  
 25 us as well.

96

1 "Question: If I was doing a calculation for an  
2 interchange fee today, I would not be relying on this  
3 cost study because, as you say, interest rates change  
4 and all that sort of stuff?  
5 "Answer: I would agree.  
6 "Question: In fact, it would be rather foolish to  
7 calculate an interchange fee based on this cost study?  
8 "Answer: Yes, I think it is outdated."  
9 What is your reaction to that?  
10 A. My reaction is that it is indeed somewhat  
11 unsatisfactory. We have a nine-year damages period and  
12 for the cost based method we have data for one year. As  
13 it happens, it is the first full year in the period.  
14 Ideally, one would have liked more data and this is  
15 then for the exemptable level of MIF and for the damages  
16 calculation.  
17 A similar thing to be said for the other methods,  
18 the MIT, where the only proper or decent data source  
19 that they are using is the 2015 EC merchant cost study  
20 which has data for 2013. Again, not entirely  
21 satisfactory that you don't have data going all the way  
22 back from 2007.  
23 Q. Sorry, Dr Niels, I just want to interrupt. As you know  
24 Mr von Hinten-Reed has tried to analyse the data going  
25 back some years, correct?

97

1 A. But only Sainsbury's specific data, that's why I said  
2 the only proper source is the EC merchant study, which  
3 is the survey of many merchants.  
4 Q. I am concentrating on the robustness of what you have  
5 relied on. The reason for that is it is MasterCard's  
6 burden of proof to prove an exemption. It is not for  
7 Sainsbury's to prove any exemption. So I need to know  
8 from you whether you accept that the data you have  
9 relied on is robust and convincing for the purposes for  
10 which you have used it?  
11 A. Yes, and I think it is. So what I'm saying is this is  
12 again both for exemptable level and for the damages  
13 calculation. I accept it is somewhat unsatisfactory  
14 that for both methods you have only one year of data.  
15 Ideally one would have liked more. But nonetheless  
16 I think -- well, I certainly still rely on -- sticking  
17 with the cost study, I still rely on that cost data. It  
18 gives a good indication of what it costs -- what costs  
19 would have been in those years.  
20 I was not in a position to redo or update the cost  
21 studies, so this was the best available data. I did  
22 look a little bit into, well, if these costs move, as  
23 Mr Sidenius has signalled, what direction would they  
24 have moved? As I flagged up in section 3 of my report,  
25 if you look at the biggest cost item in there, which is

98

1 the credit default cost, I don't think that's  
2 confidential, I flagged it in section 3 of my report.  
3 I referred to data from the FCA, that between 2007 and  
4 2010 those default costs went through the roof, I mean,  
5 record levels.  
6 So that tells me that if anything, in the subsequent  
7 years the total costs that Mr Sidenius would have  
8 produced would have gone up. But that is as far as  
9 I can go. I accept that I have not updated, or I was  
10 not in a position to update the 2008 cost study.  
11 Q. Let's take this in stages. Keep the bundles open, but  
12 can you go to bundle E2, please, tab 6. This is  
13 a MasterCard document. We have seen it before. It has  
14 attached to it a report, an economic analysis by  
15 Professor Weizäcker, and that starts at 362. This is  
16 the MasterCard notice of appeal 2005.  
17 It has an economic analysis of the MIF at 362, which  
18 is a similar sort of thing that you are calculating. If  
19 I go to 380, paragraph 92 he says -- this is the  
20 Professor. This is the basis upon which he is relying  
21 on robust data from Edgar Dunn:  
22 "The starting point for setting the default MIF is  
23 to take into account those costs which reflect a  
24 conservative estimate ...(Reading to the words)...  
25 providing a payment guarantee."

99

1 The very same costs that you are dealing with.  
2 93:  
3 "These costs are determined by a cost study  
4 performed every second year by a specialist independent  
5 firm of consultants."  
6 Edgar Dunn & Company, the EDC cost study.  
7 So it is MasterCard's own view that these cost  
8 estimates have to be, or should be updated every second  
9 year for the very reasons that Mr Sidenius gives in his  
10 evidence, both in answer to a question that I posed and  
11 both in answer to a question that Mr Justice Barling  
12 posed, that things change. You accept that.  
13 I think you have accepted that it is unsatisfactory  
14 that you are relying on 2007 data to calculate a MIF for  
15 a nine/ten-year period. You have accepted it is  
16 unsatisfactory?  
17 A. Yes, it is unsatisfactory, but I still rely on the  
18 results. What I don't know from here is one implication  
19 of the question is MasterCard did this every second  
20 year. I can't recall. What I have seen is the cost  
21 studies in 2005 and 2008. So that is three years.  
22 I don't know factually whether Professor Weizäcker  
23 is correct here, but clearly, yes, there was a need to  
24 do this periodically. I can see the commercial  
25 rationale for that.

100

1 Q. If it is unsatisfactory, how on earth can it be robust  
2 and compelling?  
3 A. It is robust for that period and also for the years  
4 immediately after that. So it is robust data to start  
5 with, the cost study.  
6 Then the only reason why one may doubt it is that  
7 these costs can move over time, and I accept that and  
8 that is the bit that is unsatisfactory. Nonetheless, is  
9 my answer on what's the reasonable and exemptable level  
10 of MIF wrong?  
11 I think, in any event, I do not think I'm  
12 overestimating the MIT for this reason because for the  
13 reason that I outlined earlier, if anything, we saw the  
14 cost of default, which is by far the biggest cost item  
15 here, would have gone up certainly in the next four  
16 years. It may have gone down a bit. But -- so on that  
17 basis, that for me is sufficient to conclude that I'm  
18 not -- I'm certainly not overestimating the MIF on this  
19 basis.  
20 So unsatisfactory, but I think I can still rely on  
21 this as a reasonable conservative measure of what comes  
22 out of a cost study.  
23 Q. This is a piece of evidence that you refer to which is  
24 not in section 5 at all, is it? This is just something  
25 that you have highlighted in your report about default.

101

1 There's no analysis in section 5 about this at all?  
2 A. Correct. I have not carried out an analysis trying to  
3 assess what the cost would have been like.  
4 Q. No.  
5 A. So I'm deriving this based on what I said in section 3  
6 of my report. That's correct.  
7 Q. For example, I could put to you that the LIBOR rates  
8 have gone from whatever it was, 6% to 0.6%, and so the  
9 cost of the banks' borrowing for the 28 free credit was  
10 gone down, for example. I could put that to you?  
11 A. For example, the free funding costs would have gone down  
12 and they are a much smaller component, but that is one  
13 component that could have gone the other way.  
14 Q. I can also put to you, although me putting it to you is  
15 that the average APR on credit cards has actually gone  
16 up over the claim period?  
17 A. That may well be the case, I don't know. But that's not  
18 an item that goes into the cost study.  
19 Q. We are going to come on to that in a moment.  
20 Were you in court when Mr Cook was cross-examining  
21 Mr Reynolds yesterday?  
22 A. No.  
23 Q. Well, it was put to Sainsbury's that the period of the  
24 claim was probably one of the most turbulent periods in  
25 the financial history for the best part of 60/70 years.

102

1 Would you accept that? We have had the eurozone crisis,  
2 we have had the banking crisis, would you accept it has  
3 been a bit turbulent?  
4 A. Yes, I accept that.  
5 Q. Yet you still don't think that you would need to revisit  
6 data that relates to 2007?  
7 A. Ideally one would like to revisit the data. I was not  
8 in the position to do so. And again, I don't think my  
9 analysis -- my resulting -- my resulting number from the  
10 cost study overestimates the MIF because on balance  
11 I would posit, but I haven't analysed it in detail,  
12 I accept, that costs would have gone up because of these  
13 turbulent times. In particular, the --  
14 MR JUSTICE BARLING: The defaults.  
15 A. The defaults, yes.  
16 MR JUSTICE BARLING: You say what you did was conservative,  
17 on balance?  
18 A. Yes.  
19 MR BREALEY: Can we go to bundle E1, please. Just out of  
20 interest, where in D3 do you refer to this, so the  
21 Tribunal have it in mind?  
22 A. I will find it. It takes me a while.  
23 Q. If you find it, we can revisit it maybe tomorrow.  
24 PROFESSOR JOHN BEATH: The use of the term "conservative"?  
25 A. No. The --

103

1 MR BREALEY: I think it is 378, is it? 379?  
2 A. In 379 I refer to the cost of defaults. So the FCA  
3 study or data showing the defaults have risen. That's  
4 what I referred to earlier. This is in the overall  
5 discussion as to -- about issuer costs, why they are  
6 higher in the EU than other ...  
7 MR JUSTICE BARLING: Forward losses. That's fraud. 3.6 is  
8 fraud, isn't it?  
9 A. Correct.  
10 MR JUSTICE BARLING: So that was very high --  
11 A. So fraud has gone down.  
12 MR JUSTICE BARLING: That's gone down.  
13 MR BREALEY: Sorry, which paragraph are you referring to?  
14 A. In 380, and in the chart you can see that fraud cost  
15 would have gone down somewhat.  
16 MR JUSTICE BARLING: Do you have a similar table for default  
17 costs?  
18 A. No, I don't. I just mention it qualitatively in 379.  
19 MR BREALEY: The only evidence that we have got before the  
20 Tribunal is 379:  
21 "The result of an increase in the number of bad  
22 debts."  
23 At E1, tab 15, again it is the General Court.  
24 Page 345, just after the page we were looking at before,  
25 starting at 209 to 211. I would imagine you have been

104

1 taken to these three paragraphs because I have referred  
2 certain witnesses to them. It relates to interest.

3 The second assumption is that issuing banks bear the  
4 majority of the costs of the system. Do you see that?  
5 Yes?

6 A. Yes.

7 Q. You must have read this before?

8 A. I have, yes.

9 Q. So the second assumption is the issuing banks bear the  
10 majority of the costs of the system. As you know,  
11 the Commission said that issuers' revenues had to be  
12 taken into account. That was apparently appealed, and  
13 the General Court said:

14 "With regard to the second assumption, as  
15 the Commission has pointed out, in essence recital 686,  
16 it is sufficient to note that it is based on a partial  
17 presentation of the issuing and acquiring business,  
18 taking into account only the costs borne by the issuing  
19 banks and omitting the revenues or other economic  
20 advantages they obtain from credit card issuing business  
21 notwithstanding the latter's importance."

22 See paragraphs 106 to 108.

23 106 to 108 is at page 332, which relates exclusively  
24 to the UK market, as you have probably seen.

25 So we established this morning that you looked at

105

1 the judgments of the courts to guide your economic  
2 analysis. The question that I'm sure you know I'm going  
3 to ask is why have you not taken into account the  
4 substantial interest that banks earn, and other economic  
5 advantages from credit cards?

6 A. I think, well, there is various angles to this. I think  
7 this particular point here in 211 is a criticism of the  
8 cost method that I think misses the point because there  
9 is a justification for the cost method despite it not  
10 explicitly accounting for issuer revenue.

11 I can go through the justification of the cost  
12 method and I can go through the question of revenues as  
13 to why or -- in what context they are or are not taken  
14 into account. Because I think it is a bit too -- it is  
15 a bit cutting corners to say the cost method doesn't  
16 directly incorporate revenues because that is correct.  
17 But that misses the point of why a cost method is  
18 justified.

19 I think it goes back to the principles. If we are  
20 in 101(3), exemptable level of MIF or the damages  
21 calculation, so what would be a reasonable exemptable  
22 level of MIF? In general, when you want to sort of  
23 regulate a product or determine a fair price, there are  
24 two main ways of doing it. One is to look at the  
25 product's costs and the other is to look at the price of

106

1 benchmark or comparable products.

2 So my cost-based method is looking at cost, and  
3 that's not uncommon in regulation. Most utility  
4 regulation is cost based. The MIT method which I also  
5 applied is more looking at the benchmark price. So that  
6 criticism, looking at cost doesn't take into account  
7 revenues, I do not think it is a valid one at that  
8 level.

9 On the issuer revenue question, clearly issuers also  
10 make revenues, but the whole principle of interchange,  
11 so going back to Baxter and also then the EDC cost  
12 methodology, is even taking into account those issuer  
13 revenues, so you look at all the revenues on the  
14 merchant side, the costs on the acquiring side, you look  
15 at all the revenues from the cardholders and the costs  
16 to the issuers, even then you have an imbalance in this  
17 four-party system. So despite the issuer revenues. And  
18 the MIF is a mechanism to allocate that.

19 So from that perspective, from the origins of the  
20 cost, even the cost method being a proxy for the  
21 imbalance does take into account issuer revenue from  
22 that perspective.

23 Q. But --

24 A. Let me then continue on the issuing revenue because it  
25 is a big theme.

107

1 You can look at this in three stages. Conceptually,  
2 empirically, what is actually the evidence on issuer  
3 revenue, and normatively, should issuer revenues be the  
4 be all and end all.

5 Conceptually, in a two-sided market a scheme may  
6 decide, look, there is a pot of money to be had from  
7 merchants, on the merchant side and from cardholders,  
8 and let's suppose the optimal, like any two-sided market  
9 you get the skewed pricing structure, so let's suppose  
10 it is right that we charge this to merchants, this  
11 amount, this MSC of 1%, say. Amex does that, the  
12 four-party scheme wants to do it as well.

13 So there is a pot of revenue on the merchant's side,  
14 and clearly there are revenues on the cardholder's side.  
15 But there is no -- that is the balance of the scheme,  
16 and then you look at cost and revenues and you find,  
17 okay, with this level of revenues on the merchant's  
18 side, acquirers actually getting a good deal out of this  
19 and that's not the right balance within the system. So  
20 let's reallocate through the MIF.

21 Because you shouldn't forget that, yes, issuers get  
22 roughly -- I don't know if this is now confidential --  
23 between 70% and 80% of the scheme's revenues are on the  
24 issuing side. So that is the issuer revenue. The rest  
25 is on the merchant's side. But -- maybe this is

108

1 confidential -- we saw the percentage of costs, and more  
 2 than 95% of the costs are incurred on the issuing side.  
 3 So the issuers have 95% of the cost and 70%, 80% of the  
 4 revenue, so there is an imbalance.  
 5 Conceptually that's where a MIF comes into play.  
 6 Then I think the argument from the other side is: but  
 7 those issuer revenues in their own right, might they be  
 8 big enough, even if you have an imbalance, forget about  
 9 that, might they actually be big enough to fund all  
 10 those issuer costs? So are the issuers making a lot  
 11 of -- getting all of that revenue and actually the  
 12 scheme can function just by the issuers paying for their  
 13 own costs?  
 14 I think, first of all, there is no evidence, as was  
 15 also established with Mr Sidenius. So no one has ever  
 16 really fully analysed, well, how profitable is issuing?  
 17 But from the FCA document, and we may come to it in more  
 18 detail, but that was published in November last year, so  
 19 after the expert reports, but one does get a clear  
 20 impression that there is a lot of competition on the  
 21 issuing side, including competition on the interest  
 22 rate. You get lots of these zero balance transfers, low  
 23 rate offers etc.  
 24 That to me suggests that, yes, it is profitable on  
 25 the issuing side but not so profitable that you can fund

109

1 the entire, basically the entire scheme cost. And the  
 2 FCA also concluded that there is no indication that  
 3 currently there is a cross subsidy from -- so interest  
 4 revenues from revolvers to transactors in the scheme.  
 5 My third point, apologies for the length, but  
 6 normatively one would also raise big question marks. Is  
 7 it even desirable to have a scheme where everything is  
 8 funded out of issuer revenues? For the scheme it  
 9 probably wouldn't be desirable. It is not the business  
 10 proposition that 40% of all cardholders who are  
 11 revolvers fund the entire thing. It is also not clear  
 12 whether a scheme like that would survive in competition  
 13 with other schemes.  
 14 Secondly, again, from reading the FCA, the FCA as  
 15 a regulator would be quite worried about a scheme that  
 16 subsidises the whole scheme out of 40% of cardholders  
 17 who are revolvers.  
 18 So that is my take, if you like, on interest  
 19 revenues.  
 20 Q. Let's just try and draw this to a close, then. Do you  
 21 accept or do you disagree with what the General Court  
 22 has said, that when you are looking at the issue of  
 23 whether issuing banks bear the majority of the costs of  
 24 the system, which is the thrust of almost the whole of  
 25 your report, that the issuing banks bear the majority of

110

1 the costs of the system? Do you disagree with what the  
 2 General Court said, or do you accept that when looking  
 3 at that you should include, or not exclude or not admit  
 4 from your consideration the interest payments and the  
 5 other revenue? In other words, do you agree with what  
 6 the General Court has said, or disagree?  
 7 A. I think it is not out of -- it is out of -- in a way  
 8 I disagree therefore, is the answer, because the cost  
 9 method is what it is. It is a cost method. It doesn't  
 10 directly take into account issuer revenues.  
 11 If the court is saying you should also look at  
 12 issuer revenues, well, the answer to that is then there  
 13 is another method, maybe we are then back into the  
 14 overall, the fallbacks studies that EDC has also done  
 15 where it did try to look at all revenues, all costs and  
 16 at that imbalance. And that's where we got those  
 17 percentages from, the 70%, 80% of costs on the issuing  
 18 side -- sorry, 70%, 80% of the revenues, but 95% of the  
 19 costs, and hence there is an imbalance taking into  
 20 account issuer revenues.  
 21 Q. Just, again, you have said I think in evidence that you  
 22 disagree with what the General Court has said. I'm  
 23 looking at section 5 of your report. Is it correct to  
 24 say that you have omitted from your analysis in  
 25 section 5 any analysis of revenues and other economic

111

1 advantages issuers obtained from their card issuing  
 2 business? Have you omitted revenues and other economic  
 3 advantages that card issuing businesses obtain in your  
 4 analysis? Have you omitted it?  
 5 A. Yes, in the sense that section 5, I apply a cost method  
 6 as a way of getting to an exemptable level of MIF. And  
 7 interest revenues do not feature in the cost method.  
 8 I think I do give the rationale for the cost method,  
 9 which is the rationale I explained earlier, that it is  
 10 in a way -- it tries to be a proxy for also this cost  
 11 revenue imbalance.  
 12 But I did not look at issuer revenue explicitly in  
 13 section 5, correct.  
 14 Q. Would you accept with me it is rather unsatisfactory  
 15 that you are giving your rationale for that halfway  
 16 through this trial in cross-examination rather than in  
 17 section 5 of your report?  
 18 A. No, I disagree. I think there is a good rationale which  
 19 I explain for the cost for doing a cost study and for  
 20 doing a MIT, which -- the MIT approach which  
 21 the Commission has been emphasising, which incidentally  
 22 also does not explicitly look at issuer revenues because  
 23 it has a completely different basis. It is a price --  
 24 cost benchmarking exercise. It also doesn't look at  
 25 interest revenues.

112

1 Q. Are you still in bundle 3, tab 3? Your first report.  
 2 A. Yes.  
 3 Q. You can clear your decks and just retain your first  
 4 report.  
 5 If we go to page 293, this is a section of this  
 6 issuer's cost methodology where you refer to merchant  
 7 benefits, correct?  
 8 A. Yes. 5C.  
 9 Q. Then over the page, at 5C.2 you refer to the conceptual  
 10 framework, yes?  
 11 A. Yes.  
 12 Q. I'm interested in paragraph 5.36, where you say:  
 13 "Merchants may benefit from accepting payment cards  
 14 in two main ways."  
 15 Then the first bullet point is a reduction in  
 16 transaction costs and risks which, certainly insofar as  
 17 transaction costs, Mr von Hinten-Reed accepts.  
 18 Then the big difference between the two of you is  
 19 the increase in sales. You would accept that that is  
 20 a big difference not only between you and  
 21 Mr von Hinten-Reed, but you and the European Commission?  
 22 A. Correct.  
 23 Q. Again, if you read 5.36:  
 24 "Merchants may benefit from accepting payment cards  
 25 in an increase in sales."

113

1 Just pausing there.  
 2 That is the exam question that you are postulating:  
 3 "Merchants may benefit from accepting payment cards  
 4 in an increase in sales."  
 5 The first point I want to ask you is: is that not  
 6 the wrong question? The correct question is whether the  
 7 MIF leads to an increase in sales.  
 8 A. Yes. But then I refer back to my earlier logic that it  
 9 is the MIF that enables these four-party schemes to be  
 10 competitive in the first place, and therefore the  
 11 benefits from cards can also be attributed to MIF.  
 12 Without -- another way of putting it, and I think  
 13 this is accepted logic, with a lower MIF a scheme is of  
 14 less size, and therefore the bigger a scheme is, the  
 15 bigger these -- you get -- the bigger these benefits  
 16 also in terms of increasing sales.  
 17 Q. So you take my now famous little restaurant in  
 18 Tottenham.  
 19 A. There is a game there tonight, I believe.  
 20 Q. I'm sadly not going. If you take my little restaurant  
 21 in Tottenham, are you really seriously suggesting that  
 22 that restaurant in Tottenham is going to lose sales  
 23 because the MasterCard credit MIF has been reduced  
 24 from 0.8% to 0.3% as a result of the regulation?  
 25 A. I'm not sure my analysis applies that linearly. I would

114

1 certainly say the restaurant in Tottenham benefits from  
 2 the fact that it accepts MasterCard. It would benefit  
 3 from accepting Amex or Visa. It benefits by offering  
 4 a better service.  
 5 The MIF, to bring the MIF in, means the MIF has  
 6 meant -- a higher MIF has meant more people have  
 7 a MasterCard so more usage, and therefore this benefit  
 8 that the restaurant in Tottenham gets in accepting the  
 9 MasterCard is bigger than if the MIF was lower and the  
 10 MasterCard scheme was correspondingly smaller.  
 11 Q. I will ask the question again. Nearly everybody in the  
 12 UK, adult -- there is information on it -- most people  
 13 have two, maybe three cards, debit cards, credit cards,  
 14 whatever. Again, where does the small restaurant get  
 15 an increase in sales as a result of the difference in  
 16 level between 0.3% and 0.8%?  
 17 A. Well, in general terms, first of all, let's say if the  
 18 restaurant didn't accept any MasterCard then it would  
 19 miss the custom of people who have a MasterCard card and  
 20 want to pay with their MasterCard --  
 21 Q. Forget the card.  
 22 A. With a higher MIF the MasterCard scheme would be bigger  
 23 because it would be more competitive, more attractive to  
 24 be issuing, and therefore there is a -- it is not  
 25 linear, I would say, but there is then also

115

1 a relationship with the benefits.  
 2 So a scheme with a higher MIF, more card  
 3 penetration, more usage, therefore is of more benefit to  
 4 the merchant or to this restaurant than the scheme that  
 5 has fewer cardholders because it has a lower MIF.  
 6 Q. Let's assume that is true, which I suggest to you that  
 7 it is not. But the MIF does lead to increased sales.  
 8 Have you in your report satisfied those four conditions  
 9 for the first condition of article 101(3)? That is to  
 10 say have you categorised the nature of the claimed  
 11 efficiency, the link between the MIF and the efficiency,  
 12 but more importantly the likelihood and magnitude of the  
 13 efficiency? Where in your report have you calculated  
 14 the magnitude of this efficiency? That is to say the  
 15 level of increased sales that merchants obtained by  
 16 reference to the MIF.  
 17 A. Yes, I think this is one of those things that probably  
 18 economics, or no one can actually quantify or -- so it  
 19 is a question one can't answer precisely.  
 20 What I have done in detail in section 5 is review  
 21 the evidence for the question: do merchants benefit?  
 22 Through individual sales I think that is reasonably  
 23 obvious, but also in the aggregate. So I looked at all  
 24 the evidence and discussed it systematically and  
 25 I concluded they do. But can you quantify it? No. It

116

1 is a yes/no answer.  
 2 I think the answer is yes, they do benefit, and  
 3 therefore I conclude that merchant -- so the credit  
 4 facility, some of the costs should be included in the  
 5 MIF, but I cannot quantify and therefore, no, I have not  
 6 done that in my report. I have identified the nature of  
 7 the benefit, but not the magnitude.  
 8 MR JUSTICE BARLING: You can't quantify the benefit of  
 9 merchants as a whole from increased sales due to the  
 10 MIF?  
 11 A. Yes, correct. I think it is very difficult for anyone  
 12 to quantify the effect of, say, credit card credit as  
 13 a whole on aggregate spend.  
 14 MR BREALEY: I'm moving on to a different topic. I don't  
 15 know whether that would be a convenient moment to pause?  
 16 MR JUSTICE BARLING: Yes.  
 17 MR BREALEY: I'm making very good progress.  
 18 MR JUSTICE BARLING: Good. Are we on target to --  
 19 MR BREALEY: Mr Harman on Monday.  
 20 MR JUSTICE BARLING: -- finish this witness some time  
 21 tomorrow?  
 22 MR BREALEY: Yes.  
 23 MR JUSTICE BARLING: Mr Brealey, I appreciate the  
 24 difficulties in doing this, but are you able to give any  
 25 prediction for those who might otherwise be excluded?

117

1 MR BREALEY: I think if the students are coming tomorrow  
 2 morning, they will be okay. But then I'm going into,  
 3 really, stuff that is confidential to MasterCard.  
 4 I have got to sort Maestro out, for example. So that is  
 5 pretty historic, but --  
 6 MR JUSTICE BARLING: The morning looks as though --  
 7 MR BREALEY: I will do my best so they get their hour's  
 8 session.  
 9 MR JUSTICE BARLING: And also for the benefit of anyone who  
 10 is here now who needs to know. All right.  
 11 I think there are some questions for the witness.  
 12 MR BREALEY: Okay.  
 13 MR JUSTICE BARLING: Is it convenient to take them at this  
 14 stage? I hope so.  
 15 MR BREALEY: Absolutely, yes.  
 16 MR SMITH: Mine is not a question for the witness, but  
 17 a request for the parties.  
 18 Questions by THE TRIBUNAL  
 19 PROFESSOR JOHN BEATH: I have a question. It goes back to  
 20 this thing about if, in the cost-based method, you  
 21 should take account of revenues which you generate from  
 22 interest.  
 23 I was thinking to myself what would William Baxter  
 24 have made of all of this, because if you think back to  
 25 the original model, what he is doing is building up

118

1 a demand curve for a transactional service and a supply  
 2 curve of transactional services. And there are two  
 3 people in that supply process: the acquirers and the  
 4 issuers.  
 5 When you think about what they are trying to do, at  
 6 what price am I willing to supply this much of  
 7 a service, now, that generates their cost curve or  
 8 supply curve. Why would an issuer, in thinking about  
 9 their bit of the aggregate supply curve, why wouldn't  
 10 they want to take account of potential revenues as a way  
 11 of -- because, you know, it is a willingness to supply,  
 12 and revenues seem to be a part of that?  
 13 A. Yes, no, absolutely. So -- and also to be clear, back  
 14 to basics, the original Baxter model which you referred  
 15 to, that was the first one to really set this out  
 16 systematically. That does take into account issuer  
 17 revenue.  
 18 So the Baxter method is clear. The Baxter method  
 19 looks at what are the total -- what is the merchant  
 20 demand curve? So everything you can get out of  
 21 merchant's willingness to pay. And what's the total  
 22 issuer -- cardholder demand curve, which includes issuer  
 23 revenue.  
 24 Then Baxter shows, if you also look at supplies, so  
 25 the acquirer cost and the issuer cost, Baxter shows, if

119

1 you are just adding all the curves together, that in  
 2 equilibrium Baxter shows that it is only by coincidence  
 3 that at that point the merchant willingness to pay  
 4 exactly covers the acquirer cost and the issuer revenue  
 5 exactly covers -- the cardholder revenue exactly covers  
 6 the issuer cost. It is only by coincidence. It is more  
 7 likely than not that you get an imbalance in the system,  
 8 and that's the MIF. That is the optimal MIF. It  
 9 reflects that imbalance, so that does take into account  
 10 issuer revenue, to be clear.  
 11 The whole story on the cost methodology, it is for  
 12 practical reasons that that is a proxy, because you only  
 13 then have to measure costs. And there are certain  
 14 advantages to it, but those three costs are in a way  
 15 an approximation of that original imbalance in the  
 16 Baxter method.  
 17 PROFESSOR JOHN BEATH: Thank you.  
 18 MR JUSTICE BARLING: Just on that -- sorry, I'm sure you  
 19 have already answered this and forgive me if you have,  
 20 and it is probably in your report. But once on the  
 21 Baxter method you have worked out what the imbalance is,  
 22 the costs and revenues on both sides of the two-sided  
 23 market, the MIF is the attempt to balance it. But it  
 24 seems that the way MIFs are arrived at don't use  
 25 a mathematical, if you like, or economic approach, but

120

1 they could, could they? They could just look at the,  
 2 I don't know, the cost side is -- you have got the,  
 3 whatever it was you said, 70% to 80% of the revenue  
 4 and 90% of the cost. Presumably there is some economic  
 5 model or some algorithm you could use to adjust it?  
 6 But that's not a method that appeals to anybody?  
 7 A. No, I think that is mainly for practical reasons. So  
 8 I think the EDC three heads of cost is an approximation.  
 9 But I think also EDC, Mr Sidenius tried to explain that  
 10 in 2002, I believe they tried to do that whole exercise  
 11 as a cross-check. And what they found I think is, yes,  
 12 if you look at everything in the round and  
 13 mathematically, what's the difference? What's the  
 14 imbalance? Then that was actually reasonably in line  
 15 with the three heads of costs.  
 16 MR JUSTICE BARLING: So they did it as a cross-check?  
 17 A. They did it as a cross-check at the time.  
 18 I think another factor here that is relevant, Baxter  
 19 also describes how historically these things came about  
 20 before any economist had any model, right? So it was  
 21 sort of naturally -- maybe this is my market knows best  
 22 argument, but these old systems, cheques and credit  
 23 cards, the participants in the scheme they kind of knew  
 24 what was the imbalance. Baxter merely provided  
 25 a justification: look, it shouldn't be --

1 21

1 MR JUSTICE BARLING: It is the clearing of cheques in the  
 2 early American system?  
 3 A. Yes, the market created interchange, if you like.  
 4 MR JUSTICE BARLING: Yes.  
 5 MR BREALEY: As Professor Beath knows, the Commission  
 6 analysed Baxter in the Commission's decision at  
 7 paragraph 702 and onwards quite substantially. The OFT  
 8 did as well.  
 9 MR JUSTICE BARLING: Yes.  
 10 MR BREALEY: Remember that Mr Sidenius, on his two  
 11 cross-checks, neither study he accepted were  
 12 article 101(3) compliant.  
 13 MR SMITH: Mine was more a point of information, very  
 14 sensible of the considerable help we have had from both  
 15 parties to date. But we were wondering whether it would  
 16 be possible for MasterCard to provide us with a schedule  
 17 of the UK MIFs that it set over time over the claim  
 18 period, but to do so not on a blended or average basis,  
 19 but to provide us with the MIFs that were applicable on  
 20 a card-by-card or card type-by-card type basis for both  
 21 debit and credit cards.  
 22 MR JUSTICE BARLING: And premium and --  
 23 MR SMITH: Indeed. So we would like to be able to see what,  
 24 for instance, the MIF was for a premium card as well as  
 25 for a standard credit card, as well as for a debit card,

1 22

1 and there may be other varieties in between.  
 2 I don't know whether MasterCard will have the  
 3 equivalent Visa MIF rates. If those are available, we  
 4 would obviously be interested in seeing those also.  
 5 Then, finally, and this is more for Sainsbury's,  
 6 having heard about the pound-for-pound monitoring of  
 7 Sainsbury's costs, we wonder whether it would be  
 8 possible to have a breakdown of, again, over the claim  
 9 period, what Sainsbury's paid to its acquiring banks  
 10 both in terms of the rate, in other words, the merchant  
 11 service charge rate that was paid as a percentage, or  
 12 whatever rate it was, and the total amount in absolute  
 13 terms that was paid, ideally differentiating between  
 14 card schemes.  
 15 MR BREALEY: Okay.  
 16 MR JUSTICE BARLING: Good. Thank you.  
 17 We will see you tomorrow. Make sure you don't  
 18 talk --  
 19 MR COOK: Sorry, Mr Smith, one question on that query. You  
 20 asked for a rate schedule. Do you want us to break it  
 21 down into volume of business? I think that would be  
 22 difficult to do. If you wanted a rate table that would  
 23 be considerable easier.  
 24 MR SMITH: No, I think just a rates table is all we would  
 25 like. Thank you.

1 23

1 (4.30 pm)  
 2 (End of open session)  
 3 (The court adjourned until 10.30 am  
 4 on Friday, 26th February 2016)  
 5  
 6  
 7  
 8  
 9  
 10  
 11  
 12  
 13  
 14  
 15  
 16  
 17  
 18  
 19  
 20  
 21  
 22  
 23  
 24  
 25

1 24

---

	INDEX	PAGE
1		
2		
3	(Open session) .....	1
4	DR GUNNAR NIELS (affirmed) .....	2
5	Examination-in-chief by MR HOSKINS .....	2
6	Cross-examination by MR BREALEY .....	3
7	(End of open session) .....	38
8	(Beginning of yellow confidential .....	38
	session - REDACTED)	
9		
	(End of yellow confidential session) .....	38
10		
	(Open session) .....	38
11		
	Questions by THE TRIBUNAL .....	118
12		
	(End of open session) .....	124
13		
14		
15		
16		
17		
18		
19		
20		
21		
22		
23		
24		
25		



<p><b>A</b></p> <p><b>A1 (3)</b> 24:15 25:16 27:24</p> <p><b>Aberdeen (1)</b> 43:14</p> <p><b>able (13)</b> 1:17 22:15 22:21 23:2,11 35:21 37:15 38:10 38:11 58:20 68:14 117:24 122:23</p> <p><b>Abrahams (3)</b> 38:23 40:2 41:9</p> <p><b>absence (4)</b> 14:21 19:12,13 21:16</p> <p><b>absolute (1)</b> 123:12</p> <p><b>absolutely (3)</b> 79:14 118:15 119:13</p> <p><b>absorb (1)</b> 15:2</p> <p><b>academic (10)</b> 24:13 24:22,25 25:1,8,20 26:8,11 27:12,16</p> <p><b>academics (1)</b> 18:5</p> <p><b>accept (42)</b> 13:3 23:4 23:7,8 24:6 26:7,14 28:16 29:23 31:9 32:6 36:5 37:9 39:10,21 45:21 48:23 50:20 52:22 78:1,5 81:3,21,23 82:14 92:20,23 94:2 98:8,13 99:9 100:12 101:7 103:1 103:2,4,12 110:21 111:2 112:14 113:19 115:18</p> <p><b>acceptable (2)</b> 50:18 51:13</p> <p><b>accepted (13)</b> 12:25 28:20 29:6 32:9 49:5 54:7 73:4 80:10 85:21 100:13 100:15 114:13 122:11</p> <p><b>accepting (5)</b> 113:13 113:24 114:3 115:3 115:8</p> <p><b>accepts (2)</b> 113:17 115:2</p> <p><b>access (1)</b> 35:17</p> <p><b>account (18)</b> 37:8 48:21 71:5,6 99:23 105:12,18 106:3,14 107:6,12,21 111:10 111:20 118:21 119:10,16 120:9</p> <p><b>accounting (1)</b> 106:10</p> <p><b>achieved (1)</b> 49:25</p> <p><b>acquirer (26)</b> 63:3,25 65:13,13,14,15,20 65:22,23 67:16,25 68:1,2,8,20 69:1,3 70:10,14 71:19,22 72:2,21 74:16 119:25 120:4</p> <p><b>acquirer's (1)</b> 72:1</p> <p><b>acquirers (16)</b> 61:15 65:7 70:6,24 72:15 73:4,14,16,17,21 74:2,7,10,12 108:18 119:3</p> <p><b>acquiring (19)</b> 31:11 61:8 63:6 64:6 66:8 66:13,14,21 70:8 70:17 71:10 72:2 76:9,20,22 95:18 105:17 107:14 123:9</p> <p><b>act (2)</b> 4:12 10:4</p> <p><b>acting (3)</b> 10:2,23 46:12</p>	<p><b>active (3)</b> 6:17,22 13:21</p> <p><b>activity (1)</b> 60:25</p> <p><b>actual (1)</b> 81:9</p> <p><b>adding (1)</b> 120:1</p> <p><b>address (1)</b> 50:22</p> <p><b>adduce (1)</b> 47:21</p> <p><b>adducing (1)</b> 51:20</p> <p><b>adjourned (1)</b> 124:3</p> <p><b>adjournment (1)</b> 45:16</p> <p><b>adjust (1)</b> 121:5</p> <p><b>adjusted (2)</b> 84:18 85:1</p> <p><b>admit (1)</b> 111:3</p> <p><b>adopted (5)</b> 13:20 46:20 82:21 83:3,4</p> <p><b>adult (1)</b> 115:12</p> <p><b>advance (1)</b> 1:17</p> <p><b>advanced (1)</b> 56:6</p> <p><b>advantages (12)</b> 54:1 54:5,10 57:8 59:15 61:13 66:21 105:20 106:5 112:1,3 120:14</p> <p><b>adverse (1)</b> 25:6</p> <p><b>advertising (3)</b> 40:17 41:14,15</p> <p><b>advice (2)</b> 4:16,17</p> <p><b>advised (9)</b> 4:5,6 5:7 5:10,12 7:3 46:14 95:22 96:22</p> <p><b>advisers (5)</b> 5:13 6:11 8:3 13:25 35:15</p> <p><b>affect (1)</b> 73:10</p> <p><b>affirmed (2)</b> 2:8 125:4</p> <p><b>afternoon (1)</b> 45:20</p> <p><b>aggregate (6)</b> 21:23 83:10,18 116:23 117:13 119:9</p> <p><b>ago (6)</b> 4:9,10 14:19 73:16 78:14 92:15</p> <p><b>agree (17)</b> 15:8,8,24 16:3 19:4 28:13 29:24 32:5 33:10 39:24 58:10 62:25 68:23 78:7 85:9 97:5 111:5</p> <p><b>agreed (5)</b> 29:4 60:14 66:18 67:14 72:25</p> <p><b>agreements (12)</b> 49:18 64:6,7,24 76:15 80:18 81:2,13,15 81:18 84:6,7</p> <p><b>agreements (3)</b> 76:4 77:9 81:12</p> <p><b>agrees (1)</b> 68:8</p> <p><b>agricultural (1)</b> 25:11</p> <p><b>air (1)</b> 52:2</p> <p><b>al (4)</b> 18:2,4,6,9</p> <p><b>albeit (1)</b> 68:9</p> <p><b>alcohol (2)</b> 26:1,2</p> <p><b>algorithm (1)</b> 121:5</p> <p><b>allegation (1)</b> 12:22</p> <p><b>allocate (2)</b> 89:24 107:18</p> <p><b>allow (1)</b> 67:19</p> <p><b>allows (6)</b> 50:7 55:8 55:14 56:17 58:22 60:9</p> <p><b>alongside (1)</b> 5:8</p> <p><b>America (1)</b> 26:7</p> <p><b>American (1)</b> 122:2</p> <p><b>Amex (9)</b> 59:6 60:22 68:16 72:5,12 78:19 79:1 108:11 115:3</p> <p><b>amount (2)</b> 108:11 123:12</p>	<p><b>analogy (3)</b> 25:7 73:19 73:20</p> <p><b>analyse (2)</b> 20:16 97:24</p> <p><b>analysed (7)</b> 20:17 52:10,12 58:7 103:11 109:16 122:6</p> <p><b>analyses (1)</b> 76:2</p> <p><b>analysing (1)</b> 50:15</p> <p><b>analysis (46)</b> 4:22,25 9:3,11 15:9 23:21 25:13 26:6,17 27:3 35:18,21 36:9 37:5 41:2 42:24 47:23 50:14,17 53:24 54:14,16 56:16 57:6 58:12,19 59:25 60:6 75:9,13 77:3,4,18,20 82:2 91:1 99:14,17 102:1,2 103:9 106:2 111:24,25 112:4 114:25</p> <p><b>angles (1)</b> 106:6</p> <p><b>annex (1)</b> 7:10</p> <p><b>annual (1)</b> 14:23</p> <p><b>answer (24)</b> 39:8,13 39:18 40:15 55:5 60:16 83:22 94:16 94:22 95:2,14 96:10,20,24 97:5,8 100:10,11 101:9 111:8,12 116:19 117:1,2</p> <p><b>answered (1)</b> 120:19</p> <p><b>answers (1)</b> 37:25</p> <p><b>anti-competitive (3)</b> 76:11,12 81:12</p> <p><b>anybody (1)</b> 121:6</p> <p><b>anymore (1)</b> 96:13</p> <p><b>anyway (3)</b> 12:25 84:12,13</p> <p><b>apologies (1)</b> 110:5</p> <p><b>apparently (2)</b> 73:17 105:12</p> <p><b>appeal (6)</b> 4:21 7:5 10:21 11:1 46:19 99:16</p> <p><b>appealed (1)</b> 105:12</p> <p><b>appeals (4)</b> 7:13 8:20 10:2 121:6</p> <p><b>appendix (3)</b> 24:15 25:16 27:24</p> <p><b>applicable (1)</b> 122:19</p> <p><b>application (4)</b> 34:6 45:22 80:9 96:12</p> <p><b>applied (4)</b> 24:23 26:10 95:21 107:5</p> <p><b>applies (3)</b> 1:15 38:12 114:25</p> <p><b>apply (4)</b> 29:15 95:20 95:23 112:5</p> <p><b>applying (2)</b> 4:25 26:21</p> <p><b>appreciable (4)</b> 54:1 54:10 57:8 59:15</p> <p><b>appreciate (4)</b> 1:12 37:7 87:10 117:23</p> <p><b>appreciative (1)</b> 66:21</p> <p><b>approach (8)</b> 53:1 60:3 83:3 84:19 85:2 89:17 112:20 120:25</p> <p><b>approached (3)</b> 48:6 80:3 81:21</p> <p><b>appropriate (1)</b> 43:7</p> <p><b>approving (1)</b> 47:3</p> <p><b>approximate (1)</b> 53:4</p>	<p><b>approximation (2)</b> 120:15 121:8</p> <p><b>APR (1)</b> 102:15</p> <p><b>argued (1)</b> 56:10</p> <p><b>arguing (1)</b> 56:4</p> <p><b>argument (11)</b> 16:6 54:4 56:6,19,24 60:21 62:6 68:4 83:13 109:6 121:22</p> <p><b>arguments (4)</b> 47:9,11 52:20,21</p> <p><b>arising (4)</b> 54:1,10 57:8 59:15</p> <p><b>arrangement (1)</b> 62:5</p> <p><b>arrangements (1)</b> 85:12</p> <p><b>arrived (1)</b> 120:24</p> <p><b>article (25)</b> 4:25 5:2 45:23 46:23 47:2,7 49:4 50:3 53:25 55:3 57:7 58:5,17 59:10,14 61:20 78:3,10 80:9,25 81:10,11,18 116:9 122:12</p> <p><b>articulating (1)</b> 72:20</p> <p><b>ascertain (1)</b> 41:1</p> <p><b>aside (1)</b> 68:10</p> <p><b>asked (7)</b> 39:15 46:1 55:1 94:12,24 96:19 123:20</p> <p><b>asking (4)</b> 41:11 64:3 72:24 95:2</p> <p><b>aspect (1)</b> 63:4</p> <p><b>aspects (1)</b> 43:22</p> <p><b>assertion (2)</b> 15:7,8</p> <p><b>assess (4)</b> 24:16 28:21 29:17 102:3</p> <p><b>assessed (3)</b> 29:5,21 48:22</p> <p><b>assessing (1)</b> 22:10</p> <p><b>assessment (5)</b> 18:8 22:16 23:3,12 89:22</p> <p><b>assist (3)</b> 40:12 41:20 43:9</p> <p><b>assistance (3)</b> 26:5 34:2 64:3</p> <p><b>association (1)</b> 47:1</p> <p><b>associations (1)</b> 33:17</p> <p><b>assume (4)</b> 60:11 70:6 78:24 116:6</p> <p><b>assuming (2)</b> 66:7 77:22</p> <p><b>assumption (6)</b> 40:8 67:15 72:24 105:3 105:9,14</p> <p><b>attached (1)</b> 99:14</p> <p><b>attain (1)</b> 47:22</p> <p><b>attempt (1)</b> 120:23</p> <p><b>attempted (6)</b> 50:2,4 54:12 55:2,5 83:6</p> <p><b>attention (1)</b> 30:24</p> <p><b>attractive (3)</b> 62:1 66:6 115:23</p> <p><b>attribute (3)</b> 90:7,12 90:19</p> <p><b>attributed (3)</b> 54:23 55:22 114:11</p> <p><b>audit (2)</b> 87:24 92:18</p> <p><b>Australia (16)</b> 11:22 12:8,14,23 14:20 17:1,8 19:7,14,15 19:21,23 24:20,24 26:4 27:1</p> <p><b>Australia's (2)</b> 11:23 14:24</p> <p><b>Australian (1)</b> 20:17</p> <p><b>authorities (3)</b> 32:14</p>	<p>32:20 34:15</p> <p><b>authority (3)</b> 29:9 81:16 82:20</p> <p><b>authors (2)</b> 17:17 19:1</p> <p><b>availability (2)</b> 39:18 39:23</p> <p><b>available (6)</b> 14:8 42:12 46:5 50:12 98:21 123:3</p> <p><b>average (2)</b> 102:15 122:18</p> <p><b>avoid (2)</b> 65:4 79:18</p> <p><b>avoidance (1)</b> 86:8</p> <p><b>aware (9)</b> 1:8 33:19 33:23 34:23 35:8 39:8 83:4 86:20 87:6</p>	<p>102:5 105:16 107:4</p> <p><b>basic (2)</b> 55:11 63:22</p> <p><b>basically (6)</b> 4:14,19 83:23 84:17 96:11 110:1</p> <p><b>basics (3)</b> 58:24 62:24 119:14</p> <p><b>basis (19)</b> 17:7 18:10 28:14,18,22 29:5 32:4,11,13 85:22 90:10,13 95:10 99:20 101:17,19 112:23 122:18,20</p> <p><b>basket (1)</b> 31:25</p> <p><b>battles (1)</b> 10:11</p> <p><b>Baxter (14)</b> 58:17 107:11 118:23 119:14,18,18,24,25 120:2,16,21 121:18 121:24 122:6</p> <p><b>bear (7)</b> 47:3 66:11 71:11 105:3,9 110:23,25</p> <p><b>bearing (2)</b> 43:18 44:16</p> <p><b>bears (1)</b> 42:3</p> <p><b>Beath (4)</b> 103:24 118:19 120:17 122:5</p> <p><b>Beath's (1)</b> 73:15</p> <p><b>beef (4)</b> 43:14 44:1,2 44:3</p> <p><b>began (1)</b> 4:9</p> <p><b>beginning (3)</b> 2:4 38:15 125:8</p> <p><b>behalf (2)</b> 7:8 66:8</p> <p><b>behaviour (1)</b> 27:8</p> <p><b>believe (6)</b> 23:19 86:23 95:22 96:12 114:19 121:10</p> <p><b>believes (2)</b> 28:17,19</p> <p><b>bell (1)</b> 75:4</p> <p><b>benchmark (2)</b> 107:1 107:5</p> <p><b>benchmarking (1)</b> 112:24</p> <p><b>benefit (37)</b> 31:12 42:4,14 47:2 57:14 70:23 71:9 75:19 75:22 77:8 82:7,9 82:17 83:9,10,16 83:16 85:1 86:17 90:25 91:1,8,11,19 91:22,24 113:13,24 114:3 115:2,7 116:3,21 117:2,7,8 118:9</p> <p><b>benefiting (2)</b> 85:22 87:11</p> <p><b>benefits (38)</b> 30:25 31:6,20 48:20 54:20 56:20,23,25 57:17,20,21,23 58:1,2,4,11,13 66:22 71:2,7,17 75:2,4,7 81:8 82:12 82:17 89:21,25 90:5,16,21 113:7 114:1,11,15 115:1,3 116:1</p> <p><b>best (7)</b> 67:4 73:11,12 98:21 102:25 118:7 121:21</p> <p><b>better (11)</b> 31:5,10 34:19 35:7,13,23 36:4,6 68:7 69:7 115:4</p> <p><b>bid (1)</b> 65:17</p> <p><b>big (11)</b> 60:16 61:17</p>	<p>61:20 70:6 83:4 107:25 109:8,9 110:6 113:18,20</p> <p><b>bigger (6)</b> 71:25 114:14,15,15 115:9 115:22</p> <p><b>biggest (2)</b> 98:25 101:14</p> <p><b>bilateral (8)</b> 63:1 64:11,24 65:10,16 69:22 72:25 74:24</p> <p><b>bilaterally (2)</b> 60:14 61:12</p> <p><b>bilaterals (3)</b> 61:21,22 69:20</p> <p><b>bit (36)</b> 6:13,18 9:15 26:10 27:23 34:14 34:17 42:16 54:25 55:25 60:19,20 63:13 66:23 67:19 69:6,20 70:4 71:17 72:11,16,17 74:12 80:6 82:13 84:6 86:8,9 89:20 98:22 101:8,16 103:3 106:14,15 119:9</p> <p><b>bits (1)</b> 24:2</p> <p><b>blended (1)</b> 122:18</p> <p><b>blue (1)</b> 88:19</p> <p><b>board (1)</b> 51:4</p> <p><b>body (1)</b> 22:10</p> <p><b>book (1)</b> 29:9</p> <p><b>borne (1)</b> 105:18</p> <p><b>borrowing (1)</b> 102:9</p> <p><b>bottom (3)</b> 40:1 73:10 74:14</p> <p><b>bought (1)</b> 32:1</p> <p><b>Boyle (1)</b> 2:3</p> <p><b>brackets (2)</b> 49:11 87:10</p> <p><b>brain (1)</b> 8:7</p> <p><b>BRC (1)</b> 33:17</p> <p><b>break (6)</b> 27:17 36:12 36:17 92:6,9 123:20</p> <p><b>breakdown (2)</b> 88:22 123:8</p> <p><b>Brealey (48)</b> 1:14,15 1:22,25 2:2 3:15,16 3:17 27:17,21,24 36:11,19 37:14,17 37:21 38:2,20 43:9 45:10,12,18,20 60:8 62:7 66:18 74:19,20 88:21 92:7,11 103:19 104:1,13,19 117:14 117:17,19,22,23 118:1,7,12,15 122:5,10 123:15 125:6</p> <p><b>brief (1)</b> 30:14</p> <p><b>bring (6)</b> 3:23 50:6 55:7 73:19,20 115:5</p> <p><b>brings (2)</b> 50:6 55:7</p> <p><b>build (1)</b> 24:2</p> <p><b>building (1)</b> 118:25</p> <p><b>bulk (2)</b> 50:17 60:6</p> <p><b>bullet (5)</b> 9:6,15 14:22 88:15 113:15</p> <p><b>bundle (21)</b> 2:22 13:7 13:8 16:8 22:4 28:24 29:2 30:1 36:19 38:21 48:7 53:8,16 75:11 78:11 84:23 93:16 93:18 99:12 103:19 113:1</p>
--	---	--	---	---	--	---

<b>bundles (3)</b> 78:11 84:22 99:11	95:5 96:11 102:17 <b>case-by-case (7)</b> 28:14 28:18,21 29:5 32:4 32:11,13	<b>client (4)</b> 3:22 4:2,13 34:9	<b>competition (28)</b> 4:11 20:12,15,18,22,25 21:11 32:24 42:10 96:22 54:22 55:17 58:25 70:23 72:4,5 73:22 73:24 74:1 76:4,14 78:19 79:7,8 81:10 110:20 110:12	34:13 42:6 77:20 87:18 90:11,23 93:6 <b>considerable (2)</b> 122:14 123:23 <b>consideration (3)</b> 34:22 46:8 111:4 <b>considered (3)</b> 28:13 28:17 31:24 <b>consistency (2)</b> 6:7 11:5 <b>consistent (4)</b> 13:1,3 35:5 40:7 <b>constrained (1)</b> 64:15 <b>consultants (1)</b> 100:5 <b>consumer (6)</b> 15:1 32:1 43:23 44:5,10 44:22 <b>consumers (25)</b> 17:3 17:20,21 20:11,25 30:18 31:6,12,12 31:19 33:5,8 42:9 42:14,15,21 45:1 77:20 80:25 81:5,8 81:14,17 82:25 83:2 <b>contained (1)</b> 3:12 <b>contains (1)</b> 15:11 <b>context (10)</b> 9:10 16:1 24:1 28:23 33:7,10 53:11 75:17 86:2 106:13 <b>continue (2)</b> 87:7 107:24 <b>contrary (1)</b> 34:24 <b>contribute (1)</b> 77:11 <b>controversial (1)</b> 82:20 <b>convenient (3)</b> 92:5 117:15 118:13 <b>convincing (15)</b> 45:22 45:25 47:9,11,11 47:15,21,25 49:12 50:4 51:21 55:6 59:12 91:18 98:9 <b>Cook (2)</b> 102:20 123:19 <b>corners (2)</b> 44:21 106:15 <b>correct (45)</b> 2:14 4:7 11:5 15:6 17:9 23:11 28:4,14,18 32:12 45:6,7,8,9 46:21 47:17 49:16 49:19,22,25 51:23 51:23,24 75:1 84:4 84:15 88:2,16 89:17 90:23 94:16 95:11 96:13 97:25 100:23 102:2,6 104:9 106:16 111:23 112:13 113:7,22 114:6 117:11 <b>correctly (4)</b> 7:9 13:22 53:22 57:5 <b>correlation (2)</b> 14:25 15:14 <b>correspondingly (1)</b> 115:10 <b>cost (115)</b> 8:8 14:25 15:2,3,15,16 17:2 22:2,11,20 26:15 31:13,18 33:4 41:25 42:21 44:6,9 44:19 49:1 50:19 50:20 61:14 66:11 82:7,8 84:18,21 85:2,3,15,19 86:13	86:15,17 87:2,18 87:22 88:8,22,22 89:1,3,15,16,22 90:2 91:21,22 92:16,21 93:15,16 95:12 96:1,8,15,22 97:3,7,12,19 98:17 98:17,20,25 99:1 99:10 100:3,6,7,20 101:5,14,14,22 102:3,9,18 103:10 104:2,14 106:8,9 106:11,15,17 107:2 107:4,6,11,20,20 108:16 109:3 110:1 111:8,9 112:5,7,8 112:10,19,19,24 113:6 119:7,25,25 120:4,6,11 121:2,4 121:8 <b>cost-based (4)</b> 82:10 89:17 107:2 118:20 <b>costing (1)</b> 44:1 <b>costs (67)</b> 17:3 27:9 27:13 32:22 33:6 37:9 42:7 44:7,21 61:1,3,6,6,16 64:11 76:19,22 77:14 85:17,17,17,18,22 90:6,8,9,13,15,20 90:24 91:1 98:18 98:18,22 99:4,7,23 100:1,3 101:7 102:11 103:12 104:5,17 105:4,10 105:18 106:25 107:14,15 109:1,2 109:10,13 110:23 111:1,15,17,19 113:16,17 117:4 120:13,14,22 121:15 123:7 <b>counterfactual (2)</b> 72:22 79:21 <b>counterweight (1)</b> 30:19 <b>countries (2)</b> 25:5,7 <b>Coupe (1)</b> 36:5 <b>Cournot (1)</b> 61:24 <b>course (8)</b> 14:18 26:14 27:6,13 47:17 70:13 81:3 83:8 <b>court (35)</b> 1:18,23 5:3 7:6 9:12,13 10:1,6 23:15,19 25:17 34:2 37:18 45:18 46:10 37:25 47:16 48:19,25 53:17,19 53:22 54:5 56:13 57:5,16 102:20 104:23 105:13 110:21 111:2,6,11 111:22 124:3 <b>court's (1)</b> 81:20 <b>courts (2)</b> 7:5 106:1 <b>covers (3)</b> 120:4,5,5 <b>CRA (10)</b> 19:25 20:4,4 21:6,10,17,22 22:1 22:25 35:17 <b>create (2)</b> 35:3 75:21 <b>created (2)</b> 56:4 122:3 <b>creates (2)</b> 57:13 75:2 <b>creating (2)</b> 31:2 76:7 <b>credit (32)</b> 11:21 32:22 50:5,7 55:6,8 58:11 60:10 71:8 79:19 85:16,23 88:8,21 89:2,3	90:20 91:19,20 99:1 102:9,15 105:20 106:5 114:23 115:13 117:3,12,12 121:22 122:21,25 <b>crisis (2)</b> 103:1,2 <b>criteria (7)</b> 24:23 29:20 52:5,22 53:5 60:1 83:20 <b>criteron (5)</b> 26:10,21 27:14 81:23 83:5 <b>criticism (3)</b> 51:4 106:7 107:6 <b>criticisms (1)</b> 50:24 <b>cross (2)</b> 33:3 110:3 <b>cross-border (1)</b> 76:7 <b>cross-check (3)</b> 121:11 121:16,17 <b>cross-checks (1)</b> 122:11 <b>cross-examination (3)</b> 3:16 112:16 125:6 <b>cross-examining (1)</b> 102:20 <b>current (10)</b> 4:23,24 10:16 12:5 16:15 21:19,20 58:18 79:17 87:21 <b>currently (2)</b> 95:20 110:3 <b>curve (7)</b> 119:1,2,7,8,9 119:20,22 <b>curves (1)</b> 120:1 <b>custom (1)</b> 115:19 <b>customer (7)</b> 39:11 43:16,17 44:15,17 45:8 76:23 <b>customers (5)</b> 22:18 31:22 40:17 72:12 73:13 <b>cut (5)</b> 43:12,15 70:15 71:2 88:24 <b>cutting (4)</b> 44:7,20,21 106:15
<b>calculate (3)</b> 93:7 97:7 100:14	<b>centrally (1)</b> 64:19 <b>certain (8)</b> 14:14 25:10 26:9 43:13 60:25 73:22 105:2 120:13 <b>certainly (19)</b> 6:9,16 6:23 7:18 8:10 9:24 11:3 24:25 37:6 57:25 58:19 62:9 79:3,17 98:16 101:15,18 113:16 115:1	<b>collective (3)</b> 67:3 76:19 85:12 <b>collectively (6)</b> 67:4 68:21,23 69:16,25 73:17 <b>collusion (1)</b> 76:12 <b>come (25)</b> 7:13 12:6 19:3 21:19 40:10 41:11 51:12 52:7 53:3 54:21 55:20 60:4 61:21 62:7 63:17,22 74:24 80:6 82:9,17 91:4 91:25 94:5 102:19 109:17 <b>comes (7)</b> 48:13 51:10 74:13 82:15 91:23 101:21 109:5 <b>comfortable (1)</b> 2:11 <b>coming (5)</b> 1:10 75:10 75:25 78:13 118:1 <b>command (1)</b> 6:5 <b>comment (5)</b> 24:5 33:2,3 36:7 41:19 <b>comments (1)</b> 33:1 <b>commercial (2)</b> 6:24 100:24 <b>Commission (40)</b> 6:19 6:22 7:10 9:8 28:2 28:17,19 29:11,23 30:2 32:3,21 34:3 46:19 51:10 53:1 57:11,16 60:4 76:2 76:6,18 78:14 79:25 80:21 85:20 86:4,11,15,16 87:1 87:7,11,12 96:11 105:11,15 112:21 113:21 122:5 <b>Commission's (11)</b> 13:10 28:7 32:7 33:14 48:8 75:13 77:3,4 80:11 85:25 122:6 <b>committee (1)</b> 74:9 <b>common (1)</b> 9:1 <b>communication (1)</b> 37:6 <b>companies (1)</b> 6:7 <b>company (3)</b> 44:18 87:20 100:6 <b>comparable (4)</b> 24:17 24:20 76:24 107:1 <b>compelling (2)</b> 77:18 101:2 <b>compensate (2)</b> 81:8 82:1 <b>compete (5)</b> 31:15 39:22 43:1 58:20 75:25 <b>competing (1)</b> 67:18	<b>competitors (1)</b> 20:7 <b>compiled (1)</b> 88:5 <b>complaint (1)</b> 46:19 <b>complement (1)</b> 22:14 <b>complements (1)</b> 61:24 <b>completely (4)</b> 52:5 78:16 79:13 112:23 <b>compliant (1)</b> 122:12 <b>comply (2)</b> 59:21,22 <b>component (2)</b> 102:12,13 <b>concentrate (1)</b> 3:18 <b>concentrated (1)</b> 70:8 <b>concentrating (1)</b> 98:4 <b>concept (1)</b> 81:7 <b>conceptual (1)</b> 113:9 <b>Conceptually (3)</b> 108:1,5 109:5 <b>concern (1)</b> 32:25 <b>concerned (1)</b> 7:14 <b>concerns (1)</b> 44:14 <b>conclude (5)</b> 11:14 18:10 26:17 101:17 117:3 <b>concluded (6)</b> 53:23 57:5 76:6,18 110:2 116:25 <b>conclusion (4)</b> 11:15 19:3 27:10 53:22 <b>conclusions (7)</b> 15:23 16:2 18:7 28:7 36:3 36:10 88:25 <b>conclusive (1)</b> 15:22 <b>condition (19)</b> 48:9,14 49:15 50:18 52:3,4 53:6,9,24 54:8 57:6 78:8,9 80:13,24 81:18 84:1,2 116:9 <b>conditions (20)</b> 29:22 47:3,8 48:2,7 50:2 50:16,16,23 51:6 51:16,18 52:9,10 52:12,17,25 55:2 77:12 116:8 <b>conduct (1)</b> 37:24 <b>confidential (11)</b> 37:13 38:9,15,17 89:6 99:2 108:22 109:1 118:3 125:8 125:9 <b>confidentiality (1)</b> 38:7 <b>confirm (3)</b> 2:20 3:10 3:12 <b>confirmed (1)</b> 87:12 <b>confusion (2)</b> 86:8,9 <b>consequence (3)</b> 21:7 70:24 72:21 <b>Consequently (1)</b> 47:7 <b>conservative (7)</b> 90:7 91:11 92:2 99:24 101:21 103:16,24 <b>consider (11)</b> 23:22 24:19 25:12 34:12	<b>cost-based (4)</b> 82:10 89:17 107:2 118:20 <b>costing (1)</b> 44:1 <b>costs (67)</b> 17:3 27:9 27:13 32:22 33:6 37:9 42:7 44:7,21 61:1,3,6,6,16 64:11 76:19,22 77:14 85:17,17,17,18,22 90:6,8,9,13,15,20 90:24 91:1 98:18 98:18,22 99:4,7,23 100:1,3 101:7 102:11 103:12 104:5,17 105:4,10 105:18 106:25 107:14,15 109:1,2 109:10,13 110:23 111:1,15,17,19 113:16,17 117:4 120:13,14,22 121:15 123:7 <b>counterfactual (2)</b> 72:22 79:21 <b>counterweight (1)</b> 30:19 <b>countries (2)</b> 25:5,7 <b>Coupe (1)</b> 36:5 <b>Cournot (1)</b> 61:24 <b>course (8)</b> 14:18 26:14 27:6,13 47:17 70:13 81:3 83:8 <b>court (35)</b> 1:18,23 5:3 7:6 9:12,13 10:1,6 23:15,19 25:17 34:2 37:18 45:18 46:10 37:25 47:16 48:19,25 53:17,19 53:22 54:5 56:13 57:5,16 102:20 104:23 105:13 110:21 111:2,6,11 111:22 124:3 <b>court's (1)</b> 81:20 <b>courts (2)</b> 7:5 106:1 <b>covers (3)</b> 120:4,5,5 <b>CRA (10)</b> 19:25 20:4,4 21:6,10,17,22 22:1 22:25 35:17 <b>create (2)</b> 35:3 75:21 <b>created (2)</b> 56:4 122:3 <b>creates (2)</b> 57:13 75:2 <b>creating (2)</b> 31:2 76:7 <b>credit (32)</b> 11:21 32:22 50:5,7 55:6,8 58:11 60:10 71:8 79:19 85:16,23 88:8,21 89:2,3	<b>card (44)</b> 11:21 17:18 30:20 31:9 33:19 33:23 34:4,20 35:7 35:8,10,11,14 36:4 50:5,7 54:17 55:6,8 55:12,14,18,20 58:1 60:10 66:19 71:3 76:24 85:16 88:8,21 95:16 105:20 112:1,3 115:19,21 116:2 117:12 122:20,24 122:25,25 123:14 <b>card-by-card (1)</b> 122:20 <b>cardholder (5)</b> 5:17 60:20 90:21 119:22 120:5 <b>cardholders (1)</b> 108:14 <b>cardholders (9)</b> 54:6 59:6 91:11,20 107:15 108:7 110:10,16 116:5 <b>cards (23)</b> 31:13 32:22 57:14 58:11 59:3 63:3,5 79:20,20 85:23 89:2,3 102:15 106:5 113:13,24 114:3,11 115:13,13,13 121:23 122:21 <b>careful (1)</b> 29:16 <b>carried (4)</b> 87:18,22 92:17 102:2 <b>carrying (2)</b> 93:1,2 <b>cars (1)</b> 25:10 <b>case (38)</b> 4:23,24 5:1 5:4 6:19,20 9:4,11 9:22 10:7,16 12:5 13:23 15:21 16:3 20:21 21:4,19,20 29:19 33:12 35:19 36:2 41:25 42:4 44:6,22 48:19 53:18 63:18 71:5 86:6,10 87:1,21	
<b>C</b>					<b>D</b>	
					<b>D2.1 (2)</b> 28:24 29:2 <b>D3 (8)</b> 2:12 3:18 22:5 22:7 28:23 36:21 92:12 103:20 <b>D3.1 (2)</b> 3:5,17 <b>damages (5)</b> 94:10 97:11,15 98:12 106:20 <b>data (31)</b> 15:11 21:18 35:17 46:5 88:5 89:16,22 94:8,14 94:19,20,22,25 97:12,14,18,20,21 97:24 98:1,8,14,17 98:21 99:3,21 100:14 101:4 103:6 103:7 104:3 <b>date (1)</b> 122:15 <b>dated (1)</b> 94:13 <b>day (6)</b> 13:9 34:19 43:3 61:4 91:4 93:13 <b>de (1)</b> 76:7 <b>deal (4)</b> 59:6 63:25 69:5 108:18 <b>dealing (5)</b> 13:23 30:3 30:4 69:14 100:1 77:24 <b>deals (3)</b> 30:22,23 77:24 <b>debate (1)</b> 21:2 <b>debit (5)</b> 31:13 79:20 115:13 122:21,25	

<b>debt (1)</b> 96:2	<b>dimensions (3)</b> 42:10 43:1,2	<b>Dunn (14)</b> 5:5 87:20 88:5 89:1,2,9,15,16 89:18 94:2,3 96:8 99:21 100:6	<b>effects (2)</b> 18:22 49:2	<b>event (1)</b> 101:11	<b>expectations (1)</b> 20:23	58:25 61:9 62:2 63:15 64:18 65:14 66:9,12,16,25 69:23 70:12 71:15 72:25 73:6,9,11 74:8,11 97:2,7
<b>debts (1)</b> 104:22	<b>direct (1)</b> 14:25	<b>Dunn's (2)</b> 88:8 95:14	<b>efficiencies (29)</b> 48:21 49:16,18 50:5,10 51:7,8 52:3 54:21 54:23 55:6,20,21 56:5,7,8,12,14,15 56:20 58:8 77:17 77:20 80:18,19,21 81:1 82:6 84:11	<b>everybody (2)</b> 85:8 115:11	<b>expected (1)</b> 20:10	<b>fee/MSC (1)</b> 22:18
<b>decent (1)</b> 97:18	<b>direction (2)</b> 15:2 98:23	<b>duties (2)</b> 73:23 74:4	<b>efficiency (15)</b> 49:9,21 49:24 51:2 57:13 77:8 78:2,6 80:14 80:16 84:12 116:11 116:11,13,14	<b>evidence (93)</b> 5:12 7:8 11:16,20 12:12,13 12:14,20,21,24,25 13:5,6 14:20,21 15:5,13,21,22,25 16:10 18:10,12,24 19:1,5,8,11,12,13 19:19 21:3,4,10,15 21:16,21 23:15 24:2,7 25:23 26:10 27:7,8 32:10 33:11 33:19 34:12,25 35:3 36:2,9 37:3 45:22,25 47:10,11 47:15,19,21 49:12 50:5,11,12 51:7,21 52:7 53:11,13 54:25 55:6,9 59:25 61:2 78:13 80:3 89:21,25 90:15,18 91:18 92:24 93:12 93:22 95:13 100:10 101:23 104:19 108:2 109:14 111:21 116:21,24	<b>experience (3)</b> 12:8 12:23 93:1	<b>feel (2)</b> 69:19 93:4
<b>decide (1)</b> 108:6	<b>directly (8)</b> 44:24 50:21,22 74:14 76:22 81:14 106:16 111:10	<b>duty (1)</b> 23:19	<b>efficiency (15)</b> 49:9,21 49:24 51:2 57:13 77:8 78:2,6 80:14 80:16 84:12 116:11 116:11,13,14	<b>event (1)</b> 101:11	<b>experienced (1)</b> 20:10	<b>fees (25)</b> 9:6 10:13 11:14,17,21 15:15 17:2,13,24 19:15 19:22 26:4,25 27:12 30:16,25 31:2,7,21 32:21 40:3,23 41:6,10 43:12
<b>decided (2)</b> 18:13,18	<b>disadvantage (1)</b> 64:12	<b>dynamics (1)</b> 40:8	<b>efficiency (15)</b> 49:9,21 49:24 51:2 57:13 77:8 78:2,6 80:14 80:16 84:12 116:11 116:11,13,14	<b>event (1)</b> 101:11	<b>expert (8)</b> 2:13 5:22 5:23 8:25 9:2 28:12 55:24 109:19	<b>fell (1)</b> 17:3
<b>decision (18)</b> 4:20 7:11,19 8:13 9:9 11:3 13:19 43:11 48:8 57:12 76:24 80:11 85:21,25 86:1,20 87:13 122:6	<b>disagree (14)</b> 15:19 20:14 21:13 22:3 26:8 59:19 77:2,4 110:21 111:1,6,8 111:22 112:18		<b>efficiency (15)</b> 49:9,21 49:24 51:2 57:13 77:8 78:2,6 80:14 80:16 84:12 116:11 116:11,13,14	<b>event (1)</b> 101:11	<b>explains (1)</b> 30:16	<b>fewer (1)</b> 116:5
<b>decisions (2)</b> 9:7,8	<b>disagreed (1)</b> 78:14		<b>efficiency (15)</b> 49:9,21 49:24 51:2 57:13 77:8 78:2,6 80:14 80:16 84:12 116:11 116:11,13,14	<b>event (1)</b> 101:11	<b>explained (3)</b> 34:16 34:17 112:9	<b>field (1)</b> 31:2
<b>decisive (1)</b> 82:24	<b>disagreeing (1)</b> 34:9		<b>efficiency (15)</b> 49:9,21 49:24 51:2 57:13 77:8 78:2,6 80:14 80:16 84:12 116:11 116:11,13,14	<b>event (1)</b> 101:11	<b>explains (1)</b> 30:16	<b>fierce (1)</b> 69:16
<b>decks (1)</b> 113:3	<b>disappears (1)</b> 68:15		<b>efficiency (15)</b> 49:9,21 49:24 51:2 57:13 77:8 78:2,6 80:14 80:16 84:12 116:11 116:11,13,14	<b>event (1)</b> 101:11	<b>explicitly (5)</b> 82:18 86:16 106:10 112:12,22	<b>figures (1)</b> 88:20
<b>decrease (3)</b> 20:11,24 41:10	<b>disclosure (1)</b> 34:6		<b>efficiency (15)</b> 49:9,21 49:24 51:2 57:13 77:8 78:2,6 80:14 80:16 84:12 116:11 116:11,13,14	<b>event (1)</b> 101:11	<b>extensively (1)</b> 55:11	<b>final (1)</b> 22:12
<b>deduct (1)</b> 65:10	<b>discuss (3)</b> 51:8,17 62:9		<b>efficiency (15)</b> 49:9,21 49:24 51:2 57:13 77:8 78:2,6 80:14 80:16 84:12 116:11 116:11,13,14	<b>event (1)</b> 101:11	<b>extent (9)</b> 6:14 22:11 22:17 23:3 37:4 42:20 55:19 91:7 91:24	<b>financial (8)</b> 43:18 44:14,16,20,25 45:2,5 102:25
<b>deduction (1)</b> 64:5	<b>discussed (8)</b> 25:20 27:15 37:3 41:24 52:23 58:23 60:2 116:24		<b>efficiency (15)</b> 49:9,21 49:24 51:2 57:13 77:8 78:2,6 80:14 80:16 84:12 116:11 116:11,13,14	<b>event (1)</b> 101:11	<b>extra (1)</b> 42:11	<b>find (9)</b> 10:13 19:11 26:17 53:19 68:17 86:14 103:22,23 108:16
<b>deemed (1)</b> 96:14	<b>discusses (1)</b> 89:20		<b>efficiency (15)</b> 49:9,21 49:24 51:2 57:13 77:8 78:2,6 80:14 80:16 84:12 116:11 116:11,13,14	<b>event (1)</b> 101:11	<b>extract (1)</b> 63:13	<b>findings (3)</b> 16:24 25:5 88:22
<b>default (15)</b> 60:11 61:23 63:1 67:8 71:15,15,21 73:1,1 99:1,4,22 101:14 101:25 104:16	<b>discussion (5)</b> 59:9 61:20 83:8,19 104:5		<b>efficiency (15)</b> 49:9,21 49:24 51:2 57:13 77:8 78:2,6 80:14 80:16 84:12 116:11 116:11,13,14	<b>event (1)</b> 101:11	<b>extracted (1)</b> 15:11	<b>finish (1)</b> 117:20
<b>defaults (4)</b> 103:14,15 104:2,3	<b>discussions (1)</b> 74:9		<b>efficiency (15)</b> 49:9,21 49:24 51:2 57:13 77:8 78:2,6 80:14 80:16 84:12 116:11 116:11,13,14	<b>event (1)</b> 101:11	<b>extreme (1)</b> 91:10	<b>firm (3)</b> 18:3 20:5 100:5
<b>degree (4)</b> 15:5 18:25 29:19 63:9	<b>dispute (1)</b> 80:2		<b>efficiency (15)</b> 49:9,21 49:24 51:2 57:13 77:8 78:2,6 80:14 80:16 84:12 116:11 116:11,13,14	<b>event (1)</b> 101:11	<b>eye (1)</b> 89:25	<b>firm (3)</b> 18:3 20:5 100:5
<b>Deloitte's (1)</b> 75:11	<b>dissimilar (1)</b> 27:9		<b>efficiency (15)</b> 49:9,21 49:24 51:2 57:13 77:8 78:2,6 80:14 80:16 84:12 116:11 116:11,13,14	<b>event (1)</b> 101:11	<b>eyes (1)</b> 2:5	<b>firms (1)</b> 35:11
<b>demand (3)</b> 119:1,20 119:22	<b>distinction (1)</b> 83:12		<b>efficiency (15)</b> 49:9,21 49:24 51:2 57:13 77:8 78:2,6 80:14 80:16 84:12 116:11 116:11,13,14	<b>event (1)</b> 101:11		<b>first (46)</b> 2:25 3:18 4:11 7:6 10:6,18 16:16,22 18:15 22:4,7 23:20 48:9 48:13 49:15 52:3 53:6,9,24 54:8 56:18 57:6 58:14 58:15 61:13 65:12 72:1,16,18 78:8 80:12 82:23 84:21 84:23 88:15 93:21 97:13 109:14 113:1 113:3,15 114:5,10 115:17 116:9 119:15
<b>demonstrate (1)</b> 47:8	<b>distinguish (2)</b> 56:14 56:17		<b>efficiency (15)</b> 49:9,21 49:24 51:2 57:13 77:8 78:2,6 80:14 80:16 84:12 116:11 116:11,13,14	<b>event (1)</b> 101:11		<b>Firstly (1)</b> 48:19
<b>depend (1)</b> 31:23	<b>distort (1)</b> 76:4		<b>efficiency (15)</b> 49:9,21 49:24 51:2 57:13 77:8 78:2,6 80:14 80:16 84:12 116:11 116:11,13,14	<b>event (1)</b> 101:11		<b>five (1)</b> 76:24
<b>derive (1)</b> 90:5	<b>divorced (1)</b> 52:5		<b>efficiency (15)</b> 49:9,21 49:24 51:2 57:13 77:8 78:2,6 80:14 80:16 84:12 116:11 116:11,13,14	<b>event (1)</b> 101:11		<b>flag (1)</b> 30:14
<b>deriving (1)</b> 102:5	<b>Doctor (1)</b> 86:18		<b>efficiency (15)</b> 49:9,21 49:24 51:2 57:13 77:8 78:2,6 80:14 80:16 84:12 116:11 116:11,13,14	<b>event (1)</b> 101:11		<b>flagged (2)</b> 98:24 99:2
<b>described (2)</b> 54:15 76:10	<b>document (2)</b> 2:13 10:20 11:4,6 13:9 14:5,11,15 15:24 16:14 17:17 30:3,6 30:7 38:4 93:17,21 93:22 94:4 99:13 109:17		<b>efficiency (15)</b> 49:9,21 49:24 51:2 57:13 77:8 78:2,6 80:14 80:16 84:12 116:11 116:11,13,14	<b>event (1)</b> 101:11		<b>flawed (1)</b> 23:21
<b>describes (2)</b> 40:9 121:19	<b>documents (8)</b> 8:22 9:5 10:17 33:2 86:10,25 94:1,3 106:24 112:19,20 117:24 118:25		<b>efficiency (15)</b> 49:9,21 49:24 51:2 57:13 77:8 78:2,6 80:14 80:16 84:12 116:11 116:11,13,14	<b>event (1)</b> 101:11		<b>flip (1)</b> 69:20
<b>describing (1)</b> 10:12	<b>door (2)</b> 38:8,19		<b>efficiency (15)</b> 49:9,21 49:24 51:2 57:13 77:8 78:2,6 80:14 80:16 84:12 116:11 116:11,13,14	<b>event (1)</b> 101:11		<b>floor (1)</b> 76:8
<b>description (1)</b> 52:15	<b>DotEcon (2)</b> 5:5,11		<b>efficiency (15)</b> 49:9,21 49:24 51:2 57:13 77:8 78:2,6 80:14 80:16 84:12 116:11 116:11,13,14	<b>event (1)</b> 101:11		<b>focus (1)</b> 22:19
<b>deserve (1)</b> 26:20	<b>doubt (5)</b> 21:19 87:22 92:16 93:3 101:6		<b>efficiency (15)</b> 49:9,21 49:24 51:2 57:13 77:8 78:2,6 80:14 80:16 84:12 116:11 116:11,13,14	<b>event (1)</b> 101:11		<b>focused (1)</b> 42:23
<b>design (1)</b> 61:1	<b>Douglas (1)</b> 34:7		<b>efficiency (15)</b> 49:9,21 49:24 51:2 57:13 77:8 78:2,6 80:14 80:16 84:12 116:11 116:11,13,14	<b>event (1)</b> 101:11		<b>focuses (1)</b> 41:2
<b>desirable (5)</b> 45:24 46:2 79:10 110:7,9	<b>dozen (2)</b> 69:10,13		<b>efficiency (15)</b> 49:9,21 49:24 51:2 57:13 77:8 78:2,6 80:14 80:16 84:12 116:11 116:11,13,14	<b>event (1)</b> 101:11		<b>follow (1)</b> 83:6
<b>despite (3)</b> 83:17 106:9 107:17	<b>Dr (25)</b> 1:5 2:7,8,10,14 3:1,6 5:18,22 6:4 23:14 26:3 36:13 36:19 37:22,25 38:20 41:20 45:20 57:25 60:8 66:7 74:18 97:23 125:4		<b>efficiency (15)</b> 49:9,21 49:24 51:2 57:13 77:8 78:2,6 80:14 80:16 84:12 116:11 116:11,13,14	<b>event (1)</b> 101:11		<b>follow-up (2)</b> 63:17,19
<b>destroying (1)</b> 70:22	<b>drafted (4)</b> 16:16,21 18:15 23:14		<b>efficiency (15)</b> 49:9,21 49:24 51:2 57:13 77:8 78:2,6 80:14 80:16 84:12 116:11 116:11,13,14	<b>event (1)</b> 101:11		<b>followed (3)</b> 56:11 70:9 86:5
<b>detail (7)</b> 9:23 54:15 58:23 69:8 103:11 109:18 116:20	<b>drafting (2)</b> 50:3 55:3		<b>efficiency (15)</b> 49:9,21 49:24 51:2 57:13 77:8 78:2,6 80:14 80:16 84:12 116:11 116:11,13,14	<b>event (1)</b> 101:11		<b>following (5)</b> 15:11 28:8 49:12 62:8 81:17
<b>detailed (6)</b> 15:25 21:20 25:9 37:8 61:19 88:20	<b>draw (4)</b> 16:1 30:24 92:3 110:20		<b>efficiency (15)</b> 49:9,21 49:24 51:2 57:13 77:8 78:2,6 80:14 80:16 84:12 116:11 116:11,13,14	<b>event (1)</b> 101:11		<b>follows (3)</b> 48:19 54:4 58:12
<b>details (2)</b> 46:22 61:25	<b>drawn (3)</b> 15:23 19:24 36:10		<b>efficiency (15)</b> 49:9,21 49:24 51:2 57:13 77:8 78:2,6 80:14 80:16 84:12 116:11 116:11,13,14	<b>event (1)</b> 101:11		<b>food (1)</b> 39:4
<b>determine (4)</b> 50:18 51:14 78:2 106:23	<b>drift (1)</b> 70:19		<b>efficiency (15)</b> 49:9,21 49:24 51:2 57:13 77:8 78:2,6 80:14 80:16 84:12 116:11 116:11,13,14	<b>event (1)</b> 101:11		<b>foolish (1)</b> 97:6
<b>determined (2)</b> 29:20 100:3	<b>driven (1)</b> 69:17		<b>efficiency (15)</b> 49:9,21 49:24 51:2 57:13 77:8 78:2,6 80:14 80:16 84:12 116:11 116:11,13,14	<b>event (1)</b> 101:11		<b>footnote (8)</b> 11:9,19 12:16,18 19:16,24 86:20 88:1
<b>detriment (2)</b> 44:4 45:3	<b>dropped (2)</b> 6:23,24		<b>efficiency (15)</b> 49:9,21 49:24 51:2 57:13 77:8 78:2,6 80:14 80:16 84:12 116:11 116:11,13,14	<b>event (1)</b> 101:11		<b>footnoted (2)</b> 23:5,8
<b>dictates (1)</b> 48:25	<b>due (5)</b> 1:25 2:1 21:12 31:17 117:9		<b>efficiency (15)</b> 49:9,21 49:24 51:2 57:13 77:8 78:2,6 80:14 80:16 84:12 116:11 116:11,13,14	<b>event (1)</b> 101:11		<b>forget (4)</b> 78:3 108:21 109:8 115:21
<b>difference (6)</b> 56:7 68:19 113:18,20 115:15 121:13			<b>efficiency (15)</b> 49:9,21 49:24 51:2 57:13 77:8 78:2,6 80:14 80:16 84:12 116:11 116:11,13,14	<b>event (1)</b> 101:11		<b>forgive (1)</b> 120:19
<b>different (14)</b> 16:1 22:11 26:14,15 29:20 35:19 39:19 39:23 71:13 76:25 79:13 91:7 112:23 117:14			<b>efficiency (15)</b> 49:9,21 49:24 51:2 57:13 77:8 78:2,6 80:14 80:16 84:12 116:11 116:11,13,14	<b>event (1)</b> 101:11		
<b>differentiating (1)</b> 123:13			<b>efficiency (15)</b> 49:9,21 49:24 51:2 57:13 77:8 78:2,6 80:14 80:16 84:12 116:11 116:11,13,14	<b>event (1)</b> 101:11		
<b>difficult (5)</b> 1:12 21:24 42:7 117:11 123:22			<b>efficiency (15)</b> 49:9,21 49:24 51:2 57:13 77:8 78:2,6 80:14 80:16 84:12 116:11 116:11,13,14	<b>event (1)</b> 101:11		
<b>difficulties (1)</b> 117:24			<b>efficiency (15)</b> 49:9,21 49:24 51:2 57:13 77:8 78:2,6 80:14 80:16 84:12 116:11 116:11,13,14	<b>event (1)</b> 101:11		
<b>difficulty (2)</b> 64:10,16			<b>efficiency (15)</b> 49:9,21 49:24 51:2 57:13 77:8 78:2,6 80:14 80:16 84:12 116:11 116:11,13,14	<b>event (1)</b> 101:11		

**form (4)** 17:5 36:13  
79:17 89:23  
**formed (1)** 12:14  
**forming (1)** 85:22  
**forward (6)** 15:20  
19:10 25:16 23  
50:12 104:7  
**fought (1)** 10:10  
**found (8)** 10:14 19:1,1  
21:4 40:6 81:10  
86:3 121:11  
**four (14)** 48:2,6 50:15  
51:6,16,18 52:5,9  
52:10,12,17 53:5  
101:15 116:8  
**four-party (20)** 54:17  
54:21 55:12,14,18  
58:14,22 59:7,8  
60:23,24 63:4 75:7  
76:21 77:7,23  
79:15 107:17  
108:12 114:9  
**framework (1)** 113:10  
**frankly (1)** 34:24  
**fraud (6)** 71:5 96:2  
104:7,8,11,14  
**free (2)** 102:9,11  
**Friday (1)** 124:4  
**friends (1)** 85:15  
**fuel (1)** 74:6  
**fulfilled (2)** 47:4 81:19  
**full (1)** 97:13  
**fully (2)** 82:1 109:16  
**function (1)** 109:12  
**fund (3)** 109:9,25  
110:11  
**funded (1)** 110:8  
**funding (2)** 85:18  
102:11  
**funds (1)** 96:2  
**further (1)** 96:18

**G**

**gain (3)** 57:13 73:5  
78:6  
**gains (1)** 78:2  
**game (2)** 68:18  
114:19  
**gasoline (4)** 25:25  
26:1,6,24  
**general (24)** 9:1 10:1  
19:6 35:24 39:8  
46:10,25 47:16  
52:15,18 53:19,22  
54:5 57:5 72:15  
74:7 104:23 105:13  
106:22 110:21  
111:2,6,22 115:17  
**generally (2)** 59:22  
73:14  
**generate (1)** 118:21  
**generated (1)** 81:1  
**generates (1)** 119:7  
**generous (2)** 67:19  
71:22  
**genuinely (1)** 74:12  
**getting (6)** 43:13,14  
82:13 108:18  
109:11 112:6  
**give (17)** 1:12,17,20  
34:20 35:7 37:25  
41:18,18 59:5 69:4  
86:19 89:5 91:7  
92:1 93:22 112:8  
117:24  
**given (7)** 23:15,18  
40:8 53:14 89:23  
90:5 95:21  
**gives (8)** 30:15 32:8

34:8 75:12 81:5  
86:21 98:18 100:9  
**giving (6)** 5:12 28:2,3  
32:18 90:18 112:15  
**glaze (1)** 2:6  
**go (79)** 2:12,16,22  
8:21 10:17,18,18  
11:8 13:7 14:1,16  
15:13 16:8,23  
17:11,17 18:1  
19:14 20:1 22:4,5  
24:12 25:15,22  
27:17,21,23,24  
28:24 29:3 33:13  
36:19,25 37:11,12  
38:4,20 39:7,25  
40:3,4,4,25 46:7,17  
48:7,9 49:7 50:14  
52:24 53:10 58:24  
59:24 61:25 63:11  
65:23 66:4 75:11  
78:9 79:24 80:7,12  
82:4 84:21 85:14  
88:18,24 89:7 92:1  
92:11,14 95:4 99:9  
99:12,19 103:19  
106:11,12 113:5  
**goes (11)** 30:21 37:8  
56:23 68:5 72:17  
73:15 95:3,4  
102:18 106:19  
118:19  
**going (25)** 26:5 27:21  
37:15,21 38:3,3  
40:23 44:2 48:10  
51:2 52:13 66:24  
67:19 70:13 77:5  
77:17 87:3 97:21  
97:24 102:19 106:2  
107:11 114:20,22  
118:2  
**good (23)** 9:2 12:13  
18:10,18 35:17  
36:7,11 45:10,20  
57:13 59:6 60:5,15  
68:21 69:5,16  
71:23 98:18 108:18  
112:18 117:17,18  
123:16  
**goods (2)** 17:25 32:1  
**government (3)** 73:23  
74:4 78:25  
**grabs (1)** 71:20  
**granular (1)** 58:9  
**grateful (1)** 37:14  
**great (3)** 38:23 39:4  
58:11  
**greater (2)** 26:5 71:23  
**greatest (2)** 86:18  
90:1  
**ground (1)** 46:18  
**group (6)** 1:10,21 51:1  
76:23 83:1,24  
**groups (2)** 6:9 8:5  
**grow (1)** 59:6  
**grows (1)** 59:5  
**guarantee (3)** 71:4  
85:17 99:25  
**guess (1)** 6:8  
**guide (3)** 29:12 47:12  
106:1  
**guidelines (3)** 49:8  
79:24 80:4  
**Gunnar (5)** 2:8,14 3:1  
3:6 125:4

**H**

**half (3)** 69:10,13  
90:12

**halfway (1)** 112:15  
**hands (1)** 67:7  
**happen (2)** 40:22  
41:10  
**happened (1)** 15:10  
**happening (1)** 15:5  
**happens (2)** 96:4  
97:13  
**happy (1)** 70:21  
**hard (4)** 21:17,18  
90:17 92:2  
**harm (2)** 32:20 34:16  
**Harman (4)** 36:21,22  
37:4 117:19  
**Harman's (2)** 30:10,13  
**harsh (1)** 68:24  
**Headline (1)** 16:24  
**heads (8)** 85:15,16,21  
86:15,17 91:22  
121:8,15  
**hear (2)** 38:10,11  
**heard (4)** 8:12 66:18  
74:10 123:6  
**hearings (2)** 5:20 24:7  
**heart (3)** 32:19,25  
34:16  
**heavily (1)** 89:18  
**Helen (2)** 5:18 6:4  
**help (5)** 35:9 42:18,22  
43:10 122:14  
**helpful (4)** 1:18 24:8  
33:10 34:13  
**high (17)** 12:19 21:1  
23:15 25:16 27:10  
31:20 32:17 33:5  
33:18 40:8 46:20  
68:9 69:25 70:1,2  
74:11 104:10  
**higher (20)** 11:14,17  
31:17 33:4 41:6,7  
43:18 44:19,19  
62:2,11,20 63:15  
68:16 74:8 82:7  
104:6 115:6,22  
116:2  
**highlight (1)** 37:11  
**highlighted (1)** 101:25  
**highly (1)** 68:6  
**Hinten-Reed (4)** 50:25  
97:24 113:17,21  
**Hinten-Reed's (1)**  
28:25  
**historic (1)** 118:5  
**historically (1)** 121:19  
**history (4)** 10:9,9  
58:16 102:25  
**hold (3)** 61:23,24  
63:23  
**hold-up (2)** 62:6 64:8  
**holder (2)** 63:10 71:5  
**holders (1)** 70:1  
**home (1)** 58:4  
**honest (1)** 87:15  
**honestly (1)** 38:2  
**honour (2)** 63:3,5  
**hope (4)** 32:6 53:12  
61:9 118:14  
**hopefully (1)** 47:24  
**HOSKINS (7)** 1:5 2:7,9  
2:12 3:15 88:20  
125:5  
**hour (3)** 2:2,4,5  
**hour's (1)** 118:7  
**huge (1)** 69:14  
**hypothetical (5)** 43:12  
67:5,9,10 78:21

**I**

**idea (1)** 1:20

**ideally (4)** 97:14 98:15  
103:7 123:13  
**identified (2)** 76:24  
117:6  
**identify (7)** 10:20 13:8  
22:15,22 23:2,11  
93:21  
**ifs (3)** 17:2 20:11  
64:11  
**ignored (1)** 54:5  
**image (1)** 70:4  
**imagine (4)** 2:5 56:3  
62:13 104:25  
**imbalance (15)** 62:16  
95:16 107:16,21  
109:4,8 111:16,19  
112:11 120:7,9,15  
120:21 121:14,24  
**imbalanced (1)** 34:8  
**immediately (3)** 67:23  
96:16 101:4  
**impact (9)** 11:23  
16:11 17:18,20,21  
81:9 82:24 83:1,7  
19:14,22  
**impartial (1)** 34:2  
**impetus (1)** 71:1  
**implication (1)** 100:18  
**implies (1)** 81:7  
**importance (1)** 105:21  
**important (6)** 9:10  
37:17 43:1 63:4  
75:10 90:5  
**importantly (2)** 90:23  
116:12  
**impose (2)** 65:9 67:8  
**imposed (1)** 64:19  
**imposing (1)** 17:23  
**impression (6)** 28:3  
32:8 35:4 86:19  
87:14 109:20  
**improvement (2)** 19:2  
21:5  
**improves (1)** 51:2  
**improving (2)** 39:11  
77:11  
**inaudible (1)** 68:11  
**incentive (2)** 65:20  
68:20  
**incentives (5)** 65:12  
67:3 72:1,8,8  
**incidentally (1)**  
112:21  
**include (2)** 39:11  
111:3  
**included (3)** 25:5  
90:24 117:4  
**includes (1)** 119:22  
**including (2)** 86:9  
109:21  
**inconclusive (1)** 18:12  
**inconsistent (3)** 16:4  
16:6 20:20  
**incorporate (1)**  
106:16  
**Incorporated (1)**  
10:21  
**increase (8)** 11:14  
44:6 104:21 113:19  
113:25 114:4,7  
115:15  
**increased (4)** 43:11  
116:7,15 117:9  
**increasing (1)** 114:16  
**incremental (2)** 7:7  
9:25  
**incurred (1)** 109:2  
**independent (5)** 3:13

34:1 87:24 92:18  
100:4  
**independently (2)**  
37:5 87:19  
**INDEX (1)** 125:1  
**indication (3)** 34:21  
98:18 110:2  
**indications (2)** 1:13,17  
**indifferent (2)** 73:5  
74:13  
**indirectly (1)** 50:22  
**indispensability (1)**  
84:3  
**indispensable (6)** 51:3  
76:20 84:9,10,11  
84:15  
**individual (15)** 52:24  
63:13,23,24 67:3  
68:20 71:19,19  
74:12 83:1,9,9,12  
83:21 116:22  
**individually (7)** 51:18  
67:16 69:1,18,24  
71:22 83:17  
**inevitable (2)** 32:9,10  
**infer (2)** 18:7 36:3  
**influence (2)** 15:17  
31:22  
**inform (2)** 11:7 27:2  
**information (6)** 25:13  
25:15 35:20,25  
115:12 122:13  
**informative (2)** 27:11  
79:21  
**informs (1)** 89:21  
**infringed (1)** 76:7  
**infringement (5)** 8:13  
13:19 46:23 57:12  
87:13  
**inherent (5)** 51:25  
52:2 61:21 81:24  
82:16  
**inherently (1)** 85:12  
**initiative (2)** 38:24  
39:9  
**insights (1)** 22:14  
**insisting (1)** 72:21  
**insofar (2)** 1:16  
113:16  
**instance (3)** 7:6 10:6  
122:24  
**instructed (2)** 35:9,11  
**instrument (1)** 77:14  
**instruments (1)** 31:25  
**intangible (2)** 42:13  
44:23  
**intended (1)** 17:23  
**inter-scheme (1)**  
55:18  
**interaction (1)** 76:8  
**interactions (3)** 8:1,2  
8:6  
**interchange (61)** 5:1  
5:18 8:10 9:6 10:13  
11:14,17,21 16:11  
16:25 17:2,13,24  
19:15,22 20:24  
22:18 26:4,25  
27:12 30:4,16,25  
31:2,7,21 32:21  
40:3,23 41:6,10  
43:12,18 58:24  
61:9 62:2 63:15  
64:18 65:14 66:9  
66:12,16,25 69:4  
69:23 70:12,16  
71:15 72:25 73:6,9  
73:11 74:8,11 82:8  
88:21 95:10 97:2,7

107:10 122:3  
**interest (13)** 8:24 96:1  
97:3 103:20 105:2  
106:4 109:21 110:3  
110:18 111:4 112:7  
112:25 118:22  
**interest-free (3)** 85:18  
86:24 91:20  
**interested (6)** 10:3  
14:20 56:1 75:16  
113:12 123:4  
**interesting (4)** 8:6  
41:17 68:19 74:20  
**interests (2)** 70:14  
73:12  
**intermittently (2)**  
6:25 14:12  
**internal (3)** 9:5 30:15  
59:8  
**international (4)** 8:4  
10:21 19:25 61:17  
**interrupt (2)** 60:8  
97:23  
**interscheme (1)** 79:7  
**intervened (2)** 46:15  
96:21  
**intervening (2)** 7:4,9  
**intervention (1)** 11:23  
**intra-EEA (1)** 85:23  
**introduced (2)** 16:25  
86:11  
**introduction (2)** 52:18  
52:19  
**invested (1)** 42:12  
**investigation (8)** 4:7  
4:20 6:13 7:1,2,14  
14:13 86:2  
**involve (2)** 40:11  
64:11  
**involved (11)** 6:14  
7:15,17,20,25 8:13  
8:19 12:3 13:12  
14:12 40:12  
**involvement (3)** 6:15  
6:23 7:1  
**Iranzo (8)** 18:2,4,6,9  
18:18,22 19:7 23:1  
**irrational (2)** 66:23  
67:2  
**irrelevant (1)** 49:3  
**issue (7)** 8:18 61:22  
72:7,9 85:10  
110:22  
**issuer (35)** 63:13 64:1  
65:9,11,19,20 66:6  
67:20 74:16 91:22  
104:5 106:10 107:9  
107:12,17,21 108:2  
108:3,24 109:7,10  
110:8 111:10,12,20  
112:12,22 119:8,16  
119:22,22,25 120:4  
120:6,10  
**issuer's (10)** 8:8 66:3  
84:18,21 85:2,15  
85:16 87:2 90:13  
113:6  
**issuers (17)** 61:1,15  
63:24 65:3,4 67:22  
69:21,24 72:6  
107:9,16 108:21  
109:3,10,12 112:1  
119:4  
**issuers' (1)** 105:11  
**issues (3)** 4:23 10:15  
10:16  
**issuing (36)** 10:3 61:3  
61:8 63:7,8 64:4  
66:13 67:6,14

70:10,11,18 72:6  
72:13 74:15 76:20  
76:21 79:8 95:17  
105:3,9,17,18,20  
107:24 108:24  
109:2,16,21,25  
110:23,25 111:17  
112:1,3 115:24  
**item (4)** 22:2 98:25  
101:14 102:18  
**items (1)** 22:20

**J**

**J2 (1)** 93:18  
**January (1)** 94:18  
**Jenkins (3)** 5:19,22  
6:5  
**JOHN (3)** 103:24  
118:19 120:17  
**joint (2)** 52:20 55:24  
**Jones (1)** 13:9  
**judge (1)** 34:20  
**judgment (6)** 53:23  
90:22 91:2,5,25  
92:1  
**judgments (4)** 9:12,13  
9:17 106:1  
**jump (1)** 80:22  
**June (1)** 16:12  
**jurisprudence (1)**  
81:20  
**Justice (58)** 1:4,7,16  
1:23 2:1,3,10 27:19  
27:23 36:12 37:13  
37:15,20,24 38:6  
38:19 42:18 43:4  
45:11,13,19 48:20  
53:17 62:8,23  
64:21 65:7,19,22  
67:12,22 69:10,13  
72:9 74:19 92:5  
100:11 103:14,16  
104:7,10,12,16  
117:8,16,18,20,23  
118:6,9,13 120:18  
121:16 122:1,4,9  
122:22 123:16  
**justification (3)** 106:9  
106:11 121:25  
**justifications (1)** 52:2  
**justified (1)** 106:18

**K**

**keener (1)** 74:8  
**keep (3)** 60:17 74:11  
99:11  
**keeps (1)** 68:5  
**key (4)** 41:22 52:20,21  
69:19  
**kicked (1)** 38:24  
**kind (6)** 4:22 9:19  
40:7 50:25 59:13  
121:23  
**kinds (1)** 79:21  
**knew (2)** 35:2 121:23  
**know (44)** 1:7 2:3,4  
3:19 5:3 6:12 7:22  
9:18 16:21 19:17  
23:16 28:16,19  
34:1,5 36:13 38:11  
42:12 43:5 46:18  
48:1 50:24 55:21  
59:9 75:17 78:12  
79:4,16 82:13 89:5  
93:11 97:23 98:7  
100:18,22 102:17  
105:10 106:2  
108:22 117:15  
118:10 119:11

<p>121:2 123:2 <b>knows (4)</b> 68:1,10 121:21 122:5 <b>Koboldt (2)</b> 5:11 7:24</p> <hr/> <p style="text-align: center;"><b>L</b></p> <p><b>laid (3)</b> 53:24 54:8 57:6 <b>large (3)</b> 1:19 22:10 70:8 <b>largest (1)</b> 14:24 <b>late (1)</b> 93:24 <b>latter's (1)</b> 105:21 <b>launched (1)</b> 40:16 <b>law (3)</b> 44:12 48:19 64:2 <b>lead (7)</b> 11:14,18 32:22 62:20 63:18 66:1 116:7 <b>leading (3)</b> 6:20 9:16 32:24 <b>leads (3)</b> 27:9 62:2 114:7 <b>leave (1)</b> 68:10 <b>leaving (2)</b> 38:25 71:7 <b>led (1)</b> 55:1 <b>legal (9)</b> 8:23 41:24 46:6,7,8 59:18,20 59:23 75:9 <b>length (2)</b> 51:8 110:5 <b>let's (30)</b> 3:17 7:14 10:17 14:1 18:14 26:22 30:8 40:20 41:12 53:2 55:25 57:4 60:11,21 65:12 70:6 71:18 78:24 91:11 93:14 93:14,16 94:7 99:11 108:8,9,20 110:20 115:17 116:6 <b>letter (2)</b> 13:9,11 <b>level (28)</b> 20:13,15 21:23 31:2 50:19 51:12,14 53:2,4 58:9 60:5 61:16 72:6 73:6 82:10 89:10 91:6 93:23 97:15 98:12 101:9 106:20,22 107:8 108:17 112:6 115:16 116:15 <b>levels (3)</b> 41:3 62:3 99:5 <b>liaise (1)</b> 7:23 <b>LIBOR (1)</b> 102:7 <b>light (2)</b> 43:11 53:21 <b>liked (2)</b> 97:14 98:15 <b>likelihood (3)</b> 49:21 80:19 116:12 <b>limitations (1)</b> 81:25 <b>limited (1)</b> 37:4 <b>line (17)</b> 15:9 21:1 32:15 33:1 9:53:4 66:10 73:10 74:14 81:11 92:3 94:15 94:24 95:8,24 96:3 121:14 <b>linear (1)</b> 115:25 <b>linearly (1)</b> 114:25 <b>lines (1)</b> 90:17 <b>link (5)</b> 49:18 51:21 51:25 80:18 116:11 <b>listen (2)</b> 1:9,11 <b>literature (6)</b> 22:10,13 25:20 26:11,18 27:11 <b>little (8)</b> 6:13,23,24 66:23 71:16 98:22</p>	<p>114:17,20 <b>live (1)</b> 72:14 <b>loading (1)</b> 32:21 <b>logic (11)</b> 54:14,20 59:12 60:18 63:2 63:22 69:23 91:17 91:21 114:8,13 <b>logical (2)</b> 50:23 55:16 <b>long (7)</b> 2:4 3:19,20 5:15 60:16 89:20 90:2 <b>longer (4)</b> 27:23 31:14 73:8 87:11 <b>look (45)</b> 7:19 10:9 12:21,22 15:25 20:1 25:24 27:7 30:8 32:3,11,13 33:11 36:8 42:13 42:21 57:4,12,20 61:4 74:25 78:1,5 91:21 93:15 94:1,3 98:22,25 106:24,25 107:13,14 108:1,6 108:16 111:11,15 112:12,22,24 119:24 121:1,12,25 <b>looked (21)</b> 4:24 9:5,7 9:8,16 10:15 14:9 18:6,11,17 21:22 24:2,4 35:16 36:2 56:21 83:7,22 95:15 105:25 116:23 <b>looking (15)</b> 4:4 9:9 12:12 22:6 75:1,14 75:19 79:9 104:24 107:2,5,6 110:22 111:2,23 <b>looks (4)</b> 17:19 81:23 118:6 119:19 <b>lose (2)</b> 79:3 114:22 <b>loss (1)</b> 73:5 <b>losses (1)</b> 104:7 <b>lot (17)</b> 5:3 6:16 10:10 19:8 24:1,4,4 30:8 36:2 37:20 79:3,6,8 79:9 93:1 109:10 109:20 <b>lots (2)</b> 8:6 109:22 <b>low (4)</b> 31:13 66:15 69:4 109:22 <b>lower (24)</b> 11:18 17:5 17:24 18:24 20:12 31:6,20 37:9 40:3 40:25 41:5,15,25 43:23 44:3,7,10,21 66:1 74:6,8 114:13 115:9 116:5 <b>lowering (1)</b> 42:1 <b>lowest (1)</b> 70:15</p> <hr/> <p style="text-align: center;"><b>M</b></p> <p><b>Maestro (1)</b> 118:4 <b>magnitude (6)</b> 49:21 51:22 80:20 116:12 116:14 117:7 <b>main (7)</b> 27:6 43:2,2 53:17 88:22 106:24 113:14 <b>maintained (1)</b> 44:20 <b>majority (4)</b> 105:4,10 110:23,25 <b>making (4)</b> 42:13 79:18 109:10 117:17 <b>manner (3)</b> 28:20 87:23 92:17 <b>maps (1)</b> 83:14 <b>March (2)</b> 4:10 13:11</p>	<p><b>market (33)</b> 20:17 24:18,21 29:17,22 31:3 32:23 60:18 63:9,14,23,24 64:14 68:5,10,12 69:22 70:7,23 79:3 79:8,9 82:25 95:10 95:22,25 96:1 105:24 108:5,8 120:23 121:21 122:3 <b>marketing (6)</b> 40:4,11 40:13 42:2,7,16 <b>markets (14)</b> 24:17,19 25:4 26:12,13,14 26:15 27:4 32:17 49:2 55:12 58:25 59:2 85:7 <b>marks (1)</b> 110:6 <b>mass (1)</b> 69:14 <b>massive (1)</b> 56:9 <b>MasterCard (7)</b> 3:22 3:23,24 4:1,5,6,13 4:17 5:9,13 6:6,7 7:5,17,20 8:4,15,17 10:2,11,21 12:7 13:23,24 15:20 19:8 38:10 46:13 46:19,20 47:17,20 53:21 54:2,6 56:3 56:14,18 57:9 58:4 58:20 59:16 64:4 64:24 70:19,20 71:2 72:5 76:6,18 76:23 78:17,25 79:25 85:16 86:5 86:11,12 87:19,19 88:16 96:14 99:13 99:16 100:19 114:23 115:2,7,9 115:10,18,19,20,22 118:3 122:16 123:2 <b>MasterCard's (7)</b> 6:11 13:10 34:23 68:3 70:9 98:5 100:7 <b>match (1)</b> 30:19 <b>material (3)</b> 14:8 38:9 38:11 <b>mathematical (1)</b> 120:25 <b>mathematically (1)</b> 121:13 <b>matter (4)</b> 74:1 79:13 87:13 91:2 <b>matters (1)</b> 80:7 <b>mean (9)</b> 12:4 19:11 21:18 35:11 41:22 52:1 58:7 75:24 99:4 <b>means (11)</b> 9:2 31:13 35:2,3 44:7 47:9 48:21 68:15 69:4,4 115:5 <b>meant (4)</b> 81:5 84:2 115:6,6 <b>measure (2)</b> 101:21 120:13 <b>meat (2)</b> 38:3 44:22 <b>mechanism (2)</b> 76:19 107:18 <b>member (6)</b> 3:25 5:8 5:10 6:21 8:18 76:25 <b>members (9)</b> 4:5,6,17 5:14,23 8:4 10:23 13:24 83:1 <b>mention (7)</b> 85:24 86:7,22,25 87:4,5 104:18</p>	<p><b>mentioned (3)</b> 14:19 24:8 42:8 <b>mentioning (1)</b> 24:11 <b>mentions (1)</b> 86:23 <b>MEPAC (2)</b> 4:1 5:7 <b>merchant (25)</b> 5:16 15:15 17:4 27:13 27:13 31:24 60:19 63:6 69:5 73:7 82:12,17 89:21,25 90:15 97:19 98:2 107:14 108:7 113:6 116:4 117:3 119:19 120:3 123:10 <b>merchant's (6)</b> 63:6 70:15 108:13,17,25 119:21 <b>merchants (47)</b> 22:17 30:18 31:5,19 32:22 59:4 66:9,10 66:15,20 68:3,7 71:3 73:13 77:21 82:7,8,16 83:7,9,10 83:10,16,18,23 85:22 86:17 87:12 90:5,8,13,20,25 91:2,8,18,23,24 98:3 108:7,10 113:13,24 114:3 116:15,21 117:9 <b>merely (1)</b> 121:24 <b>merits (1)</b> 31:15 <b>met (1)</b> 52:22 <b>method (38)</b> 50:20 51:11,13,13,13 53:3 60:5 82:10,11 82:15 86:12,13 87:7,8 91:21 92:25 94:5 97:12 106:8,9 106:12,15,17 107:2 107:4,20 111:9,9 111:13 112:5,7,8 118:20 119:18,18 120:16,21 121:6 <b>methodology (15)</b> 8:9 8:11 52:17 84:18 84:21 85:3 86:5 87:2 95:15,19,21 96:13 107:12 113:6 120:11 <b>methods (12)</b> 50:18 50:21 51:25 52:1,6 52:13,23 58:21 82:9,18 97:17 98:14 <b>middle (1)</b> 89:20 <b>MIF (130)</b> 37:9 50:6,6 50:19 51:12,14 53:2,4,20 54:2,11 54:17,23 55:7,7,9 55:13,17,23 56:8 56:15,17,21,21 57:9,13,21 58:7,14 58:16,19,22 59:16 60:6,9,23,24 61:23 62:12,14,14,21 64:25 65:1,14,23 65:24,24 66:5 67:10,12,13 68:1,6 68:16 72:21 73:18 74:2,23,23,24,25 75:3,5,20,24 76:7 77:1,6,10,14,23,25 78:1,4,6,15,16,22 78:23 79:1,23 80:19 82:10,16 84:16 85:23 89:1,1 89:11,24 91:6 93:7 93:23 97:15 99:17</p>	<p>99:22 100:14 101:10,18 103:10 106:20,22 107:18 108:20 109:5 112:6 114:7,9,11,13,23 115:5,5,5,6,9,22 116:2,5,7,11,16 117:5,10 120:8,8 120:23 122:24 123:3 <b>MIFs (8)</b> 65:1 68:9 70:21 77:7 86:21 120:24 122:17,19 123:3 <b>migrates (1)</b> 64:25 <b>million (3)</b> 40:22,25 41:13 <b>mind (9)</b> 55:16 56:16 64:20 70:25 71:11 73:8 79:20 91:18 103:21 <b>Mine (2)</b> 118:16 122:13 <b>minute (3)</b> 7:13 38:4 92:14 <b>minutes (2)</b> 27:18,22 <b>mirror (1)</b> 70:4 <b>misses (2)</b> 106:8,17 <b>mistaken (2)</b> 57:3 86:24 <b>MIT (8)</b> 50:20,20 84:18 97:18 101:12 107:4 112:20,20 <b>MIT-based (1)</b> 82:11 <b>MIT-MIF (3)</b> 8:8,11,12 <b>MMF (1)</b> 4:2 <b>model (4)</b> 118:25 119:14 121:5,20 <b>models (1)</b> 69:23 <b>moment (14)</b> 3:17 14:19 29:25 36:11 41:12 49:8 53:8,10 60:12 68:21 78:13 92:5 102:19 117:15 <b>Monday (1)</b> 117:19 <b>monetary (2)</b> 45:5 73:5 <b>money (6)</b> 42:12 45:7 59:4 70:13 71:6 108:6 <b>monies (1)</b> 64:5 <b>monitoring (1)</b> 123:6 <b>monopoly (1)</b> 63:9 <b>months (1)</b> 4:15 <b>morning (9)</b> 1:4,10,21 1:25 2:1,5 105:25 118:2,6 <b>move (2)</b> 98:22 101:7 <b>moved (1)</b> 98:24 <b>moving (2)</b> 45:20 117:14 <b>MSC (3)</b> 21:12 73:18 108:11 <b>MSCs (2)</b> 18:24 21:8 <b>multilateral (5)</b> 61:13 62:4,25 63:16 69:22 <b>multilaterally (1)</b> 61:12 <b>multiple (2)</b> 72:2,3 <b>muscle (1)</b> 67:25</p> <hr/> <p style="text-align: center;"><b>N</b></p> <p><b>NaBANCO (2)</b> 86:6 95:5 <b>nailed (1)</b> 59:13 <b>named (2)</b> 5:21,23 <b>natural (1)</b> 27:19 <b>naturally (1)</b> 121:21 <b>nature (9)</b> 8:2 21:12</p>	<p>26:15 49:15 50:10 79:18 80:17 116:10 117:6 <b>nearly (3)</b> 3:21 95:3 115:11 <b>neat (1)</b> 75:12 <b>necessarily (6)</b> 62:11 65:2,21 67:23 68:9 69:17 <b>necessary (9)</b> 29:17 30:23 53:20 56:22 60:12 75:3 77:6 79:14 84:14 <b>necessity (2)</b> 59:10 78:15 <b>need (22)</b> 2:12 28:21 28:23 39:7 45:21 46:1,3,5 53:6 56:13 57:20 60:23,24 78:11 80:2 84:23 87:15 93:18 96:2 98:7 100:23 103:5 <b>needs (2)</b> 60:11 118:10 <b>negative (1)</b> 81:9 <b>negotiate (3)</b> 63:14 66:24 69:18 <b>negotiating (2)</b> 66:8 73:11 <b>negotiation (11)</b> 62:18,19 64:22,23 65:3,17 66:12 67:6 69:2 70:10 71:20 <b>negotiations (2)</b> 63:1 63:2 <b>neither (2)</b> 21:4 122:11 <b>NERA (1)</b> 22:25 <b>net (1)</b> 81:12 <b>neutral (1)</b> 81:13 <b>nevertheless (1)</b> 77:11 <b>new (8)</b> 4:11,13 6:12 31:3 40:15,16 41:13 45:21 <b>nice (2)</b> 42:13 96:24 <b>Niels (22)</b> 1:5 2:7,8,10 2:14 3:1,6 23:14 26:3 36:13,19 37:22,25 38:20 41:20 45:20 57:25 60:8 66:7 74:18 97:23 125:4 <b>nil (1)</b> 64:7 <b>nine (2)</b> 4:15 94:10 <b>nine-year (1)</b> 97:11 <b>nine/ten-year (1)</b> 100:15 <b>normal (2)</b> 8:23 76:3 <b>normatively (2)</b> 108:3 110:6 <b>note (2)</b> 85:20 105:16 <b>noteworthy (3)</b> 86:1,3 86:14 <b>notice (3)</b> 38:7,19 99:16 <b>notification (1)</b> 4:11 <b>notion (1)</b> 82:11 <b>notwithstanding (1)</b> 105:21 <b>November (1)</b> 109:18 <b>nuanced (1)</b> 73:8 <b>number (9)</b> 9:16 24:13 29:1 53:15 55:22 82:14 91:13 103:9 104:21 <b>numbers (2)</b> 93:4 95:24 <b>nutshell (3)</b> 50:11</p>	<p>59:2 62:1</p> <hr/> <p style="text-align: center;"><b>O</b></p> <p><b>o'clock (1)</b> 45:14 <b>objective (9)</b> 48:20 54:1,10 57:8 59:10 59:15 87:23 92:17 93:4 <b>objectively (1)</b> 53:20 <b>objectives (1)</b> 81:11 <b>observe (3)</b> 21:17,24 27:5 <b>observing (1)</b> 40:13 <b>obtain (3)</b> 84:11 105:20 112:3 <b>obtained (3)</b> 24:15 112:1 116:15 <b>obvious (1)</b> 116:23 <b>obviously (4)</b> 1:23 12:6 25:6 123:4 <b>occur (2)</b> 84:12,13 <b>odd (2)</b> 43:4 68:12 <b>offer (4)</b> 31:5 39:11 70:14 72:3 <b>offering (2)</b> 44:21 115:3 <b>offers (1)</b> 109:23 <b>official (1)</b> 28:20 <b>officially (1)</b> 5:9 <b>OFT (15)</b> 4:7,11,19,20 5:8,21 6:12,18 11:13,16 32:20 33:8 86:2 96:11 122:7 <b>okay (13)</b> 40:10 46:7 51:10 60:4 61:11 63:18 71:25 87:16 89:22 108:17 118:2 118:12 123:15 <b>old (1)</b> 121:22 <b>older (1)</b> 6:13 <b>omitted (3)</b> 111:24 112:2,4 <b>omitting (1)</b> 105:19 <b>once (4)</b> 52:22 63:5 82:14 120:20 <b>one-to-one (1)</b> 83:11 <b>ones (1)</b> 25:9 <b>onwards (1)</b> 122:7 <b>open (13)</b> 1:3,23 28:23 38:14,18 45:18 53:18 99:11 124:2 125:3,7,10 125:12 <b>opened (1)</b> 6:12 <b>opening (1)</b> 76:10 <b>operate (2)</b> 60:13 76:25 <b>operates (2)</b> 24:18,21 <b>operation (6)</b> 53:21 64:4 71:3 76:21 77:6 79:14 <b>opinion (4)</b> 3:13 55:13 55:23 93:23 <b>opposed (1)</b> 93:9 <b>optimal (3)</b> 60:21 108:8 120:8 <b>optimises (1)</b> 60:22 <b>option (1)</b> 63:7 <b>oral (1)</b> 5:19 <b>order (1)</b> 75:5 <b>ordinary (1)</b> 65:1 <b>organised (1)</b> 60:24 <b>Origin (1)</b> 25:25 <b>original (3)</b> 118:25 119:14 120:15 <b>originated (1)</b> 95:15 <b>origins (1)</b> 107:19 <b>other's (1)</b> 6:10</p>
--	---	--	--	---	--	--

<b>outcome (4)</b> 67:4 79:11,12 93:5	122:15	<b>periodical (1)</b> 95:9	1:18	<b>producing (1)</b> 60:25	<b>quarter (1)</b> 90:12	96:17 98:5 101:6
<b>outcomes (1)</b> 32:24	<b>parties' (1)</b> 64:3	<b>periodically (3)</b> 95:23	<b>precise (4)</b> 1:13 59:25	<b>product (5)</b> 21:6	<b>query (1)</b> 123:19	101:12,13
<b>outdated (1)</b> 97:8	<b>partly (2)</b> 41:23 71:25	96:3 100:24	60:1 81:25	43:13,16,22 106:23	<b>question (63)</b> 12:3	<b>reasoning (7)</b> 90:6
<b>outlined (1)</b> 101:13	<b>party (2)</b> 7:9 56:1	<b>periods (1)</b> 102:24	<b>precisely (4)</b> 3:20 33:3	<b>product's (1)</b> 106:25	29:17,22 39:10,16	90:12 91:13,15
<b>overall (15)</b> 14:8 24:3	<b>pass (3)</b> 44:6 73:6,18	<b>person (2)</b> 43:19 47:7	50:15 116:19	<b>products (4)</b> 25:10,11	40:11,24 41:17,24	101:9,21 106:21
26:16 31:12 81:11	<b>pass-on (72)</b> 12:3,4,14	<b>personally (1)</b> 28:12	<b>prediction (1)</b> 117:25	82:25 107:1	42:3 43:6,7 44:12	<b>reasonably (4)</b> 26:13
82:2,24 83:7,12,16	12:19 13:2,4 14:21	<b>perspective (7)</b> 36:8	<b>prefer (2)</b> 72:14 74:4	<b>professional (1)</b> 3:13	46:6,7 57:22 60:5	61:9 116:22 121:14
83:21,25 86:2	15:22 16:5 18:11	59:11 62:4 66:4	<b>preference (1)</b> 62:3	<b>Professor (10)</b> 5:6	60:15 61:11 62:17	<b>reasoning (1)</b> 28:8
104:4 111:14	19:8,11,12 20:21	95:14 107:19,22	<b>premium (3)</b> 43:14	7:23 73:15 99:15	62:17 63:20 64:2	<b>reasons (7)</b> 11:13 24:9
<b>overcharge (1)</b> 44:17	21:1,11,15,17,25	<b>Peter (2)</b> 88:2,13	122:22,24	99:20 100:22	68:10,19 71:25	25:11 82:4 100:9
<b>overestimates (1)</b> 103:10	22:19 23:4,13 24:2	<b>petrol (6)</b> 73:20,21,22	<b>present (4)</b> 20:21	103:24 118:19	72:13,14,16 73:3	120:12 121:7
<b>overestimating (2)</b> 101:12,18	24:14,16 25:9,14	73:23 74:1,3	22:13 34:10 53:18	120:17 122:5	73:15 75:18,20	<b>recall (9)</b> 7:9 9:22 10:6
<b>overly (1)</b> 27:9	25:18,20,25 26:3	<b>pick (2)</b> 29:25 53:8	<b>presentation (1)</b> 105:17	<b>profitable (3)</b> 109:16	83:22 91:23 93:9	12:2 13:22 14:6,9
<b>overview (2)</b> 22:13	26:11,17 27:3,3,4,8	<b>picture (3)</b> 24:3 26:16	<b>presented (4)</b> 5:19	109:24,25	93:10 94:13,19,24	30:7 100:20
24:14	27:10,12 28:4,12	33:18	19:23 22:14 24:7	<b>profits (1)</b> 49:3	94:25 95:2 96:6,17	<b>recap (1)</b> 5:25
<b>Oxera (15)</b> 3:19,24 4:3	28:13,17,21 29:4	<b>piece (1)</b> 101:23	<b>pressure (2)</b> 31:17	<b>progress (1)</b> 117:17	96:21 97:1,6	<b>receive (2)</b> 71:3 80:25
4:13 5:6,16,20,21	29:14,17,20 32:8	<b>place (11)</b> 4:21 18:23	66:15	<b>prohibition (2)</b> 63:21	100:10,11,19 106:2	<b>recital (1)</b> 105:15
7:3,7 8:16 9:25	32:16,17 33:1,3,18	21:9 45:10 56:18	<b>presumably (4)</b> 44:7	76:3	106:12 107:9 110:6	<b>record (1)</b> 99:5
13:16,18 46:14	34:21 35:8,18,22	58:15 60:7 72:1	62:11 66:20 121:4	<b>promise (1)</b> 53:7	114:2,6,6 115:11	<b>recover (1)</b> 76:22
<b>Oxera's (1)</b> 3:22	36:3,10 40:8 41:2	87:5 92:25 114:10	<b>presumption (7)</b> 12:17 13:1,4 16:4	<b>promotions (2)</b> 39:5	116:19,21 118:16	<b>REDACTED (2)</b> 38:15
	41:16,25 42:2,6,15	<b>play (4)</b> 1:20 13:16	20:21 21:1 25:14	40:4	118:19 123:19	125:8
	44:11,13,14,19	68:18 109:5	<b>presumptions (1)</b> 24:4	<b>proof (4)</b> 47:5,6,17	<b>questioning (1)</b> 37:25	<b>redo (1)</b> 98:20
	81:7	<b>players (1)</b> 31:3	<b>pretty (7)</b> 6:4 8:17	98:6	<b>questions (8)</b> 3:15	<b>reduce (1)</b> 44:15
	<b>pass-through (1)</b> 31:23	<b>playing (1)</b> 31:2	14:14 37:4 43:4	<b>proper (5)</b> 35:18 64:4	14:3 37:16 63:17	<b>reduced (5)</b> 15:15
	<b>passage (1)</b> 90:2	<b>plea (1)</b> 46:23	48:12 118:5	68:5 97:18 98:2	74:21 118:11,18	19:20 44:3 78:15
	<b>passages (3)</b> 28:1 29:8	<b>pleadings (1)</b> 8:23	<b>prevent (1)</b> 81:12	<b>properly (1)</b> 38:1	125:11	114:23
	37:12	<b>please (9)</b> 2:7,12 11:8	<b>previous (4)</b> 22:14	<b>proposition (4)</b> 33:10	<b>quick (1)</b> 11:11	<b>reduces (1)</b> 44:9
	<b>passed (12)</b> 18:25	13:7 16:8 22:5	26:19 35:22 40:6	35:24 39:24 110:10	<b>quite (15)</b> 5:4 6:2	<b>reduction (5)</b> 11:21
	20:11,24 21:8 22:3	36:19 99:12 103:19	<b>price (26)</b> 21:7 39:12	<b>prove (3)</b> 46:20 98:6,7	10:10,10 30:8	18:23 21:5,7
	22:17 27:1 31:19	<b>pleased (1)</b> 10:15	39:14,18,23 41:2	<b>provide (7)</b> 22:16 23:3	34:24 37:17 54:24	113:15
	31:21 33:6 44:25	<b>plucked (1)</b> 52:1	42:1,23 43:1,21,22	23:12 24:14 25:3	59:11 70:7 71:13	<b>reductions (2)</b> 15:15
	66:9	<b>pm (6)</b> 38:16 45:15,17	44:2,8,9 60:12,14	122:16,19	71:13 75:9 110:15	49:1
	<b>passive (1)</b> 73:17	92:8,10 124:1	69:24 70:1,2,15	<b>provided (1)</b> 121:24	122:7	<b>refer (15)</b> 12:20 23:5
	<b>patent (2)</b> 63:10 70:1	<b>point (31)</b> 6:25 9:15	74:5 106:23,25	<b>providing (2)</b> 44:9	<b>quote (2)</b> 86:14 87:1	23:19 31:16 48:4
	<b>pause (4)</b> 14:18 40:20	10:8 12:11 14:22	107:5 112:23 119:6	99:25		51:19 88:4,14,15
	41:12 117:15	21:16 22:1 27:19	11:24 15:1,16,18	<b>proviso (1)</b> 14:1	<b>R</b>	101:23 103:20
	<b>pausing (7)</b> 15:4 20:19	31:16 41:22 42:22	17:6,25 19:19 20:4	<b>proximity (7)</b> 51:12,19	<b>radio (1)</b> 40:18	104:2 113:6,9
	33:25 39:20 77:2	49:4 54:8 56:9	20:12 21:5,8 22:12	52:13 85:19 107:20	<b>raise (2)</b> 43:22 110:6	114:8
	85:24 114:1	63:24 70:18 77:24	22:20 26:1 31:5,20	112:10 120:12	<b>raised (1)</b> 62:17	<b>reference (3)</b> 23:8
	<b>pay (13)</b> 31:8 33:5	81:13 82:5 89:23	31:23 33:6 36:1	<b>public (1)</b> 21:18	<b>range (2)</b> 29:20 91:3	88:1 116:16
	65:4,25 68:8,11,13	96:6,7 99:22 106:7	39:4 40:3,25 41:4,6	<b>published (2)</b> 24:25	<b>ranges (1)</b> 40:15	<b>referred (12)</b> 9:23,24
	69:6 70:11 82:7	106:8,17 110:5	41:15 42:21 44:19	109:18	<b>rate (10)</b> 24:14 29:15	11:3 16:9 33:14
	115:20 119:21	113:15 114:5 120:3	85:8,11,12 108:9	<b>punchline (2)</b> 90:3,10	60:11 109:22,23	38:23 79:25 89:19
	120:3	122:13	56:9 77:7 107:10	<b>purchasers (1)</b> 77:21	123:10,11,12,20,22	99:3 104:4 105:1
	<b>payable (1)</b> 93:24	<b>pointed (1)</b> 105:15	55:12 80:9 106:19	<b>purchases/basket (1)</b> 31:25	<b>rates (7)</b> 27:5 29:18	119:14
	<b>paying (7)</b> 44:17,18	<b>points (2)</b> 9:6 21:14	<b>priced (6)</b> 59:3 63:21	<b>purposes (2)</b> 12:5	96:1 97:3 102:7	<b>referring (3)</b> 54:25
	65:22,24 68:14,15	<b>policy (1)</b> 30:14	85:8,11,12 108:9	98:9	123:3,24	93:8 104:13
	109:12	<b>posed (2)</b> 100:10,12	<b>principle (4)</b> 19:10	<b>put (32)</b> 3:17 7:8 11:1	<b>rationale (6)</b> 44:13	<b>refers (1)</b> 22:24
	<b>payment (24)</b> 31:13	<b>posit (1)</b> 103:11	56:9 77:7 107:10	13:7 16:8 19:10	100:25 112:8,9,15	<b>refinements (1)</b> 51:15
	31:25 33:4 50:9	<b>position (17)</b> 31:10	55:12 80:9 106:19	22:4 24:1 28:23	112:18	<b>reflect (1)</b> 99:23
	57:25 58:21 59:2	34:19 35:7,13,19	<b>pro-competitive (2)</b> 49:2 85:13	29:25 32:6 34:14	<b>RBA (3)</b> 20:10,23,24	<b>reflection (2)</b> 23:7
	63:5,7 64:1,7 67:22	35:23 36:4,6,7	<b>probably (22)</b> 1:14 2:5	34:17 41:14 43:6	<b>RBS (1)</b> 7:9	87:9
	67:24 68:24 71:5	44:20 64:9 67:9	6:2 9:18 14:8 23:4	44:12 48:1 49:11	<b>reaction (2)</b> 97:9,10	<b>reflects (1)</b> 120:9
	72:4 76:24 77:7	73:14 79:2 98:20	34:19 36:11 41:23	50:12 51:5 53:7	<b>read (20)</b> 11:9 14:2,17	<b>regard (4)</b> 22:23 29:21
	85:17 95:16 99:25	99:10 103:8	42:7 43:2 46:18	57:22 65:12 74:11	30:10 33:7 36:25	75:20 105:14
	113:13,24 114:3	<b>positive (5)</b> 15:5,20	74:7 78:10 93:11	78:10 84:22 87:9	37:22 38:25 39:1	<b>regarded (3)</b> 71:8 87:2
	<b>payments (4)</b> 17:18	16:3 43:11 70:12	94:13 95:17 102:24	87:14 102:7,10,14	40:14 46:24 48:12	87:11
	31:9 72:3 111:4	<b>possibilities (1)</b> 31:10	105:24 110:9	102:23	56:12 57:2,24	<b>regardless (1)</b> 15:2
	<b>pays (3)</b> 44:22 64:25	<b>possibility (1)</b> 64:23	116:17 120:20	<b>putting (8)</b> 15:20	58:16 59:18 93:11	<b>regression (1)</b> 26:6
	68:3	<b>possible (10)</b> 1:19	61:21,23,24	25:16,23 44:8	105:7 113:23	<b>regulate (1)</b> 106:23
	<b>penetration (1)</b> 116:3	29:14 47:24,25	<b>problem (4)</b> 30:16	47:20 73:2 102:14	<b>reader (2)</b> 11:11 90:11	<b>regulating (3)</b> 17:13
	<b>people (9)</b> 1:8 38:10	51:5 67:25 72:20	61:21,23,24	114:12	<b>reading (14)</b> 15:7,17	19:15,22
	65:24 69:15 93:1	79:22 122:16 123:8	<b>problematic (1)</b> 30:18	<b>qualitative (1)</b> 44:18	17:5 18:25 31:7,14	<b>regulation (9)</b> 16:12
	115:6,12,19 119:3	<b>possibly (3)</b> 38:8	<b>problems (1)</b> 61:25	<b>qualitatively (1)</b> 104:18	39:10 49:2 57:18	16:25 17:1 30:23
	<b>percentage (3)</b> 89:5	60:16 66:1	<b>proceeding (1)</b> 10:1	<b>quality (19)</b> 21:6	76:14 77:19 87:20	31:1 62:13 107:3,4
	109:1 123:11	<b>postulating (1)</b> 114:2	<b>proceedings (10)</b> 1:9	39:12,13,18,22	99:24 110:14	114:24
	<b>percentages (1)</b> 111:17	<b>pot (3)</b> 59:4 108:6,13	5:8,24 7:21 16:10	42:9,11,22 43:13	<b>realise (2)</b> 65:25 68:2	<b>regulations (1)</b> 30:4
	<b>Perez (1)</b> 34:7	<b>potential (1)</b> 119:10	16:15 30:5 46:11	43:15,16,21,23	<b>reallocate (1)</b> 108:20	<b>regulator (3)</b> 78:22,24
	<b>perform (1)</b> 35:18	<b>potentially (1)</b> 71:13	46:15 92:22	44:3,7,10,15,21	<b>really (16)</b> 1:14,14,15	110:15
	<b>performed (2)</b> 7:7	<b>pound-for-pound (1)</b> 123:6	<b>process (2)</b> 5:15 119:3	45:3	12:2 37:17 38:3	<b>regulators (1)</b> 78:15
	100:4	<b>power (7)</b> 30:19 63:9	<b>processing (1)</b> 85:17	<b>quantify (8)</b> 44:24	42:5,13,18 67:16	<b>regulatory (1)</b> 11:23
	<b>period (16)</b> 7:18 70:21	63:9,14,24 64:14	<b>produce (4)</b> 11:16	45:3 95:19 116:18	73:25 86:19 109:16	<b>rejected (8)</b> 56:5,12
	85:18 86:24 91:20	69:22	49:1 58:1 75:4	116:25 117:5,8,12	114:21 118:3	56:20,25 57:1,16
	93:9 94:8,10 97:11	<b>practical (4)</b> 29:12	58:7 99:8	<b>quantifying (1)</b> 50:15	119:15	57:24 96:15
	97:13 100:15 101:3	51:11 120:12 121:7	<b>produces (8)</b> 56:19,22	<b>quantity (1)</b> 44:4	<b>realm (1)</b> 42:24	<b>rejects (1)</b> 7:10
	102:16,23 122:18	<b>practice (2)</b> 9:1,2	56:24 58:1,4,10	<b>reason (16)</b> 9:14 23:1	42:23,25 59:19	<b>relate (2)</b> 25:4 26:23
	123:9	<b>pre-indications (1)</b> 96:17	75:19 78:6	62:13,23 65:16	87:21 92:16 93:3	<b>related (3)</b> 8:10 26:13
						94:19
						<b>relates (7)</b> 17:15 48:9

76:10 94:13 103:6 105:2,23 <b>relating (3)</b> 8:8 9:5 55:9 <b>relationship (1)</b> 116:1 <b>relationships (1)</b> 42:20 <b>relevant (16)</b> 4:24 7:19 9:7,8 10:8,16 25:12,13 26:18,24 27:14 75:20 77:19 82:25 92:24 121:18 <b>relied (7)</b> 12:13 26:23 35:11 93:22 94:4 98:5,9 <b>relies (2)</b> 47:7 77:19 <b>rely (9)</b> 18:13 20:22 35:14 89:17 93:5 98:16,17 100:17 101:20 <b>relying (4)</b> 25:24 97:2 99:20 100:14 <b>remain (2)</b> 50:7 60:10 <b>remains (1)</b> 67:8 <b>remember (9)</b> 6:17 8:7 11:2 14:11 40:2 46:21,22 95:5 122:10 <b>remind (1)</b> 93:14 <b>remits (1)</b> 64:5 <b>renew (1)</b> 87:3 <b>report (67)</b> 2:13,25 3:5,18 4:5 8:21 14:7 16:10,16,22 17:11 18:15,17 20:1 22:5,7 23:14 23:20 27:25 28:25 30:10,12,13 33:25 36:20,20,22,22 40:21,24 46:9 47:19 48:4 50:3 51:17 52:12,14,24 54:14,24 55:3 58:8 58:19 62:9,10 75:10 81:22 82:22 83:3 84:16,23 88:25 94:22 98:24 99:2,14 101:25 102:6 110:25 111:23 112:17 113:1,4 116:8,13 117:6 120:20 <b>reported (2)</b> 18:2,22 <b>reports (7)</b> 3:12 5:5,6 5:20,21 14:23 109:19 <b>request (1)</b> 118:17 <b>required (2)</b> 61:10 71:21 <b>requirement (1)</b> 95:11 <b>requires (1)</b> 11:16 <b>Reserve (1)</b> 11:22 <b>respect (3)</b> 52:15 86:18 90:1 <b>respected (1)</b> 20:4 <b>respective (1)</b> 76:23 <b>responding (1)</b> 66:14 <b>response (1)</b> 13:10 <b>rest (1)</b> 108:24 <b>restaurant (8)</b> 114:17 114:20,22 115:1,8 115:14,18 116:4 <b>restricting (1)</b> 76:8 <b>restriction (8)</b> 64:17 76:14 81:10 82:1,3 84:8,10,13 <b>restrictive (2)</b> 77:9 81:1 <b>result (6)</b> 18:24 42:11	64:21 104:21 114:24 115:15 <b>resulted (2)</b> 11:22 17:2 <b>resulting (4)</b> 54:6 91:6 103:9,9 <b>results (5)</b> 25:19 85:11 88:23 89:8 100:18 <b>retail (19)</b> 11:15,18,24 15:16 17:5 19:19 20:13,15,17 21:5 24:17,19 25:4 26:13 31:18,20,22 31:23 33:16 <b>retailer (3)</b> 17:3 44:17 45:8 <b>retailers (22)</b> 14:24 15:1,16 21:21 26:4 27:1 28:2 31:6,8 33:4,6,16 34:18,19 35:6,13,20,23,25 35:25 36:1,4 <b>retailers' (2)</b> 14:25 17:3 <b>retailing (1)</b> 31:17 <b>retain (1)</b> 113:3 <b>revenue (20)</b> 85:19 89:3 106:10 107:9 107:21,24 108:3,13 108:24 109:4,11 111:5 112:11,12 119:17,23 120:4,5 120:10 121:3 <b>revenues (35)</b> 61:5,6 105:11,19 106:12 106:16 107:7,10,13 107:13,15,17 108:3 108:14,16,17,23 109:7 110:4,8,19 111:10,12,15,18,20 111:25 112:2,7,22 112:25 118:21 119:10,12 120:22 <b>review (9)</b> 6:6,10 8:24 9:20 13:14 14:23 25:19 50:11 116:20 <b>reviewed (6)</b> 8:22 9:21,23 11:5,6 24:13 <b>reviewing (2)</b> 7:16 9:12 <b>revisit (4)</b> 95:9 103:5 103:7,23 <b>revolvers (3)</b> 110:4,11 110:17 <b>rewarding (1)</b> 40:17 <b>Reynolds (1)</b> 102:21 <b>right (19)</b> 18:19 32:24 36:12 38:21 39:25 40:1 45:13 59:20 64:13 70:13 87:16 90:19 91:5,10 108:10,19 109:7 118:10 121:20 <b>rightly (1)</b> 73:25 <b>rigour (1)</b> 26:9 <b>ring (2)</b> 38:7 75:4 <b>risen (1)</b> 104:3 <b>risks (1)</b> 113:16 <b>rivals (3)</b> 69:7,13,16 <b>robust (24)</b> 12:16,23 23:3,12 24:10 27:15 45:22,25 46:4 47:24 51:20 52:7 77:18 87:23 92:17,21,24 93:4,6 98:9 99:21 101:1,3 101:4	<b>robustness (3)</b> 26:21 94:7 98:4 <b>Rogers (1)</b> 36:5 <b>role (4)</b> 5:25 6:2 13:18 13:21 <b>roof (1)</b> 99:4 <b>room (1)</b> 85:8 <b>rooted (1)</b> 9:4 <b>rough (1)</b> 51:13 <b>roughly (1)</b> 108:22 <b>round (5)</b> 36:9 63:11 79:10 82:13 121:12 <b>Royal (5)</b> 7:3 10:4 46:12,14 56:2 <b>rule (9)</b> 63:3,5 64:13 64:16,19,22 65:8 65:15 71:18 <b>rules (1)</b> 92:3  <b>S</b> <b>sadly (1)</b> 114:20 <b>Sainsbury's (18)</b> 16:1 24:18,21 27:7 36:3 37:9 38:9,11,23 40:22 41:13 42:12 98:1,7 102:23 123:5,7,9 <b>sake (1)</b> 60:21 <b>sales (11)</b> 113:19,25 114:4,7,16,22 115:15 116:7,15,22 117:9 <b>satisfaction (1)</b> 51:21 <b>satisfactory (1)</b> 97:21 <b>satisfied (3)</b> 47:9 51:1 116:8 <b>satisfies (1)</b> 52:17 <b>satisfy (3)</b> 46:9 50:2 55:2 <b>saves (1)</b> 61:16 <b>savings (1)</b> 31:18 <b>saw (8)</b> 14:11 16:21 18:14 33:2 34:25 92:14 101:13 109:1 <b>saying (23)</b> 12:23 21:10 29:23 34:3 39:21 41:4,5,23 46:25 56:11,24 57:25 64:10,17,18 68:13 70:11 73:25 75:23 78:21,24 98:11 111:11 <b>says (14)</b> 11:12 12:11 12:18,18 13:5 18:21 29:13 48:18 56:13 57:18 64:25 90:4 94:21 99:19 <b>scaled (1)</b> 72:23 <b>scaling (1)</b> 71:9 <b>schedule (2)</b> 122:16 123:20 <b>scheme (80)</b> 4:18 54:6 56:4,8,15,18,19,22 56:22,24 57:9,17 57:19,23 58:1,3,10 58:13 59:5,7,8 60:13,22,23,24,25 61:1,5,7,16 62:14 62:15 63:4,18,20 64:4 66:5 67:17 68:24 69:6 70:3,20 71:9,12,24 72:2,13 72:23 75:2,4,5,18 75:21,24 76:21 77:7,8,23,25 78:4 79:15,19 108:5,12 108:15 109:12 110:1,4,7,8,12,15 110:16 114:13,14	115:10,22 116:2,4 121:23 <b>scheme's (1)</b> 108:23 <b>schemes (47)</b> 30:20 33:20,23 34:4,20 35:7,8,10,11,14 36:5 50:5,7 54:17 54:21,22 55:7,8,13 55:14,19,21 58:14 58:17,21,22 59:1 60:10 61:17 66:19 66:22,22 67:18 72:3,4,18 74:14,17 75:7 76:24 78:17 78:20 79:2,4 110:13 114:9 123:14 <b>Scotland (6)</b> 7:3 10:4 46:12,14 56:2,4 <b>second (18)</b> 3:5 6:5 20:10 22:1 28:25 46:23 52:4 82:17 78:9 80:24 81:18 84:1 100:4,8,19 105:3,9,14 <b>Secondly (2)</b> 71:1 110:14 <b>section (38)</b> 17:11,15 17:19,20 18:21 19:14 22:13,19 24:1 25:21 36:25 37:1,7 52:14 54:16 55:11,24 58:24 84:25 85:1,3,5 88:4 89:13,19,20 98:24 99:2 101:24 102:1 102:5 111:23,25 112:5,13,17 113:5 116:20 <b>sections (3)</b> 22:15 52:23 54:15 <b>sector (2)</b> 17:18 31:24 <b>see (30)</b> 1:20 3:5 14:14,22 16:16 18:6 20:3 23:6 34:21 41:9 45:13 46:25 48:6,18 49:8 57:15,22 67:5,21 80:2,13 86:16 87:15 94:7 100:24 104:14 105:4,22 122:23 123:17 <b>seeing (1)</b> 123:4 <b>seeking (1)</b> 73:10 <b>seen (14)</b> 5:4 6:11 9:18 14:5 16:14,15 17:7 23:9 24:6 28:8 30:6 99:13 100:20 105:24 <b>select (1)</b> 26:12 <b>selected (1)</b> 24:16 <b>selection (2)</b> 24:22,23 <b>sense (3)</b> 68:13 70:22 112:5 <b>sensible (2)</b> 53:3 122:14 <b>sentence (3)</b> 22:24 82:23 92:15 <b>separate (1)</b> 11:1 <b>separately (2)</b> 5:9 52:11 <b>seriously (1)</b> 114:21 <b>service (10)</b> 17:4 27:13 39:12,13,18 39:22 115:4 119:1 119:7 123:11 <b>services (3)</b> 17:25 32:1 119:2 <b>session (13)</b> 1:3 38:14	38:15,17,18 118:8 124:2 125:3,7,8,9 125:10,12 <b>set (21)</b> 3:13 12:5 23:21 25:12 28:9 33:25 34:3,4,6 35:25 47:16 50:23 55:11 79:23 88:8 88:23 89:7 90:14 91:17 119:15 122:17 <b>sets (4)</b> 35:22 52:19 77:12 81:16 <b>setting (5)</b> 52:16 63:16 69:2 85:23 99:22 <b>share (11)</b> 12:10 51:3 51:6,7 52:4 68:5 79:3 80:25 81:7,24 90:22 <b>shared (3)</b> 11:25 12:1 12:7 <b>shifting (2)</b> 44:8 82:8 <b>shifts (2)</b> 76:19 77:14 <b>shop (1)</b> 42:13 <b>short (9)</b> 36:12,17 45:16 60:17 70:21 70:22 88:24 92:5,9 <b>short-term (1)</b> 70:23 <b>shortly (1)</b> 83:22 <b>show (6)</b> 27:3 41:4 48:13 49:14,15 84:5 <b>showed (1)</b> 91:3 <b>showing (2)</b> 91:5 104:3 <b>shown (2)</b> 14:7 58:18 <b>shows (4)</b> 15:14 119:24,25 120:2 <b>side (32)</b> 53:7 59:4 60:19,20 61:3,6,6,7 61:8,14 67:6,6 69:20 71:7 72:13 74:15 95:18,18 107:14,14 108:7,13 108:14,18,24,25 109:2,6,21,25 111:18 121:2 <b>Sidenius (11)</b> 7:24 88:2,13 93:12 94:7 98:23 99:7 100:9 109:15 121:9 122:10 <b>sides (1)</b> 120:22 <b>sides' (1)</b> 52:7 <b>signalled (1)</b> 98:23 <b>signature (5)</b> 2:18,20 3:3,8,10 <b>significant (1)</b> 11:15 <b>similar (5)</b> 4:23 33:18 97:17 99:18 104:16 <b>simple (1)</b> 62:10 <b>simply (6)</b> 1:21 11:13 22:22 66:23 70:19 72:20 <b>situation (10)</b> 43:4 63:12 65:8 66:17 69:21,21 78:21 79:6,11 83:15 <b>situations (1)</b> 29:15 <b>six (2)</b> 9:6 70:8 <b>size (3)</b> 31:24 60:22 114:14 <b>skeleton (1)</b> 80:1 <b>skewed (4)</b> 59:3 85:8 85:11 108:9 <b>slightly (1)</b> 34:8 <b>small (5)</b> 15:2 21:7,12 22:2 115:14	<b>smaller (2)</b> 102:12 115:10 <b>Smith (15)</b> 60:8 62:6 64:2 66:7,18 67:10 67:13 70:6 72:20 74:18 118:16 122:13,23 123:19 123:24 <b>Smith's (1)</b> 62:17 <b>society (1)</b> 32:23 <b>sold (1)</b> 74:6 <b>solution (2)</b> 30:22 86:3 <b>somewhat (3)</b> 97:10 98:13 104:15 <b>soon (1)</b> 38:8 <b>sophisticated (1)</b> 71:11 <b>sorry (16)</b> 29:1 37:18 38:6 39:3 43:5 47:13 53:15 57:2 60:8 69:12 74:19 97:23 104:13 111:18 120:18 123:19 <b>sort (15)</b> 4:16 8:4 9:22 11:4,6 27:4 51:12 60:12 72:15 82:5 97:4 99:18 106:22 118:4 121:21 <b>sought (2)</b> 33:20,24 <b>source (4)</b> 89:8,16 97:18 98:2 <b>sources (1)</b> 34:12 <b>Spain (9)</b> 17:1,8,15 18:23 19:20 24:19 24:24 26:4 27:1 <b>Spanish (1)</b> 21:4 <b>specialist (1)</b> 100:4 <b>specific (11)</b> 14:9 16:1 22:15,22 23:2 27:7 29:19 33:12 34:5 57:21 98:1 <b>specifically (10)</b> 24:8 54:1,10 55:10 57:8 59:15 75:1 78:1,5 86:21 <b>spend (4)</b> 7:7 9:25 42:2 117:13 <b>squarely (1)</b> 89:14 <b>stage (17)</b> 5:21 6:18 8:16,17 13:22,23 51:15 52:25 60:2,3 63:8 70:18 86:11 87:6 92:2 96:11 118:14 <b>stages (2)</b> 99:11 108:1 <b>stand (1)</b> 1:24 <b>standard (9)</b> 47:6,15 47:21 48:12,16,17 48:23 49:6 122:25 <b>starker (1)</b> 72:6 <b>start (4)</b> 7:15 80:8 82:2 101:4 <b>started (5)</b> 3:24,24 4:3 4:14,15 <b>starting (4)</b> 82:5 89:23 99:22 104:25 <b>starts (6)</b> 17:12 30:3 36:23 85:1 88:7 99:15 <b>state (1)</b> 6:23 <b>statement (11)</b> 13:3,4 20:23 23:10,11 33:9 52:20 55:24 88:2,12 94:17 <b>statements (21)</b> 8:24 8:25 28:8,9 32:7,14 33:7,14,16,21,24	34:7,9,11,11,15,18 34:23 35:1,2,4 <b>states (1)</b> 76:25 <b>stating (1)</b> 96:12 <b>stations (5)</b> 73:20,21 73:22 74:1,4 <b>stay (1)</b> 53:9 <b>Staying (2)</b> 53:6 90:1 <b>stays (1)</b> 73:24 <b>stealing (4)</b> 30:17 83:13,17,19 <b>steer (1)</b> 32:2 <b>step (3)</b> 6:19 50:23 55:16 <b>stick (1)</b> 72:18 <b>sticking (1)</b> 98:16 <b>stop (1)</b> 45:10 <b>stores (1)</b> 40:16 <b>storms (1)</b> 8:7 <b>story (1)</b> 120:11 <b>straight (3)</b> 1:5 18:14 26:22 <b>strong (12)</b> 12:16 13:1 13:4 16:4 20:20 25:17 28:3,11 34:25 39:4 65:19 91:18 <b>strongly (2)</b> 95:22 96:22 <b>structure (2)</b> 59:3 108:9 <b>struggle (2)</b> 68:17 78:19 <b>struggling (1)</b> 71:16 <b>students (2)</b> 1:10 118:1 <b>studied (1)</b> 19:3 <b>studies (40)</b> 18:8 21:2 22:16,19,22,23 23:1,2,5,9,12,20,23 23:25 24:4,5,9,24 25:3,8 26:8,19,23 27:2,16 35:16 87:18,22 88:9,13 89:2,9 90:2 92:16 92:21 93:5 96:23 98:21 100:21 111:14 <b>study (40)</b> 7:7 9:25 18:6,18 19:1,6,7 25:9 26:3,24,25 27:12 86:13 88:16 89:1,11,15,16,18 93:15,16 94:18 95:12 96:8,15 97:3 97:7,19 98:2,17 99:10 100:3,6 101:5,22 102:18 103:10 104:3 112:19 122:11 <b>stuff (4)</b> 8:23 48:12 97:4 118:3 <b>subject (2)</b> 87:24 92:18 <b>subjective (1)</b> 48:22 <b>submission (2)</b> 13:12 14:10 <b>submissions (9)</b> 5:11 5:16,17 6:6,10 9:16 9:19 37:22,23 <b>submit (1)</b> 5:6 <b>subsequent (2)</b> 77:21 99:6 <b>subsidise (1)</b> 31:14 <b>subsidies (1)</b> 110:16 <b>subsidy (2)</b> 33:3 110:3 <b>substantial (1)</b> 106:4 <b>substantially (1)</b> 122:7 <b>substantiated (2)</b>
--	--	--	---	---	--	---

<p>49:10 80:16  <b>successful (1)</b> 54:18  <b>successfully (1)</b> 76:25  <b>suffered (1)</b> 43:19  <b>suffers (1)</b> 43:23  <b>sufficient (3)</b> 30:19  101:17 105:16  <b>sufficiently (4)</b> 24:10  24:17,20 93:6  <b>suggest (7)</b> 12:16,19  15:4 26:3 32:2 73:7  116:6  <b>suggesting (2)</b> 72:22  114:21  <b>suggests (3)</b> 14:24  62:20 109:24  <b>summarised (1)</b> 52:21  <b>summarises (2)</b> 25:19  88:21  <b>summary (5)</b> 16:23  19:23 25:3 30:15  75:13  <b>supermarkets (3)</b>  39:22 42:11,25  <b>supplemental (2)</b> 2:25  3:5  <b>supplier (1)</b> 44:5  <b>supplies (1)</b> 119:24  <b>supply (6)</b> 119:1,3,6,8  119:9,11  <b>support (1)</b> 28:3  <b>supported (4)</b> 29:11  35:1 39:4 82:20  <b>supporting (1)</b> 28:11  <b>suppose (3)</b> 64:3  108:8,9  <b>supposed (2)</b> 23:15  34:1  <b>sure (16)</b> 1:8,22 2:3  9:3 41:18 56:10,10  62:7 63:22 66:3  74:21 86:19 106:2  114:25 120:18  123:17  <b>surely (2)</b> 68:2,6  <b>survey (2)</b> 75:12 98:3  <b>surveys (2)</b> 5:16,17  <b>survival (1)</b> 71:24  <b>survive (3)</b> 67:18 69:6  110:12  <b>switch (1)</b> 72:11  <b>system (13)</b> 53:21  54:2 59:16 71:4  95:16 105:4,10  107:17 108:19  110:24 111:1 120:7  122:2  <b>systematically (2)</b>  116:24 119:16  <b>systems (4)</b> 33:4 50:9  62:3 121:22</p> <hr/> <p style="text-align: center;"><b>T</b></p> <p><b>tab (27)</b> 2:12,22 3:5  10:18,19 13:8 16:9  22:8 28:25 29:2  30:2 36:20,21  38:20 46:9,17 48:7  53:11 75:12 79:24  84:23 93:16,18,19  99:12 104:23 113:1  <b>table (10)</b> 15:11 70:9  88:20 89:8,8 91:3,6  104:16 123:22,24  <b>take (31)</b> 9:19,21  15:16 18:23 20:19  38:7,19 48:11 51:3  51:19 80:1,2,4  85:14 88:6,18</p>	<p>89:22 90:16 99:11  99:23 107:6,21  110:18 111:10  114:17,20 118:13  118:21 119:10,16  120:9  <b>taken (10)</b> 21:9 48:20  52:25 53:2 60:3,7  105:1,12 106:3,13  <b>takes (3)</b> 85:5,16  103:22  <b>talk (1)</b> 123:18  <b>talked (1)</b> 26:19  <b>talking (11)</b> 30:5  36:14 40:2,21 42:1  71:12 74:23 76:17  80:21 94:9,10  <b>talks (2)</b> 77:15,16  <b>target (1)</b> 117:18  <b>tax (8)</b> 25:25 26:1,1,1  26:2,6,24 33:8  <b>team (1)</b> 56:2  <b>tease (1)</b> 55:25  <b>television (2)</b> 40:18  41:14  <b>tell (1)</b> 18:3  <b>tells (1)</b> 99:6  <b>tend (1)</b> 15:1  <b>term (2)</b> 73:8 103:24  <b>terms (16)</b> 5:20 9:1  44:18,25 45:5 52:3  52:3 59:25 62:10  72:8,15 73:5  114:16 115:17  123:10,13  <b>test (5)</b> 59:18,20,20  59:22 79:15  <b>tests (1)</b> 59:23  <b>Thank (7)</b> 2:10 62:6  74:18 22 120:17  123:16,25  <b>thanks (2)</b> 20:12  27:23  <b>theme (5)</b> 19:6 21:15  60:16 61:20 107:25  <b>theories (2)</b> 62:24  63:12  <b>theory (9)</b> 5:18 8:10  32:19 34:16 42:18  42:24 43:10,24  62:19  <b>thing (10)</b> 1:7 30:5  58:2,11 66:4 68:12  97:17 99:18 110:11  118:20  <b>things (15)</b> 1:24 9:24  39:19,23 40:19  51:22 61:14 66:19  71:7 79:22 95:25  96:2 100:12 116:17  121:19  <b>think (170)</b> 2:1 4:14  5:15,19 6:10,18,21  7:3,8,17 8:3,11,16  8:19,21 9:1,10,14  9:24 10:12 11:2,4  12:3,10 13:4,17,21  14:6,14,21 15:7  16:17 18:5,5 21:2  21:22 22:6,24  23:24,24,25 24:9  27:19 28:13,16,20  34:7,10 35:5,16,21  35:24 37:4,7,24  39:1 41:17 42:6,16  43:21 45:10,18,24  46:2,5,11,11 50:4  50:13,21 51:5,9,24  52:19,21,25 53:6</p>	<p>54:23 55:5 56:12  57:18 58:10 59:18  60:15,18 61:12  62:9 65:6,11,25  66:3 67:16 68:19  68:23 69:1,3,5,9,19  69:25 71:18,22,23  72:15 73:14,17  74:12 75:2 77:24  78:19 79:7 82:2,3,6  82:9,14,19 83:4,11  83:13,15,15,20  84:22,25 85:8 87:5  87:9 90:19 91:14  92:23 97:8 98:11  98:16 99:1 100:13  101:11,11,20 103:5  103:8 104:1 106:6  106:6,8,14,19  107:7 109:6,14  111:7,21 112:8,18  114:12 116:17,22  117:2,11 118:1,11  118:24 119:5 121:7  121:8,9,11,18  123:21,24  <b>thinking (3)</b> 71:4  118:23 119:8  <b>third (3)</b> 14:22 84:2  110:5  <b>thirdly (1)</b> 63:19  <b>thought (3)</b> 34:24  35:1 69:8  <b>thoughts (1)</b> 70:17  <b>three (16)</b> 3:12 18:5  34:11 76:11 85:15  85:16,21 86:15  91:22 100:21 105:1  108:1 115:13  120:14 121:8,15  <b>three-party (4)</b> 58:21  62:15 78:20 79:4  <b>threshold (1)</b> 46:8  <b>thrive (1)</b> 56:18  <b>thrust (1)</b> 110:24  <b>Thursday (1)</b> 1:1  <b>thud (1)</b> 67:7  <b>time (28)</b> 1:17 3:19  4:13,18 5:5,13 6:1  6:22 7:6,7,19,24,25  12:1,2 13:18 15:21  39:1 86:1,4 93:8  94:8 95:3,9 101:7  117:20 121:17  122:17  <b>times (5)</b> 5:19 33:20  33:23 60:9 103:13  <b>today (3)</b> 54:19 93:24  97:2  <b>tomorrow (8)</b> 1:10,20  1:25 2:1 103:23  117:21 118:1  123:17  <b>tonight (1)</b> 114:19  <b>top (4)</b> 20:3 38:21  39:3,25  <b>topic (1)</b> 117:14  <b>total (4)</b> 99:7 119:19  119:21 123:12  <b>Tottenham (5)</b> 114:18  114:21,22 115:1,8  <b>transaction (7)</b> 21:8  61:14,16 64:11  84:13 113:16,17  <b>transactional (2)</b>  119:1,2  <b>transactors (1)</b> 110:4  <b>transcript (7)</b> 38:25  39:2 93:11,18,19</p>	<p>94:12 95:7  <b>transfer (5)</b> 17:2 45:7  59:9 61:8,10  <b>transfers (1)</b> 109:22  <b>translate (1)</b> 17:24  <b>translated (3)</b> 22:12  52:8,9  <b>translates (2)</b> 83:11  83:14  <b>trial (1)</b> 112:16  <b>tribunal (19)</b> 12:21  19:5 23:18,20  25:17,23 26:5  32:10 34:2 37:18  40:12 41:20 43:10  47:20 91:14 103:21  104:20 118:18  125:11  <b>tried (12)</b> 15:25 47:22  50:11 51:17 59:21  59:22 60:4 82:11  95:18 97:24 121:9  121:10  <b>tries (1)</b> 112:10  <b>true (3)</b> 64:14 92:20  123:21,24  <b>try (13)</b> 26:12 33:11  45:4 47:23 51:5,9  53:3 60:17 63:13  65:12 79:20 110:20  111:15  <b>trying (6)</b> 12:6 35:3  41:1 58:5 102:2  119:5  <b>turbulent (3)</b> 102:24  103:3,13  <b>twice (1)</b> 57:23  <b>two (19)</b> 17:8 21:14  43:22 52:6,13,23  56:16 70:17 74:17  78:17 83:20 84:17  88:13 106:24  113:14,18 115:13  119:2 122:10  <b>two-sided (8)</b> 55:12  58:25 59:2 60:18  85:7 108:5,8  120:22  <b>type (3)</b> 40:12 76:16  122:20  <b>type-by-card (1)</b>  122:20  <b>types (3)</b> 22:11 27:4,8  <b>typical (1)</b> 29:14</p> <hr/> <p style="text-align: center;"><b>U</b></p> <p><b>UK (27)</b> 3:25 4:5,6,17  5:8,10,14,23 6:21  8:3,18 10:23 13:24  15:10 16:1,12,24  25:4 78:23,24,25  88:25 89:1,11  105:24 115:12  122:17  <b>ultimately (3)</b> 27:10  51:9 79:5  <b>unchanged (1)</b> 11:18  <b>uncommon (1)</b> 107:3  <b>underline (1)</b> 64:9  <b>underlying (2)</b> 94:1,3  <b>understand (14)</b> 1:22  10:24 16:18 29:4  39:16 56:2 62:6  66:10 68:17 84:1  87:23 88:12 91:14  92:18  <b>understanding (3)</b>  32:16 84:5 94:5  <b>understood (1)</b> 57:2</p>	<p><b>undertake (2)</b> 92:21  95:11  <b>undertaking (2)</b> 47:1  96:15  <b>undertakings (4)</b> 8:14  8:14,20 47:1  <b>undesirable (1)</b> 68:6  <b>united (1)</b> 4:1  <b>university (1)</b> 1:11  <b>unjust (1)</b> 44:13  <b>unsatisfactory (9)</b>  97:11 98:13 100:13  100:16,17 101:1,8  101:20 112:14  <b>unsound (1)</b> 87:3  <b>update (5)</b> 95:24 96:9  96:22 98:20 99:10  <b>updated (3)</b> 96:3 99:9  100:8  <b>updating (2)</b> 94:25  95:1  <b>upfront (1)</b> 23:22  <b>usage (2)</b> 115:7 116:3  <b>use (6)</b> 31:14,24 94:8  103:24 120:24  121:5  <b>useful (1)</b> 87:20  <b>users (1)</b> 77:9  <b>usually (2)</b> 72:2 74:10  <b>utility (1)</b> 107:3</p> <hr/> <p style="text-align: center;"><b>V</b></p> <p><b>valid (3)</b> 77:11 96:7  107:7  <b>value (4)</b> 20:19 91:25  95:18 96:14  <b>varieties (1)</b> 123:1  <b>various (6)</b> 8:1 28:1  46:10 55:21 59:23  106:6  <b>VAT (1)</b> 22:20  <b>veers (1)</b> 59:9  <b>verified (1)</b> 49:13  <b>versus (3)</b> 67:3 68:21  83:21  <b>vices (2)</b> 76:11,12  <b>view (20)</b> 11:25 12:7  12:11 27:2 28:11  29:11 34:8 35:7,10  41:16,18 48:22  49:4 73:8 81:14  89:24 90:16,18  91:9 100:7  <b>views (4)</b> 12:4,4,15  35:14  <b>vigorous (6)</b> 20:12,15  20:18,22,25 21:11  <b>vis-a-vis (2)</b> 50:8  73:12  <b>Visa (12)</b> 7:15,20  68:15 70:19 72:5  78:16,25 85:20  86:12 87:3 115:3  123:3  <b>volume (1)</b> 123:21  <b>von (5)</b> 28:25 50:25  97:24 113:17,21</p> <hr/> <p style="text-align: center;"><b>W</b></p> <p><b>wall (1)</b> 65:23  <b>want (32)</b> 1:6,9 10:18  14:2 27:17 30:24  31:16 48:1,6,14  53:9 59:17 60:19  61:7 65:3,17 67:17  67:22,23,24,24  70:15 78:10 80:22  81:6 82:21 97:23  106:22 114:5</p>	<p>115:20 119:10  123:20  <b>wanted (2)</b> 95:9  123:22  <b>wants (1)</b> 108:12  <b>wasn't (3)</b> 18:18  34:25 72:22  <b>way (26)</b> 10:12,14  13:6 15:23 18:12  21:22,24 35:4  42:14,15 43:24  44:5 59:7 64:15  67:14 70:13 82:13  97:21 102:13 111:7  112:6,10 114:12  119:10 120:14,24  <b>ways (5)</b> 40:16 44:23  84:17 106:24  113:14  <b>we're (1)</b> 69:14  <b>website (2)</b> 16:18,19  <b>weeks (1)</b> 73:15  <b>weight (4)</b> 32:14,18  34:14,17  <b>weights (1)</b> 91:7  <b>Weizäcker (4)</b> 5:6 7:23  99:15 100:22  <b>went (5)</b> 9:25 18:18  24:10 74:23 99:4  <b>weren't (2)</b> 14:19 35:1  <b>wholesale (3)</b> 22:20  25:25 26:1  <b>wholly (1)</b> 13:1  <b>William (1)</b> 118:23  <b>willing (3)</b> 65:4,7  119:6  <b>willingness (3)</b> 119:11  119:21 120:3  <b>wisdom (1)</b> 28:21  <b>wise (1)</b> 95:23  <b>witness (7)</b> 8:23,25  88:1,12 117:20  118:11,16  <b>witnesses (1)</b> 105:2  <b>wonder (1)</b> 123:7  <b>wonderful (1)</b> 66:19  <b>wondering (1)</b> 122:15  <b>Woolworths (1)</b> 15:12  <b>word (1)</b> 83:4  <b>words (18)</b> 15:17 17:5  18:25 31:7,15 49:3  56:6,19 64:7,8  76:15 77:19 78:3  84:12 87:21 99:24  111:5 123:10  <b>work (5)</b> 3:24 6:11  12:6 27:4 61:7  <b>worked (2)</b> 6:25  120:21  <b>working (3)</b> 6:4,9 8:5  <b>world (1)</b> 79:22  <b>worldwide (1)</b> 88:16  <b>worried (1)</b> 110:15  <b>worse (5)</b> 68:25 79:7  79:8,9 81:17  <b>worth (2)</b> 5:7 24:10  <b>wouldn't (18)</b> 43:5  54:17 55:17,18  58:12,13,15,20  65:13,15,24 66:1  66:23 70:17 71:1  79:10 110:9 119:9  <b>wrap (2)</b> 75:5 77:25  <b>wrapped (2)</b> 75:21  78:4  <b>write-offs (1)</b> 90:20  <b>wrong (4)</b> 75:18 77:22  101:10 114:6  <b>wrongly (1)</b> 54:5</p>	<p style="text-align: center;"><b>X</b></p> <hr/> <p style="text-align: center;"><b>Y</b></p> <p><b>year (8)</b> 94:11 97:12  97:13 98:14 100:4  100:9,20 109:18  <b>years (15)</b> 3:21 4:9,10  33:17 92:25 94:9  94:11 95:3 97:25  98:19 99:7 100:21  101:3,16 102:25  <b>yellow (7)</b> 37:19,20  38:5,15,17 125:8,9  <b>yes/no (1)</b> 117:1  <b>yesterday (1)</b> 102:21  <b>young (3)</b> 6:2 87:25  92:19  <b>youngster (1)</b> 6:4</p> <hr/> <p style="text-align: center;"><b>Z</b></p> <p><b>zero (26)</b> 64:19 65:1  65:14,18 66:15,25  67:8,12,13,20,21  68:1 69:3 70:16,21  71:15,16,20 72:21  73:1 78:16,22  79:23 91:10 92:4  109:22</p> <hr/> <p style="text-align: center;"><b>0</b></p> <p><b>0.3 (2)</b> 114:24 115:16  <b>0.6 (1)</b> 102:8  <b>0.8 (2)</b> 114:24 115:16</p> <hr/> <p style="text-align: center;"><b>1</b></p> <p><b>1 (1)</b> 125:3  <b>1% (1)</b> 108:11  <b>1(3) (1)</b> 46:23  <b>1.00 (1)</b> 45:15  <b>1.5 (1)</b> 4:4  <b>1.6 (1)</b> 6:25  <b>10 (3)</b> 13:8 27:18,22  <b>10.30 (2)</b> 1:2 124:3  <b>100 (2)</b> 74:2 91:10  <b>100p (2)</b> 73:24 74:5  <b>101 (2)</b> 77:10 81:11  <b>101(1) (5)</b> 4:25 5:2  59:10 61:20 81:10  <b>101(3) (27)</b> 4:25 5:2  45:23 47:2,8 48:1  48:14 49:4 50:3  54:9 55:3 57:7 58:5  59:14,23 60:1,7  77:9,12 78:3,10  80:9,25 81:18  106:20 116:9  122:12  <b>102 (4)</b> 10:19 11:8,9  11:12  <b>103 (3)</b> 11:9 30:12,13  <b>106 (3)</b> 37:12 105:22  105:23  <b>108 (2)</b> 105:22,23  <b>11 (3)</b> 48:7 93:18,19  <b>11.40 (1)</b> 36:16  <b>11.50 (1)</b> 36:18  <b>11.53 (1)</b> 38:13  <b>115 (1)</b> 8:21  <b>118 (1)</b> 125:11  <b>1186 (2)</b> 48:8,9  <b>12.45 (1)</b> 38:16  <b>120 (1)</b> 53:19  <b>124 (1)</b> 125:12  <b>126 (1)</b> 93:16  <b>1341 (1)</b> 16:23  <b>1357 (2)</b> 17:12,17  <b>1360 (2)</b> 17:19,20  <b>1362 (2)</b> 19:14,16</p>
--	--	---	--	--	--	---

1368 (1) 20:3  
 1390 (2) 93:18 94:12  
 1392 (1) 95:6  
 15 (5) 33:17 46:9,17  
 94:24 104:23  
 16 (3) 4:9,10 36:23  
 16-year (1) 10:9  
 17 (1) 3:21  
 19 (3) 53:11 93:19  
 94:12  
 194 (1) 46:24  
 195 (1) 46:24  
 196 (2) 46:24 47:13  
 1980s (1) 86:13  
 1987 (1) 86:6

**2**

2 (10) 30:15 36:20,21  
 45:14 54:15 55:11  
 55:24 58:24 125:4  
 125:5  
 2.00 (1) 45:17  
 20 (4) 17:20 40:22,25  
 41:13  
 20-million (1) 41:15  
 2000 (3) 3:25 4:10,19  
 2002 (3) 7:15 85:21  
 121:10  
 2004 (3) 94:19,22  
 95:1  
 2004/2005 (1) 87:10  
 2005 (8) 4:19 12:8  
 88:14 89:14 94:20  
 94:22 99:16 100:21  
 2006 (3) 6:12 93:24  
 94:11  
 2006/2005 (1) 94:18  
 2007 (10) 13:11,19  
 87:5,13 94:13 95:1  
 97:22 99:3 100:14  
 103:6  
 2008 (11) 19:25 88:16  
 89:11,15,18 93:10  
 93:15 94:13 96:8  
 99:10 100:21  
 2009 (2) 8:14,20  
 2010 (4) 93:7,8,9 99:4  
 2012 (1) 18:2  
 2013 (2) 16:12 97:20  
 2015 (1) 97:19  
 2016 (2) 1:1 124:4  
 202 (1) 75:12  
 207 (1) 53:23  
 209 (1) 104:25  
 21 (2) 38:21 95:6  
 211 (2) 104:25 106:7  
 214 (1) 4:6  
 22 (1) 30:2  
 232 (3) 53:12,16,16  
 25% (3) 90:7 91:12  
 92:1  
 25th (1) 1:1  
 26 (1) 19:24  
 26th (1) 124:4  
 27 (1) 39:25  
 28 (1) 102:9  
 287 (1) 85:3  
 28th (1) 16:12  
 290 (3) 88:7,8,9  
 293 (1) 113:5  
 2A (1) 79:24

**3**

3 (14) 2:12 17:11 22:8  
 28:25 29:2 36:19  
 84:23,23 98:24  
 99:2 102:5 113:1,1  
 125:6  
 3.1 (1) 17:15

3.1.4 (2) 17:19 18:21  
 3.14 (1) 17:20  
 3.17 (1) 92:8  
 3.2 (2) 19:14,21  
 3.27 (1) 92:10  
 3.6 (1) 104:7  
 30 (2) 74:2 92:25  
 30-day (1) 71:8  
 30p (2) 73:24 74:5  
 316 (1) 14:2  
 324 (2) 14:2,22  
 326 (1) 10:20  
 332 (1) 105:23  
 338 (2) 10:19 11:8  
 343 (2) 46:17,23  
 345 (1) 104:24  
 35.1 (1) 94:17  
 362 (2) 99:15,17  
 373 (1) 27:25  
 378 (1) 104:1  
 379 (4) 104:1,2,18,20  
 38 (5) 80:7 125:7,8,9  
 125:10  
 380 (2) 99:19 104:14  
 383 (2) 22:6,7  
 38A.13 (1) 80:23  
 38A.7 (2) 80:8,8  
 38A.8 (1) 80:12  
 3A (1) 2:23

**4**

4 (3) 52:14 54:16 85:1  
 4.30 (1) 124:1  
 40 (1) 95:3  
 40% (2) 110:10,16  
 419 (1) 2:16  
 420 (2) 25:15,22  
 4307 (1) 75:12  
 436 (2) 53:12,16  
 44 (1) 86:20  
 447.17 (1) 3:3  
 459 (1) 30:3  
 460 (1) 30:15  
 461 (1) 30:16  
 463 (1) 30:23  
 464 (1) 31:4

**5**

5 (12) 52:23 85:3,5  
 89:20 101:24 102:1  
 111:23,25 112:5,13  
 112:17 116:20  
 5.1 (1) 85:7  
 5.15 (2) 88:7,9  
 5.16 (1) 88:9  
 5.18 (1) 88:11  
 5.2 (3) 89:8 91:3,6  
 5.20 (2) 88:18,21  
 5.3 (1) 85:14  
 5.36 (2) 113:12,23  
 5.4 (3) 87:17 92:14,15  
 5.82 (1) 88:24  
 5.84 (1) 89:7  
 5.85 (1) 89:7  
 5.89 (3) 89:10 90:1,3  
 50 (3) 75:16 76:3  
 80:13  
 50% (4) 11:21 90:7  
 91:12 92:2  
 51 (4) 76:5,12 80:13  
 80:15  
 52 (2) 76:13 77:22  
 53 (1) 77:5  
 54 (3) 16:9 75:16  
 77:13  
 590 (1) 29:2  
 5C (1) 113:8  
 5C.2 (1) 113:9

**6**

6 (5) 3:5 10:18,19  
 52:24 99:12  
 6% (1) 102:8  
 60/70 (1) 102:25  
 636 (1) 3:8  
 670 (2) 48:11,18  
 671 (2) 48:11 49:5  
 672 (2) 48:11 49:7  
 686 (1) 105:15

**7**

7 (3) 38:20 94:15 95:8  
 70% (5) 108:23 109:3  
 111:17,18 121:3  
 702 (1) 122:7  
 795 (1) 29:3  
 796 (1) 29:10  
 799 (1) 29:3

**8**

8 (2) 24:1 25:21  
 8.14 (2) 28:6 32:7  
 8.15 (1) 88:7  
 8.19 (2) 33:13 35:6  
 8.53 (3) 22:6,7,9  
 8.55 (1) 24:12  
 80% (5) 108:23 109:3  
 111:17,18 121:3  
 81(3) (1) 53:25  
 83 (1) 80:22  
 84 (1) 81:5  
 85 (1) 81:6  
 856 (4) 25:2 38:21  
 39:3,3  
 862 (1) 39:25  
 87 (2) 82:19,23

**9**

9 (2) 36:25 37:7  
 9.4 (1) 37:12  
 90% (1) 121:4  
 92 (1) 99:19  
 93 (1) 100:2  
 938 (1) 14:1  
 95% (3) 109:2,3  
 111:18  
 98 (1) 4:12

