Payment Systems Regulator

Market review into the supply of card-acquiring services

Responses to pass-through methodology consultation

June 2019

Contents

Names of individuals and information that may indirectly identify individuals have been redacted.

Barclays

From:
To: cards@psr.org.uk

Subject: RE: Payment Systems Regulator MR card- acquiring services consultation on our proposed pass-through analysis

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Dear PSR

Thank you for the opportunity to comment on the draft working paper.

Barclays broadly agrees with the methodology you propose for your pass-through analysis but would like clarification on the following points:

1. We gather that the mathematical formulas you intend to use can result in a wide range of degrees of pass-through, and capture different pass-through dynamics. Barclays is interested in understanding how these various potential outcomes will be interpreted, and particularly at what point the PSR will consider that the evidenced degree of pass-through is satisfactory.

2. On a related point, at what stage will parties have the opportunity to comment on the PSR's findings in respect of this working paper? Will this be after publication of the working paper, or will this feedback need to form part of the response to the interim report, scheduled for Q4?

3. As to the actual data requested, we understand that Barclays will be asked to provide a sample of merchant level data, and also information on industry-wide characteristics. As to the merchant-level data, could the PSR clarify how big the sample will be (e.g. in terms of the number of merchants about which information is requested)? In addition, it would be helpful to get clarification on what the "industry-level" data will comprise.

Can you please confirm receipt of this message and when you will be able to revert on the above points/questions?
Kind regards

[redacted]

[redacted]

British Retail Consortium (BRC)

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BRC response to PSR consultation: Card Market Review – pass-through methodology consultation

March 2019

Introduction

0.1 The British Retail Consortium (BRC) is the trade association for the entire retail industry, the UK's largest employer, with a membership accounting for half of UK retail by turnover. Our diverse industry spans large multiples, independents, high street and out of town retailers, from online to bricks and mortar, selling goods across all sectors to increasingly discerning consumers.

0.2 All BRC members have an interest in the payment system as end users, in fact retailers are one of the most significant end user groups, processing more than 50 million transactions per day and around £366 billion per year for products & services sold in store, online & over the phone. A priority for the BRC has therefore been to ensure an innovative, transparent and competitive payments market for all retail end users and their customers.

0.3 The BRC held a call for members on 28th February 2019 to discuss the Market Review and the pass-through methodology consultation. Most of the comments and feedback received were relatively broad in nature.

1 Are there variables you think would have a material influence on the degree or speed of pass-through which are not covered in the chapter Data we propose to use?

1.1 **Scope:** BRC members have suggested that as this working paper is the first of three working papers, it is hard to say if this paper is sufficiently broad without knowing the content of the other two papers.

1.2 **Tiering:** Our members emphasised the impact of retailer size, or 'tiering', on both formal and informal aspects of the commercial relationship. Tier 1 merchants are more likely to find it difficult to move between acquirers to secure the best deals (due to the full accreditation required, for example). And whilst lower tier merchants may find it easier to switch between card-acquirers they often lose out through lack of transparency or visibility in service-provision, and find it more difficult to challenge charges, negotiate the best prices or secure the favourable contractual terms through their Service Level Agreements (SLAs).

1.3 **Contractual arrangements:** Members have expressed concern over how contracts are managed by card-acquirers whereby adjustments are made swiftly when they work in the acquirers' favour (such as the fulfilment of certain transaction categories or passing-on additional costs such as increased scheme fee inputs), whilst adjustments are rarely made when they would work in the merchants' favour (such as reduced interchange fee inputs). The tariff and/or length of contract can be a significant factor for the responsiveness of acquirers to input costs – merchants locked into contracts for extended periods of time are more likely to lose out on favourable adjustments.

1.4 **Refunds & cashback:** Our members believe that consideration should be given to how refunds and cashback affect average MSCs. It was suggested that, without removing these transactions for the analysis or allowing for them as a sperate category of transactions, it will likely cause some inconsistencies. For cashback, some merchants only pay interchange and scheme fee on the 'sales' part of the transaction, but the total (Sale + cashback), is often reported as the total transaction value. Refund fees are inconsistent, with scheme fees being payable on refunds, but interchange is partly refunded. For merchants with large numbers of refunds, this can skew the average interchange.

2 Do you have any views on the comparators we are proposing to use in the difference-in-difference approaches?

2.1 **Methodology:** The BRC is supportive of the PSR's proposed approach to the analysis both in terms of the questions the PSR intends to address and the econometric approaches. The BRC also welcome the PSR's proposed method for gathering merchant-level data from the top 5 acquirers which removes the burden on merchants to provide this data themselves which can be very challenging from a resourcing perspective. We believe, however, that some validation should be conducted of this data against merchant & scheme provided data where possible.

2.2 **Blending:** Members observed that caution should be exercised where acquirer costs are not split by interchange and scheme fees, particularly in the difference-in-difference approach comprising regulated and non-regulated categories, as many blended rate pricing structures do not differentiate between card categories.

3 Given the contracting arrangements, is three years sufficient for the MSC to reflect the effects of the IFR caps?

3.1 **Time:** Concerns were expressed around the proposed time periods of the data set. It is important to note that merchants experienced significant reductions in interchange fees immediately ahead of the of the IFR coming into effect owing to the outcome of litigation. The data set immediately prior to December 2015 is therefore unreliable as a comparator for reductions after December 2015. Our members have suggested that the data should cover 5 years in all cases, that the time period covered should be from 2 years before December 2015 for effective comparisons to be made of at least 1 year after – measuring from immediately before December 2015 would not be adequate.

4 General comments

4.1 **Consultations:** Several members have indicated that the PSR approach of consulting on working papers is not helpful to the expediency of the Market Review process, and further concerns were raised around the capacity for end-user groups to engage effectively and the appetite to engage in a granular process. It was suggested that this modus operandi favours payment service providers that have greater capacity to engage at this level.

4.2 **Market Review Scope:** The BRC continue to be disappointed over the scope of the Market Review, specifically the exclusion of "rules that card scheme operators set or the fees they charge to acquirers, and whether these are excessive or justifiable" (ToR, p11). The BRC would hope to see the general proposition cited at 1.14 (consultation, p6) applied by the PSR to card scheme input costs.

Terminology

4.3 Members suggested that the use of the term ‘pass-through’ could cause some confusion as it is applied in several other contexts within the card payments market.

4.4 Members observed that paragraph 1.13 refers to the PSR having a view on whether the services are ‘working well’, but that ‘working well’ is not defined.

4.5 Members expressed concern that the caveat in paragraph 1.16 - ‘subject to such data being available in an appropriate form’ – could give acquirers the opportunity not to provide sufficiently detailed data.

4.6 Members questioned if the V-Pay category of transaction, cited in paragraph 3.10, will include Visa Electron. Further in this paragraph there is a reference to ‘Other Domestic’ which members were unclear about as a category but noted that the ‘Inter’ category is not listed.

4.7 Paragraph 3.27 refers to ‘thousands of merchants.’ Members questioned whether this would be measured by Merchant ID or by company – for example one of our members has over 2000 Merchant IDs.

4.8 Paragraph 3.14 defines IF++ as ‘any tariff where, for any given transaction, the MSC is quoted to the merchant as the sum of the interchange fee, scheme fee(s) and a margin’. It was suggested by a member that IF++ would not be found listed out as the interchange fee value/rate + Scheme Fee value/Rate + a margin per transaction as normally the interchange is only referred to as ‘interchange’ with no value/rate, and scheme fees may be quoted as a value/rate or just as ‘pass-through scheme fees’ and the margin may not be quoted per transaction.

[redacted]

[redacted]

Global Payments

RBB Economics

Global Payments

Response to pass-through methodology consultation

RBB Economics, 1 March 2019

1 Introduction

This note, prepared at the request of Eversheds Sutherland, legal counsel to GPUK LLP ("Global Payments"), responds to the pass-through methodology consultation published by the Payment Systems Regulator ("PSR") in February 2019.

In particular, the note covers the following topics.

- First, we explain the limited scope to draw inferences from the proposed pass-through analysis on the degree of competition in the market for the supply of card-acquiring services.
- Second, we outline some key challenges that Global Payments expects to face in terms of availability of the data proposed to be used by the PSR.
- Third, we provide responses to the specific questions at 5.2 posed by the PSR within its pass-through methodology consultation.

2 Scope to draw inferences from the results of the pass-through analysis on competition

The PSR sees the pass-through analysis as one piece of evidence that it will consider when taking a view on whether competition in the supply of card-acquiring services is working well. In this regard, the PSR notes that, as a general proposition, "*prices in a competitive market would in the longer term reflect input cost*" and that *"[a] reduction in the input costs would* *therefore result in lower prices*".[1] Importantly, however, the PSR acknowledges that the degree of long-term pass-through depends on several demand and supply factors and that a competitive market could exhibit (very) different degrees of pass-though.

The PSR's last observation is key when assessing the scope to draw inferences from the results of the pass-through analysis on competition. In particular, we submit that there is not necessarily a close link between the degree of pass-through and the degree of competition. In turn, the observation of a certain level of pass-through does not necessarily allow for strong conclusions regarding the level of competition in a market.

For example, perfect competition is consistent with pass-through rates ranging between zero and one.[2] As such, an observation that pass-through rates are substantially below 100% does not mean that competition in the market is weak.[3]

3 Data availability

In the paragraphs below, we discuss the key challenges that Global Payments expects to face in terms of the availability of the data proposed to be used by the PSR.

3.1 Historic data on the type of tariff a Merchant is paying

The PSR flags the type of tariff the Merchant is paying (for example, Blended or IF++) as one of the Merchant characteristics it aims to collect.[4]

[✂]

3.2 Data broken down by category of transaction

The PSR proposes to collect the Merchant data, namely MSC, Fees and Merchant characteristics, broken down by a number of categories of transaction.[5]

[✂]

1 PSR pass-through methodology consultation, para. 1.14.

2 In the textbook case of perfect competition, whether a marginal cost increase is passed on or not (i.e. whether consumers or producers bear the cost increase) depends on who "needs" the market the most (i.e. who is the least sensitive to price). In particular, if consumers are not price sensitive at all, such that a higher retail price has no impact on consumption, then consumers will bear the entire burden of the cost change. On the other hand, if consumers would leave the market in the event of any further price rise, i.e. demand is perfectly "elastic", then producers will bear the full impact of the change. Intuitively, in that case, any increase in the price consumers have to pay for the product would destroy the entire market and so producers must absorb the entire cost change in the form of reduced margins (leaving the retail price unchanged).

3 For a more detailed discussion of cost pass-through and competition, see RBB Economics (2014). *Cost pass-through: theory, measurement, and potential policy implications – A Report prepared for the Office of Fair Trading.*

4 PSR pass-through methodology consultation, para. 3.8.

5 PSR pass-through methodology consultation, para. 3.7.

3.3 Categorisation of types of tariff

The PSR has proposed the following categorisation of types of tariff: “Blended”, “IF+”, “IF++”, “Other” and “Unknown”.[6]

[✂]

4 Responses to the specific questions posed by the PSR

In its discussion of next steps, the PSR poses several specific questions which it believes may be particularly important to receive comments on.[7] In the below, we discuss each of these questions in turn.

4.1 Are there variables you think would have a material influence on the degree or speed of pass-through which are not covered in the chapter *Data we propose to use*?

Global Payments considers that the proposed analysis of the PSR does not adequately capture the role of risk in the pricing process.

[✂]

4.2 Are there variables covered in the chapter *Data we propose to use* that you think would be irrelevant or immaterial to the degree or speed of pass-through?

Global Payments submits that the relevance of the data the PSR proposes to use depends on the exact way these data will be used in the analysis. Global Payments reserves the right to comment on the relevance of certain variables once their exact role in the analysis becomes clear.

4.3 Do you have any views on the comparators we are proposing to use in the difference-in-difference approaches?

Regarding the methodologies outlined by the PSR, there are two aspects we would like to comment on, namely (i) the way the PSR plans to obtain the Merchant sample and (ii) the difference-in-difference with IF++ pricing as comparator.

4.3.1 Merchant sample

The PSR proposes to collect the Merchant-level data as three sub-samples for each acquirer, with each sub-sample consisting of a random selection of the Merchants that buy card-

[6] PSR pass-through methodology consultation, para. 3.11.
[7] PSR pass-through methodology consultation, para. 5.2.

acquiring services from the acquirer in question at the sub-sample start date, and track those Merchants for up to 36 months. Regarding this methodology, the PSR flags that *"[t]he sample would stop tracking an individual Merchant earlier if the Merchant ceased being a customer of the acquirer at some point in the 36-month period*".[8]

This approach (known as stock sampling) is liable to give greater weight to Merchants that do not switch. Such overrepresentation may lead to a biased estimate for the pass-through rate at the industry level. Suppose, for example, that there is a decrease in the interchange fee, which some acquirers pass on fully, while others do not pass on at all. In such situation, it seems likely that at least some Merchants would switch from their original acquirer who is not passing on to a new acquirer who is passing on (in order to obtain better terms). From the moment of their switch, these Merchants benefit from full pass-through, but these months are explicitly excluded from the sampling, potentially leading to the overall pass-through rate being underestimated.

4.3.2 Difference-in-difference with IF++ pricing as comparator

The PSR's difference-in-difference approach with IF++ pricing as comparator relies on initially identifying a subset of Merchants who are (before the introduction of the IFR caps on Interchange Fees) approximately equally likely to be paying Blended as IF++ tariffs.[9]

We understand that there is a tendency for Merchants to be more suited to a given tariff. As such, the number of Merchants that are approximately equally likely to be paying Blended as IF++ tariffs may be very low (or at least not representative of the Merchant population as a whole).[10]

4.4 Given the contracting arrangements, is three years sufficient for the MSC to reflect the effects of the IFR caps?

[✂]

8 PSR pass-through methodology consultation, para. 3.25.

9 PSR pass-through methodology consultation, para. 4.14.

10 Further, the Merchant's choice of Blended vs. IF++ is endogenous. This means that failure to fully capture the determinants of tariff choice in the logistic regression at "step 1" is likely to introduce bias to the results. More generally, the PSR will be aware that to the extent that the assumptions required for propensity score matching to be valid are not met, biases may arise.

iZettle

From:
To: cards@psr.org.uk
Subject: Fwd: Payment Systems Regulator MR card- acquiring services consultation on our proposed pass-through analysis

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Dear Sirs,

In response to your request for feedback on the recently published Working Paper, iZettle AB would like to contribute with the comments below.

General feedback on cost reporting:

We believe that in PSR's data collection, the cost reporting should be requested from the acquirers, not from the Payment Facilitators as they may not have all the data for each unique transaction. This is due to the different roles of the market players. A Payment Facilitator constitutes the "merchant" in its role as Payment Facilitator and the actual sub-merchant is the "merchant on record". As reporting from acquirers to Payment Facilitators has been limited historically, Payment Facilitators will have limited possibility to pull out cost data on the granular level (card-detail level, i.e. card type and card region), which is proposed in the Working Paper.

Input on Section 5.2.

Are there variables you think would have a material influence on the degree or speed of pass-through which are not covered in the chapter Data we propose to use?

No.

Are there variables covered in the chapter Data we propose to use that you think would be irrelevant or immaterial to the degree or speed of pass-through?

The blended rate is a way for Payment Facilitators to incorporate all service charges into one comprehensive fee for the merchant. This makes a Payment Facilitator an enabler for small merchants to accept card payments in a manner that they would not have been otherwise. Acquirers offering larger merchants the IC++ MSC model will add service charges, terminal rentals, platform fees, etc., on top of the card-payment-processing related IC++ fees.
In conclusion, assessing the degree of pass-through by looking at a Payment Facilitator's blended MSC towards its merchants, might give an incorrect picture of the impact of IFR caps.

Do you have any views on the comparators we are proposing to use in the difference-in-difference approaches?

The difference-in-difference approaches and the comparators would only be applicable for providers using a Full-Pass-through (IC++) MSC model. For i.e. a Payment Facilitator offering a blended MSC, it would not be possible to track on these comparators because the MSC would be agnostic to the category and comparators.

Given the contracting arrangements, is three years sufficient for the MSC to reflect the effects of the IFR caps?

Yes.

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Let us know if you need any further information.

[redacted]

[redacted]

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izettle.com

Lloyds Banking Group

LLOYDS BANKING GROUP

LLOYDS BANKING GROUP PLC

PSR market review into the supply of card-acquiring services

Response to Pass-through methodology consultation

1 March 2018

LLOYDS BANKING GROUP PLC

Response to PSR Pass-through methodology consultation

1.1 We welcome the opportunity to respond to the PSR's consultation on the proposed methodology for calculating the pass-through of fees paid by card acquirers to the fees charged to merchants.

1.2 In the Terms of Reference for this market review, the PSR raised concerns that the savings made from the interchange fee caps introduced by the Interchange Fee Regulation (IFR) might not have been passed on to smaller merchants. It also raised concerns that the scheme fee portion of the fees that merchants pay to acquirers is increasing significantly. **We support the PSR's decision to take an analytical approach to answer these questions and establish whether merchants have realised the intended benefits from interchange fee caps.**

1.3 The prices that merchants pay for card acquiring services are determined by several factors. Each merchant's tariff depends on the mix of payment cards used by its customers, value of transactions, prevalence of international payments, riskiness of transactions and other factors. Estimating the effect that changes in interchange and scheme fees have had on the prices paid by merchants therefore requires a robust econometric approach that controls for all other factors that affect merchant tariffs.

1.4 Overall we agree with the econometric methodology proposed by the PSR**.** The models sufficiently account for all variables that affect the price levels faced by merchants. This will allow the PSR to isolate the pass-through effect. Using three different model specifications will give the PSR more confidence in its findings.

Pass-through should be modelled at the acquirer level

1.5 The PSR is proposing to conduct the analysis at the market level. It would be more appropriate to calculate pass-through individually for each major acquirer.

1.6 [redacted] Other acquirers might have exercised different levels of pass-through. The PSR risks reaching inaccurate conclusions about the market if it only considers the average pass-through. It might overestimate the level of fees passed through by some acquirers and underestimate it for others.

1.7 We do not expect that analysing each major acquirer individually would significantly increase the complexity of the analysis. 90% of the card acquiring market is served by five acquirers.

PSR should only use relevant and standardised data

1.8 The PSR intends to request a large number of data fields for the analysis. We agree that the majority of these are appropriate for estimating pass-through. But some of the categories that PSR intends to request are not relevant to pricing as we do not record or hold the data. [redacted] We will comment on specific data fields with input from our data provider when the PSR issues the draft data request.

1.9 It is not uncommon for providers to record data in different ways. As PSR intends to request a large amount of detailed data breakdowns, it should ensure that inputs are standardised between acquirers. The clarity of definitions will be important to avoid asymmetric inputs which might lead to inaccurate conclusions or data being unusable for the analysis.

1.10 We welcome the PSR's plan to issue a draft data request, and would be happy to engage with the PSR in advance of this to discuss potential data issues. We provide comments on the PSR's specific questions below.

RESPONSE TO CONSULTATION QUESTIONS

1. Are there variables you think would have a material influence on the degree or speed of pass-through which are not covered in the chapter Data we propose to use?

1.11 Our view is that the data set out in the paper covers all variables that might have a material influence on the pass-through of changes in interchange and scheme fees. We do not propose that any additional data is considered.

2. Are there variables covered in the chapter Data we propose to use that you think would be irrelevant or immaterial to the degree or speed of pass-through?

1.12 We agree with the variables that the PSR is proposing to use in its analysis. We might not be able to provide all of the data breakdowns that the PSR has proposed. We will comment on these when the PSR issues the draft data request.

3. Do you have any views on the comparators we are proposing to use in the difference-in-difference approaches?

1.13 We agree with the comparators proposed by the PSR. Using tariffs that received full pass-through like IC++ and tariffs that were not affected by IFR such as commercial card tariffs will provide robust comparators to estimate the pass-through.

4. Given the contracting arrangements, is three years sufficient for the MSC to reflect the effects of the IFR caps?

1.14 Yes, we believe that three years is a sufficient time period for the full effect of IFR caps to be passed through to merchants. It might take different amounts of time for different acquirers to operationally implement changes in their tariffs, but we do not believe there is any reason why it would take more than three years for any acquirer.

Mastercard

WORKING PAPER RESPONSE

Mastercard response to PSR '*Market review into the supply of card-acquiring services - Pass-through methodology consultation*'

1 MARCH 2019

Summary

Mastercard welcomes the opportunity to respond to the PSR's working paper on the proposed methodology for assessing the extent to which acquirers pass through to merchants the fees that they pay to card scheme operators and card issuers.

We believe that the pass-through analysis is a key element of the PSR's initial work to understand the functioning of the acquiring market and it is important that the analysis should be as effective as possible. Mastercard is keen to engage and assist the PSR in this process wherever it may be helpful for us to do so. In the working paper, the PSR has laid out a strong basis for measuring pass-through, but we believe that are a small number of areas in which changes might be made, to enhance further its robustness.

The key points that we wish to make are as follows:

- The PSR has proposed an econometric approach, which combines both the potential insights of panel data and difference-in-difference estimation approaches. We have identified a number of significant challenges which could affect the reliability of the findings—these are explained in more detail below. As a result we believe it would be more appropriate first to undertake a high-level analysis of trends in MSCs across different types of merchants (e.g. by size and sector) in order to assess the extent to which MIF reductions have in fact been passed on.

- We note that the focus will be on the MSC. For smaller merchants (defined in terms of numbers of transactions), fixed charges are also likely to be significant costs. We therefore recommend they are considered in the analysis.

- Allocating scheme fees to merchants may be challenging for merchants with blended MSCs. We understand that the PSR is seeking sufficient information to conduct this allocation, but we suspect that the challenges in allocation may make it difficult to draw firm conclusions on correlations with scheme fees.

- While we see the comparison of merchants on IF++ contracts with merchants on blended MSCs as being useful, we suspect that it will be much more difficult to draw meaningful observations from a comparison of consumer cards with commercial cards. Most merchants will conduct a mix of consumer and commercial card transactions, and there will not be the same clarity of distinction as with the former comparison of contracts.

- We recommend that the PSR includes payment facilitators in the analysis. The outcomes when a payment facilitator is involved may be different and this growing section of the market cannot easily be excluded.

Each of these points is considered in further detail below.

Challenges

The time period of the analysis presents some inherent challenges. Firstly, the sampling method proposed by the PSR would mean that merchants which switch acquirers are likely, to some extent, to be excluded from the analysis, or at least the impact of switching acquirer will be excluded. This creates a risk of a survivorship bias, as the more cost conscious merchants may be excluded.

In addition, there may be some dynamic effects in how MSCs evolve over time, that the static panel data approach could be ill-suited to capture. It is not clear how this issue can be resolved given the limited time period of data. For example, one might consider using a dynamic panel estimation approach such as the Arellano-Bond estimator, but with only three data points in each sub-sample, the insights from this may be limited.

The potential complexities of these analyses therefore should not be under-estimated and it will be important to get the detail right. In particular, it will be important to avoid survivorship bias and the exclusion of relevant variables that are also correlated with the dependent variable — the MSC. Both of these points are considered further below.

Given these complexities, we recommend that the PSR first considers a higher level analysis looking at trends in average MSCs across different types of merchant.

We look forward to engaging with the PSR further on the findings of this analysis.

Other related fees

We note that the focus of the methodology will be on the MSC. For smaller merchants in particular (defined in terms of numbers of transactions), there are often other related fees that can also be significant costs. These can include monthly charges and one-off payments for acquiring services and in some cases acquiring fees may be bundled with other service fees (such as for the rental of terminals or for other banking services). They are charged as part of the overall service provided, and vary across different deals and different acquirers. Smaller merchants can be expected to consider the combined cost of the MSC and other related fees (including fees for terminals) when selecting an acquirer (or payment facilitator).

Consequently, these charges are not likely to be completely independent of the MSC. These charges may be correlated in some way to changes in the MSC. Such an 'omitted variable' therefore has the potential to bias the results of the analysis.

We recommend, ideally, collecting data on these other relevant charges and then conducting the analysis both with and without these charges included in the cost. Alternatively, a separate analysis will be required to understand if changes in other charges over the period is correlated in any way with the MSC.

Allocating scheme fees to merchants

For merchants paying a 'blended' MSC for acquirer services, there is unlikely to be a direct measure of how scheme fees flow through into costs for the merchant. The PSR intends to estimate the fee that the acquirer pays for any given merchant's transactions based on the number and type of transactions conducted by that merchant.

This makes sense in principle, but it may be challenging in practice, depending on the consistency and availability of the data on transactions and scheme fees. The Mastercard fee schedule has both transaction-related and non-transaction related fees and charges, so it is not simple to calculate the scheme fees that relate to any particular merchant, based on their transactions. The PSR would need to discuss with acquirers whether they would be able reliably and consistency to calculate the attribution of scheme fees to merchants.

Any uncertainty in this allocation will make the relationship between scheme fees and the MSC less clear and less reliable for interpretation. We have seen shifts in the nature of transactions over time, which has resulted in changes in average scheme fees over time, which will likely be correlated with merchant type. This means that unreliable data on the allocation of scheme fees to merchants could introduce a bias into the analytical results.

It will therefore be important to have some confidence in the estimation of scheme fees attributable to merchants, if this variable is included in the analysis.

Commercial cards

We expect that the analysis will be most robust when there is a clear distinction between the impact of IFR on the fees that merchants are charged. Consequently, we view the comparison of merchants on IF++ contracts with merchants on blended MSCs as being potentially quite powerful.

However, we suspect that it will be much more difficult to draw meaningful observations from a comparison of consumer cards with commercial cards. Most merchants will conduct a mix of consumer and commercial card transactions, and so blended MSCs will reflect the expected mix of transactions, which will be uncertain. There will not be the same clarity of distinction as with the former comparison of merchants with different types of contract with acquirers.

The PSR should therefore exercise caution in drawing conclusions from this analysis.

Payment facilitators

The working paper indicates that payment facilitators will not be included in the initial analysis on merchants, but the PSR will consider including payment facilitators in the final analysis.

We recommend that the PSR includes payment facilitators in this analysis. Payment facilitators have a growing share of merchants and may produce different outcomes for merchants as they negotiate with acquirers. It may be that certain types of merchants are more likely to use payment facilitators, and so excluding them from the analysis could reduce the coverage of the results. As a growing and important component of the market, they should be included for completeness.

[redacted]

Riskskill

From:
To:
Cc:
Subject: PSR Consultation - Market review into the supply of card-acquiring services 21

[redacted]

Since we came to see you in the summer, you have clearly been busy with this review.

We have received, read and digested your consultation review document MR18/1.3 - and whilst feedback was not directly requested or sought, we felt that you would value feedback / comments.

- We have annotated the document in red typing where we have thoughts / comments
- These comments reflect a number of matters, but very much at the top of our list, would appear to be that you have seemingly oversimplified (or misunderstood - we are not sure) the broader complexity of interchange and acquirer charging differences and methodologies. You may wish to think about this a little further in your scope and questioning of acquirers, as your results will then be confusing and unexplainable if you have not distinguished between the various aspects of the transaction pricing. Equally, you will need to understand what the non-variable charges represent. In particular:

* To take interchange in a polarised way like this does not tell the full story as there are many variables that form part of the calculation
* You may need to add further variables to the formulas throughout and in the samples of data to include the elements / breakdowns that you have highlighted.
* The key elements (but all of the variables are tangible) are: Secure/non-secure, delivery mechanisms, cross-border/not, merchant location, proportions of intra-region, calculation methods (i++, flat, variable), other fees involved, fraud/chargeback levels with processing costs thereof.

3 Data we propose to use

3.1 In this chapter, we set out the data we propose to use. This will comprise a mix of Merchant-level data (MSC, Fees, and Merchant characteristics), acquirer characteristics, and industry-wide characteristics.

3.2 The chapter has the following structure: we first set out the variables (the data fields) we propose to use in our analysis. We then set out the period for which we propose to collect data. Finally, we explain how we propose to collect the Merchant data (the Merchant sample).

Why just the top 5 UK acquirers? What about cross-border acquirers? Retail banks behind acquirers?

3.3 We propose to request Merchant-level data from the five largest UK acquirers. We may also request data from payment facilitators to complement the analysis of the acquirer data.

Worldpay, Barclays, Cardnet, First Data, Elavon, Global Payments, Paysafe, Cashflows, OSMM, Allied Wallet, Equire, Valitor, Payvision, Wirecard, AIB UK, BoI UK, Bambora, B&S

3.4 Acquirer characteristics and industry-wide characteristics will likely be based on data we request from acquirers, and statistics derived from the Merchant-level data. and more?

3.5 We explain further below what data we propose to use.

Data fields – Merchant data

3.6 We set out below what type of Merchant data we propose to use for the analysis. This includes our view on the appropriate categories of transaction to consider, based on our current understanding. We also set out our view on the appropriate categories of types of tariff for the purpose of collecting data.

3.7 We propose to collect Merchant data over time for an appropriate sample of Merchants as described further below. The Merchant data we propose to collect falls into three categories:

- MSC – the fee paid by the Merchant to the acquirer for the card-acquiring services (see Glossary) – ideally broken down by category of transaction (see *Categories of transaction* below)
- Fees that the acquirer pays for the Merchant's transactional activity, ideally broken down by category of transaction (see *Categories of transaction* below), comprising:
  1. Interchange Fees paid by the acquirer to the issuer for the Merchant's transactional activity Interchange rates are published by Visa and Mastercard and hopefully reflect what the acquirer is actually passing onto the merchant
  2. Scheme Fees paid by the acquirer to the Operators for the Merchant's transactional activity
- Merchant characteristics

Visa Europe operates 3 pricing regimes
1. Flat fee
2. Tiered fees
3. Stepped fees

Visa interchange typically dependent on country
1. Domestic
2. Intra-regional
3. International

Visa Europe has 5 specific acquiring fees and 3 common with issuing
1) Volume (a and c)
2) BIN (a)
3) Authorisation (b and c)
4) Clearing and settlement (b and c)
5) International and cross-border (a and c)
6) License
7) System access
8. Service

Visa Europe fees typically dependent on country
1. Domestic
2. Intra-regional
3. International

Visa has 3 business units and fees for each
a) Scheme
b) Processing
c) Non-regulated

3.8 Merchant characteristics will include the following:

- volume of transactions, broken down by category of transaction (see *Categories of transaction* below)

Settlement days

- value of transactions, broken down by category of transaction (see *Categories of transaction* below)

Chargeback levels

- average transaction value, broken down by category of transaction (see Categories of transaction below)

Fraud levels

Collateral / guarantee

- Merchant Category Code (MCC) (a four-digit code used to classify the Merchant by the type of goods or services it provides)

high brand risk

- time since the Merchant signed up with current acquirer

high prepayment risk

Multiple acquirer relationships

- amount acquirer billed the Merchant for card acceptance products – i.e. goods or services to accept card payments that Merchants buy from their acquirers in addition to card-acquiring services

UK domestic or cross-border acquirer

- how the Merchant was signed up (for example, via internal sales team, external sales organisation, or following referral) Direct acquired or via a PF referred by retail bank
- the type of tariff the Merchant is paying (for example, Blended or IF++ – see *Types of tariff* below)
- the type of agreement between the acquirer and the Merchant (for example, standard or bespoke)
- the number of outlets the Merchant is operating

Other services signed up for by merchant that may have an influence on transaction fees - fraud detection, DCC, multi-currency processing, account updater

Categories of transaction

3.9 Data on MSCs, Fees, value of transactions, and volume of transactions should ideally be split according to the dimensions that determine the Interchange Fees and Scheme Fees transactions attract. We set out below our view on what appropriate categories may be, based on our current understanding.

3.10 We believe it may be appropriate to define categories based on Card Type, Region, and Transaction Type. Each combination of Card Type, Region and Transaction Type defines a category. We explain below what Card Types, Regions and Transaction Types are:

- Card Type:
  - Visa Consumer Immediate Debit and Prepaid
  - Visa Consumer Credit and Deferred Debit and Charge
  - V-PAY none issued in the UK but could be cross-border intra regional immediate debit transactions
  - Visa Commercial Immediate Debit and Prepaid
  - Visa Commercial Credit and Deferred Debit

Visa Commercial Credit and deferred debit: Business, Corporate & Purchasing, Small Market Expenses and Large Market Enterprise

  - Mastercard Consumer Debit, Mastercard Consumer Prepaid, and Debit Mastercard Consumer
  - Mastercard Consumer Credit

- Mastercard and Maestro Commercial Cards7
- Maestro Consumer and Maestro Consumer Prepaid

- For each of these Card Types, split by the following Regions:
  - Domestic UK (any transactions that attracted a UK Domestic Interchange Fee)
  - Other Domestic (any transactions that attracted a domestic Interchange Fee oter than the UK Domestic Interchange Fee) Bilateral fees? 'On-us' transactions?
  - Intra-EEA (any transactions that attracted an Intra-EEA Interchange Fee)
  - Other International, non UK/non EEA acquired in the UK

- For each combination of Card Type and Region, split by the following Transaction Types:
  - Face-to-face, contactless
  - Face-to-face, chip and PIN Face-to-face chip and signature or no CVM
  - Face-to-face, magnetic stripe
  - E-commerce, secure (Verified by Visa, Mastercard Secure)
  - E-commerce, other non-secure? with/without CVV2/CVC2, address verification, account updater ?
  - Mail Order/Telephone Order with/without - CVV2/CVC2, address verification
  - Other Attended versus unattended payments

Types of tariff

3.11 Based on our current understanding, we think it would be appropriate to use the following categories when collecting data on types of tariff:

- Blended
- IF+
- IF++
- Other
- Unknown

Blended

3.12 Any tariff where the MSC for a given transaction does not depend directly on the Fees that transaction will attract, and which does not satisfy the criteria for IF+ or IF++ (see below).

Mastercard World Business Mastercard Executive BusinessCard Mastercard Corporate Executive BusinessCard

7 These comprise Mastercard Corporate, Mastercard Electronic Corporate, Mastercard BusinessCard, Mastercard Electronic BusinessCard, Mastercard Professional Card, Mastercard Prepaid Commercial, Mastercard Fleet Card, Mastercard Purchasing Card, Maestro Prepaid Commercial, and Maestro Small Business. Mastercard FleetCard Debit Mastercard for Business

IF+

3.13 Any tariff where, for any given transaction, the MSC is quoted to the merchant as the sum of the Interchange Fee the transaction attracts, and a margin.

acquirer fee including scheme fees, own fees and margin

IF++

3.14 Any tariff where, for any given transaction, the MSC is quoted to the merchant as the sum of the Interchange Fee the transaction attracts, the Scheme Fee(s) the transaction attracts, and a margin. Interchange plus scheme fees plus acquirer own fees including margin

Other

3.15 For instances where the Merchant's tariff is known but does not satisfy the criteria of Blended, IF+ or IF++ tariffs. Example? Bilateral fees? Onus pricing?

Unknown

3.16 For instances where the type of tariff the Merchant pays is unknown.

Acquirer and market characteristics

3.17 It may be appropriate to incorporate data on acquirer and market characteristics in the analysis. The purpose of including these characteristics would be to control for factors that affect the MSC and co-vary with the Fees. Such factors could otherwise result in omitted variables bias.

3.18 Most relevant acquirer characteristics can likely be estimated using the Merchant-level data we propose to collect. Such characteristics would include:

- total volume and value of transactions acquired by the acquirer
- mix of transactions acquired
- mix of Merchant categories (based on, for example, MCC)

3.19 We would have to collect data on other potential acquirer characteristics, including:

- incidence of 'on us' transactions
- fees acquirers pay to the Operators, but are not directly attributable to Merchants' transactional activity

3.20 The following market characteristics may be relevant (to the extent relevant data can be found):

- interest rates
- cost index for cost of processing transactions
- incidence of card fraud
- number of Visa or Mastercard-branded debit and credit cards in issuance

Fees paid by merchant to acquirer / PF / third party for other services not directly linked to transaction processing, e.g. terminal / device deployment and maintenance, PCI, DCC, multi-currency processing, anti-fraud tools, customer authentication

Time

3.21 The IFR caps took effect from 9 December 2015. We propose to collect data covering a period of approximately two years before the IFR caps took effect, and approximately three years after.

3.22 We would ideally use monthly data on MSC, Fees and Merchant characteristics. We recognise that historic data on Merchant characteristics on a monthly basis may not be available. If this is the case, we will consider what approach is most appropriate based on the data available to us.

Merchant sample

3.23 We set out below how we propose to collect Merchant-level data from acquirers.

top 5 only or representative?

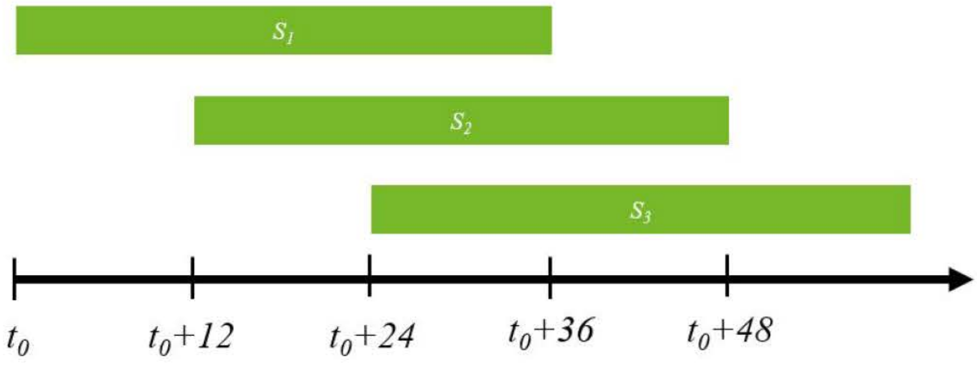
3.24 We intend to rely on a sample of the Merchants served by each of the acquirers in scope of the analysis. The approach to sampling seeks to balance the two following considerations:

- It seems appropriate to draw, for each acquirer, several samples of Merchants over time. Looking only at Merchants who stay with a single acquirer over the entire period would give a skewed picture of pricing dynamics.
- On the other hand, it is useful to follow the same Merchant over a longer period. This allows us to use panel data models for analysing the data.

3.25 We propose to collect three sub-samples for each acquirer. The three sub-samples would cover different, but overlapping, time periods. Each sub-sample would consist of a random selection of the Merchants that buy card-acquiring services from the acquirer in question at a certain point in time (the sub-sample start date), and track those Merchants for up to 36 months. (The sample would stop tracking an individual Merchant earlier if the Merchant ceased being a customer of the acquirer at some point in the 36-month period.) Taken together, the sub-samples would span a period corresponding to the one set out above (see *Time* above).

3.26 The sub-samples would be staggered, with the sub-sample start dates being 12 months apart. Figure 1 illustrates the staggered overlapping sub-samples. The sub-sample start date for the first sample is t_0, the sub-sample start date for the second sample is $t_0 + 12$ months, and the sub-sample start date for the third sample is $t_0 + 24$ months.

Figure 1: Illustration of staggered overlapping sub-samples



3.27 We expect that each of the sub-samples would contain thousands of Merchants.

UK Finance

PSR Market Review into supply of card-acquiring services: pass-through methodology consultation

Date: 01 March 2019

Address: UK Finance, 1 Angel Court, London, EC2R 7HJ

Sent to: cards@psr.org.uk

UK Finance is the collective voice for the banking and finance industry.

Representing more than 250 firms across the industry, we act to enhance competitiveness, support customers and facilitate innovation.

General comments

UK Finance welcomes the opportunity to engage with this first stage of the PSR Market Review into the supply of card-acquiring services, and will continue to do so throughout the course of the Review process.

This first consultation paper concerns fees that retailers pay to acquirers for accepting card payments – known as the Merchant Service Charge (MSC). An element of the MSC is the interchange fee. Interchange fees are paid by acquirers to issuers, via the card scheme operators. Interchange fees are an important component of card payments, ensuring a funding balance in the card ecosystem between card companies and retailers, and playing an important role in assisting with the investment necessary to keep card payments secure, reliable and convenient.

A cap on interchange fees was introduced in the UK market in 2015 through the European Interchange Fee Regulation. The PSR's working paper proposes a methodology for measuring the 'pass-through' to retailers of this reduction in interchange fees, and of changes to other fees charged by card schemes to acquirers.

We have several comments on the general approach of this consultation paper:

- Although the paper seeks to measure both changes in interchange fees and other card scheme fees, there is an implied assumption that the reduction in interchange fees will see a corresponding reduction in MSCs[1]. This continues the position set out in the PSR's 2015 regulatory approach paper on interchange fees.[2] However, there is no legal requirement for acquirers to pass on a reduction and, as recognised by this consultation paper, there is are a multitude of factors that can impact MSCs.

- It is not clear how the results of the PSR's pass-through analysis will be interpreted and fed into the wider market review assessment. For example, in some markets pass-through analyses have been used as a measure of competitiveness; however, as noted in the RPB

[1] This was also an assumption in the Interchange Fee Regulation recitals https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=OJ:JOL_2015_123_R_0001&rid=1.
[2] https://www.psr.org.uk/sites/default/files/media/PDF/psr-cp14-1-5-sp5-interchange-fees.pdf (5.12 and 5.13).

Economics paper cited in the consultation, '*the degree of pass-through depends on several demand and supply factors*'.[3]

- The paper states that '*as we develop our analysis, we will consider whether it is appropriate to provide further information on how our analysis has developed*'.[4] We believe it is critical that the PSR give stakeholders further opportunities to engage in both the quantitative analysis and the interpretation of this analysis before the interim findings stage. For example, this could be through provision of a data room; review of the mathematical code used to estimate the pass-through models, once the modelling is complete; and engagement on emerging findings[5].

- Coming to robust conclusions from this analysis will be challenging, due to likely data limitations, and econometric specification issues. Further, the complexity of the acquiring market, with its multiplicity of players and diverse pricing models, will make it difficult to isolate and estimate pass-through of changes in scheme fees and interchange fees.

- The PSR should consider whether to capture data from small acquirers as well as the largest five acquirers. Operational costs and scheme fees are likely to vary significantly between these two groups.

- We would also like the PSR to consider alternative approaches to understanding pass-through beyond econometrics; for example, changes in the quality of services provided by acquirers to retailers.

Responses to questions

Are there variables you think would have a material influence on the degree or speed of pass-through which are not covered in the chapter *Data we propose to use*?

The PSR's approach to estimating pass-through focusses only on whether changes in interchange and scheme fees have been passed-through to changes in merchant service charges (MSCs). However, pass-through may also manifest in ways in which the PSR's proposed analysis does not capture at all. For example, changes in fees may be passed through in changes in non-MSC payment acceptance charges, or in changes in non-price elements (such as improved quality, new product capabilities etc.).

Are there variables covered in the chapter *Data we propose to use* that you think would be irrelevant or immaterial to the degree or speed of pass-through?

It is difficult to comment on this question at this stage of the process and emphasises the need for the PSR to provide stakeholders with the opportunity to engage with the data and methodology during the actual application of the pass-through analysis.

[3] 1.14, page 6
[4] 1.12, page 6.
[5] A similar approach was taken by the FCA on the Credit Card Market Study.

Do you have any views on the comparators we are proposing to use in the difference-in-difference approaches?

There are several issues that we believe may complicate and reduce the robustness of the proposed approaches:

IC++ as a comparator: It is important that the PSR analysis accounts for the fact that types of merchant on IC++ tariffs are not representative of the merchant population as a whole.

Commercial cards as a comparator: It is important that the PSR analysis accounts for the fact that the usage of Commercial cards is very small relative to that of non-Commercial cards. Commercial card usage is also typically focussed in certain merchant sectors (such as Travel).

Given the contracting arrangements, is three years sufficient for the MSC to reflect the effects of the IFR caps?

The PSR's staggered approach to merchant sampling means that only a fraction of the total sample will include a full three years' worth of data post the introduction of the IFR caps. This is likely to reduce the robustness of the proposed approach.

ENDS

Visa Europe

VISA

VISA Europe submission to the PSR's pass-through methodology consultation

March 2019

1 Overarching comments

Visa Europe ("Visa") welcomes the opportunity to respond to the PSR's consultation on the proposed pass-through analysis and to help inform the PSR's work on the Market Review into the Supply of Card-Acquiring Services (the "market review").

We think it would be valuable for the PSR to consider carefully the technical challenges posed by the proposed econometric analysis. These include data availability, accounting for the range and complexity of acquiring services and the risk of correlation between proposed control variables. With this in mind - and given the absence of meaningful precedent of such analysis in the sector - we believe that the PSR would benefit from working closely with the sector in refining the proposed methodology accounts for the nuances and specificities of the market in both the execution and interpretation of the analysis.

We also encourage the PSR not to rely on a single econometric specification (model triangulation) and to consider alternative approaches to understanding pass-through beyond econometrics. These approaches may be simpler or could better take account of the complex commercial and competitive environment in which acquirers operate.

While Visa supports the PSR's engagement-led approach to the market review, we consider it could have done more to improve the intelligibility of the econometric models presented in the methodology paper. Going forward, the PSR could consider making use of a wider range of engagement channels, particularly where the PSR's thinking on technical issues can be communicated effectively to non-technical audiences (e.g. via workshops or illustrative models). We believe that effective stakeholder engagement results from all parties gaining a better understanding of the approaches being employed.

Finally, it is important that the PSR maintains an open perspective on its objectives and that it avoids preconceived notions about the market. We therefore support the PSR's position that the results of the pass-through analysis will be considered together with other sources of evidence to inform its conclusions for the market review.

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2 Potential econometric issues

As part of the market review, the PSR wishes to determine the degree of long-term pass-through of card scheme and interchange fees to the Merchant Service Charge ("MSC"); the speed of pass-through, and the differences in the degree/speed of pass-through across different merchants.

As the PSR identifies in its consultation, long-term pass-through depends on several demand and supply factors. These 'demand and supply' factors can be complex and can change over time. We noted in our response to the draft Terms of Reference ("ToR") that the market for acquiring services is evolving quickly to respond to changing end-user needs, which means that the value proposition for acquiring services has changed significantly in recent years. For example, the market today caters to a much larger segment of merchants (including merchants that had been underserved previously); and the market is also increasingly characterised by an extensive range of specialist value-added services and products that are tailored to individual merchant needs.

We suggest the PSR continues to work closely with the sector in refining the proposed methodology to ensure the nuances and specificities of the market are accounted for in both the execution and interpretation of the analysis.

As noted in Section 1, we also suggest that the PSR does not rely on a single econometric specification (model triangulation) and considers alternative, non-econometric approaches to understanding pass-through, which may be simpler and could better reflect the complex commercial and competitive environment in which acquirers operate. One example of an alternative approach to understanding pass-through could include, but is not limited to developing a pricing model. Acquiring is a complex financial service and pricing is driven by a range of factors such as the acquirer's risk appetite. These factors could be incorporated into a bespoke pricing model developed by the PSR to understand in more detail the approach to pricing taken by acquirers.

In the remainder of this section, we first set out our views on the specific questions posed by the PSR (Sections 2.1 to 2.4) and then outline some further econometric concerns regarding the proposed methodology (Section 2.5).

2.1 PSR Question 1: Additional control variables

Are there variables you think would have a material influence on the degree or speed of pass-through which are not covered in the chapter *Data we propose to use?*

It is important that all the factors that have an influence on both the MSC and card scheme and interchange fees are controlled for in the econometric models. Omitting these factors will risk attributing the effect of the missing variables to the included variables, and thus potentially mis-estimating the pass-through effect. We urge the PSR to consider carefully the industry dynamics and include all relevant factors in the analysis to minimise bias in the model estimates.

For example, the merchant risk profile, including the merchant's creditworthiness and the industry it operates in, is likely to be a key factor affecting the MSC. Acquirers underwrite card transactions and are financially liable for the non-performance of their merchants. If the merchant risk profile is omitted from the models, the increase in the MSC may be wrongly attributed to a failure in passing through the saving of the IFR cap, rather than to the inherent risk profile of the merchant.

In the proposed methodology, the PSR sets out several merchant characteristics, including the Merchant Category Code (MCC), which classifies merchants by the type of goods or services they provide. The proposed merchant characteristics (and in particular the MCC) will capture some risk factors but we consider it critical that the PSR explores further with acquirers other data sources and variables which could better reflect risk (e.g. a merchant's history of chargebacks and insolvency).

Finally, we note that accounting for all the relevant control factors is not a simple exercise, as the value chain for card-acquiring services includes several interrelated components that may be challenging to capture consistently in an econometric model. We encourage further engagement with the industry to identify additional relevant factors to include in the models.

2.2 PSR Question 2: Superfluous control variables

Are there variables covered in the chapter *Data we propose to use* that you think would be irrelevant or immaterial to the degree or speed of pass-through?

As discussed above, we support the PSR in its effort to ensure that industry dynamics are captured in the modelling, and on the face of it, we consider that all of the proposed variables are potentially individually relevant.

However, some of the proposed variables are likely to be highly correlated with each other. High correlation between control variables constitutes 'multicollinearity', which can in turn lead to imprecise and not statistically significant estimates. Some examples of proposed variables correlated with each other are:

- Within the list of merchant characteristics, the average transaction value appears to be a function of the value of transactions and the volume of transactions, two factors that are also listed individually as relevant controls.
- We understand the indicator variable "D", which allows the degree of pass-through to vary between categories of merchants, is based on merchant characteristics that are also included in the model as stand-alone variables.

We therefore urge the PSR to carefully assess the list of proposed control variables considering this multicollinearity concern, and ensure that robust testing of multicollinearity is integrated into the approach.

2.3 PSR Question 3: The comparators in the difference-in-difference approaches

Do you have any views on the comparators we are proposing to use in the difference-in-difference approaches?

The PSR is proposing two difference-in-difference approaches: one examining merchants (where merchants with blended MSCs are the *control*, and merchants with 'interchange plus plus' MSCs the *comparator*) and one examining transactions (where consumer card transactions are the *control*, and commercial card transactions the *comparator*). In each case, the approach relies on the assumption that, other than through the impact of the IFR, the trend in the *comparator* would have been the same as the trend in the *control* in the period following the IFR. This is known as the 'parallel trend' assumption.

With respect to the difference-in-difference model with the 'interchange plus plus' tariff as the comparator, we appreciate the PSR's effort in selecting a subset of merchants with similar observable merchant characteristics. Further analysis may need to be conducted to confirm that the sample is suitable for the analysis. However, we consider that the choice of comparator is suitable for the purposes of this analysis.

With respect to the difference-in-difference model with 'commercial card' transactions as the comparator, we have reservations on the suitability of the comparator in this context. Commercial cards can be considered a different segment of the market to consumer cards, with different end-user requirements, product offerings and competitive dynamics. These include substantial differences in the scales of the sectors, the prominence of prepaid cards in the commercial sector (reducing working capital risks) and the ability for merchants to continue to surcharge commercial card transactions under the IFR. The MSC for commercial card transactions is therefore driven by supply and demand factors that differ sufficiently from those driving the MSC for consumer cards that the parallel trend assumption is likely to be violated. This could hinder the robustness of the proposed difference-in-difference model.

We encourage further engagement with the industry to assess the comparability of commercial cards with consumer cards.

2.4 PSR question 4: Time period for the analysis

Given the contracting arrangements, is three years sufficient for the MSC to reflect the effects of the IFR caps?

The PSR plans to use three years of monthly data after the introduction of the IFR, and two years prior to that for the proposed analysis. Subject to availability of data, this may be a statistically satisfactory sample.

However, the variation in scheme and interchange fees and MSC data over this period of time is likely to be low. This is in part due to the length of contracting arrangements between merchants and acquirers. A longer time period may be more suitable for the analysis to produce sensible and conclusive results. Alternatively, changes to the terms and conditions of a contract within a given contractual period may contribute to increased levels of variation in the data.

We encourage the PSR to gather views on the average duration of contracts, and the potential service level or pricing variations over a contractual period. Analysing the variation in the dataset available will also help the PSR to form a view on whether the time period considered is sufficient to conduct the proposed estimation.

2.5 Further econometric concerns

Objectives of the econometric analysis

While the PSR should use its powers to fully investigate stakeholder concerns, we urge that the PSR does not use the pass-through analysis alone to draw conclusions on specific issues. We therefore encourage the PSR to keep an open perspective on how the pass-through analysis will be used and fully agree with the PSR's view that *"the results of the pass-through analysis will be one piece of evidence [the PSR] will consider when taking a view on whether the supply of card-acquiring services is working well."*

As an example of this, the PSR notes in the ToR of the market review that there are concerns regarding whether smaller merchants have benefitted from the introduction of the IFR cap. As we have noted in our response to the draft ToR, there are significant economies of scale in an acquiring business model and pricing will incorporate the merchant's risk profile. As a result, the cost of accepting cards or digital payments can often be higher for smaller merchants. If the econometric specifications proposed by the PSR fail to account sufficiently for these nuances, the analysis may not produce fully reliable results.

Model triangulation

The PSR should consider how regulators in other industries have conducted pass-through assessments and other large-scale econometric exercises. In particular, we highlight Ofwat's econometric approach to cost assessment in PR19 in the box below.

Ofwat: Econometric approach to cost assessment for PR19

As a starting point to its cost assessment approach in its ongoing regulatory determination - Price Review 2019 – Ofwat generated a wide range of econometric models. These 'initial' models were tested and assessed according to their robustness, statistical validity and estimation method. Thanks to the large number of 'initial' models tested, and combined with stakeholder feedback and engagement with academics, Ofwat was able to select a subset of 'high quality' and 'final' models to be used in the price control estimations.

Ofwat recognised the practical limitations to the use of statistical modelling in cost assessments and the fact that all models are subject to error and a degree of bias. Given that *"in many instances, it is not possible to identify a single "preferred" econometric model that clearly prevails over all others"*[1], Ofwat decided not to rely on a single model but rather a diverse set of models – the 'final' models – and combined them via triangulation.[2] As a result, Ofwat took averages across as many as nine different 'final' econometric models to derive its cost assessment results.

1 Ofwat, Supplementary technical appendix: Econometric approach, January 2019.

2 Triangulation involves assigning weights to different models and averaging their results to achieve more holistic conclusions from the analysis.

Given the above, we encourage the PSR not to rely on a single econometric specification and instead to consider the results from a combination of different models (model triangulation). Furthermore, as discussed in Section 1, we encourage the PSR to consider alternative approaches to complement the econometric analysis.

Data availability and sample size

To implement the proposed methodology robustly, a very large and granular dataset will be needed. From the consultation document, we understand the PSR is not certain of the availability and/or granularity of data. Failure to obtain a large and suitable sample of data may jeopardise the robustness of the proposed analysis. We urge the PSR to ensure the availability of the data needed before fully committing to the proposed econometrics analysis. Failing to obtain a satisfactory sample of data may have major implications for the techniques proposed in the paper.

Explanatory power

The PSR has proposed a substantial list of relevant factors to account for in the models. On the one hand, we encourage the PSR to capture as many industry dynamics as possible with adequate variables in the model. However, the presence of too many control variables may decrease the explanatory power of the model, especially if the sample size is not large enough. As an example, to capture only the volume of transactions for each merchant, more than 250 variables have been defined, accounting for different splits and combinations among card types, regions and transaction types. The value of transactions and average transaction value are captured with a similar number of control variables.

To compound the problem, some of the merchant and acquirer characteristics that the PSR has proposed to use as control variables in the model are likely to have low levels of variation in the sample considered, e.g. the MCC and the channel through which the merchant signed up with an acquirer. This may also have a negative impact on the model's ability to isolate confidently and precisely the relationship between the scheme and interchange fees and the MSC.

Without further detail on the dataset that the PSR plans to use in this exercise, it is hard to determine whether the proposed method will lead to robust conclusions. As previously noted, we therefore encourage the PSR to share the results of this analysis with stakeholders, allowing them to interpret and analyse the results, before drawing any conclusions.

3 Stakeholder engagement

Visa fully supports the PSR's engagement-led approach to the market review, but considers the PSR could have done more to improve the intelligibility of the econometric models presented in the paper.

The market review is the first of its kind in the sector and will set an important precedent for the payments industry, both in the UK and globally. It is therefore critical that stakeholders have adequate opportunities to inform the PSR's analysis throughout the process (i.e. from establishing the approach to the interpreting the results of the analysis).

It is important to recognise that many industry participants may not necessarily have the relevant technical expertise in econometrics, which could prevent their engagement with the PSR for this work. To ensure greater stakeholder engagement, we urge the PSR to:

- Make use of a wider range of engagement channels, where the PSR's thinking on technical issues can be communicated effectively to non-technical audiences (e.g. workshops or illustrative models).
- In combination with the above, the PSR should work on improving the intelligibility of its econometric modelling work. While econometrics is a technical topic, ultimately, stakeholders will need to be comfortable with the 'meaning' of an econometric model before they can understand and accept its results.

Finally, we would highlight the importance of promoting transparency regarding the PSR's own analysis. Subject to restrictions on the sensitivity or confidentiality of the data, it is in line with standard regulatory to make available to stakeholders the resources required to replicate the analysis. This will enable stakeholders to review and re-perform the analysis, which will bring greater confidence and trust from the sector to the PSR's results.

Worldpay

PSR market review into the supply of card-acquiring services

Worldpay response to pass-through methodology consultation (MR18/1.3)

March 2019

Non-confidential version

Contents

Note: Confidential elements of our submission that have been redacted are indicated using the [✂] symbol.

1 Executive summary

1.1 The PSR intends to use a detailed econometric analysis to examine how the charges merchants face for card-acquiring services have responded to changes in the fees acquirers pay. The resulting 'cost pass-through rate' would inform the PSR on how well the supply of card-acquiring services is working. This is an ambitious piece of analysis and is difficult to comment on fully without a greater understanding of the broader context of evidence that the PSR will consider. In our initial view, the PSR's proposed approach gives rise to three key areas for consideration.

Key area 1: Interpretation of results

1.2 The proposed econometric approach appears to be the principal (if not the only) piece of evidence the PSR intends to use to assess pass-through. This presents significant risks.

1.3 It is possible to find lower pass-through rates in more competitive industries and higher ones in less competitive ones. This illustrates the fundamental difficulty in using a pass-through rate as an indicator of the intensity of competition: there is no established competitive benchmark. Moreover, where both price and non-price factors are relevant to competition in practice, focusing only on the pricing dimension of competition may substantially understate the actual pro-competitive pass-through to customers.

1.4 Accordingly, the PSR should be mindful of applying too much weight to the results of its proposed analysis, which only examines the link between fees and merchant service charges. We strongly encourage the PSR to adopt a broader approach to understanding and measuring pass-through in the card-acquiring industry to avoid drawing false conclusions from its proposed analysis.

Key area 2: Opportunity to engage

1.5 Our understanding is that from this point the PSR does not intend to engage further on its pass-through analysis – which is a central component of the PSR's market review – until the interim report. This approach gives rise to significant concerns that relate to giving parties affected by the PSR's market review the opportunity to comment on its pass-through methodology that may, as a consequence, affect the reliance that can be placed on the final outcome of this assessment.

1.6 It is widely recognised through a range of cases that complex data analysis benefits from third-party review to ensure accuracy, and in these cases access is regularly given (e.g. through data rooms). Worldpay therefore expects the PSR to adhere to similar principles of transparency and fairness in relation to its market review in this case. This includes being given the opportunity to review and comment on the final methodology the PSR choose to adopt, as well as the results from the cost pass-through analysis, in advance of the interim report.

Key area 3: Methodological, econometric and data issues

1.7 The complexity of this industry creates a range of issues for the proposed analysis. If left unresolved, we are concerned that the PSR's results may be unreliable.

1.8 There are methodological issues: relevant prices appear to be excluded; retained pass-through reinvested in the form of improved quality is not captured; mix effects are being created without adequate controls, and monthly pricing may lead to mis-measured data.

There are also econometric issues: potential omitted variable bias; mis-measurement in the reduced form panel estimation that uses an aggregate fee measure, and therefore would not specifically measure the interchange fee regulation; and concerns over the comparators used in both difference-in-difference estimations.

1.9 Finally, on data, the PSR has set out an ambitious request that will result in a very large dataset, and it is not clear how it will control for biases across the sample.

1.10 We provide more detailed comments in the remainder of our submission. We look forward to engaging with the PSR on the above issues, in addition to our more detailed points made in the later sections of this response.

2 Our response

Introduction

2.1 The PSR intends to examine how the charges merchants face for card-acquiring services have responded to changes in the fees acquirers pay to card scheme operators and card issuers. The PSR's proposed approach is set out in its 'Pass-through methodology consultation' (the 'Methodology').

2.2 The PSR is proposing to use a detailed econometric analysis to assess how the Merchant Service Charge (MSC) has responded to changes in Visa and Mastercard Interchange Fees and Scheme Fees. The results of this analysis will inform the PSR on how well the supply of card-acquiring services is working (the Methodology, para. 1.4).

2.3 Worldpay is pleased to comment on the PSR's Methodology. This is an ambitious piece of analysis and difficult to comment on fully without greater understanding of the broader context of evidence that the PSR will consider. We have aimed to identify areas that we know will be challenging, and those where an alternative approach may be more appropriate.

2.4 Our response is split into two parts:

1. An outline of three key areas for consideration based on the PSR's Methodology
2. A set of detailed points in relation to the analysis

2.5 We have provided our views on the four questions set out in the PSR's consultation in the broader context of our response. We highlight the most relevant sections of our response with respect to each specific question (see the sections immediately following the inline question boxes).

Three key areas for consideration

Key area 1: Interpretation of results on pass-through

2.6 The proposed econometric approach appears to be the principal (if not the only) piece of evidence the PSR intends to use to assess pass-through. By relying heavily on econometrics, we consider that the PSR risks not being able to rely upon robust evidence in its overall assessment because, as stated in a report for the OFT, "there can be no guarantee that the practitioner will always be able to obtain robust estimates [when estimating pass-through rates]".[1]

2.7 Given inherent difficulties in deriving reliable estimates from econometrics, it is particularly important that the PSR considers broader evidence "in the round" in order to avoid drawing false conclusions from its analysis. Specifically, even if robust estimates can be achieved, there is a fundamental issue as to what the pass-through numbers mean in the context of this particular market. The suitability of the specific econometric models used needs to be evaluated by reference to information about the market as a whole. Similarly, the models' results should be considered alongside, and needs to be consistent with, other findings that emerge from the PSR's study.

[1] RBB Economics, *"Cost pass-through: theory, measurement, and potential policy implications"*, A Report prepared for the Office of Fair Trading, February 2014.

2.8 The Methodology would also represent, to our knowledge, the first time a detailed econometric approach to pass-through has been used in the context of a market review. We encourage the PSR to be aware of the limitations of each estimation approach, which in turn determines how much weight can be placed on the estimates that are obtained.

2.9 The RBB report sets out how "[g]ood practice suggests that practitioners should follow the following steps when using econometric analysis:

- assess the empirical results in light of the limits of each approach;
- compare the results with the other evidence collected in the course of the investigation. When the quantitative results and the qualitative evidence are inconsistent, both the assumptions that underpin the economic modelling that the analyst has adopted and the reliability and interpretation of the qualitative evidence should be carefully reviewed; and
- perform sensitivity analysis to assess the robustness of the results obtained."[2]

2.10 The Methodology suggests that the PSR plans to use the estimated pass-through rate as a measure of the intensity of competition in the card-acquiring industry. However, the PSR has not yet set out what pass-through rate it expects to see in an industry that is working 'well'. It is therefore unclear what might be considered to be a problematic pass-through rate.

2.11 It is well understood that the extent of industry-wide cost pass-through typically depends on the elasticity of demand relative to the elasticity of supply. However, the curvature of demand also plays a key role in determining the magnitude of pass-through. Depending on the relevant elasticities and the curvature of demand, it is possible to find lower pass-through rates in more competitive industries and higher ones in less competitive ones. Therefore, without robust estimates of pass-through, and a detailed understanding of its drivers, it will be very difficult to reliably assess the specific role played by the level of competition in the market. This illustrates the fundamental difficulty in the PSR's apparent intention to use a calculated pass-through rate as an indicator of the intensity of competition; it is unclear what a relevant competitive benchmark pass-through rate is.

2.12 Moreover, there are few studies that shed light on the relationship between cost pass-through and market structure and competition. Accordingly, there seems to be significant scope for the results of the PSR's analysis to be misinterpreted. It is important the PSR recognises that this is currently an active area of frontier academic research and that there is little agreement as to how results of empirical analysis can be interpreted.

2.13 Pass-through results may be sensitive to the dimensions on which firms might compete, such as price, quality, and service. Where firms compete on more factors than just price, a reduction in marginal costs may be passed-on through lower MSC prices, lower non-MSC prices, and/or invested in improving the quality of its proposition. All these scenarios are consistent with competition being effective in a market. Therefore, where both price and non-price factors are relevant to competition in practice, an analysis that focuses only on the pricing dimension of competition may substantially understate the actual pro-competitive pass-through to customers.

[2] Ibid.

2.14 Accordingly, the PSR should be mindful of applying too much weight to the results of its proposed analysis – which only examines the link between fees and the MSC – in isolation. We strongly encourage the PSR to adopt a broader approach to understanding and measuring pass-through in the card-acquiring industry.

Key area 2: Ensuring adequate opportunity for providers to engage with the proposed analysis[3]

2.15 The PSR states in the Methodology consultation paper that "[a]s we develop our analysis, we will consider whether it is appropriate to provide further information on how our analysis has developed. In any event, we will set out how the analysis has evolved in the interim report of our market review, including how we have taken into account comments on this working paper".[4] This suggests that parties may not have an opportunity to comment on the results of the PSR's pass-through analysis at an earlier stage. We note that the cost pass-through analysis appears to be a central component of the PSR's market review into card acquiring services. It is important therefore that the parties are given the opportunity to check, re-work and test the sensitivity of the PSR's final methodology and analysis before the outcome can be relied upon to inform the PSR's findings.

2.16 The PSR should ensure that firms are given the opportunity to effectively comment on evidence and ensure the PSR's analysis is accurate and reflective of the market being reviewed. This is particularly relevant in the context of the technical analysis being proposed by the PSR, and the fact that this would represent the first time use of a detailed econometric approach to pass-through in the context of a market review.

2.17 It would be unsatisfactory not to see the workings or output from this analysis until the interim report. It is widely recognised that complex data analysis benefits from third party review to ensure accuracy. Such a process allows parties to the review the opportunity to effectively comment on evidence and in so doing improve the PSR's analysis. This is on the basis of established procedures for complex analysis to be scrutinised thoroughly in advance of it appearing in provisional findings documents and implemented by competition authorities, including the CMA. That these procedures are important in making the analysis robust, can be seen in a range of cases, most notably the recent CMA investigation into Private Healthcare.

2.18 As noted in the CMA's market investigation guidelines: "investigations must not only be thorough and disciplined but also fair. The requirement for fairness includes giving the parties opportunities to understand the CMA's analysis affecting them; the CMA accordingly aims to be open and transparent in its work".[5] Worldpay therefore expects the PSR to adhere to similar principles of transparency and fairness in relation to its market review in this case. This should involve parties being given the opportunity to review and comment on the cost pass-through analysis in advance of the interim report.

2.19 Furthermore, the Competition Appeal Tribunal in *BMI Healthcare* refers to requirements of "fair consultation and the implicit duty on an administrative body to provide an effective opportunity to comment"[6] and the right of a person affected by a decision to be informed of

[3] This section also addresses the PSR's second bullet point at para. 5.2 of the Methodology.
[4] Para. 1.12.
[5] Competition & Markets Authority, Guidelines for market investigations: their role, procedures, assessment and remedies (CC3), para. 42.
[6] [2013] CAT 24, para. 36.

the "gist" of the case, which is acutely context-sensitive, and in competition cases "will often involve a high level of specificity". [7]

2.20 Consequently, we request that the PSR explores the option of holding a “data room” in which the external advisors to relevant card acquirers are able to assess the accuracy and robustness of any analysis performed.[8] The advisors would need access to the code and data used by the PSR to generate any results it relies on as evidence. We consider that the usefulness of such a data room would be maximised if it was held prior to the interim report; providing sufficient time for parties to comment on the application of the PSR’s methodology, before any conclusions are drawn. The PSR may also want to consider publication of further working papers, once initial analysis has been conducted, prior to any data room.

Key area 3: Methodological, econometric and data issues

2.21 Worldpay has a number of comments relating to the economic, econometric and data aspects of the proposed approach.

2.22 Worldpay considers that the card acquiring industry is but one part of a complex and changing supply chain, that gives rise to a range of methodological and data issues. Unless these issues are incorporated into the PSR’s analysis we are concerned that the results of the work may be unreliable. In this section we have identified some key examples of these methodological and data issues.

Methodological issues

2.23 The PSR’s methodology proposes to measure pass-through by assessing the link between fees (scheme fees and interchange fees) and the MSC. Worldpay considers that this approach excludes relevant card acquiring prices that are not captured in the MSC, and would also exclude relevant prices of card acquiring products. Consequently, the PSR’s methodology could substantially underestimate pass-through.

2.24 The PSR’s methodology only focuses on the pass-through of costs onto prices, and therefore would not capture any pass-through that was subsequently invested in the business in the form of improved quality. Consequently, the PSR’s methodology could substantially underestimate pass-through.

2.25 The proposed methods of categorising merchants into aggregate groups of tariff and merchant type risks creating mix effects in which the underlying make-up of customers is not sufficiently comparable across card acquirers. Indeed, [✂].

2.26 The proposed use of monthly data may mis-measure prices faced by merchants. The amount billed to a merchant in one month may not be reflective of the price that merchant faces over a longer time frame, due to [✂]. Consequently, there may be variation in the MSC that is driven by merchant-specific and time-specific factors that the proposed fixed effects may not capture.

[7] Ibid, para. 39(7).
[8] Worldpay notes that data rooms have been set up in the context of a number of other market investigations and reviews, particularly where detailed econometric analysis has been undertaken (as is proposed here). It would therefore seem to be appropriate for the PSR to adopt a similar approach in this case.

Econometric issues

2.27 In addition to the general methodological issues above, there are considerations to be mindful of with the specific econometric specifications being proposed. For example, the reduced form panel estimation uses an aggregate fee measure, and therefore would not specifically measure the impact of the interchange fee cap. Since other costs (like our increased costs associated with cyber and operational resilience) moved substantially over the proposed assessment period, this estimation would be unlikely to capture the effect of the IFR alone on the MSC. In addition, the proposed estimation risks suffering from omitted variable bias by not including costs that may co-vary with fees. Finally, the use of lagged independent variables may also lead to biased estimates of the coefficient on fees.

2.28 Both the difference-in-difference estimations have issues in terms of the validity of comparators being proposed. Worldpay doubts that either the IF++ or commercial cards meet the criteria necessary to be valid comparators, and therefore the PSR risks not being able to perform an accurate analysis.

Data issues

2.29 The data requirements set out in the methodology document are highly ambitious. The proposed methodology would impose a very significant burden on Worldpay due to the granularity of the data being requested. Consequently, we request that the PSR consider extending its 4-week response time to its proposed data request on pass-through. Based on the proposals in the Methodology, Worldpay estimates that it would need to provide [✂] data points per merchant, as well as additional base customer information, to the PSR.

2.30 In the event that only a portion of firms in the sample are able to provide data that meets the PSR's eventual requirements, we welcome views on how the PSR would proceed with its analysis, and what inferences it considers could be drawn from a smaller sample.

2.31 A particular concern would be possible bias in the data that would be available, which excludes some groups that are economically relevant and could counterbalance a biased sample of available data.

2.32 Finally, we consider that the PSR's methodology would need to evaluate the significance of key aspects of the market such as negotiated prices (both MSC and non-MSC prices), as well as non-price factors of competition.

Detailed points

Interpretation of results on pass-through

2.33 The PSR states that the results of this analysis would inform it on how well the supply of card-acquiring services is working (the Methodology, para. 1.4). This suggests that the PSR plans to use the estimated pass-through rate as a measure of the intensity of competition in the card-acquiring industry.

2.34 This is the first time this type of econometric analysis has been undertaken in the context of a market review as far as we are aware. We consider this is a highly ambitious exercise, and there is insufficient empirical evidence to support the PSR's proposal to use an estimated pass-through rate as an indicator of the level of competition. Accordingly, it is important that this analysis is considered in the round with the other qualitative and quantitative evidence available.

2.35 The PSR has not yet set out what pass-through rate it expects to see in an industry that is working 'well'. It is therefore unclear what might be considered to be a problematic pass-through rate. Further, there are few published articles that appear to have tested the link between competition and pass-through empirically.[9] Indeed, the RBB Economics report on cost pass-through prepared for the Office of Fair Trading (OFT) notes the following:

> "Empirical work on cost pass-through issues in industrial organisation settings is relatively new, and analysis that attempts to quantify pass-through rates in this context is scarce. Most notably, we have identified few studies that shed light on the relationship between cost pass-through and market structure and competition. Moreover, the pass-through measures reported in the empirical literature, notably pass-through elasticities, are often difficult to interpret and compare…
>
> [I]mportantly, no clear evidence emerges as to how cost pass-through is linked to market concentration measures such as a firm's market share or the market HHI level."[10]

2.36 Economic theory predicts a wide range of pass-through rates. The extent of industry-wide cost pass-through typically depends on the elasticity of demand relative to the elasticity of supply. However, the curvature of demand also plays a key role in determining the extent of pass-through. For example, for a monopolist when inverse demand is linear, curvature is zero and the pass-through will be 50%, irrespective of the elasticity of demand. However, if demand is sufficiently convex, the pass-through rate of a monopolist will exceed 100%. This illustrates a fundamental difficulty in the PSR's apparent intention to use a calculated pass-through rate as an indicator of the intensity of competition; it is unclear what a relevant competitive benchmark is.

2.37 The available empirical evidence also reveals a wide range of pass-through rates or elasticities, but little insights into what drives differences in pass-through rates: "absolute industry-wide pass-through can be as low as 20% but can also reach well over 100%. This wide range could be explained by a number of factors, notably market structure, however there is relatively little consideration in the literature of what causes pass-through rates to vary".[11]

2.38 Importantly, the PSR has identified different merchant groups and products in its methodology paper, and is considering comparing pass-through outcomes for these different merchant groups and products. To the extent that these groups and products have different elasticities of demand relative to supply, one would expect their pass-through rates to be different even if the intensity of competition is similar across these groups or products. It is unclear how the PSR proposes to account for this when interpreting the results of its difference-in-difference estimations, which compare pricing outcomes of different merchant groups and products.

2.39 In addition, pass-through results may be sensitive to the interactions that arise between the choice of price or quantity, on the one hand, and additional dimensions on which firms might compete, such as product or service quality, on the other. For example, a reduction in marginal costs would be expected to increase the margin per unit, and in turn encourage

[9] RBB Economics, *"Cost pass-through: theory, measurement, and potential policy implications"*, A Report prepared for the Office of Fair Trading, February 2014.
[10] Ibid.
[11] Ibid.

an acquirer to invest in the quality of its proposition. These alternative methods of pass-through are pro-competitive and would result in consumer benefits, and so would be expected to expand the number of units sold at this higher margin. Indeed, in its Terms of Reference the PSR proposes to consider "the quality of service that merchants receive from their provider of card-acquiring services" (ToR, para 3.3).

2.40 In this example, an investment in higher quality may allow an acquirer to maintain or even raise its price, and so may even diminish the rate of production cost pass-through. If both price and quality are relevant to competition in practice, an analysis that focuses only on the pricing dimension of competition may substantially understate the actual pro-competitive pass-through to customers.

2.41 Accordingly, the PSR should be mindful of applying too much weight to the results of its proposed analysis – which only examines the link between fees and the MSC – in isolation. We strongly encourage the PSR to adopt a broader approach to understanding and measuring pass-through in the card-acquiring industry.

Methodological issues

Non-MSC card acquiring prices are excluded[12]

2.42 The PSR's proposed analysis focuses on measuring the relationship between fees and the MSC, where the MSC is defined as "the amount the acquirer bills a Merchant for card-acquiring services in a given time period. This includes authorisation charges attributable to the Merchant's transactional activity" (Annex 1 of the Methodology).

2.43 The MSC that is defined in the Methodology will exclude non-MSC pricing elements that are relevant to merchants, and [✂]. Accordingly, the Methodology is not measuring all aspects of price pass-through, and so is likely to underestimate pass-through to merchants. These aspects include the following:

- card acquiring products that may be bundled or sold separately to merchants (i.e. including a range of ancillary services), where the charges of these produces are not billed in the same time period as the ongoing card-acquiring service.
- non-MSC charges that may not be captured by the definition in the Methodology, which may include joining fees, authorisation fees, and PCI management fees.

2.44 Where these charges above have reduced since the IFR, the proposed measurement of pass-through would understate the effect of the IFR.

2.45 Additionally, many acquirers have asymmetric business models, and their degree of cost pass-through may be the result of leveraging their strength in other markets.

Monthly data potentially mis-measures prices faced by merchants

2.46 The definition of the MSC proposed in the Methodology captures the amount billed in a given month. In practice the price (as a percentage of turnover) faced by a merchant in one month may not be reflective of the price that merchant faces over a longer time frame. This could be due to a variety of reasons, including [✂]. Consequently, there may be variation

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[12] This section also addresses the PSR's first bullet point at para. 5.2 of the Methodology.

in the MSC that is driven by merchant-specific and time-specific factors that the proposed fixed effects may not capture.

Interchange fee regulation

2.47 As noted above, not all transaction types have benefited from a reduction in the interchange fee. For example, the interchange fee on higher value debit card transactions has increased owing to a change from a pence per transaction charge to an ad valorem charge. We consider that the PSR's analysis needs to account for these complexities and not assume that the result of the IFR was a simple reduction in interchange fee for every merchant in all circumstances.

Types of tariff

2.48 The Methodology proposes grouping tariffs into five categories: Blended, IF+, IF++, Other and Unknown. There is a real risk that firms in the PSRs sample allocate tariffs into categories in such a way that the mix of tariffs is not comparable. For example, there could be many different tariffs included within Blended, or within Other, such that the resulting mix of customer pricing is substantially different across firms in the sample.

2.49 The PSR's analysis should recognise that even within a category there may be substantial variation in the pricing achieved by customers. [✂].

The PSR's proposed three sub-samples lacks a clear rationale and may lead to misleading results[13]

Question 4: Given the contracting arrangements, is three years sufficient for the MSC to reflect the effects of the IFR caps?

2.50 The three samples would be staggered, starting 12 months apart. As drafted in the methodology paper the third sample S3 only exists in the post-IFR cap period. We question whether this is intentional.

2.51 If it is intentional, the PSR should test whether these merchants are not systematically different from those in samples S1 and S2 (which existed over the pre-IFR cap period). If the implementation of the cap caused changes in the marketplace, then this may mean that the samples are different:

- For example, if the act of passing-on cost changes led to an increase in the number of merchants offering card payments, or led to changes in the number and types of tariffs used by first, then we would expect the S3 to contain a different mix of data than S1 and S2. This would also have implications for the validity of the difference-in-difference models (see below).

- Moreover, if new merchants are smaller than the average existing size of merchants, then their charges may be higher. This could lead to samples being substantially different.

2.52 We would welcome an explanation for the choice of three as being the optimal trade-off between the two considerations cited at paragraph 3.24 of the methodology paper.

[13] This section also addresses the PSR's fourth bullet point at para. 5.2 of the Methodology.

Econometric issues: Reduced-form panel estimation

The PSR's specification combines fees into an aggregate measure and so is not specifically measuring interchange fees[14]

2.53 The specification set in in Equation 2 of the Methodology appears to be measuring the effect of pass-through of all fees, not just the interchange fee. It is unclear how the PSR will use this estimation to identify whether the interchange fee cap, and assumed cost reduction, was passed on to merchants. We understand this to be one of the theories of harm stated by the PSR.

2.54 If the PSR intends to use Equation 2 to assess the pass-through of the IFR specifically, then the aggregate measure of fees may give a biased estimate of pass-through. Interchange fee and scheme fee rates move over time then at some intervals these fees may be positively correlated and at others uncorrelated or negatively correlated. Unless the PSR's aggregated fee measure is split out into interchange fees and scheme fees the PSR may under-estimate or over-estimate pass-through due to the IFR.

2.55 It is important that the PSR recognises that over the proposed assessment period Worldpay experienced both cost reductions (due to the IFR), and cost increases (for example due to increases in scheme fees[15], the loss of the Visa rebate, and the removal of caps on Visa consumer debit transactions). Consequently, any analysis that tries to isolate the effect of just the IFR caps – without controlling for these other cost changes faced by Worldpay (and presumably other card acquirers), could be misleading.[16]

Risk of omitted variable bias by focusing on a narrow range of input costs[17]

Question 1: Are there variables you think would have a material influence on the degree or speed of pass-through which are not covered in the chapter *Data we propose to use*?

2.56 The specification set out at Equation 2 of the Methodology includes fees ("per transaction fee the acquirer pays") but does not include other costs (like our spend on cyber and operational resilience) that card acquirers would have faced over the proposed estimation period. Card acquirers face a range of costs other than fees in order to provide services and products to customers, which ultimately must be covered for the business to survive.

2.57 If a card-acquiring business sets its prices on the basis of mark-ups over variable costs so as to make a contribution to cover its fixed costs, for example, then changes in these fixed costs will affect those prices, and are relevant to an analysis of pass-through.

2.58 To the extent these other costs co-vary with the per-transaction fees incurred by card acquirers the coefficient on these fees would experience omitted variable bias and so the results of the estimation will be invalid.

[14] This section also addresses the PSR's first bullet point at para. 5.2 of the Methodology.
[15] In addition, scheme fees are not all levied per transaction, there is a wide range of types of scheme fee, and scheme fees change regularly. Worldpay's pass-through of these cost changes does not happen at the same frequency as changes in scheme fees, and so there is often a material lag.
[16] This last paragraph also addresses the PSR's fourth bullet point at para. 5.2 of the Methodology.
[17] This section also addresses the PSR's first bullet point at para. 5.2 of the Methodology.

No explicit consideration of demand in explaining the MSC

2.59 It is unclear how the PSR plans to control for demand in its reduced-form panel estimation. We welcome clarity on this point.

2.60 Increased demand for card payments over the estimation period would be expected to have increased the fees incurred by card acquirers. Unless demand is controlled for effectively in this specification there is a risk of the coefficient on fees being biased.

The proposed inclusion of lagged independent variables may create econometric complications that the PSR could struggle to resolve

> **Question 2**: Are there variables covered in the chapter *Data we propose to use* that you think would be irrelevant or immaterial to the degree or speed of pass-through?

2.61 In equation 2 the PSR is proposing including lagged independent variables in its regression specification. The PSR would need to ensure that the lagged independent variables are weakly exogenous i.e. not determined by lagged values of the error term in the regression. If the lagged independent variables are correlated with the error term then the coefficient estimates are likely to be biased, and so the PSR's results could be unreliable. We would welcome clarity from the PSR as to how they would address this situation if they determined that the lagged independent variables were not weakly exogenous.

2.62 In the event that the PSR considers a modification to its model by including lagged dependent variables, the model would at that point become a dynamic panel data model and the coefficient estimates will be correlated with the error term and therefore be biased. In this case, first differencing is not sufficient and generally, some form of instrumental variables would be required to resolve the bias. We welcome clarity from the PSR as to what instruments they may consider using if they adopt an IV approach to estimating a dynamic panel mode. For example, if the model includes K lags, then one needs at least K+2 time periods of panel data.

> **Question 3**: Do you have any views on the comparators we are proposing to use in the difference-in-difference approaches?

Econometric issues: IF++ difference-in-differences approach[18]

2.63 The validity of a difference-in-difference estimation depends importantly on the suitability of the comparator groups, as well as industry characteristics. For this estimation to provide reliable results, it is necessary that the following features are met, though these are not sufficient for the estimation to be reliable:

- Both the IF++ group and the Blended tariff groups must face the same pricing trends before the implementation of the IFR cap.

[18] This section also addresses the PSR's third bullet point at para. 5.2 of the Methodology.

- Both the IF++ group and the Blended tariff groups would likely have experienced the same pricing trends after implementation of the IFR cap, had the cap not been introduced.
- That any pass-through would have been implemented by the point in time the PSR chooses for its estimation (the “second period” in the methodology paper). The periods selected by the PSR should be relevant to the question being asked. If the PSR intends to use this analysis to understand the pass-through of the IFR specifically, then the second period should capture dynamic effects of pass-through, such that the long-run pass-through is measured.
- That the IF++ group would have experienced “full pass-through”.

2.64 It is important that the PSR satisfies itself that there are no general equilibrium effects in the market over the period being scrutinised. Since merchants have the option of changing contract or supplier, switching behaviour over the assessment period would have changed the dynamics of the industry, changed sample sizes, and potentially the trend in the MSC.

2.65 In addition, [✂]. Consequently, the substantially different mix of customer types in these two groups suggests that they may not be suitable comparators.

2.66 Furthermore, there are likely to be differences in churn rate of customers on Blended tariffs compared to customers on IF++ tariffs. As noted above, [✂]. If churn rates are different for SMEs than for large corporates then the effect of the IFR may have led to switching being concentrated in one group (such as the Blended group), and not the other group (the IF++ group). Such an outcome has the potential to invalidate this difference-in-difference approach.

Econometric issues: Consumer vs commercial difference-in-differences approach[19]

2.67 The same general points in the section immediately above also apply to this section.

2.68 In addition, commercial card volumes are small relative to non-commercial card volumes, and usage of commercial cards is concentrated in certain merchant types such as hotels and airports. This raises the possibility that consumer and commercial groups may not have faced the same pricing trends before the implementation of the IFR, and may not be expected to have faced the same pricing trends after the IFR.

Data issues

Burden on Worldpay

2.69 The proposed methodology would impose a very significant burden on Worldpay due to the granularity of the data being requested. Consequently, we request that the PSR consider extending its 4-week response time to its proposed data request on pass-through. We refer to the PSR's Markets Guidance, which states at paragraph 3.8: "before making requests for information and documents, we scope our requests carefully in light of the purpose for which the information is sought, the availability of relevant information from other sources, including information held by the PSR already, and the ease with which respondents can provide the information we need".

[19] This section also addresses the PSR’s third bullet point at para. 5.2 of the Methodology.

2.70 In particular, the data is to be (i) gathered at the individual merchant level, (ii) split between card type for transactions, (iii) split by region (for each different card type), and (iv) split by transaction type. The PSR is also proposing to use 5 years' worth of monthly data. This is likely to involve many thousands of individual observations. Based on the proposals in the Methodology, Worldpay estimates that it would need to provide [✂] data points per customer, as well as additional base customer information, to the PSR.

2.71 Indeed, the Methodology states that the PSR proposes to rely "on a sample of merchants served by each of the acquirers in scope of the analysis", which seems to acknowledge that the proposed approach will be extremely data intensive on the parties. However, it is unclear how the PSR proposes to select a sample of merchants or how representative this would be (e.g. of SME customers, larger customers that negotiate bespoke pricing, or new customers who may have been enticed to switch with lower fees). The PSR simply states that it would be a "random selection" of merchants.

Possibility of biased samples

2.72 The approach to sampling also only proposes to use those merchants that have been with the acquirer for a full 3-year duration or up to the point at which they ceased being customer (with three overlapping 3-year samples being considered).

2.73 As noted above, the PSR also proposes to collect data on the types of tariff that the merchants are on. However, it only proposes to split between "Blended", "IF+", "IF++", "Other", and "unknown" tariff categories. This does not adequately capture the number and variety of the different tariffs that Worldpay offers, which raises the concern that there may be differences between the MSC for different merchants due to differences in their tariff, which is not being controlled for in the Methodology.

2.74 The PSR will need to take care to ensure that data across firms are sufficiently comparable that they can be aggregated into a single dataset. We ask that the PSR is fully transparent with regard to any assumptions it takes in this area.

Limited/no availability of many of the proposed data points

2.75 In the event that only a portion of firms in the sample are able to provide data that meets the PSR's eventual requirements, we welcome views on how the PSR would proceed with its analysis, and what inferences it considers could be drawn from a smaller sample.

2.76 A particular concern would be possible bias in the data that would be available, which excludes some groups that are economically relevant and could counterbalance a biased sample of available data.

2.77 In addition, we note that [✂]. This raises a question as to whether data across card acquirers will be sufficiently comparable, as the allocation approach taken by acquirer may differ.

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