

RBAFOI-252606

Documents were sought by an applicant pertaining to the Reserve Bank of Australia's Issuer Costs Study.

For details about the study, please see the Bank's 'Review of Retail Payments Regulation' wepage. https://www.rba.gov.au/payments-and-infrastructure/review-of-retail-payments-regulation/about.html

Summary of Request	 Any document considering or recording whether the RBA should include particular categories (including, but not limited to, the cost of funds) in the categories of eligible costs to be taken into account in the Issuer Costs Study. Any document considering, explaining or summarising any change to the methodology to be adopted in the Issuer Costs Study compared to similar studies carried out by the RBA in the past. Any document recording, setting out or explaining the calculation of the estimated \$1.2 billion in surcharge savings referred to in the Consultation Paper (see pages 9, 10, 19 and 69 of the Consultation Paper).
Notes/context to any specific documents released:	Document 2 represents work by an intern/analyst

The Cost of Banning Surcharging on Debit and/or Credit Cards

Intern Note Presentation

Payment Systems Regulation January 2025

D25/10058 GENERAL

Estimated cost of surcharging:

\$980 Million*

Or 124,050,632 serves of Caf butter chicken

- \$400 million worth of visa/mastercard debit surcharges
- \$470 million worth of visa/mastercard credit surcharges
 - \$110 million worth of eftpos surcharges

*Excludes American Express

From: CONNOLLY, Ellis

Sent: Friday, 2 May 2025 3:30 PM

To: Cc:

Subject: RE: Surcharging analysis in recent months [SEC=OFFICIAL]

Thanks – super helpful

From: @rba.gov.au>

Sent: Friday, 2 May 2025 3:17 PM

To: CONNOLLY, Ellis @rba.gov.au>

Cc: @rba.gov.au>; @rba.gov.au>

Subject: Surcharging analysis in recent months [SEC=OFFICIAL]

Hi Ellis,

As per your request, please see the analysis relating to surcharging that the team has completed so far. Most of this has been copied from the surcharging policy discussion, so let me know if you'd like more detail on any particular piece.

If I think of anything else I'll let you know! I believe there's some other WIP items, like treatment of taxis note (link).

6. Summary analysis of merchant-level surcharging data ((excel file here)

Main findings:

• Consumers paid **\$1.2 billion in surcharges** in 2023/24 (expanding economy)

\$900m calculation over the entire

- 11% of merchants are surcharging at an average rate of just over 1.1%
- Surcharging propensity increases with size, but drops sharply for the largest businesses
- Hospitality merchants surcharge the most at around one-third of merchants

UNIMPUTED, INCLUDING MICRO (of known)		
Split	Surcharging propensity	Average surcharge
Total	11.67%	1.14%
Size		
Micro	5.92%	1.44%
Large Micro	15.78%	1.26%
Small	23.22%	1.07%
Medium	21.20%	0.90%
Large	11.98%	0.82%
Payment Plan		

Simple	8.65%	1.54%
Blended	19.61%	1.33%
IC++	12.08%	1.16%
Industry		
Hospitality	33.01%	1.08%
Retail	10.11%	0.89%
Airlines	3.76%	1.20%
Acquirer type		
Non-bank	10.33%	1.00%
Bank	9.71%	0.81%

Thanks,

Payments Efficiency & Competition | Payments Policy Department RESERVE BANK OF AUSTRALIA | w: $\underline{www.rba.gov.au}$

Sent: Wednesday, 30 July 2025 11:01 AM

@rba.gov.au> To:

Cc: CONNOLLY, Ellis @rba.gov.au>;

Subject: Credit Card cost study

⚠ EXTERNAL EMAIL: Do not click any links or open any attachments unless you trust the sender and know the content is safe.

Thank you for the opportunity to provide information and input to the RBA in regard to interchange cost studies on credit cards. We would be pleased to discuss the various issues with you and your team once you have had the time to review our input.

We would not believe that, as a percentage of domestic purchase value, non-funding eligible interchange costs for credit cards would have moved significantly between 2019 and 2024/5, hence our concern regarding the 0.3% noted in the consultation paper and the noted above. The causes of this difference are likely to include the definitions of "eligible costs", where used the original 2002 definitions and the RBA appears to have used a modified set (as per the table that you provided), and perhaps the short timeframe provided to participants to gather the cost data (our study took over 6 months to complete); the definitional differences are discussed in more detail below.

ELIGIBLE COSTS

As Michele Bullock would recall, there was a lot of discussion about what should be included in the eligible costs for credit

card interchange back in 2002. Indeed, the Standard in the regulation (RBA Regulations 2002.pdf attached) was open to some interpretation. Hence a more specific Guidance Note was issued, which I discuss below in relation to your eligibility table.

Eligible costs (categories from the issuer cost study)	Excluded from eligible cost calculations
Au horisa ion and Transaction Processing	Account Overheads, Set up and Maintenance
Fees and Other Costs associated with Mobile	Card Production and Delivery
Wallets	3. Product Development
Fraud	Cardholder reward programs
Net Scheme Fees	5. Disputes, chargebacks and collections and
	write-offs
	6. Cost of Funds
	7. Cost of Capital

In regard to the table that you provided above in relation to costs to be excluded from credit card interchange calculations, we would refer to the attached RBA Regulations 2002_guidance note.pdf document. In this Guidance Note, which was used to set the original weighted average level of 0.55% in 2003, we note against your exclusions –

- Item 1, Account Overheads, Set up and Maintenance:
 - Paragraphs (i) and (ii) on Page 3 states, "to the extent they arise out of the relevant activities", eligible costs include
 - "direct internal staff costs (including for example salaries, benefits, recruitment, travel and related costs, where charged directly to the credit card issuing business), and direct ongoing costs of systems, materials, premises and equipment"
 - "direct software, hardware and other capital expenditures, amortised according to accounting requirements for the relevant time period"
 - Paragraph (iv) on Page 3 states eligible costs include "internal charges or allocations from other business units where costs have been identified through appropriate activity-based methods. These could include, for example, the share of call centre, branch and other processing staff and related costs incurred in responding to authorisation or retrieval requests, chargebacks, lost/stolen card reports and customer enquiries on suspect transactions. The allocation of telecommunication costs in respect of processing and authorisation activities are also included."
 - Paragraph (vi) on Page 4 states eligible costs include "maintaining and updating card authorisation files".
- Item 2, Card Production and Delivery: under 'Fraud and fraud prevention', eligible costs include -
 - Paragraph (vi) on Page 4 "development and production of card security features where such features are implemented principally for the purposes of fraud prevention"
 - o Paragraph (ix) on Page 5 "secure delivery of cards where such delivery is employed principally to prevent fraud"

However, we agree that under 'Fraud and fraud prevention' on Page 5, it is stated that "Costs that are not principally related to fraud prevention, such as routine card production and delivery, statement production and credit assessment on new accounts, are not included in eligible costs"

- Item 3, Product Development: under 'Fraud and fraud prevention', eligible costs include, as per paragraph (vi) on Page 4, "development and production of card security features where such features are implemented principally for the purposes of fraud prevention"
- Item 5, Disputes, chargebacks and collections and write-offs: under 'Transaction processing and authorisation", paragraphs (viii), (ix) and (x) on Page 4 state eligible costs include "receiving and processing chargebacks and representments", "net chargeback write-offs" and "scheme fees for processing and authorisation, clearing and settlement, retrievals and chargebacks".

The collection and collation of the required data inside each credit card issuer in 2002/3 was complex, and we developed a detailed Cost Manual, some 90 pages in length in order to assist each issuer organisation. Our consultants spent a great deal of time with the relevant managers and accountants inside each card issuer, in order to ensure that the correct figures were provided as per the RBA request and requirement for setting the new Standard.

We hope that the above is helpful and of assistance to you. We look forward to hearing from you and discussing the above.

All the best

Sent: Friday, 25 July 2025 2:06 PM

To: @rba.gov.au>

Cc: CONNOLLY, Ellis <u>@rba.gov.au</u>>;

Subject: RE: Credit Card cost study [SEC=OFFICIAL]

Thank you for your email.

Likewise, we will not be permitted to share any information about individual participant data and will provide only aggregated data & calculations.

We would probably dispute whether some of your excluded items from eligible costs have always been excluded, as, having been personally involved in the original 2002 cost study as sanctioned by the RBA, some of them used to be "in". Hence there may be a wrinkle in "consistent with previous cost study methodologies adopted by the RBA", acknowledging that cost of funds is now considered "out".

We will collate some information to share with you (targeting to provide next week) and look forward to meeting when you have had a chance to review.

All the best

From: B@rba.gov.au>

Sent: Friday, 25 July 2025 1:50 PM

 To:
 K@rba.gov.au>

 Cc:
 CONNOLLY, Ellis
 @rba.gov.au>

Subject: RE: Credit Card cost study [SEC=OFFICIAL]

To help with your reconciliation the included cost categories for the issuer cost study are as follows:

Eligible costs (categories from the issuer cost study)	Excluded from eligible cost calculations
Au horisa ion and Transaction Processing	8. Account Overheads, Set up and Maintenance
Fees and Other Costs associated with Mobile	Card Production and Delivery
Wallets	10. Product Development
3. Fraud	11. Cardholder reward programs
4. Net Scheme Fees	12. Disputes, chargebacks and collections and
	write-offs
	13. Cost of Funds
	14. Cost of Capital

This is consistent with previous cost study methodologies adopted by the RBA, with the exception of 'cost of funds'. An explanation for the exclusion of 'cost of funds' is available in Chapter 3 of the Consultation Paper. The exclusion of other items follows the RBA's historical approach to assessing interchange through the lens of how best to support efficiency and competition in the Australian payments system. We nonetheless collected information on those items to inform a broader picture of the card issuing market when reviewing our regulatory settings.

Before meeting we'd ask that you send through the material you are willing to share from your 2019/20 study, and any questions or clarifications you have. It's likely that definitional differences and time between the studies account for much of the discrepancy. We can then review and suggest some meeting times. Just note because of secrecy provisions in the RBA Act we can't share any information about individual participants or their data.

Kind regards,

Sent: Friday, 25 July 2025 10:26 AM

To: @rba.gov.au>; @rba.gov.au> Cc: CONNOLLY, Ellis @rba.gov.au>

Subject: RE: Credit Card cost study [SEC=OFFICIAL]

A EXTERNAL EMAIL: Do not click any links or open any attachments unless you trust the sender and know the content is safe.

We have been given approval by our client to engage with you on our 2019/20 cost study on credit card interchange, which used the as sanctioned by the RBA). There appear to be significant same methodology as we used differences in the costs calculated in our 2019/20 study and that conducted by the bank earlier this year, hence we are keen to discuss and reconcile these differences.

Please let me know when might be a good time to meet.

I look forward to hearing from you.

All the best

From:

Sent: Friday, 18 July 2025 7:16 PM

To: 'CONNOLLY, Ellis' @rba.gov.au>; @rba.gov.au>; @rba.gov.au>;

@rba.gov.au>

Subject: RE: Credit Card cost study [SEC=OFFICIAL]

Ellis

Many thanks for your quick response, and will liaise with

I am seeking approval from our 2019/20 cost study client to go through our findings with you, and will let you know how that progresses. In the meantime, we would be happy to discuss at a high level the cost discrepancies highlighted below. Do let me know if that would be helpful and when might be a good time.

All the best in your new role in keeping things stable!

All the best

From: CONNOLLY, Ellis @rba.gov.au>

Sent: Friday, 18 July 2025 8:08 AM

To:

Cc: @rba.gov.au>; @rba.gov.au>;

@rba.gov.au>

Subject: RE: Credit Card cost study [SEC=OFFICIAL]

Thank you for this email. We would happily receive any information that you think will assist us with advising the PSB on how best to promote the efficiency, competitiveness and safety of Australia's Payments System.

has moved on to a new role in our Financial Stability Department, so the best people to contact going forward on payments efficiency and competition issues are (emails in the CC list).

Best regards,

FIlis

Sent: Thursday, 17 July 2025 8:38 PM @rba.gov.au>

Cc: CONNOLLY, Ellis @rba.gov.au>;

Subject: Credit Card cost study

A EXTERNAL EMAIL: Do not click any links or open any attachments unless you trust the sender and know the content is safe.

I hope that all is well.

As you might imagine, we have been closely reading the consultation paper on the "Review of Merchant Card Payment Costs and Surcharging" released this week, and dealing with the tsunami of inbound emails that it has caused for us - but all good for the consulting business.

I think you are aware that we undertook a credit card cost study, using the RBA's 2002 methodology, in 2019/20, with some of its submission made to the RBA last December. Indeed, this led to a video meeting with members of the RBA team in February and our providing them with the data collection forms (as originally approved by the RBA in 2002,

Given our February discussions and the provision of the collection sheets, we assume that the RBA Cost Study referenced in this week's consultation paper would have used the same methodology - but it is hard for us to reconcile this, as the numbers have come out so different from our 2019/20 study (as shown below). As per the study that we conducted in 2002, we only collected data on Australian issued credit cards (split consumer & commercial) with the eligible costs then apportioned to only purchases made at Australian merchants, in order to calculate the inputs to interchange levels (i.e. we did collect data on international purchases and cash advances, but then focussed on domestic purchases in our calculations).

As shown below, we have major differences in costs as a percentage of domestic purchase value in Fraud (which included mitigation and losses) and Authorisation & Transaction Processing (in our case, including the cost of digital wallets and an allocation of customer servicing costs [including portions of call centre & branch costs as per 2002]). In our study, we had small issuers, covering 53% value and 56% volume of domestic credit card purchases - so it unlikely that the differences are caused by the difference in sample participants. Another anomaly is your conclusion on small issuers vs the major banks, which is reversed from our own: that is, because the smaller issuers spend much less on their customer interface and digital investment (mobile app, online banking, call centre, branches, etc), we calculated their eligible costs as a percentage of domestic purchase value as being slightly below the major banks.

RBA Cost Study 2025		Cost Stud 2019/20	у	
	Consumer credit ^(a)			
	% ^(b)			
 Eligible costs Authorisation and transaction processing Fees and other costs associated with mobile wallet providers Fraud Cost of funding interest-free periods Net scheme fees 	0.02 0.02 0.03 0.12 0.06	0.085 0.0634 0.06	←	Major Differences
Total eligible costs - Excluding cost of funding interest-free period - Including cost of funding interest-free period	0.13 0.25	0.479		

I am seeking approval from our client for the 2019/20 cost study to provide more detail to you, in order to explore where the differences have arisen. But, as you can see, even discounting the cost of funding the interest-free period (the eligibility of which appears to now be questioned in the consultation paper), we get to an eligible costs level of 0.416% in our study.

I hope that the above is helpful, and we would be happy to discuss it further with you (with full disclosure of figures subject to our client's approval).

All the best

Sent: Wednesday, 12 March 2025 6:22 PM

To:

Subject: RE: Issuer cost study update [SEC=OFFICIAL]

Hi , isn't it safe to use the definition of 'eligible costs' in the 2005 document that you linked to on 'Common Benchmark for the Setting of Credit Card Interchange Fees', since that established the 0.5% common benchmark which has not been changed since (although, yes, it would be good to make sure that there were no relevant decisions subsequent to this)? From memory template that he sent through referred to the Bank's definition of 'eligible costs' – did he provide a specific RBA source or reference document?

(The internal papers presumably provide a heap of useful info on the various considerations, but we only need to refer to the public documents to determine whether the definition of 'eligible costs' was refined after 2005.)

Cheers,

From: @rba.gov.au>
Sent: Wednesday, 12 March 2025 5:24 PM

To: @rba.gov.au>; CONNOLLY, Ellis @rba.gov.au>

Cc: @rba.gov.au>; @rba.gov.au>;

@rba.gov.au>

Subject: RE: Issuer cost study update [SEC=OFFICIAL]

Thanks .

I think you're still checked in to the explanatory notes on TRIM.

Re your question - I still don't have a firm grasp of what was eventually adopted as 'eligible costs'. The papers I identified below paint a picture – but I haven't yet located the final version that was used for calculating the cap/regulations that were put in place (for example, while I know inclusion/exclusion of funding costs/loyalty programs as part of interchange was a contentious issue, I'm not yet sure where we ultimately landed on the point). As suggested previously, I think we would have more comfort if we spent the time to do the full chronology of what's happened since the regulations from the early 2000s, including the subsequent cost studies/reviews. However, this would likely delay issuing the notices.

Having said that, I think the field/range of costs would likely be captured by the current template – there is always a risk that without knowing exactly what we want to include/exclude, we might later decide there is some category of costs we think should be excluded but which hasn't been disaggregated/split out/specifically identified under the current template (it would likely be under overheads – but the high-level approach we have adopted for overheads has been to just allow the issuers to apportion how they see fit in order to simplify/reduce burden). Further, it may be that as credit card markets have become more mature, we may decide what was allowed to be included in the early 2000s no longer applies now (i.e. costs associated with growing the market, overcoming network effects, etc.).

Let me know me how you think we should proceed, I'm happy to do some more work on finding a better answer to your question tomorrow.

Cheers,

From: @rba.gov.au>
Sent: Wednesday, 12 March 2025 4:33 PM

To: <u>@rba.gov.au</u>>; CONNOLLY, Ellis <u>@rba.gov.au</u>>

Cc: @rba.gov.au>; @rba.gov.au>;

@rba.gov.au>

Subject: RE: Issuer cost study update [SEC=OFFICIAL]

Thanks very much . I think this is looking good. I've added a few comments in the word doc. My overarching question would be: are you comfortable that we could calculate issuer 'eligible costs' - based on the definitions originally used in the early 2000s – using this template?

Thanks again,

From: <u>@rba.gov.au</u>>
Sent: Wednesday, 12 March 2025 9:11 AM

To: @rba.gov.au>; CONNOLLY, Ellis @rba.gov.au>

Cc: <u>@rba.gov.au</u>>; <u>@rba.gov.au</u>>;

@rba.gov.au>

Subject: RE: Issuer cost study update [SEC=OFFICIAL]

Thanks

Happy for @CONNOLLY, Ellis to look at it concurrently (the explanatory notes: D25/46333 (e) (tracked) and the data template: D25/50190 (e) (untracked) for 'incl. prepaid'), though the documents are on TRIM not sharepoint.

Cheers,

From: @rba.gov.au>
Sent: Wednesday, 12 March 2025 8:56 AM
To: @rba.gov.au>

Cc: @rba.gov.au>; @rba.gov.au>;

@rba.gov.au>

Subject: RE: Issuer cost study update [SEC=OFFICIAL]

Ok fantastic, thanks I'll take a look at this as soon as I can (today). Might be worth getting Ellis to take a look concurrently given the time sensitivity? Or would you rather wait?

Ta,

From: @rba.gov.au>
Sent: Tuesday, 11 March 2025 4:58 PM

To: rba.gov.au>

Cc: <u>@rba.gov.au</u>>; <u>@rba.gov.au</u>>;

@rba.gov.au>

Subject: RE: Issuer cost study update [SEC=OFFICIAL]

Hi ,

I've updated the explanatory notes: <u>D25/46333</u> (e) (tracked) and the data template: <u>D25/50190</u> (e) (untracked) for 'incl. prepaid' – these are now ready for your review. There are a few outstanding items I would appreciate

your thoughts on in the comments – happy to discuss to resolve but also happy for you to make a call. I will update the other version (excl. prepaid) once we settle these.

I've also updated the templates 26 notice/cover letter (untracked), but these should be less controversial.

Cheers,

From:

Sent: Friday, 7 March 2025 5:41 PM **To:** @rba.gov.au>

Cc: @rba.gov.au>; @rba.gov.au>;

@rba.gov.au>

Subject: RE: Issuer cost study update [SEC=OFFICIAL]

Hi

Further to our discussion this morning, I had a dig into what happened back in 2000/2001 and that's meant I haven't been able to completely finalise the updates to the template or explanatory notes (though here is the latest version if you wanted to have a look on Monday: D25/46333).

From what I can gather, it looks like the initial interchange cost study in 2000 was conducted as a joint study with the ACCC and by the external consultants (Gans & King). I haven't been able to locate on TRIM the precise requests/notices that were used.

A series of PSB papers from 2000-2001 gives a good summary of the analysis and consideration of the issues, as well as the rationale and thinking back then around which cost categories should/should not be included for the purposes of calculating appropriate interchange levels: D00/6528, D01/1410, D01/9146, D01/16225.

this might be a good starting point for any group discussion. Having briefly skimmed these papers for now, it seems that there were several obstacles/challenges encountered and strong pushback from the schemes and issuers, so it might be worth trying to prepare a chronology of sorts (like what we did for surcharging) to get our heads around what happened and how we addressed or dealt with those issues and where we eventually landed (including extending it through to every review of the settings since and subsequent cost studies done in 2007 and 2014). Perhaps if have some capacity, I think this will be invaluable for our analysis and decision-making on interchange (and could double as background reading that may need to be done anyway).

Focusing back on what we need to do to finalise the cost study requests, I have found what seems to be subsequent data collected between 2000-2004: <u>D06/17656</u>, which contains what I assume to be the templates used, as well as some further notes from the respondents on more detailed cost items. The categories are generally consistent with what we have proposed for this time round and do not appear to

Sent: Thursday, 13 February 2025 12:55 PM

To:

Subject: RE: Interchange - draft cost study requests/templates [SEC=OFFICIAL]

Follow Up Flag: Follow up Flag Status: Completed

Thanks , this is looking good. A few more comments:

- Ellis is keen to make sure we're capturing data on all the sorts of specific costs that we might want to exclude. I think the most obvious thing that is missing is travel insurance can you please include that in some way (and maybe include some catch-all 'other cardholder benefits')?
- Rather than 'Time value of money', can we be a bit more explicit, something like 'Funding interest-free period'?
- Were you planning on including some draft definitions in this initial feedback round? The issuers may find it difficult to provide comprehensive feedback without this, and it would raise the risk that we don't end up hitting the mark with some of the detailed definitions.
- On the transaction data, institutions quite reasonably get frustrated with us when we ask for data that they already provide to us through other reporting perhaps we could ask the RPS team to identify which of the data series we want are already collected, and then we could just ask the institutions for the data that we don't already have?

Happy for you to go to Ellis, once you've addressed/considered all this – no need to run it past me again.

Thanks,

From: @rba.gov.au>
Sent: Wednesday, February 12, 2025 11:38 PM

To: @rba.gov.au>

Subject: RE: Interchange - draft cost study requests/templates [SEC=OFFICIAL]

Hi .

Thanks for the useful feedback. I've now:

- Taken out
- Taken out ATMs
- Included Visa/MC debit in foreign consumer (but not foreign commercial)
- Overheads left this in for now pending feedback from the banks
- Form factors Added more rows to the template within the cost categories you identified. For some of these categories, the costs may be incremental, whereas for others they will be mutually exclusive. We will probably need to address this in the instructions
- Cost of funds/capital Tried to split this into components of the costs of providing retail credit, but looking at the 2014 responses the FIs seem to have been able to respond to the previous split between cost of funds vs cost of capital
- **Fixed variable** That's what they used in 2014. And the responses look like they've just marked the box where applicable (i.e. sometimes for both fixed and variable). I tried to look into how they dealt with this in the final analysis but ran into some access issues.

• **Transaction data** – Took this out of the template. I did think we already had this through the RPS, but thought perhaps asking them would be a good check/reconciliation.

This should be enough for Ellis to run his eye over? I'll keep working on it in the background based on further research of how the previous cost study played out.

I've also prepared the following list of issuers based on <u>list</u>. Do we also want to go out to some smaller issuers given the arguments around interchange being key to innovation/competition from smaller issuers? I can maybe try find some from the compliance/net comp list that aren't in the RPS but also do credit. Alternatively, we could cut it off at 7 to minimise burden.

- 1. ANZ
- 2. CBA
- 3. NAB
- 4. Westpac
- 5. Cuscal
- 6. Bendigo-Adelaide
- **7. ING**
- 8. Suncorp
- 9. Heritage
- 10. Indue
- 11. Macquarie

I'll start preparing the communications to issuers seeking feedback tomorrow for you to review.

Cheers,

From: <u>@rba.gov.au</u>>
Sent: Tuesday, February 11, 2025 3:24 PM
To: @rba.gov.au>

Subject: RE: Interchange - draft cost study requests/templates [SEC=OFFICIAL]

Hi , thanks very much for putting this together. I think it is coming along nicely. My feedback, including responses to your questions is below:

- ATMs. I agree that I don't think we need to collect the full suite of cost data for ATM transactions.
- **Foreign cards.** For foreign card transactions, should we also include Mastercard and Visa debit (presumably these still get used quite a bit overseas and the associated costs is relevant to any interchange cap).
- Account set-up, overheads and maintenance. I think let's treat them the same as the other cost categories in the template, and we can then test your assumption by explicitly asking issuers whether we should just collect these in aggregate and then apportion by number/value.
- Form factors. I wonder whether the form factor categories could be: physical card; mobile device; and online (and point-of-sale cash-out transactions where appropriate). And I wonder whether we should ask for the split between form factors for the following costs: card production & delivery; authorisation & transaction processing; product development; and fraud. We could then make it clear that one of our objectives is to understand the cost of mobile device transactions, and the cost of online transactions, relative to other

transactions, and ask whether our approach is appropriate (or whether we need to break down some other cost categories by form factor). On mobile wallets, I wonder whether we should have an explicit subcategory 'Mobile wallet fees (e.g. Apple Pay)' under 'Other fees'?

- Cost of funds/capital. Can these be combined, particularly with a sub-category 'Financing interest-free
 periods' or perhaps something more general, in addition to the 'Credit risks' and 'Operating risks' subcategories?
- **Fixed/variable.** I'm concerned about the possibility that each category/sub-category will be a mix of fixed and variable costs, which would mean that the tick box approach wouldn't work is that what they did in the 2014 survey? One option would be to ask the issuers about the best approach to determine fixed vs variable costs.
- Transaction data. I presume our plan is to populate the transaction data (in red) ourselves using the RPS? And so we wouldn't include it in the template sent to issuers?
- **Responses to 2014 survey.** Agree it would be useful to have a look at the 2014 survey responses/write-up to see if there are any lessons to be learned (time permitting).

it would be good to get something to Ellis by the end of tomorrow to get his reactions. Let me know if you want to chat about any of this – I'm free at 10am and 11am tomorrow if that helps.

Thanks again,

From: @rba.gov.au>
Sent: Friday, February 7, 2025 5:45 PM
To: @rba.gov.au>

Subject: Interchange - draft cost study requests/templates [SEC=OFFICIAL]

Hi

Here's where I've gotten to so far: , I had hoped to provide something high-level like this earlier in the week for your initial reaction but looks like our timing will be delayed somewhat (it's been a busy week). might be able to help as a consultant of sorts if I'm off the mark.

I started with our objectives:

- 1. Determine the appropriate level of debit interchange settings
- 2. Determine the appropriate level of credit interchange settings
- 3. Understand the costs associated with digital wallet transactions
- 4. Understand the costs associated with commercial card transactions
- 5. Determine the costs associated with card transactions at overseas merchants to Australia issuers (as a proxy of costs for inbound transactions and interchange paid by acquirers)

I had a look at the 2014 cost study and US Fed <u>Debit Card Issuer Survey - Calendar Year 2023</u> and tried to adapt what these had as much as I could. I have mostly relied on the 2014 cost study template as the US Fed survey was targeted and in aggregate and didn't allow as much flexibility for accommodating the different objectives identified above.

As a starting point, I think it makes sense to split the costs categories into fixed costs and variable costs. Then to separate out into the following categories:

1. Card production and delivery

- 2. Authorisation & transaction processing (authorisation, C&S)
- 3. Product development
- 4. Rewards
- 5. Disputes
- 6. Chargebacks
- 7. Fraud
- 8. Credit collections/write-offs
- 9. Cost of capital
- 10. Interchange fees (reverse interchange for ATMs)
- 11. Scheme fees
- 12. Other fees
- 13. Other (please specify)

We probably don't need all of these categories, but more granularity allows us to better understand which costs may be better suited to be recovered in other ways or through other fees. It would also give us more confidence as to the accuracy of the reporting (reduce risk of circumvention/overstated costs). Note - I haven't had the time to dig into the responses from the 2014 cost study yet to see which categories made sense and returned useful results.

The main issues were in trying to account for commercial cards and foreign transactions, as well digital wallet/tokenised transactions, as it is hard to know whether these cost differentials (commercial vs consumer, foreign vs domestic), alter key cost categories or we can just have an additional cost category specific to these card types within the broader structure. Alternatively, we could just adopt the scheme fee reporting template and have each distinct type of transaction (i.e. scheme, consumer vs commercial, foreign vs domestic, DP vs DNP, , tokenisation) split out for each cost category.

Let me know what you think.

Cheers,

Payments Efficiency and Competition | Payments Policy Department RESERVE BANK OF AUSTRALIA | Level 23/120 Collins Street, Melbourne VIC 3000 | w: www.rba.gov.au



Surcharging update

PEC team meeting

25 March 2025

What's new?

- Included American Express data in the imputation
- Further cleaning of the data
 - Removing anomalies
 - Checking for consistency
 - Comparing against other datasets
- New statistics!
 - Data make-up and coverage (which merchants and transactions do we have data on?)
 - Surcharging cost to consumers across all card transactions
 - American Express statistics
 - Share of transactions surcharged by value

The Big Number

Across all card transactions, consumers paid approximately \$1.2 billion in surcharges in 2023/24.

This is about \$50 per adult per year in Australia on average.

I scaled up number of \$900 million to cover all the scheme data we receive, which is our best estimate of the total value of card transactions annually.

Pure scale-up: \$1.3 billion

but much of the missing data comes from Woolworths and Coles, who do not surcharge

Summary statistics - Unimputed

UNIMPUTED, INCLUDING MICRO (of known)					
Split	Surcharging propensity	Average surcharge			
Total	11.62% (19.79% excluding	micro)	1.14%		
Size					
Micro		5.90%	1.44%		
Large Micro	1	5.74%	1.26%		
Small	2	3.02%	1.07%		
Medium	2	1.05%	0.90%		
Large	1	1.94%	0.82%		
Payment Plan					
Simple	8.65% (20% excluding	micro)	1.54%		
Blended	1	9.46%	1.33%		
IC++	1	1.89%	1.16%		
Industry					
Hospitality	3	3.01%	1.08%		
Retail	1	.0.02%	0.89%		
Airlines		3.76%	1.20%		
Acquirer type					
Non-bank	3	2.52%	1.02%		
Bank	1	.0.63%	0.84%		

- Micro merchants surcharge at only around 6%
- Average surcharge rates decrease with merchant size (aligning with decreasing CoA)
- More micro merchants on simple plans are surcharging
 - 51% of merchants are on simple plans (majority micro merchants)

2025 RBA CARD ISSUER COST STUDY & RESULTS DOCUMENTATION

Purpose and objectives

The purpose of the Issuer Cost Study (the Study) was to assist in informing the review of interchange settings as part of the RBA's <u>Review of Retail Payments Regulation: Merchant Card Payment Costs and Surcharging</u> (the Review). The aim of the study was to estimate costs to issuers for issuing different types of payment cards and processing different types of transactions, and re-assess whether the RBA's view of 'eligible costs' for inclusion in the calculation of interchange fees remained appropriate.

Further, the Study sought to gather information to better understand any differences in costs associated with card payments incurred by large and smaller issuers. This was in consideration of whether there was a public interest case for differential treatment of small issuers within interchange regulations.

Methodology and study design

The study largely leveraged the same methodology the RBA has used in the past with some modifications to accommodate time constraints, facilitate targeted lines of enquiry and minimise burden to participating institutions. Specifically, the Study sought to estimate the costs to issuers associated with:

- 1. <u>Domestic debit (combined with prepaid)</u> card transactions to assist in the determination of the appropriate level of debit interchange settings
- 2. <u>Domestic credit</u> card transactions to assist in the determination of the appropriate level of credit interchange settings
- 3. <u>Commercial credit</u> card transactions to assess the case for carve-outs for commercial cards from interchange settings
- 4. <u>Foreign</u> card transactions to assess the case for regulation of interchange for inbound foreign card transactions would be appropriate
- 5. <u>Card-present</u> transactions vs. <u>card-not-present</u> transactions to understand whether there are any differences that warrant different interchange settings
- 6. <u>Digital wallet or mobile wallet</u> transactions to assess whether there are any additional costs associated with digital/mobile wallet transactions that warranted special consideration int eh RBA's interchange settings.

The distinction was not made between fixed and variable (marginal) costs for the purposes of this study.

Approach

The RBA made initial contact with prospective respondents setting out the proposed Study, context, high-level objectives and scope of data being sought. The RBA sought feedback from prospective

respondents regarding the proposed data collection and received feedback along the following themes

- Concerns about the ability to meet the RBA's proposed timelines
- Difficulty in apportioning costs across different payment types, particularly for overheads. This could either not be done or assumptions would need to be made.
- Some issuers noted that they did not have full visibility over end-to-end costs associated with card issuing or payments processing
- Most issuers considered that the costs of card transactions incurred by issuers do not differ between smaller and larger merchants
- Some issuers considered that they could not split the costs associated with domestic vs international transactions, whereas some commented that those costs differed significantly
- Most issuers noted it would be difficult to report the costs associated with different form factors (e.g. card-present vs. card-not-present) separately
- The RBA specifically queried the validity of using foreign outbound card transactions as a proxy
 for inbound foreign-card transactions. Three issuers noted concerns over this proxy citing
 potential differences in costs in foreign jurisdictions; five stated they could not comment given
 lack of visibility over foreign issuers and three issuers raised no concerns.

Industry aggregator noted that because it did not have full visibility over end-to-end costs associated with card issuing for all of its issuers, it could not provide a meaningful response to the proposed data collection. suggested the RBA seek data directly from individual issuers and would be happy to assist any issuers that needed access to their data held by to provide a response to the RBA. The RBA engaged and regarding the possibility of those issuers providing costs data, though they were not included in the final study. ²

One issuer suggested that the study should be expanded to include costs to acquirers/merchants as a relevant consideration for reviewing interchange settings, though this was not considered a viable or necessary expansion of scope for the current study.

Two issuers noted that the proposed data collection did not seek costs data specific to domestic commercial debit card transactions and queried whether this was intentional. The team responded that this was intentional as that specific data was not required – in hindsight it would have been useful to collect this information, as the interchange settings for debit (and prepaid) transactions included both personal and commercial card transactions. However, it is reasonable to believe the implications of this are minimal given the costs to issuers associated with commercial card transactions are likely to be similar to those of personal card transactions, and the volume of commercial debit card transactions remaining low relative to personal debit card transactions.

2

elected not to participate; provided the RBA with cost data but did not provide data on volumes, which prevented their inclusion in the aggregate calculations.

The RBA took the feedback on board and made amendments prior to issuing formal requests (see Appendix for further details).

Formal requests for data and information were then sent to respondents pursuant to s 26 of the PSRA

Data collection & processing

The Study sought to collect cost data from the largest issuers, plus a sample of smaller issuers

The following factors were considered in selecting respondents⁵:

- The ability and likelihood of respondents to be able to provide meaningful data, including whether the respondent already reported to the existing RPS collections;
- The need to obtain a sufficient sample to allow analysis and estimates of the costs to issuers in line with the study's objectives;
- The desire to minimise burden on respondents and the industry, given the time constraints;
- Feedback from the study consultation process.

The majority of information was sourced directly from issuers, though data relating to issuers was collected through as the sponsoring scheme member. provided data directly but relied on their sponsoring scheme member , to source wholesale costs relating to transaction processing fees.

Upon receiving the data submissions, each institution's response was subject to a validation process. This involved ensuring that the reported data aligned with the structure and requirements of the data template, comparing reported costs across comparable and peer institutions, and cross-referencing scheme fee data against the annual scheme fee data collection .

This validation process resulted in several institutions resubmitting their data (some more than once).

Transaction data

As part of the analysis, data on transaction values and volumes was required to estimate costs at a sufficiently granular level. Values and volumes data were sourced from the RBA's Retail Payments System (RPS) collection. Where RPS categories did not align with the categories of the cost study additional data was collected from the relevant institutions. Specifically, institutions were asked to provide transaction volumes and values for personal domestic debit cards (which are grouped with commercial debit cards in the RPS).

⁵ See for detailed options regarding respondent selection, data collection and timeline integration.

For institutions which report (either fully or partially) through an industry aggregator, the RBA sourced the required data directly from them. This was the case for

: the

Data collection challenges

Appropriate allocation of costs by issuers between different payment types was a challenge. Instructions were provided to issuers that where joint or common costs needed to be allocated across multiple payment types, an appropriate activity-based cost driver should be used for apportionment (such as the number or value of transactions for each card payment type, or the proportion of staff time spent on a particular activity). Several issuers discussed their chosen apportionment method with the RBA ahead of submission. The RBA reasonably accepted different apportionment methodologies from institutions in line with individualised institutional constraints. Where institutions needed to make assumptions, the RBA requested these be documented with the submission to assist in the aggregate analysis.

While not all institutions provided detailed breakdowns within each category, the data for each institution had values for the total of each cost category. This ensured that the aggregated data captured complete values for each major section, even where subcategory data was unavailable.

Analysis

Cost data were aggregated across each major cost category for all reporting institutions and across relevant institutional groupings and products of interest (i.e. smaller issuers vs large issuers and commercial cards⁶). Transaction volumes and values were then used to calculate cost ratios.

Using the aggregated cost and transaction data, costs were calculated as a percentage of transaction value. For debit transactions, costs were also calculated on a per-transaction basis (in cents) by dividing total dollar-value costs by transaction volume.

Only eligible cost categories were included in the calculations. These categories were:

- Authorisation and transaction processing
- Fraud
- Net scheme fees
- Fees and other costs associated with mobile wallet providers

Summing these categories yielded the total eligible costs of card issuing, expressed both as a percentage of transaction value and on a per-transaction basis, across participating institutions.

Finally, once all calculations were complete, a staff member that did not work on the cost study independently reviewed and verified the results to ensure accuracy and consistency.

⁶ Only reported data for commercial cards.

Adjustments

In the case of it was identified that transaction volumes and values for credit transactions were significantly misreported in the RPS prior to October 2024. To compensate for this issue, the correct seasonally adjusted data from October to December 2024 extrapolated to estimate values for the full 2024 calendar year.

Further, did not provide a breakdown of most costs on an international vs domestic basis despite requests to do so (see Appendix). This was addressed by apportioning costs using the same volume-based approach used by for debit/credit splits.

Results: Issuer Costs of card payments

The cost study indicates that the average eligible issuer costs for both domestic debit and credit card transactions are substantially below the current interchange fee benchmarks and caps (Table 1). The study also finds that smaller issuers tend to incur materially higher issuing costs (Table 2).

Table 1: Estimated eligible issuer costs related to card issuing and processing

	Debit ^(a)		Credit
	Cents	% ^(b)	% ^(b)
Domestic transactions			
 Excluding cost of funding interest-free periods 	5	0.10	0.10
 Including cost of funding interest-free periods 	1	-	0.22
International transactions			
 Excluding cost of funding interest-free periods 	21	0.29	0.32
 Including cost of funding interest-free periods 	-	-	0.45

⁽a) Consumer cards only for domestic transactions

Table 2: Estimated eligible issuer costs related to card issuing and processing, excluding the major banks

	Debit ^(a)		Credit
	Cents	% ^(b)	% ^(b)
Domestic transactions			_
 Excluding cost of funding interest-free periods 	10	0.24	0.25
 Including cost of funding interest-free periods 	-	-	0.54
International transactions			
 Excluding cost of funding interest-free periods 	25	0.44	0.59
- Including cost of funding interest-free periods	-	-	0.85

⁽a) Consumer cards only for domestic transactions

⁽b) Per cent of transaction value

(b) Per cent of transaction value

When domestic credit card costs are disaggregated by card type, the data show that, for issuers offering both personal and commercial credit cards, the average cost of issuing commercial cards is marginally lower than that of personal cards (Table 3).

In addition, the study highlights that the costs associated with international transactions are significantly higher than those for domestic transactions (Tables 1 and 2).

Table 3: Estimated eligible issuer costs related to card issuing and processing on domestic credit cards

	Consumer Credit ^(a)	Commercial Credit
	% ^(b)	% ^(b)
Eligible costs		
 Authorisation and transaction processing 	0.02	0.01
- Fees and other costs associated with mobile wallet providers	0.02	0.01
- Fraud	0.03	0.01
 Cost of funding interest-free periods 	0.12	0.10
- Net scheme fees	0.06	0.06
Total eligible costs		
 Excluding cost of funding interest-free period 	0.13	0.09
 Including cost of funding interest-free period 	0.25	0.19

⁽a) Only includes costs for those institutions that also issue domestic commercial credit cards

Caveats & limitations on interpretation

There are several caveats associated with the collection of the data, processing and analysis through the issuer cost study that should be considered when interpreting the results.

• The data request did not include commercial debit card costs. As a result, the reported debit card costs reflect only personal debit cards, despite interchange regulation applying equivalently to commercial debit cards. However, evidence from the cost study indicates that commercial credit cards are not materially more expensive than personal credit cards, and it is reasonable to infer this is also the case for commercial and personal debit cards, in aggregate.

⁽b) Per cent of transaction value

- There was variation in how institutions apportioned shared costs across card types and transaction categories. Some institutions reported direct costs for each category without apportionment, while others allocated shared costs based on transaction volumes, values, or other internal metrics. This potentially biased costs towards one card type over another, though the direction and extent of any bias cannot be estimated. However, the integrity of the submissions is supported by the fact that each institution applied a method that should have aligned with its internal cost structures, and absent a universally applicable apportionment method, this remains the most appropriate approach.
- Some institutions indicated that certain cost categories were incurred but were unable to accurately quantified or apportioned. This limitation may have led to underestimation in some cost categories and overestimation in others, when aggregated across institutions.
- Due to the inability to directly survey foreign issuers, the cost of processing foreign card transactions by domestic issuers has been used as a proxy for estimating the costs incurred by foreign issuers operating in Australia. While this approach provides a reasonable benchmark, it may not fully reflect the actual cost structures of foreign institutions.

Suggestions for Future Analysis

The study illuminated some preliminary ideas for future analysis which may be worth considering:

- The cost to acquirers or merchants of accepting and processing card payment transactions an
 understanding of the costs to the acquiring side relative to the issuing side may provide
 additional context relevant to interchange regulation.
- 2. Conduct a 'tourist test' or merchant indifference test⁷ to cross reference some findings what would the Australian cost data suggest?
 - i. How would this compare to the cost-based approach in setting interchange?
- 3. Explore whether and the extent to which costs to issuers may differ across the distribution of transaction sizes.
- 4. To what extent costs to issuers differ for specific card types based on cardholder demographics (i.e. standard vs premium) and what this implies for 'user pays' and efficient cost distribution in the payment system.
 - i. For example, are transactions that attract higher costs to issuers largely due to factors such as fraud/risk, or rather the amount of rewards/services provided?

Payments Efficiency & Competition Payments Policy Department 14 July 2025

⁷ This test is based on an interchange level which ensures that merchants are, on average, indifferent to whether customers use cards or cash to pay for their purchases (See <u>EC FAQ</u> for information on what was done in Europe).

Appendix: Additional study & specific Issuer notes

Methodological notes

The RBA took pre-study consultation feedback on board and made amendments as follows prior to making formal requests:

- Changes to the definition of mobile wallet fees to allow for capture and production of data that may otherwise be subject to NDA agreements
- Added for specificity and examples for certain definitions
- Accommodation for issuers that could not split the costs associated with domestic and international transactions
- Accommodation for issuers that could not report on the difference in costs associated with transactions of different form factors

A minor issue arose from the exclusion of commercial debit card transaction costs from the data request. While personal debit card costs were requested, the RPS data used for transaction volume and values does not distinguish between personal and commercial debit cards. This led to an underestimation of costs, as personal card costs were divided by combined personal and commercial transaction volumes. To address this, all institutions that issue commercial debit cards were asked to provide personal debit card transaction volumes and values

. All requested institutions complied.

Unlike previous iterations of cost studies, the RBA request scheme fees net of incentives and rebates. This adjustment was judged necessary as net scheme fees more accurately reflect the true costs faced by issuers, particularly in the context of assessing appropriate interchange fee levels. Excluding scheme incentives would overstate issuer costs, as these incentives are intended to offset scheme fees.

Domestic card transactions

International card transactions

MasterCard and Visa <i>credit</i> (incl. cash advances) Personal and Commercial Total	MasterCard, Visa and eftpos <i>debit</i> Personal Total		MasterCard and Visa credit (incl. cash advances) Personal and Commercial Total	MasterCard and Visa <i>debit</i> Personal and commercial Total	
		cents			cents
0.22%	0.10% \$	0.05 \$ 5.00	0.45%	0.29% \$	0.21 \$ 20.80
0.02%	0.04% \$	0.02 \$ 1.85	0.04%	0.05% \$	0.04 \$ 3.73
0.02%	0.02% \$	0.01	0.06%	0.11% \$	0.08 \$ 8.11
0.12%			0.13%		
0.04%	0.03% \$	0.02	0.21%	0.11% \$	0.08 \$ 8.13
0.02%	0.01% \$	0.01	0.01%	0.01% \$	0.01 \$ 0.83
0.04%			0.15%		
1.45%	0.47% \$	0.23 \$ 22.79	1.97%	0.67% \$	0.47 \$ 47.22
0.54%	0.32% \$	0.16 \$ 15.82	2 0.72%	0.37% \$	0.27 \$ 26.51
0.02%	0.02% \$	0.01 \$ 0.81	0.01%	0.02% \$	0.02 \$ 1.66
0.07%	0.03% \$	0.02 \$ 1.68	0.12%	0.04% \$	0.03 \$ 2.81
0.47%	0.00% \$	0.00 \$ 0.05	0.68%	0.00% \$	0.00 \$ 0.11
0.17%	0.01% \$	0.01 \$ 0.72	0.24%	0.16% \$	0.11 \$ 11.30
0.12%	0.01% \$	0.01 \$ 0.73	0.11%	0.02% \$	0.01 \$ 1.12
0.06%	0.06% \$	0.03 \$ 2.99	0.07%	0.05% \$	0.04 \$ 3.72
1.67%	0.57% \$	0.28 \$ 27.79	2.42%	0.96% \$	0.68 \$ 68.03

Difference between scheme and surcharging data 245,697,624,919.17

Pure estimate to check. \$900 million, scaled up to 100% from 73%

Estimate 906,000,000 Multiplier 1.369863014

Output 1,241,095,890.41 1,278,328,767.12

My estimate 1,161,317,755.45

Difference 79,778,134.97

My estimate #2 1,056,095,095.70 Difference from #1 105,222,659.75 Difference from output 185,000,794.71

Share of the value of transactions facing a surcharge

Surcharges estimate 1,161,317,755.45 transaction FY 23/24 926,640,916,860.71

0.1253%

926640.9169

Share

4	Α	В	E	F	G
68	Total surcharging cost estim	nate			
69					
70	estimate	906,000,000		Share of the value of tra	insactions facing a surcharge
71	Total from this data	329,275,707		Surcharges estimate	\$ 1,235,275,707.41
72	Total from this data	1,235,275,707		Total value of card trans	\$ 926,640,916,860.71
73				Share	13.331%

POST-NOTE SURCHARGING DATA ANALYSIS

Table 1: Merchant size bucketsBased on 'Business numbers by annual turnover in June 2023'^(a) (ABS)

	•	·	
Total value of incoming transactions	Size bucket	Number of merchants	Proportion
0-\$10,000	Tiny business	471,200	39
\$10,000-\$25,000	Small micro business	127,400	11
\$25,000-\$50,000	Micro business	107,600	9
\$50,000-\$200,000	Large micro business	211,700	18
\$200,000-\$2,000,000	Small business	247,700	21
\$2,000,000-\$10,000,000	Medium business	34,400	3
\$10,000,000+	Large business	6,400	0.5
Total	-	1,206,400	100

(a) Number of small businesses in Australia | ASBFEO

Source: ABS Counts of Australian Business (2023)

Table 2Model 1 Reduced Regression Output^(a)

model i nedded neglession odtpat	
Cost_of_acceptance	-3.453***
	(0.142)
Small_business	0.099***
	(0.002)
Medium_business	0.109***
	(0.003)
Restaurant_industry	0.204***
	(0.027)

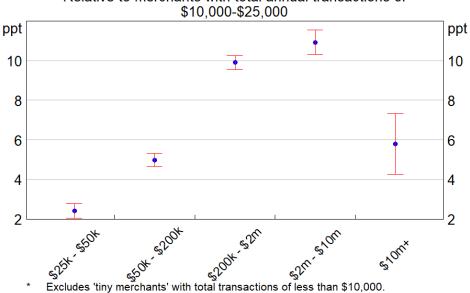
⁽a) See appendix for full regression results.

Notes: ***, **, and * denote 1, 5, and 10 per cent significance, respectively. Clustered standard errors are reported in brackets.

Size coefficients graph

The graph below shows the impact of merchant size on surcharging propensity. There appears to be a positive relationship as a business grows from \$25,000 in total transactions up to \$10,000,000, which then drops off for the largest category of merchants. This graph uses a base category of 'small micro businesses' (\$10,000-\$25,000).

Effects of Merchant Size on Surcharging Propensity Relative to merchants with total annual transactions of



Source: RBA.

Intern Payment Systems Regulation Payments Policy Department 24 January 2025

Appendix

Regression results

Model 1	Dependent variable:
	surcharging_binary
agg_avg_coa	-3.453***
	(0.142)
acquirer_typefee free	0.800^{***}
	(0.003)
acquirer_typenon-bank	0.076***
	(0.001)
size_bucketmicro business	0.024***
	(0.002)
size_bucketlarge micro business	0.050^{***}
	(0.002)
size_bucketsmall business	0.099***
	(0.002)
size_bucketmedium business	0.109***
	(0.003)
size_bucketlarge business	0.058^{***}
	(0.008)
planBlended	-0.039***
	(0.001)
planIC++	-0.010***
	(0.002)
planOther	-0.264
	(0.340)
industryBusiness_Services	0.032
	(0.027)
industryCommunication	0.027
	(0.029)
industryEducation	0.023
	(0.027)
industryHealth_Care_Services	0.033
	(0.027)
industryLogding	0.060**
	(0.027)
industryOil_Gas	-0.021
	(0.027)
industryOther	-0.004
	(0.028)
industryRestaurant	0.204***
. 1 . D . 1	(0.027)
industryRetail	0.045*

	(0.027)
industryTransportation	0.062^{**}
	(0.028)
industryTravel	-0.0003
	(0.028)
Constant	0.040
	(0.027)
Observations	456,201
\mathbb{R}^2	0.188
Adjusted R ²	0.188
Residual Std. Error	0.340 (df = 456178)
F Statistic	$4,788.292^{***}$ (df = 22; 456178)
Note:	*p**p***p<0.01