IN THE COMPETITION APPEAL TRIBUNAL 1517/11/7/22

Salisbury Square House
8 Salisbury Square
London EC4Y 8AP

Monday 18th November- Friday 20th December 2024

Before:

The Honourable Justice Michael Green
Ben Tidswell
Professor Michael Waterson

Merchant Interchange Fee Umbrella Proceedings

A P P E A R AN C E S

Sonia Tolaney KC, Matthew Cook KC, Owain Draper & Daniel Benedyk on behalf of Mastercard (Instructed by Jones Day and Freshfields Bruckhaus Deringer LLP)

Daniel Jowell KC, Jessica Boyd KC, Isabel Buchanan, Ava Mayer & Aislinn Kelly-Lyth on behalf of Visa (Instructed by Linklaters LLP and Milbank LLP)

Kieron Beal KC, Philip Woolfe KC, Oscar Schonfeld, & Reuben Andrews on behalf of the SSH Claimants (Instructed by Scott + Scott UK LLP and Stephenson Harwood LLP)

Mark Simpson KC, Jack Williams & Alastair Holder Ross on behalf of Walter Merricks CBE (Instructed by Willkie Farr & Gallagher (UK) LLP)

Monday, 16 December 2024

(10.30 am)

THE CHAIRMAN: Good morning.

MR BEAL: Good morning.

Please may I call Dr Stefano Trento to give evidence on behalf of the SSH Claimants.

THE CHAIRMAN: Yes.

DR STEFANO TRENTO (affirmed)

Examination-in-chief by MR BEAL

THE CHAIRMAN: Please sit down, Dr Trento.

MR BEAL: Please could you give your business address for the Tribunal.

A. Yes, it is Paseo de la Castellana 7 in Madrid, Spain.

Q. Do you have before you copies of your reports?

A. I do.

Q. Could you look, please, in your first report {RC-F2/1}. Could you go, please, to page 17 {RC-F2/17}. Whose signature is that?

A. This is my signature.

Q. You there say that you have set out the required experts declarations at the end of my report. Please could you turn to page 320 {RC-F/2/320}. Are those the expert declarations that you have made for this report?

A. Correct, yes.

Q. Are there any changes you would like to make to this first report?

A. No changes.

Q. Are the contents of that report true to the best of your knowledge and belief?

A. It is.

Q. Now, your second report is probably in a different folder, I am sorry about that, but for everyone else it is {RC-G/2/1}. Could we look, please, at page 153 in this report {RC-G/2/153}. This is table 10. I understand that there are some corrections to be made to the last two rows on this table. Is that right?

A. Sorry, just one second. 143?

Q. 153.

A. 153. (Pause)

Yes, that is correct. So this table shows our results for the estimate of the pass-on of overhead costs for Three, using a modification on Mr Coombs' model, and the last two rows, there is a typo, a copy-based error. So in the last -- sorry, in the second to the last, where we read "Pass-on rate - overheads", that should be "Pass-on rate of total costs minus overheads".

Then the last row, where we read "Pass-on rate - handset", that should be "Pass-on rate of overhead costs".

Q. So the second to last row is total costs minus overheads and the last row is pass-on rate overheads?
A. Correct.
Q. Thank you. Are there any other changes you would like to make to this report?
A. No further change.
Q. Could we look, please, at page 11 {RC-G/2/11}. Whose signature is that?
A. Sorry. (Pause)
This is my signature.
Q. Again, you say that the expert declaration is at the end of the report. Could we look at page 333, please {RC-G/2/333}.
A. Yes.
Q. Is that the expert declaration you have given for this report?
A. It is.
Q. Are the contents of this second report true to the best of your knowledge and belief?
A. It is.
Q. You will recall that there were some additional papers presented by AlixPartners. Are you familiar with that?
A. Yes.
Q. Could we look, please, at {RC-Q6/3/1}. This will be on the screen in front of you, Dr Trento. (Pause) Thank

you very much.

Are you familiar with this document?

A. I am.

Q. I hope this is not controversial. You prepared a responsive paper, is that correct?

A. That is correct.

Q. Please could we look at {RC-Q1/4/1}. This is a response dated 9 December 2024 in relation to that particular SSH claimant.

A. Yes.

Q. In broad outline, what were your conclusions from this report?

A. I think it needs a bit of background, I am sorry. The background is the following: if we can maybe scroll down to the next page {RC-Q1/4/2}. Yes. So the figure that we see in this page is a figure that was in my second report and that figure shows the evolution of the share of standard rooms that are booked at one of the Hilton hotels for which we have data, and that shows that the share of standard rooms booked at that hotel goes down in time, so it decreases in time.

So my conclusion for that is that it is very important to look at the data, Hilton data, at the disaggregate level, transaction by transaction, because if we do that, then we can control for the fact that maybe the average price has decreased, not because the price for the room has decreased, but just because there are more standard rooms that are booked, or actually the opposite, the average price may have increased because there are less standard rooms that are booked and more premium rooms that are booked. So this evolution will have an effect on the average price of rooms booked in the Hilton hotel.

So I did the analysis at the transaction levels to control for this effect, and then Mr Holt did an analysis, not at a disaggregate level, but at an aggregate level, and therefore I said in my second report Mr Holt's analysis could be problematic because there could be a mix effect whereby he finds an increase in the average price of a Hilton booked room, not because there is a higher price, but just because a larger share of premium rooms are booked, and that is problematic from an econometric point of view.

Then we received from AlixPartners, I think it was last week, we receive an analysis that expands the analysis that we have done in Trento 2.

Q. Could we look at page 3. I think that is probably the analysis you are referring to.

This report is confidential, so we are obviously not going to deal with any specifics, but is that the analysis, broadly speaking, that you are referring to at page 3? {RC-Q1/4/3}

A. That is correct. So the analysis basically replicates the analysis we have done in our second report for all of the Hilton hotels for which we have data, which are 29 hotels, and the bars that are in red, they represent the Covid period, and then the bars that are in blue, they represent the period after Covid, and we have got no further explanation, so it is a bit unclear to us what this chart purpose to show.

If I had to guess, my guess would be that when you look at other hotels, the share of standard rooms that are booked, it does not change -- it does not vary in time as much as the hotel that we have analysed, but I do not think this is a problem -- sorry, I do not think that this actually gives comfort about the analysis that Mr Holt has done with the aggregated data, because we have been very clear in Trento 2 that aggregating the data can be problematic for many reasons.

One is the standard -- sorry, one is the -- what we discussed before, that the share of standard room booked can change in time, and we can see that also for other hotels, that is the case. You do not need to see a monotonic increase or decrease for this to be a problem; just from January to February the share of standard room booked changes, that will have an effect, automatic, mechanic effect on prices, and so the problem is still there.

The other one is that the share of standard room booked is just an example, and we have been very clear in Trento 2 that another example could be the lead time, so the difference between the time when the room was booked and the time of the stay. That, also, we know that may have an effect on price.

Q. Just pausing you there. Could we look, please, at page 8 of this document {RC-Q1/4/8}. Is this dealing with booking lead time? That is what it says at the top of the page.

A. That is correct. Here on page 8, what we do is we replicate the analysis for all of the Hilton hotels, and then we look at the variability of the lead time, so the average monthly lead time for each hotel, and then we see that it changes from month to month quite dramatically, and that, again, will have an effect on the average price that Mr Holt used for the estimation of the pass-on for Hilton, and it does not instead affect our analysis, because our analysis is based on transaction level data, and we control for the fact that if the lead time is longer, then the price is likely to

be lower.
Q. The second piece of additional work that came in from AlixPartners related to EBITDA margins. Do you remember that?
A. I do.
Q. Can we look, please, at {RC-Q6/6/1}. This is a document dated 6 December 2024. Have you looked at that document now?
A. I have looked at the document, yes.
Q. Could we look, please, at {RC-Q1/5/1}. This is a responsive document. Is that a document you have prepared?
A. This is a document that I have prepared, yes, together with my team.
Q. Please could we look at page 7 {RC-Q1/5/7}. There is a summary there of your conclusions. Does that paragraph reflect your conclusions or is there anything else you would want to bring out as a broad summary of where you got to with the EBITDA margin analysis?
A. I think it is a fair summary. Maybe just very, very briefly, 20 seconds I think, what we have found -- so we have received the AlixPartners document without further explanation. I think what we have found is that the selection of the companies for which AlixPartners made an analysis, it seems arbitrary. There is an issue with

the selection of companies. So basically what they are doing is comparing the average MSC to the average EBITDA, and they find that the ratio is -- can go up to 11%. Then when we fix some of the issues in their analysis, we find that actually that ratio is much, much smaller, and if one looks at the ratio of the MIF, which we think is more relevant to this case than the MSC, because the MSC includes some elements that are not affected by the overcharge, when one does the analysis of the ratio of the MIF over the weighted average EBITDA, we did some correction to the analysis of AlixPartners, then you get as low as 1% to 2%.

In any event, I think Mr Economides already explained that comparing a cost to a margin may not be a very informative exercise, because if you compare wages to EBITDA, then you will be in the area of probably 1,000% instead of 11% that AlixPartners estimates and instead of the 2% -- 1 to 2% that we estimate.

MR BEAL: Thank you very much. I am sorry that was longer than usual. We were dealing with the --

THE CHAIRMAN: This is the new material that was -- yes.

MR BEAL: I hope -- let us see where we get to, but I hope I will not need to recall Mr Holt to give further evidence.

THE CHAIRMAN: Yes, we were going to revisit that at the end of last week, were we not, but we did not.
MR BEAL: I will confirm by the end of Dr Trento's evidence, but hopefully not. That is my ambition.
Would you wait there, please. There will be some further questions for you.
THE CHAIRMAN: Mr Jowell.

Cross-examination by MR JOWELL

MR JOWELL: Good morning, Dr Trento.
A. Good morning, Mr Jowell.
Q. I should start with the usual caveats. First, pursuant to the understanding, I will not be challenging every statement that you make in your evidence, and, secondly I should note that I intend to start my cross-examination, the first half of so of it will be in open, so I hope for it to be in open session, and so when I do refer to any confidential document, we need to take care not to mention any names. Then at a certain point we will go, with the Tribunal's permission, into closed session, and then we can be free to discuss the confidential claimants -- willing claimants specifically.
I would like to start off, if I may, by just getting an overview of your overall methodology by which you have arrived at your estimates of pass-on in these

proceedings, and I want to understand in particular which parts of your methodology are your work and which parts are Mr Economides' work and which parts are, if you like, a joint effort.
A. Yes.
Q. So, as I understand it, and this just by way of a very, very broad high-level overview, one can divide your method into broadly speaking three stages. First of all, putting all the claimants into sectors; secondly, deriving estimates for certain of the claimants, the so-called analysed claimants; and then, thirdly, extrapolating from the analysed claimants to other claimants. Is that fair at a very high level?
A. I think it is fair.
Q. Thank you. So if we could go then to paragraph 1.21 of your first report {RC-F/2/14}. If we can go to page 14, please.
A. Sorry, maybe just one clarification. The third step that you mentioned, which is the extrapolation from one sector to another sector --
Q. No, that was not the first step. The first step was just dividing into sectors and putting the claimants into sectors.
A. Sorry, that is my accent. The third step, I said.
Q. The third step, yes.

A. The third step, which is extrapolating a result from one sector to other sectors --
Q. Yes.
A. -- that is an exercise that Mr Economides --
Q. That is what I was going to come on to. I am grateful for that clarification, but I want to take it stage by stage and see who is responsible for what. If that is acceptable.
A. Of course.
Q. So if we could go to 1.21, which has now come up, you will see you say there:

"Overall, there are more than 2,000 SSH Claimants bringing claims against Visa and/or Mastercard in the present proceedings, operating in a wide range of different sectors. It is thus impracticable to estimate pass-on empirically for each of them.

"1.22 In order to assist the Tribunal with the question of merchant pass-on, I have aggregated merchants that I consider to be likely to pass on the MSCs to a similar extent into groups (or 'sectors'). I then estimate the pass-on for those sectors. I refer to this approach as the 'sectoral approach'."

Do you recall that evidence?
A. Yes.
Q. So stage 1 of identifying the different sectors of the

economy, and then allocating the various claimants into a sector, you deal with that in a bit more detail on page 40, please {RC-F/2/40}. If we pick it up at 5.5, we see you make some general comments. You note that in standard proceedings there is only one claimant and that can take a lot of effort, effectively, and requires a lot of data:

"As set out above, the present proceedings involve more than 2,000 claimants ..."

It would not be -- effectively, you say, it would not be practical.

Then in 5.8, you say:

"These proceedings thus require a departure from the first best approach, as it simply not practical to disclose, process and analyse data and accompanying qualitative evidence for over 2,000 claimants and estimate pass-on for each of them in a reasonable timeframe.

"5.9 Given that first best approach is not feasible ... a second best approach must be devised ... the second best approach involves aggregating SSH Claimants into a limited number of sectors and estimating the pass-on for each of those sectors."

Then to that aim, if we then go to page 42, please {RC-F/2/42}, we see, in 5.18, that you order the sectors

from the one accounting for the largest amount of the SSH claim to the one accounting for the smallest amount of the SSH claim; yes?
A. Yes.
Q. Due to settlements and various other factors, those top ten sectors by claim value have changed a bit over the course of these proceedings, have they not?
A. Yes. So the first list that I have produced was back for the CMC that we had on 10 and 11 January, and since then there has been -- there have been settlements for two big merchants and --
Q. Forgive me, I do not want to interrupt you, but where we have got to is that those top ten sectors now account for 70% of the claim --
A. I think it is --
Q. -- the SSH Claimants' claim.
A. I think it is more than -- sorry, 70%, yes, you are right.
Q. By claim value.
A. Correct.
Q. At least at the time this report was prepared.
A. Yes. So 70% of the claim by value, and I think it is 80% -- if I am not mistaken, it is 80% of the number of claimants.
Q. A little less, but more or less.

A. Sorry, yes.
Q. If we then go to {RC-I1/98/1}, which is your division by sectors, or a division by sectors, I should say. If we could open this document up. Here we are.
We see along the top, CL sector name, CL sector, sector by Economides, number of entities, and then the a percentage of the MIF. Now, the CL sector name, is that Compass Lexecon sector name or is that something else? I was not sure --
A. It is Compass Lexecon. I think there may be a very small difference on online travel agencies, because I think in the report we call them online travel agency platforms.
Q. So just that I can understand, then we see the sector by Mr Economides. So they seem to be two different sets of sectors, and I just want to understand, first of all, who identified the sectors; was that you or Mr Economides or was it a joint effort?
A. No, so for the first list of sectors -- okay, so what we wanted to do is we have 2,000 claimants and, as Mr Jowell has reminded us, what I said in the first report, it is very difficult to -- we cannot possibly estimate the pass-on for each and every claimant. So what we have done is we have listed sectors from the highest share of the claim to the lowest share of the

claim, then we have looked at the top ten sectors and we have found that these account for a large majority of claimants and share of claim.

What we have tried to do is to estimate pass-on as accurately as possible for those sectors, and the way to do that is we have tried to keep the definition of sector as narrow as possible. So you will see that we have, for instance, one sector that is called health retail, that is Holland & Barrett and iHerb, for instance. We do not have, you know, a broader retail sector, we have a very specific narrow sector, and we try to estimate pass-on as accurately as possible for those sectors.

Q. Forgive me, but I am just trying to understand. My question was just who did the job? Who identified the sectors, you or Mr Economides or somebody else?

A. It was a long introduction, sorry, yes. So the first thing we did is we ordered the -- sorry, we generated a list of sectors which was very, very narrow --

THE CHAIRMAN: When you say "we"?

A. Sorry, Compass Lexecon. Compass Lexecon produced a list of sectors which was very, very narrow, and then I think we ended up with -- I cannot remember -- maybe between 60 or 80 sectors. Then we only looked at the first ten, and then Mr Economides then, he -- so basically from number 12 onwards -- sorry, number 11 onwards, we have -- we define sectors but we do not use them. We do not use that in our ... what Mr Economides has done is that he has aggregated some of the sectors that are from 11 to 60 or 80 in our analysis, he has aggregated some of them into broader sectors, and then he has matched those broader sectors to one of the top ten.

Sorry, I do not know whether this is ...

MR JOWELL: So is it fair to say that numbers 1 to 10 you did, but then 11 -- after that, Mr Economides messed around with them a bit? I do not mean that pejoratively.

A. I do not know whether this ... but, yes, 1 to 10 we did, and then 11 to the last one Mr Economides did.

Q. Adjusted?

A. Adjusted.

Q. Okay. Who then put the different claimants into the different sectoral buckets?

A. The first ten we did, and then the last -- sorry, 11 onwards Mr Economides did.

Q. I see. So when one, for example, looks at household goods, which is, I think, down at number 30, it would have been Mr Economides who would have been responsible for putting the companies into that bucket?

A. Correct.

Q. Thank you. That would have included Interflora, would it not? Well --
A. I am not 100% sure, but I have no reason to doubt that that is the case. But, sorry, can I explain the reason why Mr Economides did the aggregation for the other sector is that then he had to match each of the sectors to one of the top ten, so it made sense for him to do the aggregation for the sector from number 11 onwards.
Q. Okay.
A. Rather than us.
Q. Now, could we then move to the second stage of your analysis, which is identifying the pass-on rate for the top ten sectors. Now, you, I think, recognised the possibility of estimating pass-on rates for the sectors by reference to a number of different data sources, but in the final analysis, such as, for example, publicly available pricing data or studies in the economic literature, but in the event, as it has transpired, the only data that you rely on for your estimates for these sectors are those of certain of the willing claimants. That is correct, is it not?
A. It is broadly correct. We have taken into account one or two papers from the economic literature I think for the supermarket sector and for the restaurant sector.
Q. I mean, you have considered them, but at the end you

disregard them, and the only data that you actually --
A. I -- sorry --
Q. It seems the only data you actually use is for, I think, ten out of the 13 willing claimants?
A. The data, I agree, but there is one paper at least for the supermarket sector that we have taken into account.
Q. Okay. Well, we will see.
A. Yes.
Q. The category of airlines was one of your top ten sectors but there was not a willing claimant for it, is that right?
A. Correct.
Q. So in the end, you were only able to arrive at estimates using the willing claimant data for nine out of the ten top sectors; correct?
A. Correct --
Q. I think you call those the analysed sectors?
A. Sorry -- this is correct, but with the only caveat that then in the second report we have also looked at three additional claimants, which are Pets at Home, WorldRemit and ...
Q. Pendragon.
A. Thank you very much.
Q. But at least in your first report, it is only for nine out of the ten sectors?

A. Correct.
Q. That brings you down so that your analysed sectors account for two-thirds of the SSH claim by claim value?
A. Correct.
Q. Right. So for the other 21 sectors, which I think Mr Economides calls the additional sectors, those account for one-third of the claim value?
A. Correct.
Q. Now, I take it that for this second stage, arriving at the estimates for these nine analysed sectors, you alone and not Mr Economides was responsible for the technical econometric part of running and interpreting the regressions themselves; correct? The actual running of the regressions, the technical side of the regressions, that was your --
A. That is correct, yes.
Q. Now, if we could go, please, to {RC-F/2/15}. You will see paragraphs 1.27 to 1.29. You mention the endogeneity problem and you say you eventually abandoned the direct estimation approach and only relied on a proxy cost approach. You say:

"1.28 Under the proxy cost approach, it is not the pass-on of the MSCs which is estimated, but rather the pass-on of a different cost borne by a merchant. This alternative cost measure should have two key properties, one conceptual, that I consider inevitably require a qualitative consideration of the business under consideration, and one practical: (i) conceptually, its pass-on rate should be expected to be the same as or similar to the pass-on rate of the MSCs, and (ii) practically its pass-on rate should be easier to determine empirically. I understand that the other experts have also used a proxy cost approach."

Then you say:

"Another challenge of the direct estimation of the pass-on of the MSCs is that the MSCs are small costs, which makes it difficult for econometric models to correctly disentangle their effect on prices from the effect of other factors. To the extent that proxy costs are similarly small, this is an issue that also affects the proxy cost approach and that affects my choice of proxies."

Now, so that is the signal to -- that last point is the signal to noise issue; correct?

A. Correct.

Q. Right. So you have used this proxy cost approach and one of the important choices, of course, was then which is the best cost proxy to use. I think that initially you were inclined to follow the views of Mr Economides as to which proxy costs were appropriate for each of the

nine sectors; that is correct?
A. That is correct. The issue is that because we cannot estimate the pass-on of the MSC directly, we need to rely on proxy costs, and then we need to make sure that the proxy cost is chosen accurately. Because if we get a proxy cost that is wrong, then we are going to estimate a pass-on that is different from the pass-on of the MSC, and therefore Mr Economides has done an exercise of trying to identify within the cost of each of the ten -- you know, the claimants that we have analysed, what is the correct proxy cost.
So we have gone from trying to analyse the MSC, which we tried to do but we could not have done, to a second best, which is try to analyse a proxy cost identified by Mr Economides.
Q. Now, in the event, that second best did not work, did it, because -- save in possibly one case, and we will come to that, but you found that you were unable to use the specific cost proxies suggested by Mr Economides because they too were too small and lacking in variation to permit you to disentangle the effect of the proxy from the other factors, and so they led to unstable and unreliable results?
A. That is correct. Just a one-second clarification, which is we have asked Mr Economides to identify proxies that

are bigger than the MSC and that did not have an endogeneity problem, which is one of the reasons why we could not estimate the pass-on of the MSC. But, as Mr Jowell correctly said, except for one claimant, we could not estimate the pass-on of the proxy cost identified by Mr Economides reliably.

Q. So you then went to another approach, yes, for all -- save for that one claimant, and that one sector, and that was to use effectively total overhead costs --

A. Correct, for -- sorry.

Q. -- excluding the MSCs?

A. Excluding the MSCs, which gives an endogenetic problem, yes -- sorry.

Q. So I want to -- we will come back to discuss the merits of that approach in a moment, as I am sure you expect, but I just want to understand now, again, who was responsible for that ultimate choice of the proxy cost of total overheads? Was that -- because before, as we discussed, you were relying on Mr Economides. So was this now your choice or Mr Economides' choice or was it both of you?

A. It was --

Q. To then go to total overheads?

A. It was my choice.

Q. Thank you.

Now, if we read then -- if we could read -- go to page 69 in your report {RC-F/2/69} and if you see 9.26.

If you could read with me these paragraphs:

"The fact that the SSH Claimants that disclosed evidence generally treat the MSC as an overhead cost shows that it is very important to analyse factual evidence with respect to both how claimants classify the MSCs, for example as COGS or overheads, and their pricing and budgeting policies to check for potential mechanisms for the pass-on of the MSCs. The limitation of my approach is that it considers evidence from only one claimant per sector. This creates a risk that the proxy cost that is identified for that claimant is not a relevant proxy for other claimants operating in the same sector. This would be the case, for example, if the merchant claimant I analysed treats the MSC as an overhead cost while other merchant claimants operating in the same sector, and which I do not analyse, treats the MSCs as COGS."

So just pausing there. Could we just unpack that a little bit, because I think you are rightly identifying here two or perhaps three different factors or assumptions that go into your approach. So the first assumption, I think, is a question of accounting classification: do all firms within the same sector classify costs in the same way for accounting purposes, and specifically if one firm within an industry sector treats an item like MSCs as a line item within COGS or, alternatively, as a line item within overheads or operating costs, is it safe to assume that all other firms in the sector it competes with adopt the same accounting classification of the cost item? Your approach assumes they do, does it not?

A. I think it is a bit more nuanced than that. I think the -- there has been an evolution. So, for instance, for claimants which treat the MSC as overheads, yes, we have taken the total overheads as a proxy cost, except for one of the claimants for which we could not estimates the pass-on of total overheads costs.

For claimants that treat the MSC as COGS, we have taken a broader range of COGS as a relevant proxy cost, but we have also looked at other things, like, for instance, how close we consider that the proxy cost is to pricing. So, for instance, if there is a claimant that records many COGS at the transaction level, at the product level, and then some other cost at the more aggregate level, we have taken that differentiation into account as well, because we consider that that will tell us something about how close those costs are to pricing.

Q. Forgive me, you make a fair point, but I think it is slightly off the point, if I can put it that way, because I am just trying to understand at the moment this approach of following total costs or COGS, and I appreciate your point that maybe one does not take total COGS, one could take a subset of COGS.

But this point of saying we follow the treatment of one claimant, it does assume, does it not, that everybody else in the sector classifies for accounting purposes the MSCs in the same way? I mean if, for example, you have a sector and some put it into COGS and some put into overheads, then taking overheads is not going to work, is it? It is not going to be appropriate?

A. Well, to the extent that there are two companies and one treats the MSC as overheads and another one treats the MSC as COGS, but -- and we analyse only the first company, company A, but to the extent that company A then copies company B, benchmarks its prices with respect to company B, such that company B treats the MSC as COGS, it increases the price because the MSC has increased, then we would see also price change for company A, and that price change --

Q. I think we can absolutely agree on that.

A. Sorry, but it is very important -- sorry, it is very important that our analysis would capture that price effect. It would capture it, because what we analyse is the pass-on of ...

Q. No, I do not think it would.

A. Yes.

Q. You are capturing total overheads.

A. Yes, but --

Q. You are not going to capture then -- you are going to massively underestimate ... MSCs are not even in your analysis, are they, because, as we discussed, we took them out --

A. They are not (Overspeaking - inaudible) of the endogenetic problem, yes.

Q. So if there is a -- so the fact is that if the scenario is that the company you are analysing treats them as -- happens to treat MSCs as overheads, they are competing with another company that treats them as COGS, and your company benchmarks against COGS, then using overheads is not correct, is it? That would then -- you do require that assumption, do you not, that everybody in the sector treats them the same way?

A. Well, as I said, I think if there is a price effect through price benchmarking, then we would capture the price effect.

Q. Well, forgive me, but you, would not, would you, because you are simply measuring overheads costs?

A. Yes, and part of the overhead cost is a cost which is COGS.
Q. No, it is not, because your proxy does not include MSCs. It does not include MSCs at all within your proxy.
A. But the proxy, okay --
Q. It does not. You have stripped them out. So it is not even a factor in your analysis, is it?
A. But because we are working with proxy costs, obviously. Ideally we would work with the MSC.
Q. Yes, but it would not -- well, I mean, let me -- if we go -- you make the point yourself.
A. Yes.
Q. You say in 9.27, you say in the second sentence:
"This creates a risk that the proxy cost that is identified for that claimant is not a relevant proxy for other claimants operating in the same sector."
A. I --
Q. If it is for them, and they benchmark against those other claimants, it is not for your claimant either?
A. I agree. I just wanted to highlight a few nuances, but in general, yes, this one of the working assumptions.
Q. It is an assumption, it is a key assumption.
There is another assumption which you have built into this, which is that even assuming all competing firms put MSCs into the same accounting category, either

overheads or COGS for every sector, you have also got to assume, have you not, that all the firms then follow that accounting classification when it comes to setting prices, because if -- even if one firm treats it as an operating cost, ie as an overhead, not as COGS, if they take it into account when they price, then your model is not going to correctly estimate, is it?

A. That is correct. It goes both ways, so when it is treated as overheads and when it is treated as COGS. So we, for some of the claimants, estimate the pass-on of COGS, because the MSC is treated as COGS, and then your argument will also work, yes.

Q. That pricing by reference to MSCs could occur either, as I think you effectively acknowledge in 9.26, either by MSCs being taken into account directly in the pricing policy day-to-day or via the budgeting policies more indirectly; correct?

A. Yes.

Q. Thank you.

Now, if we then go to paragraph 9.28, which is on page -- also on the same page, you see you then go on and say:

"In this context, I understand from Economides 1 that in his experience, similar firms generally exhibit commonalities in their treatment of costs. In particular, Mr Economides explains that he 'would expect companies in the same sector to take a similar approach to the management of their cost structures and reflect them in a similar manner in their accounts'. On this basis, I consider it likely that this is true for the companies within the sectors I analysed for the following reasons ..."

Then you give a number of reasons, and I am going to come back to those, if I may, later on.

But if we could go over the page and pick it up at 9.35 {RC-F/2/70}, there you say:

"As set out above, the identification of the relevant proxy cost is the key ingredient of the proxy cost approach. If an incorrect proxy cost is identified, the whole approach would be unreliable as the estimated pass-on would be unlikely to be a reliable measure of the pass-on of the MSCs. As also set out above, the choice of proxy is inherently untestable and I therefore consider it critical that it is assisted by a pricing expert with deep knowledge of how firms treat different types of costs in their pricing processes. The SSH Claimants have therefore instructed Mr Economides to assist me in this process.

"I understand that different experts in the present case will take different approaches with respect to identifying the proxy costs and this will inevitably generate differences in the pass-on estimates.

In what follows, I summarise my approach, which relies on the assessment of the SSH pricing expert, Mr Economides, on the basis of, among other things, the evidence disclosed by the SSH Claimants."

{RC-F/2/71}

"As set out in more detail below, I consider that such an approach has many benefits as it combines insights from the economic literature with those from the claimants' evidence and the experience brought by a pricing expert. I also comment on the limitations of such an approach ..."

So it would be fair to say that although you ultimately endorse his approach, you were heavily reliant on Mr Economides' experience as to the importance of the accounting treatment of the MSC in the choice of appropriate cost proxy; correct?

A. I was reliant on Mr Economides' expertise in identifying the relevant proxy cost for the MSC, yes.

Q. In relation, in particular, to this assumption about the accounting treatment of the MSCs and the importance of that?

A. I think this is a question for Mr Economides, not for me.

Q. No, it is your reliance on him. You were relying on -- you say in terms you were relying on him and --
A. Exactly, but I think my point is that the identification of the relevant proxy costs by Mr Economides has been done on the basis of different factors and, yes, the accounting treatment is one of those factors.
Q. You took Mr Economides, it seems, to be someone with deep knowledge of how firms in all of these sectors treat costs and how they price?
A. Better knowledge than myself, and I would say of people without hands-on experience on -- you know, to advise how -- to advise companies on how to price.
Q. If we could then come finally to the final stage of your analysis. This is the extrapolation from the estimates that you arrive at for your nine analysed sectors to the other third -- well, the other 21 sectors, I think, which are a third of the claim value. I think you said earlier that that was -- or indicated earlier, but please confirm whether that is right, that this extrapolation exercise was really entirely Mr Economides' remit?
A. I confirm that.
Q. Thank you. So I will not then ask you too much about that.

Now, Dr Trento, you are, of course, an economist and

you have a PhD in economics?
A. Yes.
Q. You have also, I think, worked at Compass Lexecon as an economic consultant for over a decade, I think?
A. Correct.
Q. I think you have also -- you are a long-standing veteran of interchange claims as well, is that correct?
A. I would not say so, but I have been working before in another case that was brought against Mastercard and Visa by three supermarkets.
Q. This was the *Sainsbury's* case that reached the Supreme Court, I think?
A. It was part of it, but the clients were -- it was not Sainsbury's, we did not work for Sainsbury's. So if I may explain, in that case, it was -- I think I can say the names because they are in the public domain. So, in any event, just to be on the safe side, in that case I was assisting Mr Neil Dryden who was the expert for the three supermarkets against Visa and Mastercard. I was not the expert myself, but I was in the team.
Q. You were in the team, and that was for about five years, was it, I think?
A. Yes. The work we have done was maybe more concentrated in one/two years, but then those cases went to the Court of Appeal and then they went to the Supreme Court, and

we did not file any report of course for the Court of Appeal or the Supreme Court, but we have been assisting the lawyers for those proceedings.

Q. Yes. Now, what I would like to do next, if I may, is to try to just establish with you some basic propositions of economic theory that I think you are not going to dissent from, and the reason that I think you are not going to dissent from them is I am going to try to take them as propositions from your report. I am just going to try to make this as uncontentious as possible so we can move swiftly.

A. Yes.

Q. I am just going to try -- ask you to confirm each of them so that we can establish some common ground, at least on economic theory.

If we can start, please, if we can go to page 56 of your first report {RC-F/2/56}. We see -- forgive me, could we go -- I think that is a bad reference. If we go back a page {RC-F/2/55}. One more page {RC-F/2/54}. Yes, that is right.

So you will see 7.17. It says -- you talk about the main takeaways from economic theory and you say:

"(a) marginal costs are generally expected to be passed on at least in part, as they directly affect the firm's profit maximising price."

I take it that you still agree with that?

A. Yes, I agree with that. We are talking about economic theory, just -- yes.

Q. If we could then go to page 55, please {RC-F/2/55}. If we see 7.25 at the bottom:

"Economic theory explains that the pass-on of a marginal cost increase is generally higher if that increase is industry-wide rather than firm-specific."

Again, I take it that you still stand by that as a matter of economic theory?

A. Yes. I am really sorry, but I need to clarify something which is that from an economic theory perspective, the only thing we know is in a setting of perfect competition. So we know that in perfect competition, companies sell products that are exactly the same, and that for a 1 penny difference between the product that firm A sells and the product that firm B sells, will make consumer go to the firm A, if firm A prices 1 penny below firm B, and that in that context, then prices are equal to marginal cost, because the firms will try to undercut each other until it is profitable to do so, and they will never go below marginal cost. So the price is going to be equal to marginal cost in that setting.

Then the only thing that we know, if there is an industry-wide increase in the marginal cost, then all firms will have to pay that increase and then all firms will increase their prices, so that is -- so you can expect pass-on in that context. Then if it is an increase only for one firm in the marginal cost, that firm cannot increase their price -- its prices. Because if it increases its prices and the other company do not increase their prices, it will lose all of its customers. Therefore the company will not increase its prices, probably it will go out of market, and so there is not going to be a price increase in the market.

This is the only thing that we know from economic theory, as far as I know.

Q. Dr Trento, is it not also the case, though, that even a monopolist will be expected to pass on half of a marginal cost increase? Is that not also an insight of economic theory?

A. No, I think it is an insight that is only true if the demand is linear, the demand curve is linear, and only if the marginal cost curve is flat.

Q. Yes, well, that is --

A. So if these assumptions do not hold, you can go very close to --

Q. (Overspeaking) But --

A. -- or 200%.

Q. But as we know, all of the insights of economic theory

are based upon assumptions holding, are they not?
A. Yes, but these assumptions are important. Exactly. So this is why I think it is important to make a distinction between them.
Q. Yes, but it does not mean there are no other insights, perhaps other than ones in relation to perfect competition, which I think is what you are suggesting, is that not right? There are other insights also in relation to -- in relation to monopolies under certain -- providing certain assumptions hold?
A. Well, sorry, because you ask about a difference between a firm-specific cost and an industry-wide cost, and in the case of a monopoly obviously there is only one company so the two are going to be the same.
Q. Well, let me ask you this as a matter of, if you like, your economic intuition: supposing you have an oligopoly, say there are three companies in a market, and there is an industry-wide cost change and a firm-specific cost change, which one do you think, as a matter of your economic intuition, is going to be passed on at a greater rate?
A. Yes, so the answer is that you have to go to the intuition, and the intuition -- because it becomes a very complex game in the end, who passes it on and who does not pass it on.

Q. Do you agree with the intuition?
A. It is an intuition. Yes, I would agree to an extent with intuition, because that seems intuitive --
Q. Common sense, I know we are not allowed --
A. Sorry, I want to say something else. Because if you are in perfect competition -- I agree with intuition, but I think I just want to explain that it is a bit complex. If you are, for instance, in perfect competition and you have end firms, and the increase in marginal cost affects all of them but one, then there is no increase in price. So that is -- so that is -- you see, when you go into economic theory things are quite complex, and then you have to rely on intuition, rather than economic theory.
Q. Okay. But you will agree we share the same intuition, in any event?
A. In general, you may expect that that is the case. I do not know whether from an economic theory perspective.
Q. But you have -- yes, okay.

Now, let me move on, if may, to one other proposition which is in your report. If we could go to 7.27 {RC-F/2/56} and the size of the cost.

You say:

"According to economic theory, the size of a marginal cost should not affect the degree of pass-on for that cost."

Again, I assume you stand by that as a matter of economic theory?

A. Yes, as a matter of economic theory.

Q. Okay.

Now, I would like, if I may, to turn away from your report and ask you to consider a couple of examples of a product and a cost of that product. The example I want to give you is the product being Americano coffees sold by Pret a Manger which, because of my very poor coffee taste, I rather like.

Now, when you buy an Americano at Pret a Manger, you can either have it with milk or without milk; yes? I do not know if you are aware of that.

A. I am not aware, but I am sure it is the case.

Q. It is priced the same regardless of -- regardless. You just tell them which one you want.

A. I trust you, yes.

Q. So Americanos, white or black, are the product, and the cost I want you to consider is the cost of the milk that goes into the white Americanos; yes? So it only goes into some of them, but it is a substantial number, let us say about 50 or 60%, as a guess, and let us assume that that proportion is pretty stable day-to-day, some days it may be 40%, some days it may be 70%, others

50:50, but it will generally be a pretty stable
proportion. So Pret a Manger can predict that if on,
say, Tuesdays it sells more Americanos than on Sunday,
then it will also consume more milk and the cost of its
milk will be greater; yes?
A. Yes.
Q. Now, do you agree that the cost of milk for Americanos
in that example is an example of a variable cost,
because an increase in the price of the milk represents,
at least over any significant time period, an increase
in the cost of Americanos, including their marginal
cost?
A. Okay, we are entering here very complex territory,
I think. Can I --
Q. It seems very simple to me.
A. No, because it is very difficult to define variable cost
and fixed cost. There has been a lot of discussion
about variable and fixed cost in here, but I have
explained this in the hot-tubbing, which is if you look
at a cost like wages, for instance, for retail staff at
Pret a Manger, that cost has an element that is
variable, because if you want to open two additional
hours, then you have to have more people and you have to
pay them, and then it has some fixed component, because
you need a minimum amount of people working in the

premises to open the premises.

So it is very difficult to look at a cost and say this is a variable cost and this is a fixed cost, except for some costs which are clearly fixed or variable, and then the status from variable to fixed can also change in time.

So what -- very quickly -- what I think the firms do, the evidence in front of us is that they estimate the per product cost, so this is what they use as COGS. So, for instance, if you look at your fashion retailer, then they know perfectly what is the cost for them of a T-shirt, and then they record that cost as part of COGS, and then all of the other costs which you may say, well, this more variable than the other one, they are all recorded as -- usually as overheads. That makes sense, because if you have a cashier in the fashion retail store, the wage of the cashier you cannot allocate to each and every product, so you have -- it is a cost that is common to all products, if you want, and if you want to pass that cost on, then you have to spread the cost across the price of many, many products.

Q. Dr Trento, forgive me, it is a very interesting lecture, but I do want you to try to answer the question, which is: do you agree that the milk in my example is a variable cost or not?

A. I have explained, I think --
Q. Is it or not? Or is it too difficult to say? Please, it is a fairly straightforward question, is it not? It seems to me it is a variable cost because it varies --
A. (Overspeaking) It does vary with the output, yes.
Q. Do you agree also that it is a marginal cost, over any sort of significant amount of output at least?
A. For the -- yes, for the latte -- I cannot remember what the example was.
Q. Americano.
A. For an Americano with latte, yes, it is a marginal cost.
Q. But there is no distinction for Americanos with latte, they just sell Americanos, and then you are asked whether you want the milk or not, but half of the people are taking the milk and half are not.
So from Pret a Manger's -- in practical terms, it is a marginal cost as well as a variable cost, is it not? I mean, over any ten Americanos, it is a marginal cost; right?
A. But you see, this is the problem. You need to identify a marginal cost for each product. What is the marginal cost for an Americano and what is the marginal cost for an Americano with latte? If you have a cost --
Q. Well, but this is the thing, they do not have it as different --

A. But we do not know how they treat them.
Q. I am telling you, you just ask for the Americano. It is a single product at a single price.
A. Sorry, the price its same. What --
Q. The price is the same.
A. I am not contesting this. What I am saying is that when you asked me to -- is this a variable cost or is it a marginal cost, what I am saying is that the distinction from an economic theory point of view may be quite neat, but the distinction then in reality between a variable cost and a fixed cost is very, very difficult to make.
Q. Well, sometimes -- yes, sometimes maybe with the example, and we will come on to MSCs in a second, but right now we are just on Americanos, and it does not seem to me it is very difficult to say it is a variable cost and the milk is both a variable and effectively a marginal cost as well of the sale of the Americano?
A. A marginal cost, I would say it is a marginal cost for the Americano with latte. It cannot be a marginal cost for an Americano without latte.
Q. But if you are selling -- over any sales of Americano -- any material sales of Americanos, let us say if a unit is ten, then it is a marginal cost, because you know that within that ten at least one of them is going to --

A. It will vary, yes, I agree it will vary with the number of Americanos, yes.

Q. Okay. Now, if we could go then to page 67 of your report {RC-F/2/67}. You say:

"I consider that the MSCs are conceptually a form of variable cost in the sense that they vary with the volume of goods sold, although I note that they are not standard marginal costs in the sense that they are not paid on all transactions, and therefore they are ex ante a probabilistic cost like returns or bad debt. This is means that the merchant does not know on a given transaction (i) whether it will pay the MSCs and (ii) what level of the MSCs it will pay, even though they may form expectations about the overall level of MSCs they might incur. As a result, any pass-on of the MSCs would have to be spread across all transactions in a similar fashion to non-COGS costs."

Now, for any relevant card transaction, obviously, the MSC is going to apply; yes?

A. Yes.

Q. So more card transactions, more MIFs; yes?

A. Yes.

Q. For most merchants for a given day or a given week, one would expect that the proportion of relevant card transactions to relevant non-card transactions is going

to be pretty predictable over any material length of
time; correct?
A. They could estimate how much, yes, I think they could.
Q. If you take your typical retailer, your corner newsagent
or a large supermarket or even a large TelCo, if you
look at it at least on a weekly level, they are also
going to know -- going to have a pretty consistent
proportion of card to non-card transactions; correct?
A. I think it is fair to say that they could, yes.
Q. Yes. They will also have a good experience of the
proportion of the different types of relevant cards that
incur MIFs. So they will have effectively a steady
average MIF rate for card transactions, at least over
any material period of time, like a day or a week or
month?
A. Yes. This is not -- you know, I am an economist, but
I think we are now talking common sense. I think if
a company wants to estimate what is the average MSC that
they would pay on each transaction, if you want, I think
there are ways to do so, because they can say, well, one
out of two consumers pay by card and then on average the
card payment is, you know, X or Y. They could do that.
There is evidence that actually there is one claimant
that does that. They estimate the payment cost that is
going to be related to each and every transaction. Then

they include that payment cost or estimated payment cost into the pricing algorithm that then derives the price that they charge to the consumers.

So the question is: can you do it? I think the answer is I think you could do it. Then the other question is: do the merchants do it or do the claimants do it? What we are seeing is that only in one case, or maybe two cases, this something that is done, and in these two cases my guess is that these companies are operating in a very competitive market where there is no product differentiation. They have -- or almost no product differentiation. They have very slim margins and the MSC accounts for a very large part of the fees that they charge to consumers.

Q. Well, Dr Trento, I am not going to get into the factual evidence with you because you have not really analysed -- I mean, you have not -- that is not your field. That was Mr Economides' field, was it not? I mean, the -- but we certainly do not agree that only one or two of these claimants has been monitoring their MSCs. I think that they all seem to monitor their MSCs.

A. No, what I am saying is that you put to me they can estimate the average MSC that is paid on each transaction and that could inform prices. What I am saying is that it is a possibility and we have seen two

claimants operating in highly competitive markets that
do that --
Q. Well --
A. -- and treat the MSC as part of their COGS.
Q. Well, all of the claimants have line items, I think, for
something like payment costs?
A. But not --
Q. They all, do they not, make budgets for those? So how
do you suppose those budgets are arrived at if they do
not have an estimate of their -- of the amount of the
MSCs and how they will vary with predicted output?
A. Yes, what I am saying is that it is not -- they do not
use it, the rest of the claimants, they do not use it as
a product level, they do not include it as part of
COGS --
Q. Ah, at the product level. But at the budgetary level
they are all looking at that?
A. They are looking at all cost, yes.
Q. Yes, and they are able to, certainly, to appreciate that
the MIF will vary reliably in proportion to output over
any significant period of time; correct?
A. That the MIF will vary in proportion to output, yes,
they will know.
Q. They will know, yes. So the effect of increasing the
MSC is going to be to push up variable costs and

marginal costs, at least over any significant increase in output; correct?
A. Are we talking about economic theory or --
Q. Well, yes, I mean --
A. Or evidence, factual evidence?
Q. No, in theory.
A. In economic theory?
Q. Yes.
A. Yes, if the MSC is recognised as a marginal cost, then, yes, of course, that will be the case.
Q. Okay. So, as a matter of economic theory then, if the MIF is variable -- both variable and industry-wide, as it clearly is, then it is likely to have a higher pass-on rate than other costs that a merchant incurs that are not variable and that are firm-specific; correct?
A. As I said, we do not know much from economic theory. The thing that we know from economic theory, or at least I know from economic theory, I have said before, intuitively I said that I agree with you.
Q. But, Dr Trento, I am really just putting two and two together. You have accepted I think --
A. I am just saying, intuitively, yes, I think we agreed with that --
Q. Intuitively agreed. Very well, okay. I will take the

intuition.
A. Okay.
Q. Very well.
I would like to then turn next --
THE CHAIRMAN: If you are moving on --
MR JOWELL: It may be a good time for a break.
THE CHAIRMAN: Yes, time for an Americano, perhaps!
MR JOWELL: A very strong one!
PROFESSOR WATERSON: Or a macchiato.
THE CHAIRMAN: All right. We will have a ten-minute break.
Obviously you know the rules and not to talk about the case to anyone. Thank you.
(11.42 am)
(Short Break)
(11.52 am)
MR JOWELL: Dr Trento, I would like to pick up on something that you say in your report. If we could go to page 66, please {RC-F/2/66}. You see paragraph 9.20. You say:
"While firms may not always follow the textbook categorisation of marginal versus fixed cost, the main teaching of economic theory still applies, that is to say that there is a difference in relation to pass-on between COGS and overhead costs."
Now, I am sorry to pick you up on your language, but the teaching of economic theory does not have anything

to do -- does not tell us anything about COGS and overhead costs; it is about marginal and fixed costs, is it not?

A. That is correct.

Q. Okay. Now, you then -- if we go to page 65, please {RC-F/2/65}, you quote from certain economic literature, and at 9.16, you quote from Professor Bresnahan of Stanford on industrial organisation, that:

"Economic marginal cost cannot be directly or straightforwardly observed."

Then other professors that say the same.

Now, that is no doubt true, it will often be hard in practice for a business to know precisely what an additional cost a unit increase in production will lead to, but that does not really stop a business trying to do their best to estimate it, does it?

A. So, as I said before, yes, but the difference is between marginal cost and non-marginal cost in economic theory.

Q. Yes.

A. Then the question is how the companies try to approximate or estimate the marginal costs, and that, I think, the factual evidence explains that it does make a difference. My position is that the way the firms are approximating marginal costs, or one way of doing that, is they include costs that they consider to be marginal in COGS, in cost of goods sold.

Q. Let us pause there, because I am just on this paragraph and, I mean, the insight that marginal costs are fundamentally not observed, it does not take one very far in itself, does it? That my only point. It just means they have to estimate it?

A. Yes.

Q. Then the question is how do they estimate it.

A. Yes.

Q. You then quote from Professor Syverson from the University of Chicago, and if I can read the quote that you cite, he says:

"Accounting data are not constructed for the sake of measuring economic categories like variable costs. Accounting data include two primary categories of costs, (1) cost of goods sold and (2) selling, general and administrative (SG&A) expenses. COGS includes direct costs associated with purchasing and transforming inputs into the products a company sells and as such is thought be composed primarily of variable costs. The SG&A category includes most other costs and as such captures many fixed costs. That said, some SG&A expenses might plausibly scale with the size of operations, while some costs in COGS might arguably be fixed. Indeed accounting standards actually allow clarification of expenses by COGS and SG&A to vary by sector. In the end, the variable fixed demarcation is not as clean as one would like it to be."

Then you go on to quote the RBB and RBB report to the effect that the economic distinction between fixed and variable costs need not coincide with accounting practice.

Now, I do not take issue with that, but I think what you seem to suggest is that what comes out of that is a wider message, that businesses will price by reference to COGS, using it as an approximation for variable costs. What I would like to put to you is that that does not actually come out of these quotations at all. These quotations do not make any predictions about what firms price by reference to; it simply makes the observation that the accounting classification is not -- does not accurately represent the distinction between variable and fixed costs; correct?

A. I agree with that, yes.

Q. Okay. So I suggest that what -- if there is any message that comes out of this literature, it is that a well-run business that wants to profit-maximise should not price looking solely on the accounting classification of a cost as a COGS, precisely because that accounting classification is inexact and rather arbitrary?

A. Well, I disagree with that. I mean, based on --
Q. (Overspeaking) Surely a well-run firm should break down its costs in a more detailed way and consider which, within the costs that it happens to put into COGS and those which it happens to put into operating costs, are variable and industry-wide. That would be the sensible thing for a firm to do, would it not?
A. No, I disagree. So, as I said, the reality is much more difficult than textbooks. If you take -- if a company wants to open a new store, then you would say, well, this may be a fixed cost, but actually that fixed cost -- sorry, that cost also depends on the amount of sales that the company wants to make. So if the company opens up a new store, it is because it wants to make more sales.
So the distinction between variable and fixed costs is one that is very, very difficult to make in reality. Some costs are -- have an element of variability and an element of, you know, they are partly fixed, partly variable. So the difference is really, for me, between marginal and not marginal cost and how companies approximate marginal costs.
Q. Well, I suggest to you that it is just not realistic to suppose that a whole sector of the economy in the long-run is going to slavishly follow an arbitrary

accounting classification of costs and ignore meaningful marginal industry-wide costs that have increased or decreased, just because of that accounting classification. That is just not realistic, is it?

A. No, as I said, I think, from what I see, from the factual evidence, setting price is a very complex exercise. So how a company do it is that they look at demand and marginal costs, and this is consistent with the economic theory, and then the issue is how do they approximate demand, how do they approximate marginal costs? They approximate demand by looking at competitors' prices. So they know if they price above their competitors, they are going to sell less, if they price below their competitors they are going to sell more.

Then they look at COGS. These are the two main components into the price setting of the companies. That does not mean that they then ignore all of the other costs. I agree with that.

So from an economic perspective, you will look at the other costs -- the economic theory perspective, sorry -- all the costs that are non-marginal, they are not considered into the pricing process. So the company would just accept that they will have to pay those costs, and if they cannot recover those costs the company will exit the market, and if they can cover those costs, the company will stay in the market. This is as far as textbook economic theory goes.

I accept that in reality -- the reality is more complex. So the companies, then they monitor the profitability, and if they do not like their profitability they may take some actions, and there are other costs which are not marginal costs which affect the profitability. So there may be an indirect link between those costs and the firm's action, including maybe the company wants to raise prices or reduce other costs when they see that their profitability is not high enough, but the first -- but there is a very big difference between COGS and the rest of the costs. So the mechanism for pass-on of COGS is very different from the mechanism for the pass-on of other costs.

Q. Well, you are just taking that from your interpretation of the -- of these very limited claimants and their limited disclosure, is that correct?

A. I am taking that, yes, from the evidence that I have in front of me.

Q. Let me just -- I was not going to take you to this now, but let me show you something. If we can go to {RC-J6/152/1}. This is McDonald's 2023 annual report. We do not have a lot, but I want to take you to one comment on page 38 {RC-J6/152/38}. You see at the top:

"The profitability of our company-operated restaurants depends in part on our ability to anticipate and react to changes in commodity costs, including [it lists them out] as well as distribution and other operating costs, including labour."

So, first of all, what this shows us is that it suggests that labour is categorised as a distribution cost; right? Or, forgive me, labour is another operating cost, forgive me, and not as a COGS?

A. Yes.

Q. Secondly, it suggests, does it not, that they are recognising that they have to look at something wider than just the COGS?

A. Yes.

Q. They have to look also at these other operating costs and distribution costs?

A. Yes, and this is consistent with what I said and that is just what you would expect a well-run business to do, is it not?

A. Sorry, I think this is fully consistent with what I have said, which is they do not ignore the other costs, they take them into account; and one of the claimants actually make the same point, which is labour is so important, it is so material, then they actually classify that as operating costs, but when there is a change in wage costs, then this is a direct input into pricing.

Q. Yes.

A. Yes, which --

Q. Indeed. That would apply, it seems, to other operating costs that are variable and industry-wide?

A. Yes, that is the -- sorry, I did not want to say "yes". I think this is where we do not agree.

Q. Okay.

A. Because I think the evidence is some of the claimants take into account costs that are very material, like the cost of wages, but I have seen no evidence that they take into account each and every single cost item that is in the -- within the operating costs; doing a distinction between variable and fixed part of this is because the distinction between variable and fixed is a very difficult distinction to make.

Q. Well, not really in the case of something like an MSC, is it?

A. I think we discussed this before.

Q. Yes, we did.

A. Yes.

Q. Now, so you do agree, I think, at least in principle, that a firm -- let me take to you to a bit of your

report at page 63 {RC-F/2/63}.
A. Sorry, before we get there, can I make an additional point, which is we have evidence from one of the claimants that they do not look at the MSC in isolation. Most companies -- most claimants, they do not look at the MSC in isolation. They -- in their accounting, they bundle the MSC with other costs, which can be bank fees or can be other things, and there is one claimant, for instance, that bundles the MSC together with the cost of handling cash, which is, you know, at the end of the day someone is going to go to the store, collect the cash and bring it to the bank, and these may have a fixed element, and it is still bundled together with the MSC.
So it is very important not to just make an abstract distinction between, you know, variable and fixed, to the extent that this can be done, but also look at the reality --
Q. I mean, there may be a fixed element, but there will also be a very significant variable --
A. (Overspeaking) It may be, but --
Q. (Overspeaking) -- because more cash, means more deliveries, mean more security, and so on; right?
A. Yes, yes, maybe, we do not know, but this is what I am saying is --
Q. Well, we do know.

THE CHAIRMAN: I think we need to concentrate on the questions that are being asked.

A. Sorry, yes.

MR JOWELL: Yes. So if we go to 9.10(b)(ii), we see there you say that you assert that the claimant:

"The evidence disclosed by the claimants shows that costs classified as COGS are usually a direct input into prices, while costs classified as overheads (or in general as non-COGS opex) do not generally have the same degree of proximity to prices."

Then it is the next bit that I am interested in, but we seem to have moved over the page a bit too early, I think:

"While this does not mean that overheads only affect prices by their effects on market structure (as in economic textbooks), I understand that increases in overheads would have to be identified and would need to trigger a review of the pricing process, usually in the form of a revision of the firm's target gross margins ([that is to say], the difference between prices and COGS)."

So I think, and I this was part of what you were saying earlier, that you do accept that a change in other operating expenses, even if it does not go directly into prices, could trigger a review of the

firm's target gross margin?
A. It could result, yes, in profitability levels that the firm does not like, and then the firm takes some actions, and one of them could be a change in prices.
Q. A change in prices, okay. Particularly, if they observe that they are not reaching their EBITDA targets, then they could increase their margins?
A. Well --
Q. That we see in the evidence as well?
A. It may be. I think the only comment is that one thing is the margin target and one thing is reality. If it is so easy to achieve margin targets, and just set margin targets --
Q. As an economist, do you accept that that process may take a little longer than the direct pricing process, but it would still translate eventually into prices?
A. It could take a little longer and potentially this is an avenue.
Q. Yes. That could be -- that could particularly be incentivised, could it not, if the firm's management have EBITDA targets that they find they are not meeting?
A. This is not for me, I think.
Q. Okay. Now, let me ask you this: suppose that you were advising the finance department of one of these merchants and let us suppose that the finance department

notice that they are not -- that existing gross margin targets are not reaching their EBITDA targets because costs have increased. I take it you would not advise the finance department just to put up prices automatically, you would advise them to understand what are the type of costs that have gone up; correct?
A. I have never done any type of advising of this kind so I do not know.
Q. What would you think -- would that not be a sensible thing to advise them? Would you not advise them to look at the different categories of costs?
A. I do not know.
Q. Energy, labour, payment services, technology services, and so on?
A. I am afraid that I am not an expert on this. So I can comment on economic theory, but I have never advised a company on how to price.
Q. As an economist, would you not advise them to look at those different costs and see which ones were variable and which ones were market-wide?
A. As an economist, I think we will go to economic theory and then try to transport economic theory in reality, but I know that reality is much more complex than economic theory.
Q. Well, do you not think that somebody in the market is

going to do the sensible thing?
A. But I think they are doing the sensible thing. Are we saying -- I think it would be very strange for a company not to do the sensible thing, which is maximising their profit, but the profit maximisation process is quite a complex one and, yes, the way they are doing it is -- well, I do not want to go back, but --
THE CHAIRMAN: I think we should stick to Dr Trento's expertise, maybe.
MR JOWELL: We ought to.
Let me ask you this, Dr Trento: you have made some points that relate to the size of the MSC as a proportion of operating costs, and I think the suggestion really maybe by you, as well as by Mr Economides, is that management might not pick up this -- pick this up as a small cost. Is that still your evidence?
A. No, I think what I am suggesting is that it is possible that a change in the MSC is so small that it will not trigger a reaction by the company. That is my position.
Q. But if the change in the MSC was dramatic, so the MIF goes, the MIF part goes, then you would accept, I think, in the long-run that is likely to be picked up by the company, is it not?
A. I think the problem is with the word "dramatic" because

the MIF is a very small component of the overall costs, so we have estimated that it is 0.26% of the revenues, and therefore I do not see that that is a dramatic change in cost so if it goes from 0.26% to zero.

Q. But if it is -- but if is monitored as a separate component as part of payment costs, then it is going to get noticed, is it not?

A. It is going to what?

Q. It is going to be noticed by these companies?

A. It may be noticed. I do not know. I am not an expert. It may be noticed. But my point is that it is so small that it may not trigger a reaction by the company in terms of: we are going to try to cut -- sorry, to cut on the other costs or to increase prices.

PROFESSOR WATERSON: Can I make -- raise a question here? If we were to observe a company renegotiating its payment charges and MSC, then would that be evidence that it is actively observing its MIF?

A. I think it would be evidence that they are trying to minimise their costs and monitor their costs.

PROFESSOR WATERSON: Yes.

A. But I think we need an additional step, which is for pass-on, which is they need to then take actions and say, well, now we have renegotiated MSC, we are now paying lower MSCs, and now we can reduce our prices or we can increase other costs. So I think that that is the last step that would be needed.

PROFESSOR WATERSON: Thank you.

MR JOWELL: May I ask a variant on that, Dr Trento, which is if a company surcharges or considers, seriously considers surcharging, do you agree that in those circumstances that is evidence that they are going to be taking MSCs into account?

A. Yes, I raised this point already in the joint expert statement. I do not know why companies surcharge. Some of the companies may surcharge. So, for instance, if you take airlines, there was a moment where all airlines were surcharging credit cards payments, and that could have been part -- we do not know -- of a strategy to not put the whole price of the ticket in the price comparison sites, and then when you go and buy this, you see a price of 200, then you go and buy, you pay 210. So I do not know. It is possible.

Q. It is possible.

A. Sorry, let me read the question again. Sorry, just one second. (Pause)

That they are going to be taking MSCs into account, for what?

Q. For their pricing.

A. That is an obvious ... yes. Yes, sorry. Yes.

Q. Thank you. Now, we have had this debate about the ratio between the EBITDA and the MSC and we have seen the paper that you were taken through this morning. I do not want to get into that, because it was only intended to be very broad brush illustrative, but I think I should, because of some of the points that are in that note, just quickly take you through some points on the document that you have recently produced this week.

So if we could pull that up, please, at {RC-Q/1/5}. I think I should note, first of all, that you mention that in bold in 1.6 that comparing it, you say, is -- you effectively say in the last sentence:

"Whether the comparison matters seems to be a question of business and pricing practice."

You refer to Mr Economides' evidence.

A. Yes, I think, sorry, the bold is a formatting mistake.

Q. I am not going to ask you about the significance of this, I just want to ask you -- I should put a few points to you about the actual figures or counter figures that you put forward.

If we could go over the page {RC-Q1/5/3}. You notice that the groupings are by GICS sub-sectors rather than SIC sub-sectors, and that is a fair point, but I think you agree that does not make a lot of difference in practice, does it?

A. I do not know the answer to this. I am sorry.
Q. Okay. Now, you also note that it is not necessarily representative of the SSH Claimants. Now, the purpose of the original document was based on the best match to the 12 Visa sectors and the overall economy. It was not intended to be matched specifically to the SSH Claimants, just for clarification, but the adjusted calculations you have provided are still only based on 12 sectors; that is correct?
A. That is correct, yes.
Q. So they are still not necessarily a fair representation of either the SSH Claimants or more widely; correct?
A. But what we have done is we have said okay, we do not know how useful this exercise is, but if you correct for it, just taking it at face value and, sorry, and doing some corrections, then results change quite dramatically.
Q. Well, the corrections you have made, though, are quite selective. If you wanted to do something more representative of the margins of the SSH Claimants, then you should really have instead recalculated the median margin figures based on all GICS sectors where the SSH Claimants are present, should you not?
A. Sorry, but when did we receive this? I think it was on Friday?

Q. Let me ask you: did you do that?
A. We did not try to -- we did not do that, yes.
Q. Okay. Well, if you had done so, I think you would have found that actually the original estimates of EBITDA were higher -- would go down, not up.
MR BEAL: I am worried about the evidence where this is coming from, unless we are going to get it after the evidence of Dr Trento.
MR JOWELL: Well, you have also -- another adjustment you have made is you have changed the median to a weighted average approach; yes?
A. Correct, and the reason for that is that there are a few companies that are selected and from which the EBITDA margins are calculated, and many of these companies have negative EBITDA margins, and those companies are companies that are selling very little, you know, very few -- sorry, whose sales are very small. Now, if we take the weighted average, which means we weight more firms that are selling more and that have higher revenues, then in my opinion this is going to give you a less distorted view because --
Q. But could I put the contrary to you, which is if you take a weighted average, then your ultimate number is going to be highly influenced by a small number of companies that may not be representative of the typical

merchant?
A. No, but this is --
Q. What about those companies like the Amazons and the Googles the Microsofts of this world?
A. No, but I think the problem -- if you look at the -- so there are very few companies that have been analysed by AlixPartners and so we do not know, you know, how representative the EBITDA margins -- sorry, the median is.
My point is if you see a lot of companies in there that have very small sales, and because they have very small sales, they have very low EBITDA negative margins, then you want to take that into account when you do the analysis and say if you have three companies that sell much more than the three companies that are not selling anything, I think you want to weigh -- you want to take this issue into account.
Q. Very well. We will have to agree to disagree on that.
A. Okay.
Q. The final point you make is to -- you propose making a calculation based on the size of the MIF, rather than the MSC; yes? Yes, that is the final --
A. Yes.
Q. -- adjustment you make? That depends a bit on what question you are asking, does it not, because if the

question is: is the cost material enough that companies are likely to monitor it and take it into account in their budgetary processes, then you should really be looking at the size of the MSC, not the MIF, whereas I do see that if you are asking what would happen in the counterfactual, then you have to ask what would happen with a zero MIF and how would that affect the MSC and how would businesses react to it, but it really depends on the question you are asking, does it not?
A. Yes, but the question that we are addressing here is if there was a decrease in MIFs, would have -- would that have triggered a price review? Therefore I think the change in MIF from the factual to the counterfactual is a better metrics to assess this question.
Q. Well, again, we will have to agree to disagree.
A. Yes, but if you -- otherwise one could say, okay, then MIF is part of MSC, MSC are part of total operating costs, and then I look at total operating costs over EBITDA, and then you get obviously a ratio that is 3,000%, 5,000%. That does not make sense. So you need look to at the price change -- the cost change that is of interest to you.
Q. Well, you may want to look at both, but you certainly would want to see the size of the MSC if you are considering what is the significance of this for the

budgetary processes, surely?
A. I think it is -- probably the difference is in the question. I think the question I am trying to address is pass-on.
Q. Okay. I would like to move on to something else, which is your choice of proxy for each of the claimants. Now, if we go to page 68 of your first report, please {RC-F/2/68}, and we see paragraph at 9.25 you say:
"The evidence disclosed by the claimants I have analysed shows that the MSCs are generally not classified as COGS, with few exceptions."
Just to be clear, there was data disclosed by 13 claimants; correct?
A. Correct.
Q. That is out of 2,000 claimants comprising over 600 corporate groups?
A. Yes.
Q. So for the vast majority of claimants, you do not actually know how they classify their MSCs for accounting purposes, do you?
A. It is correct that I do not know, for sure.
Q. Of the 13 willing claimants who came forward, chose to come forward, three did in fact classify their MSCs as part of COGS; correct?
A. That is correct.

Q. You have not actually conducted any sampling of all the claimants as to their accounting classification of MSCs?
A. No.
Q. Okay. So --
A. Sorry --
Q. -- one is really trying to read rather a lot into a very small and self-selected sample, are you not?
A. Sorry, one second. Sampling was discussed, but then -- at the very beginning of the exercise, but then the Tribunal decided that it would have taken too long.
Q. Yes. You have not undertaken it yourself?
A. No.
Q. So you are trying to read rather a lot into a very small and self-selected sample, are you not?
A. No, I do not think that is the case. Okay, so one thing is for some sectors or for all of the sectors we receive data from different claimants, and then the experts said imagine if we had got data from three claimants, A, B and C, then the experts said, okay, we think that the data from claimant A is better than the data from claimant B and C.

Now, for these other claimants, for some of them we had visibility on whether the MSC was classified as part of COGS or overheads, and there were three claimants -- sorry, for three sectors we had two different claimants and we could see that actually the classification was exactly the same.

Q. I will come on to that, because I want to come on to that right now.

A. Okay.

Q. But let us -- so if we can go back to page 69 {RC-F/2/69}, or on to page 69, rather, and we have seen 9.27 already and the opening part of 9.28, and we have seen in 9.28 your statement that Mr Economides would expect companies in the same sector to take a similar approach to the management of their cost structures and reflect them in a similar manner in their accounts. Then you say that you consider it likely that this is true for the companies within the sectors you analyse; yes?

I think we have agreed that, to a degree at least, you were relying on Mr Economides' experience in these sectors. That is right?

A. Yes.

Q. Now, at the time you wrote your report, were you aware that Mr Economides had no significant experience in the hotels or the travel and leisure sector or the telecoms sector or the university sector?

A. No.

Q. No?

A. No.
Q. Were you aware that the persons assisting him at LEK, Mr Robertson and Mr Ward, were not pricing experts?
A. No.
Q. Okay. Were you aware at the time you wrote your report that none of Mr Economides, Mr Robertson nor Mr Ward had any accounting qualifications?
A. No.
Q. Were you aware at the time you wrote your report that none of them had ever worked in the finance department of a business, any business, unless you count LEK itself?
A. I am taking all of these as to be true, I am relying on you, but I was not aware of any of this, yes.
Q. So if we then go back to your report, 9.28, and we look at the other factors. In (a) you again quote Mr Economides. Then in (b) you say that you generally rely on a very narrow definition in your sectoral approach, and you say that health retail, for example, has only two claimants and there is a likelihood of substantial commonalities between those two claimants; yes?
A. Yes.
Q. Now, just to be clear, those are not the only two companies that compete in the health and retail sector,

are they?

A. In my -- sorry, there are only two claimants, okay, yes.

Q. Yes, but in the sector we have -- I think Tesco was mentioned, the supermarket -- other supermarkets, and indeed Amazon was mentioned online; yes?

A. Yes.

Q. So if Holland & Barrett and iHerb price by reference to those competitors, it is necessary also, on your approach, to consider how Tesco and Amazon and the like classify MSCs in their accounts and how they treat them, MSCs, when it comes to pricing and budgeting.

Do you see the point? It does not matter that there are commonalities between those two claimants if there are not commonalities between the claimants and their competitors. To give you a concrete example, let us suppose that Amazon takes into account MSCs and it competes online with Holland & Barrett, and Holland & Barrett -- let us assume that Holland & Barrett take those prices of Amazon into account when they set their prices, then this whole approach falls -- goes out the window, does it not?

A. I think we discussed this before. I do not fully agree with this. I think the issue is that if there is a price change that comes as a result of Amazon changing its prices, that that price change would be in the dataset that I am using for the estimation, and then that would affect my estimation of pass-on.

Q. Well, we will have to agree to disagree on that, I think.

In (c) you say:

"I mostly carry out --"

You say you have received sample data from the other claimants, and you mention in the footnote the point that you have just mentioned orally about -- you refer to data from three other claimants.

Now, the Tribunal, I think, made clear by order that that data was to be deleted from those three claimants and was not to be relied on, we understood. Do you still have that data? Because we had understood --

A. No.

Q. So you are --

A. I deleted it.

Q. You are happening to remember?

A. Yes. When you see, it is difficult to unsee, say.

Q. Right. Of course, you are not suggesting that that was true -- you say, I think, that for others you could not tell; yes?

A. For others you could not tell, yes.

Q. So -- and, of course, we just do not know, even if however they -- those companies you mention in the footnote -- however they classify their MSCs, we do not know how they treat them for pricing processes -- in their pricing processes, do we? I mean, we have no evidence from them, no qualitative evidence, no disclosure from them?

A. Sorry, you are discussing -- sorry, the companies for which we have got the data and then we have deleted it?

Q. (Overspeaking) in your footnote, you mention the data you still recall from those three additional claimants?

A. Yes.

Q. But we do not -- you say they classify MSCs as overheads, but we have no idea whether they take MSCs into account when pricing?

A. That is correct.

Q. Okay. Then in (d) you say you observe certain regularities in the merchant claimants' evidence across sectors depending upon the relative size of the MSC.

A. Yes.

Q. You mention, I think, two of the merchants where the MSC is treated as COGS and is high -- a high proportion of their costs, but there is another claimant that you do not mention that also classifies the MSCs as COGS, but where it is quite a small proportion of their gross margin, is it not? I am not going to name it, but are you aware of that?

A. One of the SSH Claimants, you mean?
Q. Yes.
A. Yes, I think there is a big difference between those two claimants and the other claimant, and the big difference is for these two claimants, the MSC represents a very high share of the costs, and I think I have to stop here just because we are in an open session. Maybe we can got there back in the closed session.
For the other, for the third claimant, the MSC does not represent a very high share of their costs and in fact when you look at their data -- sorry, can we do this maybe in the closed session --
Q. We can do it then.
A. -- because it is easier to explain? Thank you.
Q. But you accept the basic point that it is a small proportion of their costs for this third claimant?
A. Yes, but I also --
Q. You want to add something?
A. Maybe the overall point is that it is not looked at as COGS are looked at by the other companies.
Q. Well, we will have to come on to that, yes.
A. But can we please look at that later?
Q. But it is in COGS in any event?
A. It is in COGS, yes, but it is a different type of -- yes, okay, we will have to go back.

Q. Now, I think you would agree this is a very small sample on which to try and find regularities, is it not?
A. But it is quite striking because when you look at that, the companies for which the MSC represent a very small cost, they do not track them at the product-by-product level with any degree of granularity. When you look at companies for which the MSC represents a very high proportion of the cost, then these are for two companies -- for the two companies that operate in very competitive markets and then, yes, they actually estimate the payment costs that they will have to pay on each transaction, and they include that as part of COGS for their particular transaction, and they include that in a pricing algorithm, at least one of the two, that takes into account pricing costs -- sorry, payment costs to set a price.
   Now, this is very different from what you see for the other claimants. The other claimants record the MSC as overhead costs. It is one of the many items that are within the bucket of overhead costs and there is no -- well, we have seen that COGS is a very different cost from overhead costs, as a more direct input into prices, and for those claimants for which, you know, the MSC is a small share of the costs, these are just recorded as overhead costs and it is consistent with all of the

evidence that I have seen.

Q. Okay. Dr Trento, the merchants whose data was supplied were those who were willing to supply their data; correct?

A. It must have been the case, yes.

Q. You are aware of the concept of self-selection bias?

A. Yes.

Q. So is there not a real risk here that claimants willing to come forward and supply their data are those who have a more plausible case of saying that MSCs do not feature in their price-setting process?

A. Well, my response to that is you have two of them, or at least one of them, where it is clear that actually it does feature.

Q. Yes, but there might have been more?

A. No, but what I mean is that we have a sector with two claimants, one that we know classifies MSC as COGS and takes MSC into account when pricing, and the other claimant, we do not know.

Q. But do you not agree that there are a number of examples -- I mean, Mr Holt has cited them in his evidence. I put some of those to Mr Economides, a number of examples, even from the public domain, of merchants in the same sector classifying their costs in inconsistent ways?

A. Yes, this -- sorry, I think you maybe went through this with Mr Economides, yes.
Q. Yes. I mean you are aware, for example, that Interflora, who we saw Mr Economides put in his original classification in that -- in the household goods sector, and they treat payment costs, including MSCs, as part of the cost of sales, but Mr Economides tells us that everybody else in the household goods sectors classify MSCs as part of operating costs. So we see --
A. Household goods sector is not one of sectors that we have analysed. Mr Economides, I think, did a match between the household goods sector, which is not in the top ten.
Q. No --
A. In one in the top ten.
Q. Yes. Well, are you aware in the travel industry, I think I showed him Booking.com and Expedia classify MSCs differently?
A. Yes, I am not an accounting expert, to be honest, but if I -- so Booking.com is a very large online platform, it is regulated by the European Commission so --
Q. Expedia is also a very large --
A. No, it is not classified. Is it one of the VLOP -- I do not think so -- that the European Commission is ...
Q. Under the DMA, no, it is very large, nonetheless.

A. Yes, I do not know. I think this is more for Mr Economides than for me.
Q. Mr Economides, do you remember, with his example of the Tasty chain, where he told us in his report that Tasty categorises staff costs, labour costs, as part of COGS and not part of operating costs, and he told us that that was typical of a business in the sector, but then we have just shown you McDonald's and there it is part of operating costs? So what do we make of this, Dr Trento? It seems as though there are lots of inconsistencies there.
A. As I said, I think maybe -- okay, sorry, one thing is we have evidence that restaurants can take wages into account directly when setting prices. This is not inconsistent with Tasty.
Q. Well, that is a different point, is it not, because, as I said, there are two steps, are there not? One is the accounting classification is always the same?
A. Yes.
Q. The other is then what actual costs businesses take into account?
A. Yes, I agree, but we --
Q. The accounting classification is really just rather arbitrary, is it not?
A. I do not know -- it is not for me to say whether it is

arbitrary, but we are taking both into account.
Q. You see, I suggest that these assumptions you make about uniform accounting classification within a sector and then uniform treatment of costs, they are just not safe assumptions to make, Dr Trento.
A. Again, I do not think this is for me. I think this is mostly for Mr Economides, but what I can see is that there is some regularity in there which is if MSC is a small part of the cost, then they are treated as overheads. If they are key input into costs, then they are treated as MSCs.
Q. I would like to turn, if may, to a different topic, and that is the use of your specific proxy cost of total overheads. Now, we have discussed already how initially you tried to conduct the regressions on the basis of the proxies recommended by Mr Economides and then you moved away from that because it was unworkable; yes? Do you recall that?
A. Yes.
Q. Now, one of the factors that Mr Economides identified as to whether the proxy was appropriate was whether the cost in question was variable; in other words, does it scale with the size of the business or turnover. I can show you that if we go to {RC-F/3/29}. You see 3.46, he says:

"A suitable proxy should in some way scale with the size (or revenue) of the business, to ensure that it receives similar treatment to the MSC treatment in pricing decisions."

Then he goes on to say that he understands from you that if the source of the variation includes an ad valorem component, that can create an issue for the econometric analysis.

Now, it appears then that you did discuss this with Mr Economides. Is that correct?

A. The ad valorem part, yes.

Q. Presumably you both agreed at this stage that a good proxy should vary with the size of the business?

A. All costs vary with the size of the business. It is a matter of degree.

Q. Well, yes, but he is saying something more specific, is he not? He is saying that the suitable proxy should scale with the size or revenue of the business, is he not?

A. As I said, I think all of them -- I do not know what he has in mind in here. It is not very specific.

Q. I can show you what he has in mind. If we go to page 51 {RC-F/3/51}, if we go to 4.45.6, we see rent costs. I can give you a few examples. It is not -- it is 12 times larger than CC commissions.

Then he says:

"Rent costs are largely fixed in nature" --

Oh, forgive me --

THE CHAIRMAN: This is confidential.

MR JOWELL: I should -- why do you not read it to yourself. I am not actually quite sure why this is particularly confidential, but there we are. (Pause)

It is really just that second sentence.

A. Yes.

Q. If we then go to page -- the same report, page 206, please {RC-F/3/206}, if you see at the bottom of the page:

"I have considered several additional costs items but believe these to be unsuitable as proxies for the MSC for the reasons described below ..."

Then if we go over the page {RC-F/3/207} and perhaps if you could read the very bottom, 12.63.6, particularly the second sentence. (Pause)

A. Yes.

Q. Over the page, please {RC-F/3/208}, you see 12.63.7 at the top of the page. (Pause)

A. Yes.

Q. 12.63.10. (Pause)

Just the last sentence. (Pause)

A. Yes. Well --

Q. So it is clear that Mr Economides specifically rejected proxies because they were costs that were fixed and not linked to revenues; yes?

A. Yes, I think all of these costs are linked to revenues. So it is quite difficult for me to -- so some of them -- I agree that there may be some costs that are more linked to variable -- sorry, more linked to revenues than others, in the sense that they react more than others, but it is difficult for me to see a cost that is not linked to revenues.

Q. Well, let me show you one that really seems very distant from revenues. Let us go to page 89, please {RC-F/3/89}. If we look at 6.43.2. I think I can read this out because it is so generic:

"Depreciation is not a suitable proxy. It is a non-cash charge, reflecting the depreciation of capital investment."

Yes?

A. Yes.

Q. Now, that, surely, is miles away from a variable cost, is it not, depreciation?

A. Yes, this is more fixed, yes.

Q. Yes. Now, what you have done in your regressions is you have used total overheads?

A. Yes.

Q. If we look at the breakdown of that, if we could go -- I think Mr Economides principally has broken down the costs and Mr Holt, I think, has perhaps slightly extended that analysis and put it in a nice form. If we could go to {RC-G/17/94}. We see page -- paragraph 279:

"The Claimants' overhead costs generally contain a significant portion of fixed or partially fixed costs. Mr Economides ... has classified the different categories of overhead costs based on whether they are, in his view, fixed or variable costs. These breakdowns are included in the figure below for the Claimants for whom Mr Economides has provided a cost split as well as for the Claimants where I was able to extend Mr Economides' mapping. As can be seen, for the average Claimant, Mr Economides identifies that 30% of overheads are fixed costs, 57% semi-fixed costs and 13% variable costs. Excluding [one unnamed claimant], for which multiple costs that I anticipate being at least partially fixed have been coded as variable, increases the average fixed cost component of the overheads cost to 34% and semi-fixed component to 61%, while the average variable cost falls to 5%."

Then if we look over the page at Figure 5.1, we see that that is set out in a bar graph {RC-G/17/95}. I take it you do not dispute that these are the sort of approximate proportions?

A. I am sorry, I have not done the analysis, to be honest, so it is difficult for me to opine now, but the only thing I can say now is that at least those costs that are called semi-fixed, as I have explained, I think many times now today, it is very difficult to say whether they are fixed or variable and how they scale with the revenues of a company. All costs have a fixed component and a variable component.

Then I think what Holt -- Mr Holt does, or maybe not here -- maybe he is just taking Mr Economides' categorisation -- but just to explain, one of the things that Mr Holt does in order to tell apart variable cost with fixed cost is that he looks at the correlation between a cost and the revenues and if the correlation is higher than 0.5, so the correlation coefficient goes from zero to 1, if it is more than 0.5, then he says, well, this is a variable cost. If it is less than 0.5, then he says, well, this is a fixed cost, but my point is that you have a range of correlation between the cost and the prices that goes from zero to 1 and it is very difficult to say, well, you know, the costs to the left of this point are fixed and the costs to the right of this point are variable. There is no reason to do that. There is a range of variability.

So that is my only point. Sorry, I know it was long.

Q. Fair enough, Dr Trento.

Can I just show you the next figure, Figure 5.2. So this is a breakdown of one specific claimant's overhead costs and -- now, the information is confidential, but I think I can refer to one figure because it is anonymised. You see that most of the overhead costs, 52%, are wages and salaries, but look at the figure for depreciation, the second largest, 17.5%.

A. Yes.

Q. That is all going into your total overhead costs, which you are using as a proxy?

A. For this claimant, yes, and the reason for that is that this claimant has said very clearly that they look at their operating margins and their operating margin includes depreciation.

Q. Well, can we agree this, that both COGS and overheads will contain some amount of fixed costs and some proportion of variable costs?

A. Well, I do not want to --

Q. Both COGS and overheads; yes?

A. Sorry?

Q. Both COGS and overheads will contain some amount of fixed costs, some amount of semi-fixed costs, some amount of variable costs?

A. As I said, I am not very comfortable with this binary distinction between fixed and variable.

Q. Okay. It is -- if you like, it is a range?

A. Yes.

Q. But if you are comparing total overheads to total COGS, typically a much larger proportion of overhead costs are going to be fixed or semi-fixed, rather than variable; correct, than compared to COGS?

A. Okay, let me try --

Q. I think it is --

A. Let me try --

Q. I would suggest it is one word.

A. Yes, but because the problem is that, as I said, I am not very comfortable with variable and fixed, but let me try to unpack this.

If you have three costs, one is more variable, another one is less variable and another one is even less variable, and then you look at how variable these three costs are in total, and then COGS includes certain costs, like these three costs, and then overheads include other three or five costs, then I agree that if you look at COGS, they are -- they tend to be more variable with the revenues than the overheads costs are. Yes, I agree with that.

Sorry, it is just the binary distinction between fixed and variable.

Q. I do not want to rush you --

A. Okay.

Q. -- but you agree then that COGS, from an economic perspective, from the perspective of the nature of the cost, are a better proxy for MSCs than overheads costs?

A. I strongly disagree with this.

Q. From an economic perspective?

A. Oh, sorry, sorry --

Q. Purely from an economic perspective. You are an economist, Dr Trento.

A. Yes, from an economic theory perspective.

Q. Yes, from the perspective of their degree of variability and their degree of, if you like, industry-wide/firm-specificness, if I can put it that way, they are closer, much closer, to COGS than they are to overheads costs, are they not?

A. Well, let us put it this way: MSCs are -- they do vary with -- they do vary with revenues or outputs. I agree with that.

Q. Okay. You must accept, surely, that if you are going to include in your proxy all of these overhead fixed costs, things like depreciation costs, rent, pensions, audit costs, you are going to -- all these things that

Mr Economides rejected because they are not related to revenue, you are going to reach an estimate that is bias downwards, are you not?

A. No, I disagree. It is quite easy. So what we have tried to do -- sorry, this is going to be quick. What we have tried to do, we have tried to estimate the pass-on of the MSC because we then would not have any problem identifying the relevant proxy. That is our first best. We failed. We could not do it. We tried very hard. We could not do it, because there was an endogeneity issue.

Then we went to the second best and the second best for us was the proxy cost identified by Mr Economides, which he identified on the basis of different factors. One of these factors was the variability of the cost. Another factor was the size of the cost and then there were other factors. We could not do it, except for one of the claimants.

Then we went to the third best, which we said, you know, we need to provide something to the Tribunal and then what is the most relevant proxy? We said now we have a choice between two very big baskets of cost. One is the COGS and the other one is the total overheads. We could not go more granular than that. We chose total overhead cost for reason that, you know, I think are now clear. When you look at the pass-on of total overhead costs, that includes costs which are very sizeable for the firms, like wages, for instance, which we know from some claimants that they actually feature into the pricing decision, and that they also include MSCs for which there is no evidence that they individually are taken into account in pricing decisions. So when we then take this bucket, which is the third best, and say: is the pass-on for this bucket underestimating the pass-on for the MSC, I do not think we have any evidence to say that it is.

Q. Well, it is going to underestimate it, is it not, because it is going to be based upon a collection of costs, some of which, a large proportion of which, are fixed and firm-specific and therefore are likely to bias the estimate downwards?

A. No, but we also include in the total overhead costs, costs like wages which we know may have a direct impact into the price.

MR JOWELL: Yes, and we will come on to that. I think this -- I would like to come on to wages, Dr Trento, but I think it might be sensible to do so after the short adjournment.

THE CHAIRMAN: Can I just ask, before making a decision -- you said there was a decision to be made as to whether you were going to use COGS or you were going to use total overheads?

A. Yes.

THE CHAIRMAN: You knew, before making that decision, that overheads would be likely to produce a lower pass-on than COGS?

A. I think we did not know. It was an empirical matter. We did not know, but we estimated both the pass-on of COGS and the pass-on of total overhead costs and what came out is clearly that the pass-on of total overhead costs is lower than the pass-on of COGS.

THE CHAIRMAN: So you actually did the estimate before deciding which way to go, did you?

A. No, no, no. We decided that the proxy cost was going to be total overhead costs, but we also estimated the pass-on of COGS in case the Tribunal wanted to use COGS as the relevant proxy costs.

THE CHAIRMAN: Right. Okay.

A. But the reason why we chose total overhead costs instead of COGS is that COGS, for me, are a very different category of costs. You know from qualitative evidence that all of the claimants take into account COGS into their pricing decisions. It is the first thing that they take into account and then you know that the total overhead costs, they may affect prices, maybe indirectly, but they may affect prices through profitability. So the company looks at the profitability and says: well, we are not doing as well as we thought, let us do something about it, and that something could be, you know, we reduce marketing expenditure or it could be something -- it could be we increase prices, but the channel through which these COGS and total overhead costs are passed on is quite different. So --

THE CHAIRMAN: It is more indirect?

A. Therefore we think -- given that the MSC is part of total overhead costs, we think that the better proxy is total overheard costs.

THE CHAIRMAN: Yes, okay. 2 o'clock then.

(1.00 pm)

(The luncheon adjournment)

(2.00 pm)

THE CHAIRMAN: Yes, Mr Jowell.

MR JOWELL: Good afternoon, Dr Trento. I was going to discuss a little bit about wages and how that fits in to this question of --

A. Can I, sorry, make a small correction before we --

Q. Certainly, yes.

A. So I think before Mr Jowell put to me that if McDonald's increases prices because of the MSC, because it is part of COGS, for instance, and say Wagamama then copies McDonald's, then there would be a price increase for Wagamama, and then I said, yes, there would be a price increase, but that would be captured by my analysis, my analysis would take that into account, because I have -- because in the dataset that I am using I have the variation in price that is reflecting this price increase. But I think Mr Jowell is right and I was wrong, because what happens there is that I do have the variation in prices but I do not have in my analysis the variation in the MSC because I removed the MSC from the total overhead costs. So you were right on this.

Q. I am grateful.

A. I apologise. Can I make a very short comment about this?

Q. Certainly.

A. Which is copying competitors' prices, it is not -- so in the case of McDonald's again and Wagamama, say, so if McDonald's then benchmark its prices to Wagamama and Wagamama benchmark its prices to McDonald's, and only one of them takes the MSC into account when setting prices, from an economic theory perspective the game is very difficult game to solve, so you do not really know where you end up, whether Wagamama is going to copy McDonald's, McDonald's is going to copy Wagamama or

somewhere in between, so that is a clarification that I also want to make in respect to this point.
Q. Yes, I understand that point, but I suppose it is a reasonably good bet, is it not, that over the long-run, the equilibrium price is going to be the one that reflects the marginal -- the change in the marginal industry-wide cost, is it not?
A. Yes, I do not think I agree with this. I do not have elements to say the probability that the outcome is everybody is copying McDonald's, it is more likely than the --
Q. You do not --
A. -- than the opposite.
Q. But you do not know?
A. I do not know. I do not know.
Q. Okay.
PROFESSOR WATERSON: But hopefully not.
A. Hopefully not, yes.
MR JOWELL: Could I then -- I would like to discuss the wage component within your proxy. I am going to take you to a specific example, and, again, I am not going to mention the name of the company but I think we can do this without doing so.
Could we go to {RC-F/2/362}, please. At H12, we see that you estimate the pass-on rate of total overhead

costs for the company to be a mid-point between zero and 27%, or 13.5%, across your 72 models; yes?
A. Yes.
Q. If we could go to 364, please {RFC/2/364}, we see in your table 69 that here you estimate pass-on for staff costs within overhead costs --
A. Yes.
Q. -- and you find that the company passed on its staff costs at a higher rate than total overheads; yes?
A. Yes.
Q. If we go to page 225, please {RC-F/2/225}, we see that staff costs are -- if we can see the footnote at the bottom of the page, we see that staff costs here were part of overhead costs?
A. Yes.
Q. I think you estimate, do you not, that the staff costs were passed on, I think, at an average rate of -- well, if we go to 17.49, if we can go up a little, we see that above the table you say you find pass-on rates of up to 39%?
A. Yes.
MR BEAL: I think that is marked as confidential, is it not?
THE CHAIRMAN: Yes.
MR JOWELL: It is, but ...
THE CHAIRMAN: I do not think the merchant has been

identified.

MR JOWELL: I have not identified the company, so I am assuming, I think reasonably, that it is okay.

THE CHAIRMAN: Yes.

MR JOWELL: So I think what you are suggesting here is that this can imply that the pass-on rate for this sub-component of overhead costs, the wages, is passed on at a higher rate than the remainder of overheads; yes?

A. Yes.

Q. I think the conclusion that you suggest that comes from this, in the last sentence of the page in front of us, you say:

"This may imply that the pass-on rates for non-staff related overhead costs, including the MSC, could be zero."

But I would say actually what we can draw is a broader conclusion, not that conclusion, but a broader one, that different elements or parts of overhead costs may be passed on at different rates. Is that correct?

A. In the case of this particular claimant, we know from the qualitative evidence that although staff cost is part overhead costs, they actually take staff costs into account directly when setting prices. So this is the reason why I have run a regression, trying to analyse the pass-on of wage costs. So there is a difference, I think, between the part of total overhead costs which are related to wages, and the part of total overhead costs which are not related to wages, and this is why I draw this distinction in there.

Q. Yes, but there is also a broader point that we can take here, which is that variable industry-wide costs within overhead costs may be treated differently for pricing purposes than fixed firm-specific costs; correct?

A. I am -- yes, so we have total overhead costs, and then MSC is part of this total overhead costs, and I think my understanding is that Mr Holt or Visa's position is when it comes to pass-on of these total overheads costs, there is going to be a distinction between variable costs and fixed costs, and variable costs are passed on at a higher rate -- sorry, variable overhead costs are passed on at a higher rate than fixed overhead costs. I think this is their position.

I have seen no evidence for this to be the case. I think the alternative would be -- unlike in this case where wages are obviously a direct input into pricing according to witness evidence, the other possibility is that total overhead costs are passed on as a bucket through their effect on profitability, and another possibility is that there are some total overhead costs which are monitored and actions are taken on them more directly than others.

Q. Yes. Just picking you up on that. So, for example, depreciation, which we see in some of your total overheads costs, that is not going to be something that is likely to be monitored and picked up in prices specifically, whereas variable industry-wide costs are more likely to be picked up, like wages, and will be reflected in prices; correct?

A. I think this depends on the qualitative evidence. So for the -- sorry, for the claimant that we looked at before, and you showed me the figure with the depreciation, for that claimant we have evidence that the claimant says, okay, our main component of prices is COGS and competitors' prices, but we monitor our operating margins, and if operating margins then deviate too much from what we want, then we may take action. We may take action also on prices.

The thing is that the operating margin that they are looking at, they include depreciation, and that is the reason why we have included depreciation in our measure of the proxy costs.

Q. Dr Trento, but you also include depreciation in other claimants?

A. Yes, because I think the evidence is sometimes -- I think we include depreciation in three claimants, if

I am not mistaken. Now, for this claimant the evidence is quite clear. For one of the other two claimants I think the evidence is not clear, because they say that they look at various measures of profitability, and it is not clear whether those measures include or do not include depreciation.

Q. Well, we can come to it in due course.

A. Yes.

Q. Perhaps it is better, but I suggest they do not, that they look at EBITDA, which does not take -- EBITDA is, by definition, before depreciation.

A. Are we going to come to that in closed session?

Q. We will, yes.

A. Okay, thank you.

Q. Now, if I could just take you to your first report and then to a correction or change you make in your second report. So if we could go to {RC-F/2/23}, please. You say, in 2.15(a), you say --

A. Sorry, this is the first report?

Q. The first report, yes.

A. Yes.

Q. I think this is a bad -- this may be a bad reference, but I think I can just put the point to you, which is this: you state -- forgive me, it is in here.

If we look in 2.15(a), you say that:

"For those claimants that treat MSCs as overhead costs, I have been able to carry out regression analysis that estimates the pass-on of the broader category of total overhead costs."

You say -- for the reasons you explain below, you say:

"This is likely to set an upper bound to any pass-on of the MSC overcharge."

Now, you revise that in your second report. If we can go to that at {RC-G/2/18}. We are in paragraph -- sub-paragraph (f), and you say:

"Regarding the interpretation of the pass-on of total overhead costs as an upper bound to the pass-on of the MSCs for claimants that treat the MSCs as overheads, I have slightly revised my position with respect to Trento 1. In Trento 1, I explained that I considered that (i) the pass-on of the MSC overcharge cannot be inferred from pass-on of total overhead costs, and that (ii) the pass-on of the total overhead costs is likely an upper bound of the pass-on of the MSC."

Then you say:

"I still consider the first point is correct ..."

Then you say it is possible that:

"... a small change in overhead costs, such as the MSC overcharge, had no effect on prices for many claimants ..."

If we can go over the page {RC-G/2/19}.

"... and I consider it is a factual question."

But then in (ii) you say:

"However, with more time to digest the information available to me, I consider that if the MSC overcharge has been passed on, then it is likely to have been passed on at the same rate as total overhead costs as opposed to a lower rate."

So you have fairly made a revision there. It is no longer a lower bound, you are now considering it is a central estimate.

What I want to put to you is that, given what we have seen about the high proportion of total overhead costs that are fixed and likely firm-specific, your estimates are actually a lower bound, they are actually an underestimate of the pass-on rate, are they not?

A. I do not think so, because I think, as I have explained before, there are costs within the bucket of total overhead costs which are looked at quite closely by the firm, and these are included in my analysis, in my estimation of pass-on. So, for instance, in the case of the claimant that we discussed before, wages ...

Q. But wages, if anything, is less variable and less industry-wide than MSCs. So from an economic

perspective, it looks as though they will be less likely to be passed on, even than wages. Are you saying --
A. (Overspeaking) Than the MSC. So I think maybe we need to draw a distinction between economic theory and in practice, yes? So I take from your point that what you are saying is the MSC is more variable than wages and therefore is going to be passed on at a higher rate than wages. I think the first sentence is correct, but I do not think we have any evidence about the second sentence --
Q. Well, can we agree that it is at least as likely to be passed on as wages?
A. No, because it is a very small cost. So what you are saying is that --
Q. So you think the fact that it is small is more important than the fact that it is much more variable and more industry-wide, is that your evidence?
A. It is an important consideration, of course, yes.
Q. Those two things just balance each other out, if anything?
A. We do not know.
Q. All right.
Let us move on to something else: the reliance on public studies or the lack of reliance. Now, in your first report, you do on occasion, I think, refer to

empirical sectoral studies and to public data, but I think it is fair to say that on every occasion you do not place any reliance on them, is that correct?
A. Except in the case of supermarkets, yes.
Q. Okay. Even when -- and the matching process to the additional sectors, also -- I know you said that is something that Mr Economides does, but neither he, nor you, put any reliance on the studies or the public data for that matching purpose either?
A. No.
Q. Okay. Now, I think you accept that there are empirical analyses in the economic literature on pass-on rates and that these are often or usually -- even usually sound; correct?
A. Yes.
Q. Now, in your first report, you give specific reasons for a number of -- why you do not like a number of the studies, but in your second report you attempt a more general critique of the use of the empirical studies. Do you recall that?
A. Yes. I would not call it critique, but I think I know what you are referring to, yes.
Q. You refer to three justifications for not using them. One is transportability or generalisability of the results, the other is publication bias, and the third is

approach to combining the results. Do you recall that evidence?
A. Yes.
Q. Okay. So in relation to transportability or generalisability, your concern relates to the choice of proxy, the time period studied, and the geographic location of the economic population that is analysed; yes?
A. Yes, the main point being the choice of proxy, because a large part of this literature is looking at the pass-on of wholesale prices, which are COGS, or excise duties, which are also COGS, and therefore, because my proxy cost is total overhead costs, the pass-on of COGS does not provide me information on the pass-on of total overhead costs.
Q. So you are aware, are you, that the European Commission commissioned a study on the effect of the Interchange Fee Regulation?
A. Yes.
Q. It was published in 2020; yes?
A. Yes.
Q. I am sure you are familiar with it?
A. I do not know whether it was 2020, but I believe you.
Q. Let us have a look at it, if we may. It is {RC-J6/89/1}. If we could go to page 170

{RC-J6/89/170}, you will see it says -- perhaps if you can just read the page to yourself, Dr Trento. (Pause)
Have you ...?
A. Yes.
Q. Could we go then to page 172 {RC-J6/89/172}. We see, talking about factors:
"Small cost changes [the point you were on just now].
"The studies provide evidence of pass-through of large and small cost changes in different sectors and different countries. Bergman and Hansen, for instance, show that a [Danish Krone, I assume] 0.04 increase in taxes per beer bottle is passed through to consumers. This is important evidence for the analysis since the decrease in [interchange fee] due to the [Interchange Fee Regulation] also constitutes a small cost change across sectors and countries. This shows that pass-through of small cost changes is possible in the first place."
I take it you do not disagree with that?
A. I agree with that. There is a question whether this is part of marginal cost or not from the point of view of the firm.
Q. It also then considers sectoral and country-specific characteristics which serve as determinants of the

pass-on rate, such as the measures of market competitiveness and the national GDP level. If we -- we will see that over the page at 173 {RC-J6/89/173}.

The study uses a regression model to determine the influences of these factors on pass-on rates. If we go to page 175, please {RC-J6/89/175}, we see the results and you see it in the table. For a cost increase, it is effectively a 90% pass-on rate, and for a cost decrease, 66%; yes?

A. Yes.

Q. Now, are you really saying that a study like this has no legitimacy, no evidential weight; that, instead, the Tribunal is better off basing itself on Mr Economides' matching exercise, for example, or the evidence of one claimant whose regression analyses are very questionably -- of questionable reliance or reliability?

A. No, but maybe it is important to clarify that this study does not estimate the pass-on of the MIF or the MSC. What they are doing is they are taking an average pass-on rate estimated by different papers, but the pass-on rate is very often the pass-on rate of wholesale prices for taxes.

Q. But they consider that to be a reliable proxy, do they not?

A. Yes, they do.

Q. Now, another reason that you give for ignoring all of the public studies is you mention the possibility of publication bias. So this is the idea that there may be a tendency for statistically significant positive results to be over-represented; yes?
A. Yes, I do not use them as a reason for discarding the public studies.
Q. No; as was my understanding of your -- if you do not rely on publication bias, then we can move on.
A. That is fine, yes.
Q. Fine.
A. The only thing I am saying there is we need to contextualise the results. So there is a literature that is known in economic and in other disciplines about the publication bias, which is, it is easier for a paper to be published if it finds statistically significant results than if it does not, and therefore there are many studies or many analyses that have been carried out but have not been published, and therefore there is an overrepresentation of statistically significant effect in the literature. That is just some context.
Q. That is just a general point, but it is not really of relevance here. One does not -- one would not expect that pass-on rates would be higher in the literature as a -- that would be reported as a result of that here?

A. Well, that is exactly the point, that if you look at the average pass-on rate estimate, that is going to be an overestimation of the true pass-on rate. That is what the literature on --
Q. Well, I thought a moment ago you accepted it was not really a reason to --
A. No, I do not -- I would not use this to discard.
Q. To discard.
A. To discard reliance on public papers.
Q. We looked through this report of the European Commission, and they do not mention publication bias as a concern at all.
A. Yes. Well, publication bias I think is a very well-known fact in economic and other disciplines. There are Nobel prizes written about it, so ...
Q. The other issue that you mention is accounting for the varying precision of different studies when you are synthesising the results; yes?
A. Yes.
Q. I think you criticise Mr Holt's approach to just aggregating and averaging the results, rather than accounting for the differences in the quality or accuracy of the results; yes?
A. Yes.
Q. So if we go, please, to RC-G --

A. Sorry, before we move on from this document, this is exactly what the document does. So it takes into account the different precision of the estimates of the values and it runs an econometric analysis on these results, and then it comes to a conclusion on the average pass-on rate estimates.

Q. Well, you are quite right that the IFR study does, if we look at this -- if one goes to 174 in this, please {RC-J6/89/174}, you are absolutely right that it does look at various explanatory variables, including sector and country-specific characteristics, and if you -- you can see that also on page 309 {RC-J6/89/309}. But I think you will find that it does not assign greater weight to more precise estimates, it is simply that it runs a regression analysis on these explanatory factors; correct?

A. It may be the case, yes, sorry.

Q. Okay. So it does something rather different. What Mr Holt does is two things: first of all, he has an exercise of quality control in which he excludes those studies that are liable to be unreliable or irrelevant or that are not peer-reviewed. Are you aware of that?

You are nodding. You have to say "yes".

A. Sorry. Yes, he excludes those studies that he considers to be unreliable, yes.

Q. He does in fact make -- he does actually check in his second -- in his twelfth report, he does actually regress pass-on rate estimates from the peer-reviewed studies on time and geography to check whether these have an effect -- a substantial effect on the overall pass-on rates, does he not? I can take you to that. {RC-G/18/242}, please.

Between paragraphs 818 and 829, he considers the effect of geography and time period. So he does in fact -- he does in fact check whether these factors matter?

A. Yes. I did not take this as a regression analysis.

Q. Okay. But it is at least a check?

A. It is a check, yes.

Q. Of course if you wanted to do that check on the studies he has used, you were always free to do that yourself, were you not?

A. Absolutely, yes.

Q. You chose not to do it?

A. No. But I have explained why, because most of these studies look at proxy costs that is not a relevant proxy cost for me.

Q. Okay, let us turn on to public data. You take issue every time the other experts rely on public data and I would like to look at an example of that. If we go to

{RC-G/2/204}, you see in 11.28 he says -- you say this:

"The second comment is that I consider Mr Holt's analysis, other than the analysis of the Holland & Barrett data, to be uninformative for the pass-on of Holland & Barrett and iHerb, in particular his public data analysis for the cosmetic and beauty store sub-sector that he considers includes Holland & Barrett and iHerb is carried out using as a measure of price the copy of appliances and products for personal care. The CPI is based on the price of, amongst others, the following products: electrical hair straighteners/tongs, electric toothbrush, toilet roll, disposable nappies, sanitary towels, electric razor, toothbrush, tissues, baby wipes, self-tanning products [and so on]."

You say:

"These products have little, if any, overlap with the product range of Holland & Barrett or any other health retailer. As a result, these estimates are not informative for a sector containing Holland & Barrett and iHerb."

Yes?

A. Yes, I can see where you are going. I think there --

THE CHAIRMAN: Wait for the question.

A. Sorry, sorry.

MR JOWELL: If we go to page 207 {RC-G/2/207}, paragraph 11.44, you say essentially much the same thing. You essentially repeat yourself; yes? So you say it twice.

Now, the items that Mr Holt identifies are pretty typical retail items sold in a pharmacy like Boots the chemist, are they not?

A. Maybe.

Q. Well, they are, are they not?

A. I do not know.

Q. So you are essentially saying, well, the retail goods sold in a pharmacy are very different to the goods sold in Holland & Barrett. That is essentially your point; correct?

A. Yes.

Q. Right. So you say there is no reason for the pass-on rate in those two different types of shop to be the same; correct?

A. Yes.

Q. Okay. Could we go back to your first report {RC-F2/213}. You see 16.68, you come to the end of your analysis for the health retail sector based on Holland & Barrett, and you say:

"This is my conclusion for the health retail sector ..."

Then you say this, at the bottom of the page:

"I understand from Mr Economides' analysis that the pass-on rate estimated for this sector may also be extrapolated to the following sectors for which I do not assess pass-on directly:

"(a) pharmacy ..."

A. Yes.

Q. So you are prepared to take it from Mr Economides that the pass-on rates for the health retail sector could be extrapolated to a pharmacy, but when Mr Holt does the reverse, and he uses pass-on of products sold in a pharmacy to extrapolate back to health retail products, suddenly they are completely different and not informative?

A. Yes. Can I explain?

Q. Yes, please.

A. Yes. So what we have done is we have taken a top ten sector and tried to estimate pass-on as accurately as possible, and one of the top ten sector is Holland & Barrett and iHerb, which is health retail. Now, for that sector we have tried to estimate the pass-on with Holland & Barrett data and I think we have done that as accurately as possible.

Now, the nature of the exercise is that we have 2,000 claimants and possibly 80 different subsectors,

and we cannot estimate pass-on precisely or accurately for each of these sub-sectors, and therefore once we have taken the top ten sectors, which account for 70/80% of the claim and of the claimants, we have tried to do the exercise as well as we could for those top ten sector, but the nature of the exercise is that there is always going to be imprecision, and now we have tried to limit imprecision to the bottom -- to the bottom 20% which includes pharmacies.
Q. Well, it is a third, is it not, the bottom third, which --
A. Well, in terms of claim values, it is. Now excluding Pets at Home, actually, when I think about it, excluding Pets at Home, WorldRemit and Pendragon.
Q. But I am still confused, because why are health products like pharmacy products when Mr Economides says they are, but pharmacy products are not like health products when Mr Holt says --
A. No, no -- okay, I see. It is quite attractive superficially. But what we are saying is that there is going to be inevitably imprecision, because we cannot do the estimate for all of the 80 subsectors, and now let us try to minimise the imprecision to the sub-sectors, like pharmacy, that do not really matter for the SSH Claimants, and how we do that is we estimate the pass-on

for the top ten, and then we ask Mr Economides to do the matching for the bottom, you know, from the number 11 onwards.

Q. Yes, but, forgive me, the matching has to be symmetric. It cannot be -- similarity has a symmetric quality, does it not? If sector A is similar to sector B for these purposes, then sector B is also similar to sector A., that is just --

A. No, but what I am saying is we need to be as precise as possible for the top ten, and the top ten includes Holland & Barrett and iHerb and health retail, and that we have done.

Q. Well, it is the top nine actually.

A. Top nine. Well, yes, nine of the top ten, yes. We have done that as accurately as possible. I do not think Mr Holt has done that, because he has estimated actually the pass-on of pharmacy for the pass-on of Holland & Barrett. So we have tried to estimate the pass-on of Holland & Barrett as accurately as possible, because Holland & Barrett is one of the two claimants in that sector, and Mr Holt has looked at the public data and has said: well, I do not know about Holland & Barrett, let me take a pharmacy.

Q. Yes, because he thought, like Mr Economides, apparently, that they were similar products --

A. Yes, but --

Q. -- but apparently they are only similar products when Mr Economides says they are similar products, but not when Mr Holt treats them as similar?

A. We are accepting that actually the matching exercise, we say we are very upfront in our report. We acknowledge that the matching exercise is inevitably inaccurate, because you are asking Mr Economides to find one of the top nine or top ten sectors and then match it with another sector which is, in this case, pharmacy. We acknowledge that this is an imperfect exercise, but we say that it is just intrinsic in the analysis that we do that there must be some imperfection, that everybody does -- let me give you another example, sorry.

We are upfront about this imperfection and we try to minimise the imperfection. If you look at what Visa has done, they have taken a sector, the sector that Visa categorises as a sector. So you have a sector which is other services and then you have many different claimants in there. One is BMW financial services. One is a gym, and the other one is an internet domain company that gives you the name for the website.

Q. Dr Trento, forgive me --

A. Sorry, I think it is quite important to finish this. Mr Holt assigns the same pass-on rate to these three very different companies, because it is just the nature of the exercise that we are asked to do that there is going to be some imprecision in there.

There is another sector where you have the British Heart Foundation, and this is together with telecoms, like Vodafone. It is not from us, it is from Visa --

Q. Dr Trento, we are talking about your report at the moment, and all I am suggesting is that you should have been consistent, that if you were going to be prepared to extrapolate to pharmacy, then you ought to have also considered --

A. But I have said --

Q. -- the evidence of pass-on from pharmacy products was relevant, and not irrelevant as you have treated it?

A. But I have said that extrapolation is an imperfect exercise, this is clear in our report, and therefore --

Q. Can we just disregard extrapolation, would that really be better?

A. No, I think it is imperfect but it is not to be disregarded.

Q. Well, it is not. But do you then regard Mr Holt's figures for pharmacy, or not? Because we cannot have it both ways really.

A. No, no, I can have it both ways, because what I am saying is -- because what I am saying is I estimate for

Holland & Barrett it is, say, 40%, or whatever it is, and then pharmacy could be 60%, it could be 20%, and when Mr Economides does the extrapolation, imagine the pharmacy is actually 20% and it goes to 40%, that is imprecise, and that I have acknowledged.

What I want to do is for Holland & Barrett in particular, I want to get this 40% right, and so when someone comes and says, well, you know, I do not have data for Holland & Barrett, I do it for pharmacy, and I estimate a 20% pass-on rate, that in my opinion is wrong, because what we want to do, Holland & Barrett is probably around 7% of the SSH claim, we want to get it as correct as possible, so --

Q. Dr Trento, forgive me, but you are not just estimating for Holland & Barrett, you are estimating for the sector. You are estimating for the sector.

A. Well, but my sector is Holland & Barrett and iHerb.

Q. Well, no, your sector is health products, actually.

A. Health retail --

Q. You have taken --

A. -- where the only claimants are Holland & Barrett --

Q. -- you are making a sector-wide estimate?

A. No, I am making a sector-wide which only includes iHerb and Holland & Barrett. This is my sector.

Q. Dr Trento, I think I have put the point more than once and I am going to move on.

Another concern that you have about the public data is the question of simultaneity bias; correct?

A. Yes, correct.

Q. That is -- essentially your concern is that higher prices can lead to higher costs, as well as the more obvious point of higher costs leading to higher prices; yes?

A. Yes.

Q. That is particularly a concern, I think, that you think individuals anticipate higher costs in the future, and that is then reflected in higher costs in the present. Is that right?

A. So, for instance, in the case of wage, what I say is that it is possible that wages are affected by the level of inflation, so if the inflation is higher, then people are demanding higher wages, so that would be one of the effects.

Q. Yes. Now, are you aware that in, I think, 28 out of 30 of Mr Holt's analyses of the public data, he uses a first differences analysis or specification?

A. Yes. That does not change anything.

Q. Well, he looks at changes in costs not only in the current quarter and the costs in the previous three quarters and the changes over a period of a year, so,

effectively, if the changes in prices in the last quarter of 2023 are determined in his model by changes in costs over quarter 1 to the whole -- quarter 1 to quarter 4 2023, and the pass-on is then the sum of those effects, and changes in costs in other periods, so later periods, are not included in his estimates of the pass-on. So given that he focuses only on current and recent past cost changes, does that not reduce significantly the potential for simultaneity bias as a practical matter?
A. For the past costs, yes. For the current costs, no, obviously, because of the simultaneities, meaning that the two are -- you know, prices and wages are determined at the same time.
Q. It does reduce the concern of simultaneity?
A. Only for the -- only for the lagged costs, and so -- so you put to me that he takes first differences, which just means that he is taking the increase in prices and the increase in wages.
Q. That in itself, I accept, but it is the combination of that with the price data that he uses?
A. Okay. Well --
Q. That does reduce the simultaneity?
A. Only for the lagged costs.
Q. Okay. Now the concerns about simultaneity bias that you

cite from the literature, I can take you through all the papers -- I would rather not -- but they all, I think you may recall, concern economy-wide data?

A. Yes.

Q. Now, we are talking here about sectoral data; yes?

A. Yes.

Q. Now, if we take, for example, the claimants' data, I am sure you would agree that there is less of a concern about simultaneity bias because people can swap inputs?

A. I think for the claimants' data it is the fact that you would not -- you know, wages at the economic level are not set according to Primark's prices, yes.

Q. Yes. But by the same token, sectoral -- where you are looking at sectoral data, it is less of a concern, is it not, than --

A. I agree that it is less of a concern, yes.

Q. Okay. So what I would say is that overall, it was appropriate to place some reliance, in arriving at your sectoral estimates, on the prior public studies and the analysis of the public data, was it not?

A. Well, I have explained. The main reason why I have not put reliance on that is the issue of the proxy cost. These studies, or the PPI data, for instance, looks at the pass-on of wholesale prices or taxes.

Q. But that is a relevant thing to look at, is it not, because there is -- we are already on -- we have accepted, I think, that your proxy cost is very imperfect?

A. Yes.

Q. So why not look at other imperfect proxies and give them some weight, Dr Trento?

A. I mean, the question is: how far we go from the truth, from the truth? In my opinion, we are already quite far away with total overhead costs, and if we look at costs, we are even further away.

Q. Well, I suggest with total overhead costs, taking all that depreciation, you are one end of the spectrum. So you need surely to look at things at the other end of the spectrum and at least balance it out, do you not, Dr Trento?

A. Well, I have already explained why I do not think COGS are the relevant proxy cost.

Q. Right. Well, let us talk about wages, because that is, if you like, somewhere in between. Now, if we could go, please, to your second report {RC-G/2/78}, please. You see 5.36(iii), and you write there:

"I note that Mr Coombs (and Mr Holt) also estimate the pass-on of wages -- which they consider to be a variable cost, even though they are at times treated as overhead costs by the claimants -- at lower levels than the pass-on of COGS which they also consider to be a variable cost (a characterisation I agree with)."

Then I think we can skip over Mr Coombs, and you say:

"... Mr Holt's average pass-on estimates for PPI and wages. Again, the average estimate for the pass-on of wages is below that of PPI."

If we could go -- then you say:

"Hence, Mr Coombs' and Mr Holt's own analyses find that costs which they consider to be both variable (ie wages and COGS) from an economic theory perspective are passed on at different rates. While there may be various reasons for these differences, this evidence does not support the prediction that all costs that are conceptually variable are passed on at the same rates, a prediction which Mr Holt and Mr Coombs rely on to identify their proxy costs. Indeed, Mr Coombs' and Mr Holt's analyses demonstrate the relevance of the treatment of a cost by the merchant claimants in reality as a determinant of pass-on."

Then in the table below the one -- so table 4, you see you compare Mr Holt's -- "Cost measures and pass-on estimates compared", and for COGS, 83%, and for AWE series, which is a wage series, we see 66%; yes? Do you recall this evidence?

A. Yes.
Q. So your (inaudible) different, suggesting that variable costs are passed on at significantly lower rates if they are treated as overheads, rather than as COGS; correct? That is the point you are making, I think?
A. No, I am just saying that they are passed on at different rates, even on their analysis.
Q. All right. Well, if you look in the footnote, footnote 2 to table 4, you acknowledge that:
"These numbers include three estimates that Mr Holt considers unreliable. Removing these barely changes the results to 83% for PPI and 69% for AWE."
Well, that is the proper comparison, is it not, because one has to remove, as he does for all of his estimates, you have to remove the unreliable estimates?
A. Yes, it could be.
Q. So the real difference is 83% compared to 69%. Now, given the general level of uncertainty of all of these -- of all of these results, that is not really a huge difference, is it?
A. No, I agree it is not a huge difference, but maybe -- I think it is important to make a point, which is when you do an analysis based on public data, if you look at an econometric textbook, they say, look, there are three sources of bias that you need to try to avoid at all

costs, one is simultaneity and endogeneity bias, one is omitted variable bias, and the other one is measurement error bias. When running a regression of CPIs on PPIs or CPIs on wages using this public data, you have the three of them, you have three big problems, three sources of bias, and you do not know how big they are.

So if these results are driven by omitted variable bias, because there are some -- because they are not taking into account, you know, the effect of demands, for instance, properly, on prices and costs, both these estimates could be substantial overestimation of the true pass-on, and they go both in the direction of overestimating for the omitted variable bias, so --

Q. I am really not on that point right now.

A. Okay, but --

Q. You are making the point -- you are making in your report this great comparison between 83% and actually 69% for wages to make a point that -- a different point, which is wages and COGS are passed on at different rates, and all I am putting to you is that that is not a very substantial difference in the scheme of things, given the variability of the various results.

Another point that I should put to you is that of course, as we just discussed, because Mr Holt is using a first differences approach using those datasets of one year, it is possible, is it not, that if one were to take a period of more than a year, that 69% could go up, because, I think, as we discussed earlier, it may be that when one is talking about the pass-on of something like wage rates, that might take a little longer to feed through into prices?

A. We do not know this. It is possible. It is a possibility but we do not know.

Q. It is a possibility, right.

Now, if we could go to {RC-I6/4/1}, please. Now, this is simply a document that we produced that summarises the other pass-on rates on the basis of -- found on the basis of labour costs from other public studies. You see here the first one is 0.7, so that is pretty similar to the 69% that Mr Holt found, and the others, 97%, and I think if we go over the page there are more, 98, 100% and 83% {RC-I6/4/2}. They are all broadly consistent with the figures for COGS as well, are they not?

A. Okay, I think there is a -- sorry, please, they are very -- they are high pass-on rates, yes, yes.

Q. Yes. So it does not seem to be right, when one looks at the figures as a whole, that there is a radical difference between pass-on rates for wages and pass-on rates for COGS?

A. Okay. So the issue here is the following: the literature that analyses the pass-on rate of minimum wages is focused on a very different question from our question. The question that we ask is: if you take a retailer and then you increase the wages that they are paying, how much of this wage increase is passed on?

Now, this literature usually looks at the pass-on of minimum wages throughout the supply chain, so it is possible that an increase in minimum wages affects wholesale prices, and that wholesale prices are then passed on into higher retail prices. That does not tell you much about the pass-on of minimum wages for the retailer into prices.

So we are only interested in one step during the supply chain, and this paper is mainly interested in the whole steps from the beginning to the end. There is another issue, which is when you increase minimum wages, you also increase demand, or you potentially also increase demand, because people have more money to spend, and therefore that is an additional effect that does not go through a pass-on effect but it goes through something else.

So that is why I think those papers are ... difficult to transport the results of those papers into our question.

Q. Well, we will have to agree to disagree, I think.
A. Well, no, I think it is quite an important point, because the question is if you increase minimum wages, and this increases the cost of a retailer by how much the retailer then increases prices, that is one question. If you say minimum wage increase, this will lead to an increase in COGS, this will lead to increase in demand, this will lead to an increase in the retailer cost, then all of this effect combined will lead to a price increase, then we are capturing two of the three effects which are effects we do not want to capture.
Q. Well, there is no perfect proxy, is there; we established that?
A. Yes, yes.
Q. Could I talk about your proxy and the benefits you say that come from having disaggregated data. Now, I think that if we start off with perhaps some common ground, I hope, if we go to {RC-F/19/163}. You see paragraph 468, "Unit aggregation ...", we have a discussion here by Mr Holt on mix effects and unit aggregation effects.
Now, you agree that, I am sure, about the existence of these two potential effects, mix effects and unit aggregation effects?
A. I am aware that Holt considered those to be problematic.

Q. Yes. Now, you have sought to make a virtue of the fact,
I think it is fair to say, that you use, where possible,
disaggregated data; correct?
A. Correct.
Q. But when you focus on overheads, your analysis of
overheads typically analyses aggregate overheads;
correct?
A. Yes, that is correct, because this is the way the data
comes to us, so this is the way that companies record
their overhead costs.
Q. So you are combining aggregate overheads with product
level prices?
A. Yes.
Q. Okay. Then in some cases, rather than aggregate the
overheads -- just aggregate the overheads, you also then
seek to normalise them by dividing by, for example, in
particular, the number of stores or some other devisor;
yes?
A. Well, sorry, just one qualification: you say I aggregate
overheads. I do not aggregate overheads; this is how
they come in the data.
Q. That is what you have.
A. Then, yes, I try to ...
Q. Now --
A. Yes.

Q. -- you have said, well, I have -- I think you said in your first report that you have several millions of data points which provide a wealth of information on the variation of prices and costs, and I think you said something similar in the hot-tub?

A. Yes.

Q. That is a fair representation of your views?

A. Yes.

Q. But I think you would accept that when you have aggregate data at the overhead level, that does rather limit you. To give you an example, if you have 72 monthly time periods, which is fairly typical, I think, for the length of the claimant data, even if you have 10,000 products, as a practical matter you have to compare 72 aggregate costs to 72 average prices?

A. Yes. Sorry, yes, no, I agree, this is the data that we get. We get -- for instance, if for one claimant we get only 72 months, then this is the data that we have.

Q. Yes. You analyse overheads typically using a moving average of overheads over a three, six or 12-month period; correct?

A. Correct.

Q. So if you have 72 monthly observations and a 12-month moving average, you have only six observations that are completely distinct from each other; correct?

A. No, all of them are distinct from each other, sorry.
Why only six?
Q. Well, is that right? If you are happy to -- if you are looking at a moving average over a 12-month period, then you have to divide your 72 by --
A. No, sorry, maybe I can explain. What we do is, for instance, if you take prices in November 2020, and then imagine we take a moving average of three months, this means that I look at price in November 2020 and then I look at the overhead costs in the three months before November 2020, so that would be August, September and October 2020.
Then we look at prices in December 2020, and then the moving average moves. So this is why it is called a moving average, because now instead of having August, September, October, we have September, October, November, so in fact we have the same number of observations.
Q. Well, you are talking about three months, but let us take the 12-month example, right? The average is calculated using the previous 12-month period?
A. Yes.
Q. So there is an overlap between -- for each 12-month period?
A. An overlap between the overhead costs that are included?

Q. Yes.
A. Yes.
Q. So effectively you have only six observations or six sets of observations that are completely distinct from each other?
A. I still do not agree with you, because they are all different from each other, then I understand what you are ...
I think what counsel is saying is that -- let us go back to this example of three months. If you have August, September and October, when you want to estimate the price for November then you go to the price in December, you still have September and October in the moving average. You now have September, October, November; that I agree with. But the moving average -- the value of the moving average will be different, because now we have a different month, that is included in a different month --
THE CHAIRMAN: You now have November instead of August?
A. Exactly.
THE CHAIRMAN: Yes.
MR JOWELL: Now, Mr Holt has explained that one benefit of disaggregated data is that it allows for the use of time fixed effects which flexibly control for factors that change over time but affect all units in the same way,

such as demand; yes?
A. Yes.
Q. You agree that time fixed effects can be used for that?
A. Yes.
Q. You cannot include time fixed effects in your overhead model, can you?
A. I cannot.
Q. That is a disadvantage of your model, is it not?
A. Well, I do not know. If you want to estimate the pass-on of COGS, maybe, yes. But if you want to estimate the pass-on of total overheads costs, then you just cannot use Mr Holt's model.
Q. Well, you criticise Mr Holt's analysis of public data for only including a trend and quarterly dummies on the ground that a trend cannot capture all the variation in demand.
A. Yes.
Q. Right?
A. Yes.
Q. Well, many of your analyses control for demand using median pay per worker.
A. Yes.
Q. Well, that is not very different from a --
A. Well --
Q. -- linear trend, is it?

A. Well, it is very different. Sorry. A trend is a linear trend, so what -- in the analysis of Mr Holt, you just have an effect which is just -- it does not change with the ups and downs of the economy. So if there is a recession or whether there is an economic boom, the demand is variable, the trend does not capture that.

Under my analysis I am using variables, like the median wage or the UK GDP, that do capture the business cycle of the demand, and because prices -- we know the prices are pro-cyclical, so they are affected by demand, then I think my demand variable does capture the effect of demand -- the pressure that demand can put on prices, or to increase prices or to reduce price. You cannot do this with a linear trend because demand is not linear.

Q. You would still, I think, accept, would you not, that there are differences between the businesses -- radical differences between the businesses that you analyse here, all of these different willing claimants, and they are going to vary around a trend, are they not?

A. Yes, I accept that there could be some claimant-specific effect.

Q. So that is also a deviation around a trend, is it not?

A. No, but it is very different. There may be a deviation around the trend, but the problem is one of omitted variable bias. If you cannot control for the effect of demand on prices, then the model is going to capture that effect, not through demand, because demand is not there, but through the costs, so meaning that it is going to inflate the pass-on estimate on cost.

I think Professor Waterson had a very nice example which -- well, I mean, sorry, maybe this is off-topic, but the issue is that if wages affect prices, not only because they increase costs but also because they allow people to spend more, and therefore companies put up their prices, then you want to capture both effects. If you do not capture the effect through demand, then the model is going to assign that effect to cost incorrectly. So it is going to say, well, yes, I can see there is a link between wages and prices, and all of the link, I assume that it goes through costs, even if that is not true.

In my case, I do not see any omitted variable bias in this case. Because if it is true that there is something very specific to the claimant, which may be true, that is unlikely to be correlated with the cost of the claimant.

Q. Well, let me ask you about something, another matter, which is --

PROFESSOR WATERSON: Can I just raise a point here?

MR JOWELL: Yes, please.

PROFESSOR WATERSON: Which is related to what we have been talking about, but not in that sense, and that is that you have millions of prices but you only have a relatively small number of observations of costs.
A. Of operating -- of overhead costs? Yes, not COGS.
PROFESSOR WATERSON: Yes.
A. COGS also (inaudible).
PROFESSOR WATERSON: So in terms of the degrees of freedom that you have, it is somewhat illusory to talk about millions of prices, is it not, when the thing that you are explaining them with is a relatively small sample?
A. Yes. So I think the benefit of using disaggregated data is that for each transaction we know the price, we know the COGS, and we know the characteristic of the transaction, so where it was, what the product that was sold was, when, and other things that affect prices, and I think this variation is very important to estimate, to explain prices.
Now, I agree with you that when you look then at total overhead costs, we do not have the same information for each product, so we do not have one million variations -- or millions of variation in the total overhead costs, just because how companies record their overhead costs is that they record one total overhead cost per month, then I agree with you that you

cannot -- I mean, estimating the pass-on of total overhead costs is not -- well, it is more challenging than estimating the pass-on of COGS, but I think you still need to do the analysis at the disaggregated level, because that tells you -- that allows you to better explain prices through other factors, like COGS etc, etc, product characteristics, and that allows you to then interpret the coefficient on total overhead costs, as a causation from total overhead costs to prices. But, yes, I agree with you, we are not looking at millions ...

PROFESSOR WATERSON: But there is an issue about the degrees of freedom --

A. It is -- it is much less easy to estimate the pass-on of total overhead costs than it is to estimate the pass-on of COGS, because you have much more variability in COGS than you have in total overhead costs.

PROFESSOR WATERSON: Yes.

MR JOWELL: May I pick up on another problem that arises from this aggregation?

A. Yes.

Q. So you will see on the page in front of you that Mr Holt explains and he gives an example of a mix effect. He says:

"A mix effect occurs [at the top of the page] when there are changes in the average price or cost level, not because of any change in the individual underlying changes, but rather because of a change in the composition of sales. For example, a car showroom might see its average price level go up because it sold more SUVs and fewer hatchbacks, even if the price of both SUVs and hatchbacks was entirely constant. Equivalent issues can arise with costs, for example in this case the COGS per unit would also rise if SUVs had higher COGS than hatchbacks."

A. Yes, yes, and hence the reason we use transaction level data for the estimation.

Q. Well, okay, so where you are using both aggregated costs and aggregated prices, the potential bias from those mix effects is ambiguous, it could go either way; correct? The bias, just -- not the -- it can lead to variance, but we do not know whether it is going to lead to bias -- there is no reason to suppose it is going to bias the results in any particular direction?

Let us suppose you are using aggregated costs and aggregated prices, and there is a mix effect of that nature, using the SUV example, then the bias is ambiguous; correct?

A. I mean, in the case of the example of Mr Holt, I think it is quite clear what the bias is, but I am sure you

can come up with an example where the bias is different.
Q. Well, it would depend on the circumstances, would it not?
A. Yes, it is very general question.
Q. Let us now take, if you have disaggregated prices but aggregated costs, which is your situation, right?
A. Yes.
Q. So then you have a scope for mix effects in costs but not in prices; correct?
A. Sorry, what is the mix effects on costs?
Q. Well, let us take the SUVs and hatchback example. Let us suppose you are using aggregated costs but disaggregated prices?
A. But these are COGS again.
Q. Okay. Let us suppose that the price and the cost of an SUV is higher --
A. Sorry, I agree -- if you are talking about COGS, yes, I agree.
Q. Yes. So if you are using aggregated costs, then that can lead to an increase in the measured aggregated costs in the average of all cars sold -- well, it can be an increase or a decrease; right? In the case of an increase, the increase in average cost would appear even if there were no actual changes in individual costs of either hatchbacks or SUVs?

A. Yes.
Q. There would also be an increase in aggregate revenue, but there would not be an increase in the price of the SUVs or the hatchback?
A. Yes, this is exactly the mix effects.
Q. Conversely, if there is a decrease in the share of SUVs over the period of measurement, then that is going to lead to a decrease in measured aggregate costs, even if there is no actual cost change of either type of car; yes?
A. Yes.
Q. So despite the decrease in average total costs, there is going to be no decrease in price; yes?
A. Despite the decrease in average total costs ...
Sorry, is it a question? If I am looking at price at individual level, transaction level, and if I am actually looking at COGS at an aggregate level, okay, yes, I agree.
Q. Yes, you agree. So what you have there are you have a model with -- when you have a model with aggregated costs and disaggregated prices, this is picked up as a change in cost but with no correlative change in price?
A. Yes.
Q. Okay.

A. Sorry, can I just clarify we are talking about COGS
here?
Q. Yes.
A. Yes, okay.
Q. But you are then going to find -- let us suppose that is
the only change in price and cost, so everything else is
held the same, but it is just the mix of the SUVs and
hatchbacks that changes, you are then going to find zero
pass-on?
A. If you have a change in COGS which is not reflected in
the change in prices.
Q. Correct. So -- and then if you imagine that those other
costs and prices are changing, then your analysis is
going to capture a mix of cost changes, some of which
are caused by an actual change in cost and some of which
are caused by this mix effect; correct?
A. Still in the example of COGS, yes.
Q. So you are going to have effectively a weighted average
of the actual level of pass-on of actual cost changes
and this zero mix effect; right?
A. Still in the example of COGS, yes.
Q. That creates classical measurement error, which leads to
attenuation bias, biasing the result downwards, does it
not?
A. In this example, yes.

Q. There is another issue which is perhaps even more
fundamental about --
A. Sorry, I think I may need to make a fundamental point,
which is we are looking at COGS in here, and we are not
looking at total overhead costs.
Q. Yes. Perhaps you could explain why it would matter?
A. Yes, because total overhead costs, the way that they are
recorded by the company, is they only have an aggregate
monthly cost. So they are not recorded at the product
level, and then I am aggregating those very granular
data into something that is aggregate. This is not what
I am doing. It is just the data comes in that format,
and this is the way that the data is then monitored, so
overhead costs are monitored, and this is also how
overhead costs are then possibly translated into an
action from the firm, including a price change, so I am
not -- so I think what --
Q. Well, there is still a problem with a mix effect, is
there not?
A. But what mix effect? Can you give me an example of
a mix effect for overhead costs? I think it is quite
difficult to think of one. So if I have -- say I am
a company, a supermarket, and what I do is I invest in
checkout machines and I reduce the number of retail
staff, then what you see -- then what you see in the

data, you know, there may be many effects on the different -- prices of the different input, but the only thing you see in the data is because I have invested, then it means that this decrease is my cost. I have done it so it may make sense for me to do it. So that change will decrease my overall total overhead costs.

This is the only thing you see in the data. I do not think you can see ... I cannot see how you see a mix effect in total overhead costs.

Q. Well, there might be all sorts of reasons why overhead costs vary over time, or the proportions spent on particular overheads vary over time. I mean, what if, for example, you have -- you need more utilities in a larger room or something like that? All sorts of examples you could think of.

A. Yes, but you need more utilities, then these are bigger costs for you, and you need to take that into account.

Q. Well, surely you can have examples -- one can think of examples of depreciation costs going up and down, audit costs, particularly different audit, or there may be all sorts of things that lead to these changes in the volume of overheads, as well as the price of the overheads.

A. Yes, I still cannot see a mix effect there, to be honest, but --

Q. Well, okay.

MR JOWELL: Would that be a convenient moment?
THE CHAIRMAN: Yes. We will have a ten-minute break.
(3.17 pm)
(Short Break)
(3.27 pm)
THE CHAIRMAN: Yes, Mr Jowell.
MR JOWELL: Dr Trento, I would like to discuss normalisation.
A. Yes.
Q. Now, as we have mentioned before, you analysed the effect of changes in expenditure on total overheads and also changes of so-called normalised expenditure on overheads, I think that you typically favour the normalised forms of your regression analysis. Is that correct?
A. That is correct. The normalisation only means that I divide total overhead costs by the number of stores or the number of restaurants or something that gives me an idea about the scale of the company.
Q. The reason you do that is because it is possible that expenditure on overheads can change, both because of changes in the price of the overheads, and also because of simply the fact that the merchant is spending more, because there are, say, more shops or more programmes or more restaurants or --

A. Correct.
Q. Okay. So that is a form of a greater quantity of overhead expenditure that is not -- that is captured by the normalisation; yes? So you are --
A. That is not -- it is captured ...
Q. I did not put that very well. You are seeking to capture that form of change in quantity by the normalisation?
A. Yes.
Q. Okay. But there are also other changes -- potential changes in the quantity of overheads that are not caught by that. So to give you an example, it could be that, say, advertising and marketing expenditure increases without the price of advertising or marketing expenditure increasing?
A. I agree. I think this is part of the unit aggregation effects that Mr Holt discusses.
Q. Yes, so -- and similarly, there could be seasonal changes in expenditure, such as more staff being hired around the Christmas period?
A. Yes.
Q. Just controlling for the number of stores will not account for those sorts of cost changes, will it?
A. That is broadly -- well, I accept that there are some changes in overhead costs which are not captured by the

normalisation that I do, which is just divide by the number of stores. We try to control for these effects in a different way, which is imperfect, of course, but we try to. One is to use moving averages for total overhead costs, such as if there is a spike in marketing costs in one month, then we spread this spike into different months, maybe three, maybe six or maybe 12, and if there is a seasonal effect, like increased months, you need more retail staff. We try to control for this, not only through the moving average but also by including some effects -- some fixed effects in the analysis, that are called seasonal fixed effects, that would capture these ups and downs of total overhead costs through the year.

Q. But just to be clear, the moving average will not help if you are looking at a moving average of less than a year, not for the Christmas sales point, will it?

A. For the Christmas sales, sorry, yes, what -- sorry, can you --

Q. If there is an increase in expenditure over Christmas, taking a three-month or six-month moving average will not help you?

A. It is going to help you to smooth out that increase. So if you have a spike just in December because it is Christmas, but you are actually taking six months of total overhead costs between, yes, July and December, then you are smoothing out, you are reducing the spike --

Q. It may reduce it --

A. But you still have it, yes. Sorry, in that case, that effect would be captured by seasonal fixed effects that we include in the regression analysis. So we have some fixed effects, like Mr Holt can use time fixed effects which are every month and every year. We can only include fixed effect which are either every month, so January is a fixed effect, February, and one is December, and that one in December would capture the spike in the cost of retail staff.

So, yes, of course, look, I think we can agree that the estimation of pass-on of total overhead costs is challenging. It is more challenging than the estimation of the pass-on of COGS. We have done everything we could to try and make it work, really.

Q. If we go to, just to see the sort of variations, fluctuations, that one is talking about there, I want to just show you some examples. If we go to {RC-G/18/76}, please.

THE CHAIRMAN: This is Mr Holt's twelfth report, his reply.

MR JOWELL: Yes, it is, his twelfth report.

At figure 12.1, we see an example of what he calls the "lumpiness" in overhead costs in one of the company's data, and you see a big drop in 2020 which is presumably Covid.

A. Yes.

Q. But also in the non-Covid months, one sees this variation, this up and down in the graph, yes?

A. Yes. Sorry, just to clarify that this is the original data, it is not the moving average. So this is -- these are the starting point, then we take moving average and then the lumpiness. I cannot say it goes away, but it is smoothed away.

Q. Well, if you look at -- if we look at the next one, which is page 95 {RC-G/18/95} --

A. Sorry, one other clarification for this particular claimant, and the one that we -- yes, this chart, you can see a drop in overhead costs during the Covid period. We also control for the Covid period in the regression analysis, so, again, it is challenging but we do our best.

Q. Yes. If we go to 95, we see another claimant, and, again, we see really sharp fluctuations in overheads?

A. Yes. Can I make just one point, that this chart is repeated twice in Mr Holt's report, and I think this version is incorrect. There is another version which is correct where you can still see some spikes but not to

that extent.
Q. Okay. We will double-check that.
If we can go to page 118 {RC-G/18/118}, we see another claimant. Again, we see these sharp fluctuations period to period?
A. Yes, and again we control for the Covid period, and we smooth out as much as we can the -- what is it called -- the lumpiness.
Q. You accept that this sort of month to month spikiness, it is more likely to be driven by changes in quantity, not by changes in price, is it not?
A. Possible, yes.
Q. Okay. The effect of this is going to be to really lead to the inclusion, in your model, of a degree of changes in costs which are not going to be reflected in changes in price. Again, it is going to lead to a downward bias, is it not?
A. Again, we tried to avoid these at all costs. The way we do it is that we do not run the regression based on this data that we see on the screen, but we take the moving average to try and avoid the lumpiness in the data.
Q. As you say, it is not completely avoided, is it?
A. I think to the extent that there is a -- it is not completely avoided, I agree with that.
MR JOWELL: Thank you. Mr Chairman, I would like, if we

may, to go into closed session now to deal with the individual claimants.

THE CHAIRMAN: Yes, okay. Is there any one here that should not be here? You are free to leave!

Right.

In Private

(4.30 pm)

(The hearing adjourned until 10.30 am
on Tuesday, 17 December 2024)