# Regulatory intervention in the payment card industry by the Reserve Bank of Australia

## Analysis of the evidence

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# EXECUTIVE SUMMARY

Since 2003, the Reserve Bank of Australia (RBA) has implemented a series of regulations affecting the payment card industry in Australia. Most notably, the RBA reduced the interchange fee on four-party credit cards by approximately 50% and prohibited no-surcharge rules. Prior to these regulations, interchange fees on credit card transactions averaged approximately 0.95% and, while merchants that accepted MasterCard and Visa payment cards were allowed to offer cash discounts and to suggest that customers use other methods of payment, they were not allowed to apply surcharges on transactions conducted using a payment card.

The RBA is currently in the process of reviewing its regulation of Australia's payment card industry. On 21 April 2008, the RBA issued its preliminary conclusions concerning the effects of its regulations and invited public comment. This paper responds to the RBA's invitation by presenting a thorough analysis of the effects of the RBA's regulations and their impact on final consumers.[1]

Regulation should be employed only if there is clear evidence of a market failure and only if there is reason to believe that regulation is likely to benefit consumers. For the reasons explained in this paper, the market failures alleged (though not substantiated) by the RBA do not justify continuation of regulatory intervention in the payment card industry in Australia.

Further, the RBA's regulations have clearly harmed consumers by causing higher cardholder fees and less valuable reward programmes and by reducing the incentives of issuers of four-party cards to invest and innovate. At the same time, there is no evidence that these losses to consumers have been offset by reductions in retail prices or improvements in the quality of retailer service. The empirical evidence thus provides no support for the view that consumers have derived any net benefits from the intervention.

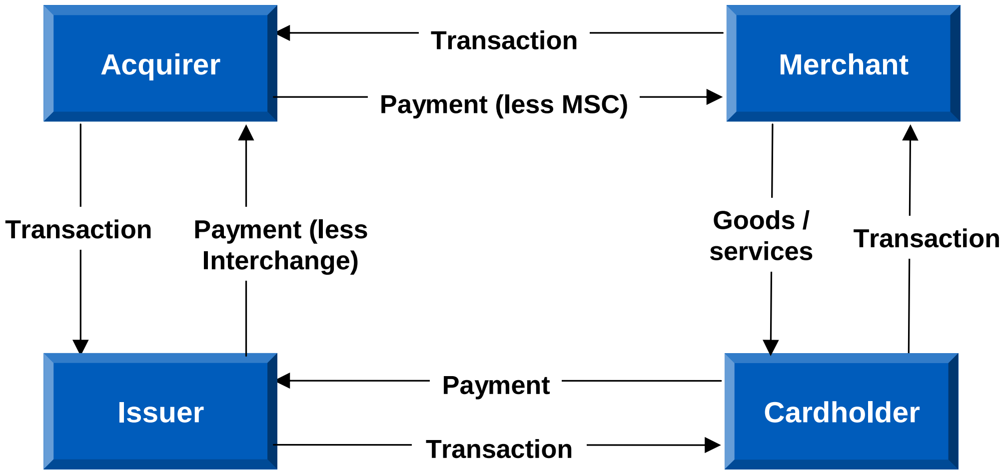
Payment card systems such as MasterCard and Visa involve four main parties, in addition to the systems themselves:

- the cardholder;
- the institution that provides the card to the cardholder – the issuer;
- the merchant that provides the goods or services to the cardholder; and
- the institution that provides services to the merchant – the acquirer.

1 Our research has been funded by MasterCard Worldwide, but the views expressed in this paper are our personal views, reflecting our independent analysis of the evidence. The views expressed here are those of the authors only. They should not be regarded as the views of CRA International, or necessarily to reflect the views of other economists employed by or affiliated with CRA International.

The following diagram illustrates a typical transaction in a four-party card system. The cardholder uses his or her card to make a purchase from a merchant. The acquiring institution makes a payment to the merchant equal to the retail price less a "merchant service charge" (MSC). The average merchant service charge in Australia on Visa and MasterCard credit card transactions currently is approximately 0.80%. The acquiring institution receives a payment from the card-issuing institution equal to the retail price less an "interchange fee". The average interchange fee on Visa and MasterCard credit card transactions in Australia is now approximately 0.50%.

The interchange fee is a cost from the perspective of the acquiring institution and affects the level of merchant service charges. The interchange fee, however, is a source of revenues from the perspective of issuing institutions. Issuers incur a variety of costs, including marketing to new cardholders, providing service to existing cardholders, extending credit, preventing fraud, etc. Revenues from interchange fees help issuers recover costs and help issuers hold down cardholder fees and maintain card benefits such as interest-free periods and reward programmes.




The RBA intervened in the payment card industry because it believed that interchange fees and other aspects of conduct in the payment card industry were reducing the efficiency of the payment system in Australia. The RBA felt that, in the absence of surcharges for credit card purchases, a consumer has an incentive to use a credit card for a transaction that could have been made with a debit card because the consumer pays the same price regardless of the method of payment and yet, when the consumer uses a credit card, he or she can delay payment for a period of time on an interest-free basis and can realise other benefits such as reward points. The RBA claimed that this incentive to use credit cards instead of debit cards results in economic inefficiency because, according to the results of a Joint Study conducted by the RBA and the Australian Competition and Consumer Commission (ACCC) in 2000 (and updated by the RBA in 2007), transactions conducted using credit cards consume significantly more real resources (i.e. were significantly more costly in social terms) than transactions conducted using EFTPOS debit cards (a domestic debit card scheme owned and operated by the Australian banks).

The RBA claimed that interchange fees exacerbate this alleged distortion in the price signals perceived by consumers with respect to their choice of a means of payment because revenue from interchange fees helps finance card benefits (e.g. the interest-free period and reward points) offered by credit card issuers. The RBA claimed that competition among card schemes only makes the alleged problem worse. The RBA felt that, in an environment in which merchant acceptance is not very sensitive to merchant service charges (which the RBA believes is the case in Australia), competition between four-party schemes was likely to lead to higher interchange fees as the schemes use higher interchange fees as a tool to persuade issuers to issue and promote the usage of their particular scheme's cards.

This paper analyses the RBA's intervention in the payment card industry. The analysis in this paper is based on an exhaustive review of the existing evidence on the impacts of the RBA's regulations, including the evidence contained in the submissions to the RBA as part of its 2007/08 review of its payment system reforms and the RBA's preliminary conclusions of this review released in April 2008. Our analysis also makes use of new research, including interviews with, and data from, MasterCard and the major Australian banks.

The main conclusions from our analysis are as follows:

The reductions in interchange fees ordered by the RBA have clearly harmed consumers by causing higher cardholder fees and less valuable reward programmes.

One of the RBA's key expectations was that reductions in interchange fees would lead to reductions in merchant service charges, and that those reductions in merchant service charges would be passed on to final consumers in the form of lower retail prices and/or higher quality of retailer service.

As expected, the reductions in interchange fees have led to reductions in merchant service charges. Merchants however have not presented any empirical evidence documenting the extent to which reductions in merchant service charges have been passed through to consumers, and neither has the RBA or anyone else.

Instead we see merchants lobbying aggressively for further reductions in interchange fees (indeed, for the elimination of interchange fees entirely). This conduct strongly suggests that merchants have retained a significant share of the reductions in merchant service charges rather than passing them on to consumers in the form of lower retail prices and/or improved quality of service.

In addition, there is evidence that merchants have imposed surcharges to a greater extent than is justified by their costs. On average, surcharges on users of four-party cards have exceeded average merchant service charges. Such surcharges imply that merchants are using surcharges to price discriminate against cardholders and to capture some of the value that would otherwise be derived by consumers from the use of payment cards.

While the RBA's regulations have clearly benefited merchants, they have harmed consumers by causing cardholder fees to increase and the value of card benefits such as reward programmes to decline. Consumers have also been harmed to the extent the reduction in the profitability of issuers caused by the RBA's regulations has reduced incentives to invest in new types of cards and payment system innovations. The Australian Bankers' Association and a number of other parties expressed the view that regulation in the payment system introduces a level of uncertainty that has had an inhibiting effect on investment decisions. Our interviews with the major Australian banks confirmed these views. Each of the banks in Australia we interviewed told us that the interventions have made it more difficult to develop a “business case” for investments related to four-party cards.

Thus, while the RBA’s regulations have clearly harmed consumers by causing higher cardholder fees and less valuable reward programmes, there is no evidence that these undeniable losses to consumers have been offset by reductions in retail prices or improvement in the quality of retailer service. The RBA’s intervention has redistributed wealth in favour of merchants.

The empirical evidence also undermines the RBA’s argument that its regulations have increased the efficiency of the payment system in Australia. The RBA believed that interchange fees were causing a distortion in the payment system (a) because they believed that, on an incremental cost basis, credit card transactions were more costly in resource terms than EFTPOS debit card transactions and (b) because they believed that interchange fees were having significant effects on consumers’ choices of payment methods. The empirical evidence does not support either leg of the RBA’s case for intervention.

# 1. INTRODUCTION

Since 2003, the Reserve Bank of Australia (RBA) has implemented a series of regulations affecting the payment card industry in Australia.[2] Most notably, the RBA reduced the interchange fee on four-party credit cards by approximately 50% and prohibited no-surcharge rules.[3]

The RBA is currently in the process of reviewing its regulation of Australia's payment card industry. On 21 April 2008, the RBA issued its preliminary conclusions concerning the effects of its regulations and invited public comment.[4] This paper responds to the RBA's invitation by presenting a thorough analysis of the effects of the RBA's regulations and their impact on final consumers.[5] The analysis in this paper is based on an exhaustive review of the existing evidence on the impacts of the RBA's regulations, including the evidence contained in the submissions to the RBA as part of its 2007/08 review of its payment system interventions and the evidence cited in the RBA's preliminary conclusions of this review. Our analysis also makes use of new research, including interviews with, and data from, MasterCard and the major Australian banks.

Regulation should be employed only if there is clear evidence of a market failure and only if there is reason to believe that regulation is likely to benefit consumers. In addition, and especially because market economies are complex, regulators must always be concerned about the possibility that regulation will have negative unintended consequences. For the reasons explained in this paper, the market failures alleged (though not substantiated) by the RBA do not justify continuation of regulatory intervention in the payment card industry in Australia. The empirical evidence on the actual effects of the RBA's interventions provides no support for the view that the payment system in Australia is now operating more efficiently or that consumers have derived any net benefits from the intervention. Moreover, there is reason to be concerned that the regulatory uncertainty created by the RBA's interventions has negatively affected incentives to invest in payment system innovations.

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2 More formally, the RBA has implemented "standards" and "access regimes". The RBA has also obtained voluntary undertakings from certain participants in the payment card industry not directly affected by the standards and access regimes. The RBA refers to these standards, access regimes and undertakings collectively as "reforms". We refer to the RBA's interventions as regulations.

3 For readers unfamiliar with the payment card industry, Appendix A describes interchange fees, no-surcharge rules and other terms used in the payment card industry.

4 RBA, Reform of Australia's Payments System: Preliminary Conclusions of the 2007/08 Review (Apr 2008) ("Preliminary Conclusions of the 2007/08 Review").

5 It may be noted that the European Commission, in its recent decision disapproving MasterCard's methods for setting cross-border interchange fees in Europe, relied in part on a report on the effects of interchange regulation in Australia that was submitted by the RBA to the OECD. See Commission Decision of 19 December 2007 relating to a proceeding under Article 81 of the EC Treaty and Article 53 of the EEA Agreement in Cases COMP/34.579 Mastercard, COMP/ 36.518 EuroCommerce and COMP/38.580 Commercial Cards, paragraphs 634 to 644 (Provisional Non-Confidential version). The current study, however, casts substantial doubt on the RBA's views concerning the effects of its intervention in Australia and clearly warrants a re-examination of these effects.

Our paper has six parts and is organised as follows:

- Following this introduction (Part 1), Part 2 provides background information on the RBA's regulations;
- Part 3 summarises the effects that the RBA expected to result from its regulations and contrasts these predictions with those of the schemes;
- Part 4 analyses the evidence to date on the effects of the RBA's interventions;
- Part 5 critiques the reasons offered by the RBA to explain why it decided to intervene in the payment industry; and
- Part 6 summarises our main conclusions.

# 2. BACKGROUND ON THE RBA'S REGULATIONS

## 2.1. THE MARKET FAILURES ALLEGED BY THE RBA

The RBA intervened in the payment card industry because it believed that interchange fees and other aspects of conduct in the payment card industry were reducing the efficiency of the payment system in Australia. The RBA felt that, in the absence of surcharges for credit card purchases, a consumer has an incentive to use a credit card for a transaction that could have been made with a debit card because the consumer pays the same price regardless of the method of payment and yet, when the consumer uses a credit card, he or she can delay payment for a period of time on an interest-free basis and can realise other benefits such as reward points.[6] The RBA claimed that this incentive to use credit cards instead of debit cards results in economic inefficiency because, according to the results of a Joint Study conducted by the RBA and the Australian Competition and Consumer Commission (ACCC) in 2000 (and updated by the RBA in 2007), transactions conducted using credit cards consume significantly more real resources (i.e. are significantly more costly in social terms) than transactions conducted using EFTPOS debit cards (a domestic debit card scheme owned and operated by the Australian banks).[7] We review and critique these cost studies in Part 5 below.

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6 See e.g. RBA, Reform of Australia's Payments System: Issues for the 2007/08 Review (May 2007), paragraph 28 ("Issues for the 2007/08 Review"); Address by Mr. IJ Macfarlane, Governor, to Australasian Institute of Banking and Finance Industry Forum, 23 March 2005, Gresham's Law of Payments, transcript as published in *RBA Bulletin* (Apr 2005), p. 9; RBA, Reform of Credit Card Schemes in Australia IV: Final Reforms and Regulation Impact Statement (Aug 2002), pp. 3-4 ("Final Reforms and Regulation Impact Statement").

7 See RBA & ACCC, Debit and Credit Card Schemes in Australia: A Study of Interchange Fees and Access (Oct 2000), pp. 45, 65, 76-79 ("Joint Study"). See also RBA, Issues for the 2007/08 Review (May 2007), paragraph 28; Address by Mr. IJ Macfarlane, Governor, to Australasian Institute of Banking and Finance Industry Forum, 23 March 2005, Gresham's Law of Payments, transcript as published in *RBA Bulletin* (Apr 2005), pp. 8-9; RBA, Final Reforms and Regulation Impact Statement (Aug 2002), p. 4. EFTPOS debit cards are described in more detail in Appendix B, which provides background information on the banking industry in Australia.

The RBA claimed that interchange fees exacerbate this alleged distortion in the price signals perceived by consumers with respect to their choice of a means of payment because revenue from interchange fees helps finance card benefits (e.g. the interest-free period and reward points) offered by credit card issuers.[8] The RBA claimed that competition among card schemes only makes the alleged problem worse. The RBA felt that, in an environment in which merchant acceptance is not very sensitive to merchant service charges (which the RBA believes is the case in Australia), competition between four-party schemes was likely to lead to higher interchange fees as the schemes use higher interchange fees as a tool to persuade issuers to issue and promote the usage of their particular scheme's cards.[9]

## 2.2. SUMMARY OF THE RBA'S REGULATIONS

In response to these alleged market failures, the RBA has implemented a series of regulations since 2003.

Visa, MasterCard, American Express and Diners Club have been prohibited since January 2003 from enforcing no-surcharge rules.

In October 2003, the RBA implemented a regulation that had the effect of reducing the average interchange fee on credit card transactions from approximately 0.95% to 0.55%. Under the current application of this regulation on credit card interchange fees (in effect since November 2006), the weighted average interchange fee on both Visa and MasterCard credit card transactions cannot exceed 0.50%.

In November 2006, the RBA implemented a regulation that reduced the average interchange fee on Visa debit card transactions from 0.53% of the transaction value to 12 cents per transaction.[10] This regulation applied *de facto* to MasterCard because MasterCard had provided an undertaking to the RBA that it would comply with the Visa debit card interchange regulation.[11]

The RBA also implemented regulations in November 2006 that affected the interchange fees on EFTPOS debit card transactions, the domestic debit card scheme owned and operated by the Australian banks. As explained further in Appendix B, the vast majority of debit card transactions

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8 See e.g. RBA, Issues for the 2007/08 Review (May 2007), paragraph 29; Address by Mr. IJ Macfarlane, Governor, to Australasian Institute of Banking and Finance Industry Forum, 23 March 2005, Gresham's Law of Payments, transcript as published in *RBA Bulletin* (Apr 2005), p. 9; RBA, Final Reforms and Regulation Impact Statement (Aug 2002), pp. 3-4.

9 See e.g. RBA, Issues for the 2007/08 Review (May 2007), paragraph 30; Address by Mr. IJ Macfarlane, Governor, to Australasian Institute of Banking and Finance Industry Forum, 23 March 2005, Gresham's Law of Payments, transcript as published in *RBA Bulletin* (Apr 2005), p. 10.

10 RBA, Issues for the 2007/08 Review (May 2007), pp. 20-21.

11 MasterCard did not introduce its scheme debit card in Australia until late 2005, after the regulatory process for Visa debit had begun. In December 2005, MasterCard indicated to the RBA that it would voluntarily conform to the standards imposed on Visa Debit. See RBA, Reform of the EFTPOS and Visa Debit Systems in Australia: Final Reforms and Regulation Impact Statement (Apr 2006), pp. 32-33.

in Australia (approximately 85% in 2006)[12] are made using an EFTPOS debit card. Interchange fees on EFTPOS transactions are paid by the issuing institution to the acquiring institution; this is the reverse direction from the flow of interchange fees on credit card purchases and thus is sometimes described as a negative interchange fee. The RBA implemented a regulation in November 2006 that requires banks to set the (negative) interchange fee on EFTPOS debit card transactions at between 4 and 5 cents. (This regulation does not apply to transactions involving "cash back".) Prior to this regulation, the negative interchange fee on EFTPOS debit card transactions had averaged around 20 cents.

Visa and MasterCard "honour all cards" rules were modified in January 2007 so that a scheme could no longer require merchants to accept a scheme's debit card as a condition of accepting the scheme's credit card (or vice versa).[13]

In addition to the regulations described above, there have been other regulations related to access and transparency. The RBA imposed access regimes related to four-party credit cards in February 2004. The regimes allow non-financial institutions to issue and acquire Visa and MasterCard credit cards as "Specialist Credit Card Institutions" (SCCIs) and prevent the schemes from imposing penalties on institutions that seek to specialise in acquiring (net acquirer rules). A similar regime related to the Visa debit system was imposed in August 2005. The RBA's EFTPOS access regime, introduced in September 2006, sets out procedures and timetables under which existing participants must negotiate connections with new participants, and sets a cap on the price current participants can charge for new connections. Regarding transparency, the RBA required that the Visa and MasterCard schemes provide information on their interchange fees and rules for access to the public. The RBA has also commenced publishing payment system statistics (e.g. average merchant service fees for four-party and three-party schemes, market shares of four-party and three-party schemes) on its website.

# 3. REVIEW OF THE PREDICTED EFFECTS OF THE RBA'S REGULATIONS

This section summarises the effects that the RBA and the four-party schemes anticipated when the RBA's proposed regulations were being debated in 2001-02. We then contrast these predicted effects with evidence on the actual effects in Part 4 below.

## 3.1. THE RBA'S EXPECTATIONS

The RBA assumed that the reduction in credit card interchange fees mandated by its regulations would cause issuers to increase fees to cardholders (including, possibly, the introduction of per-

12 RBA, Reform of the EFTPOS and Visa Debit Systems in Australia: Final Reforms and Regulation Impact Statement (Apr 2006), p. 1.

13 Visa declined to voluntarily modify its honour all cards rule and, as a result, the RBA imposed a standard requiring that the rule be modified in the manner described above. In contrast, MasterCard voluntarily complied with this standard. Although American Express does not issue a debit product in Australia, it also agreed to voluntarily comply with this standard should it decide to introduce debit or pre-paid products in the future.

transaction fees) and reduce card benefits.[14] As a result, consumers would face a higher cost for using credit cards and would thus have an incentive to switch to other payment methods, in particular debit cards, which the RBA alleged were less costly in resource terms than credit cards.

The RBA assumed that issuers would not be able to fully recover the reduction in interchange fees. In the August 2002 Final Reforms and Regulation Impact Statement, the RBA estimated that the regulations would reduce issuers' annual revenues by approximately AU$2.7 billion.[15]

On the acquiring side, the RBA predicted that the reduction in interchange would be passed on to merchants in the form of lower merchant service fees.[16] In addition, the RBA expected that the increased transparency brought about by the interchange regulations would help ensure that merchants were better informed in negotiations with acquirers. It was speculated, however, that the search and adjustment costs faced by merchants could limit the pressure on acquirers to pass through interchange reductions, in particular for smaller merchants.

The RBA anticipated that lower merchant service fees for four-party schemes would give merchants a stronger position in their dealings with three-party card schemes.[17] Thus, the RBA expected that reductions in merchant service fees for three-party schemes would also be achieved.

With respect to the impact on consumers, the RBA expected that competition among retailers would ensure that the reduction in merchant service fees would be passed through to the final prices of goods and services.[18] The RBA reviewed available evidence on concentration and profit margins in the retailing sector and concluded that the sector was "vigorously competitive". It expressed confidence that, where merchants chose not to take advantage of surcharging, competitive pressures would ensure pass-through of reduced merchant service charges to consumer prices. The RBA noted that this pass-through could be difficult to detect, but implicitly assumed that these reductions in retail prices would more than offset the negative effects on consumers of higher cardholder fees and lower card benefits.

Regarding the prohibition of no-surcharge rules, the RBA did not believe that surcharging would become widespread.[19] However, it argued that merchants should have the right to surcharge

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14 RBA, Reform of Credit Card Schemes in Australia I: A Consultation Document (Dec 2001), pp. 114 and 116-117 ("Consultation Document"); RBA, Final Reforms and Regulation Impact Statement (Aug 2002), p. 23.

15 This estimate includes the impact of all three credit card regulations. The RBA expected that the access regime and interchange standard would reduce interchange revenues, and that the reduction in interchange would exert upward pressure on annual fee revenues. At the same time, the access regime was anticipated to exert downward pressure on annual fee and interest margin revenues. RBA, Final Reforms and Regulation Impact Statement (Aug 2002), p. 23.

16 Information in this paragraph is from RBA, Consultation Document (Dec 2001), pp. 125-126.

17 RBA, Consultation Document (Dec 2001), pp. 122-123.

18 Information in this paragraph is from RBA, Consultation Document (Dec 2001), pp. 126-127.

19 RBA, Consultation Document (Dec 2001), p. 75; RBA, Final Reforms and Regulation Impact Statement (Aug 2002), p. 20. RBA, Preliminary Conclusions of the 2007/08 Review (Apr 2008), p. 6.

and that, to the extent that surcharging did occur, the cost of accepting credit and charge cards would no longer be reflected in the prices of goods and services paid by non-card users.[20] Surcharging was also expected to reduce credit card usage and shift usage towards debit cards and other payment methods.[21]

Finally, the RBA anticipated that its access regime would facilitate entry by non-traditional institutions with the "scale, skills and infrastructure" to compete with existing issuers and acquirers.[22] The RBA believed that the entry or threat of entry by such institutions would stimulate competition in the credit card industry. It was anticipated that the access regime would lead to downward pressure on interest margins and annual fee revenues for issuers and merchant service charges for acquirers.

## 3.2. THE FOUR-PARTY SCHEMES' EXPECTATIONS

Both MasterCard and Visa strongly disagreed with the RBA's contention that the interchange regulation would lead consumers to shift significantly toward using debit cards. Instead, Visa and MasterCard argued that the main effect on consumer behaviour would be a substitution to three-party cards, in particular American Express. Visa and MasterCard did not expect that the three-party schemes would feel forced to adjust their merchant service charges in lock-step with the reduction in four-party credit card interchange fees.[23] The schemes anticipated instead that the three-party schemes could increase profits by not matching the reductions in merchant service charges of the regulated four-party schemes. By maintaining higher merchant service charges and even allowing the spread between three-party and four-party merchant service charges to widen, the three-party schemes would have a better ability to finance and maintain their pre-regulation fee and benefit structures. Even though fewer merchants might choose to accept three-party cards, consumers would want to use these cards wherever they were accepted. Some merchants would therefore be willing to pay a greater premium for accepting these cards. Economic consultants retained by Visa concluded that this would be a profitable strategy for three-party schemes even if there was strong inter-system competition between the three- and four-party schemes.

Visa expected cardholder fees to increase and card benefits to become less generous as a result of the reduction in interchange fees.[24] MasterCard agreed that this was a possibility and

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20 RBA, Consultation Document (Dec 2001), p. 116.

21 RBA, Consultation Document (Dec 2001), pp. 67, 78-79.

22 Information in this paragraph is from RBA, Consultation Document (Dec 2001), p. 124; RBA, Final Reforms and Regulation Impact Statement (Aug 2002), p. 23.

23 Information in the rest of this paragraph is from MasterCard, Response to the December 2001 consultation document of the Reserve Bank of Australia (Mar 2002), p. 4; NECG, Delivering a level playing field for credit card payment schemes: A study of the effects of designating open but not closed payment schemes in Australia (Aug 2001), pp. 8, 42-43. The NECG report was prepared for Visa International.

24 NECG, Delivering a level playing field for credit card payment schemes: A study of the effects of designating open but not closed payment schemes in Australia (Aug 2001), p. 2.

expressed concern that the RBA's regulations might have significant negative effects on the number of four-party cards in use and eventually merchant acceptance.[25] MasterCard also emphasised its view that a reduction in interchange fees would force small issuers to exit the industry and would encourage large four-party issuers and acquirers to migrate their businesses to more expensive and less efficient three-party systems.[26] Visa agreed that smaller issuers would be disproportionately harmed by the regulations.[27]

The schemes agreed with the RBA's prediction that surcharging would not become widespread.[28] However, the schemes disagreed with the RBA's prediction that the amount of any surcharges would be cost-based. The schemes anticipated that surcharging would be used by at least some merchants as a means of discriminatorily extracting the value associated with credit cards.[29] The schemes also disagreed with the RBA's view that surcharging would correct price distortions, simply because they did not believe these distortions to exist in the first place.[30]

The schemes also anticipated that the RBA's access regime would have little impact on the level of competition in the credit card industry. The schemes disagreed with the RBA's contention that their membership rules were restrictive – in fact, MasterCard explicitly stated that the RBA's access regime was essentially consistent with its existing scheme rules and policies.[31]

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25 MasterCard, Response to the December 2001 consultation document of the Reserve Bank of Australia (Mar 2002), p. 40.

26 MasterCard, Response to the December 2001 consultation document of the Reserve Bank of Australia (Mar 2002), pp. 4-5.

27 NECG, Delivering a level playing field for credit card payment schemes: A study of the effects of designating open but not closed payment schemes in Australia (Aug 2001), pp. 43-44.

28 MasterCard, Response to the December 2001 consultation document of the Reserve Bank of Australia (Mar 2002), p. 42; NECG, Response to the Reserve Bank of Australia's consultation document and report of Professor Michael Katz (Mar 2002), p. 17. The NECG report was prepared for Visa International.

29 MasterCard, Response to the December 2001 consultation document of the Reserve Bank of Australia (Mar 2002), pp. 6 and 9; NECG, Credit card schemes in Australia – a response to the Reserve Bank of Australia and Australian Competition and Consumer Commission Joint Study (Jan 2001), pp. 26 and 36-37. The NECG report was prepared for Visa International.

30 MasterCard, Response to the December 2001 consultation document of the Reserve Bank of Australia (Mar 2002), p. 43; NECG, Credit card schemes in Australia – a response to the Reserve Bank of Australia and Australian Competition and Consumer Commission Joint Study (Jan 2001), pp. 30-31.

31 See MasterCard, Response to the December 2001 consultation document of the Reserve Bank of Australia (Mar 2002), p. 6.

# 4. EVIDENCE ON THE ACTUAL EFFECTS OF THE RBA'S REGULATIONS

Our analysis of the actual effects of the RBA's regulations is based on an exhaustive review of the existing evidence on the impacts of these regulations and new research, including interviews with MasterCard and the major Australian banks and analysis of data from MasterCard and the banks.

We begin with a summary of the main findings:

- As predicted by the RBA, the reduction in interchange fees has led to an increase in cardholder fees and a decrease in card benefits. In the preliminary conclusions of its 2007/08 review, the RBA acknowledges that its interchange fee regulations "have resulted in a reduction in the value of reward points and higher annual fees, increasing the effective price of credit card transactions facing many consumers".[32] Though intended by the RBA, these effects nonetheless represent harm to consumers.

- Even though issuers have been able to offset the reduction in interchange revenue to some extent with higher cardholder fees and fewer card benefits, the profitability of issuing four-party credit cards appears to have declined. The reduction in the profitability of issuing has reduced incentives for new entrants to enter the industry, and has made it more difficult for smaller issuers to compete. The reduction in interchange fees has encouraged issuers to place a greater focus on customers that carry a balance (revolvers) and has caused major issuers to start offering three-party cards. The reduced profitability of issuing four-party cards has also reduced the incentive of issuers to invest in new types of four-party cards and in other payment system innovations.

- On the acquiring side, merchant service charges for four-party schemes have declined in line with the reduction in interchange fees. The decline in Visa and MasterCard merchant service charges has been on the order of AU$870 million per year (at current levels of spending).[33]

- Some merchants have decided to surcharge but, as expected by both the RBA and the schemes, surcharging remains limited. However, as anticipated by the schemes, surcharging on average on Visa and MasterCard transactions has not been cost-based; average surcharges on users of four-party cards have exceeded average merchant service charges. Surcharging that is not cost-based implies that merchants are using surcharging as a means to price discriminate against cardholders and to capture some of the value that would otherwise be derived by consumers from the use of payment cards.

- American Express and Diners Club have increased their annual fees on rewards-based charge cards at about the same rate as issuers have increased annual fees on rewards-based Visa and MasterCard credit cards. This is another source of harm to consumers related to the RBA's regulations.

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32 RBA, Preliminary Conclusions of the 2007/08 Review (Apr 2008), p. 17.

33 RBA, Issues for the 2007/08 Review (May 2007), p. 22.

- American Express and Diners Club reduced their merchant service charges slightly in response to the reduction in merchant service charges on the four-party cards, but not nearly to the same extent as Visa and MasterCard. The fact that American Express and Diners Club have increased their annual fees in line with the increases in fees charged by Visa and MasterCard issuers but have reduced their merchant service charges by much less suggests that the RBA regulations have had less effect on the profits of the three-party card systems than on the profits of the four-party card systems (and may have led to an increase in the profits of three-party card systems).

- One of the RBA's key expectations was that reductions in merchant service charges would be passed on to final consumers through lower retail prices. Merchants however have not presented any empirical evidence documenting the extent to which reductions in merchant service charges have been passed through to consumers, and neither has the RBA or anyone else. Thus, while the RBA's regulations have clearly harmed consumers by causing higher cardholder fees and less valuable reward programmes, there is no evidence that these undeniable losses to consumers have been offset by reductions in retail prices or improvements in the quality of retailer services. The RBA's intervention has redistributed wealth in favour of merchants.[34]

- The RBA's intervention has reduced the incentive of issuers to invest and innovate in four-party cards. It has been suggested that the RBA's intervention has also adversely affected the incentive to invest in other payment cards (specifically EFTPOS debit cards) because of the regulatory uncertainty created by the RBA's actions.

- The RBA's access regime has had no significant effect in encouraging new entry into issuing or acquiring. In fact, as anticipated by MasterCard[35], the regulations may have led to an increase in concentration of the issuing segment by making it harder for smaller issuers to compete and helping to force some smaller issuers out of the business.

## 4.1. IMPACT ON CARDHOLDERS

Data provided by the RBA imply that cardholders in Australia are paying approximately AU$480 million each year in additional fees to issuing banks for Visa and MasterCard credit cards as a result of the RBA's regulations.[36] At the same time, card benefits have been reduced

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34 The proposition that consumers as a group can be net losers from a regulatory reduction in interchange fees, over a wide range of plausible parameter values and even when there is no effect on card membership or merchant acceptance, is demonstrated formally in a mathematical model attached as Appendix E.

35 MasterCard, Response to the December 2001 consultation document of the Reserve Bank of Australia (Mar 2002), pp. 4-5.

36 The RBA recently estimated that average fee revenue on bank-issued personal credit cards has increased by AU$40 since 2002. According to the RBA's statistics, there were 12 million personal credit card accounts in December 2006. AU$40 per account times 12 million accounts implies an annual increase of approximately AU$480 million. RBA, Issues for the 2007/08 Review (May 2007), p. 23; RBA, RPS statistics, available at http://www.rba.gov.au/PaymentsSystem/PaymentsStatistics/ExcelFiles/RPS.xls, accessed 23 April 2008.

significantly. Thus, holders of credit cards are now paying higher fees and receiving lower card benefits.

In addition to higher cardholder fees and reduced benefits, the RBA's regulations have also reduced the incentive of issuing banks to invest in new products and technologies for four-party cards. These effects on innovation, which are another element of consumer harm, are discussed further in Part 4.10 below.

### 4.1.1. Four-party cardholder fees

Issuers have responded to the reduction in interchange fee revenue by increasing cardholder fees for four-party credit cards. Credit card annual fees are perhaps the most visible category of fees that have been increased. However, issuers have also implemented increases to other types of credit card fees, including late-payment and over-limit fees, foreign currency conversion fees and cash advance charges.

Fees on credit cards between 2001 and 2006 are shown in Table 1 below, based on data published by the RBA. Although the credit card interchange standard was introduced in October 2003, issuers knew of the likelihood of regulation many months earlier. It has been suggested that issuers adjusted cardholder fees in advance of the implementation of the interchange regulation in order to smooth its impact.[37] We have therefore focused in Table 1 on the changes in cardholder fees between 2001 and 2004 and, alternatively, between 2002 and 2004. The table shows that, on average, annual fees for standard cards rose by 22% between 2001 and 2004, while annual fees for rewards cards rose by 47%-77% over this period. Additional data on the cardholder fees charged by specific banks is provided in Appendix C.

37 NECG, Early evidence of the impact of the Reserve Bank of Australia regulation of open credit card schemes (May 2005), p. 34. The NECG report was prepared for Visa International.

**Table 1: Fees on credit cards, 2001-2006**

| | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | % change, 2001-2004 | % change, 2002-2004 |
|---|---|---|---|---|---|---|---|---|
| **Annual fees (AU$)** | | | | | | | | |
| No-frills cards | n/a | n/a | n/a | n/a | 38 | 38 | n/a | n/a |
| Standard cards | 23 | 25 | 27 | 28 | 28 | 28 | 22% | 12% |
| Standard rewards-based cards | 48 | 61 | 76 | 85 | 85 | 85 | 77% | 39% |
| Gold rewards-based cards | 87 | 98 | 128 | 128 | 134 | 140 | 47% | 31% |
| **Cash advance fees** | | | | | | | | |
| Own bank's ATM (AU$) | 0.6 | 1 | 1.4 | 1.4 | 1.4 | 1.4 | 133% | 40% |
| Percent of value | 0.4 | 0.8 | 0.8 | 1.1 | 1.1 | 1.1 | 175% | 38% |
| Other bank's ATM (AU$) | 1.3 | 1.6 | 1.6 | 1.6 | 1.6 | 1.6 | 23% | 0% |
| Percent of value | 0.4 | 0.8 | 1.1 | 1.4 | 1.4 | 1.4 | 250% | 75% |
| Overseas ATM (AU$) | 3.9 | 3.9 | 3.6 | 3.6 | 3.6 | 3.6 | -8% | -8% |
| Percent of value | 0.4 | 0.8 | 1.1 | 1.4 | 1.4 | 1.4 | 250% | 75% |
| **Foreign currency conversion fee (%)** | 1.0 | 1.0 | 1.3 | 1.5 | 2.4 | 2.4 | 50% | 50% |
| **Late-payment fee (AU$)** | 20 | 21 | 23 | 29 | 29 | 31 | 45% | 38% |
| **Over-limit fee (AU$)** | 6 | 13 | 25 | 28 | 29 | 30 | 367% | 115% |

Source: CRA International, based on RBA, "Banking Fees in Australia", *RBA Bulletin* (May 2007), pp. 59-62 at 62 (based on Cannex data). Figures are for the end of June in each year.

### 4.1.2. Four-party card benefits (reward programmes)

In addition to increases in cardholder fees, issuers have responded to the reduction in interchange fee revenue by reducing card benefits, in particular the value of reward programmes. Relying on information for four rewards cards issued by the major banks, the RBA estimates that the value of reward points has been reduced by approximately 23% since 2003, with the majority of this decline occurring between 2003 and 2004. This is shown in Table 2 below.

**Table 2: Value of Visa and MasterCard credit card reward programmes - four major banks**

| | Average spending required for AU$100 voucher | Benefit to cardholder as a proportion of spending (bp) |
|---|---|---|
| 2003 | 12,400 | 81 |
| 2004 | 14,400 | 69 |
| 2005 | 15,100 | 66 |
| 2006 | 16,000 | 63 |
| 2007 | 16,200 | 62 |

Source: RBA, Issues for the 2007/08 Review (May 2007), p. 23. Four banks/products are: ANZ Telstra Rewards Visa, Commonwealth Bank MasterCard Awards, National Australia Bank Visa Gold, Westpac Altitude MasterCard.

For the most part, issuers have reduced the value of reward programmes by reducing the number of points earned per dollar spent ("earn rate") above a certain level or by increasing the number of points required to redeem a prize ("redemption rate"). Issuers have also introduced caps on the number of points that can be earned in a given period. In order to retain customers that value reward programmes highly, three of the four major issuers, at the same time as imposing a cap on rewards for existing cards, also introduced a new premium product that offered the pre-regulation earn rate (or better) without capping, at a higher annual fee. For two of these issuers, the product introduced was a three-party card. This is notable because, prior to 2003, none of the four major issuers had ever offered an American Express or Diners Club card to the consumer segment. However, in line with the schemes' expectations, the RBA's regulations provided these banks with incentives to offer three-party cards. This is discussed further in Part 4.2.3.

Changes to the major reward programmes offered by the four large issuers are summarised briefly here:

- ANZ was the first major issuer to make changes to its reward programme, when it announced changes to its Qantas Visa – the most widely-held credit card in Australia – and Telstra Visa reward programmes in September 2003.[38] Designed to "minimise the impact of the RBA reforms", the changes halved the earn rate on spending in excess of AU$1,500 per month (AU$2,500 for Gold cards) and capped the number of points that could be earned in a month. Customers affected by these changes were offered the ANZ Frequent Flyer Diners Club charge card (Qantas Visa cardholders) or the ANZ Rewards Diners Club charge card (Telstra Visa cardholders), which continued to offer one point per dollar spent with no cap.
- Westpac announced similar changes to its Altitude programme in February 2004.[39] As of March 2004, Westpac reduced the redemption rate of Altitude points to airline frequent flyer

38 Information in this paragraph is from: ANZ Press Release, "ANZ and Diners Club to launch new cards: Announce changes to reward programs", 12 September 2003.

39 Westpac Media Release, "Changes to Altitude", 20 February 2004, available at http://www.westpac.com.au/internet/publish.nsf/Content/WIMCMR04+Archive+media+release+20+February+2004, accessed 23 April 2008.

points from one to 0.5 frequent flyer points per Altitude point. No other redemption rates changed. At the same time as the rewards change announcement, Westpac also announced the launch of the Altitude American Express, which offered two Altitude points per dollar spent (by contrast, the Visa and MasterCard Altitude cards earned only one point per dollar spent).

- Also in February 2004, CBA announced that it would introduce points capping and reduce the Qantas frequent flyer point redemption rate for its reward programme.[40] Beginning in July 2004, points for Standard cards were capped at 50,000 per annum and the redemption rate for Qantas frequent flyer miles was halved. Similarly, Gold card points were capped at 100,000 per year, with points redeemable for Qantas miles at 1.5 to 1 (previously the redemption rate was 1 to 1). Simultaneously, CBA introduced a new Platinum MasterCard, which offered cardholders no cap on points and Qantas redemption at the pre-existing rate (1 to 1). According to CBA, the changes to the reward programme were "in direct response to the Reserve Bank of Australia's recently introduced credit card reforms".

- NAB changed the structure of its NAB Gold Rewards programme in July 2005, halving the earn rate on spending in excess of AU$3,000 per month and offering no points on spending in excess of AU$10,000 per month.[41] NAB also increased the redemption rate for retail vouchers, credit and other rewards, but maintained the same redemption rate for Qantas rewards. At the same time as the rewards cut-backs, NAB increased the annual reward programme fee by 73% (from AU$33 to AU$57.20). The changes to NAB's reward programme were attributed to "costs attached to the programme".

Numerous sources attribute the changes to annual fees and reward programmes to the reduction in interchange revenue brought about by the RBA's regulations.[42] However, while the RBA's regulations undoubtedly pressured issuers to reduce cardholder benefits, it should be noted that issuers simultaneously faced rising costs associated with providing reward programmes, especially frequent flyer points.[43] Following the collapse of Australia's Ansett Airlines in 2001, Qantas (as the only remaining domestic provider of free flights to bank card programmes) increased the cost of frequent flyer points to bank issuers and simultaneously scaled back on the value of its frequent flyer miles.[44] Although the level of this cost increase is confidential, one

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40 CBA Media Release, "The Commonwealth Bank restructures credit card offering ahead of Platinum launch", 20 February 2004, available at http://about.commbank.com.au/group_display/0,1922,CH2071%255FTS10479,00.html, accessed 23 April 2008.

41 NAB Media Release, "NAB changes Gold Rewards loyalty program", 21 April 2005, available at http://www.nab.com.au/About_Us/0,,65195,00.html, accessed 23 April 2008.

42 See, for example, Grant Halverson, "Australian interchange review: three years on", *Australian Banking & Finance*, 15 February 2007.

43 Unless otherwise indicated, information in this paragraph is from Ian Rogers, "Australia's credit card market is losing its shine", *Cards International*, 7 March 2003.

44 Robin Arnfield, "A shakeup in Australia's card market", *Credit Card Management*, March 2003.

industry expert estimated the increase at a factor of between two and three compared with the cost of points in the late-1990s.

### 4.1.3. Cardholder fees and card benefits for three-party cards

The four-party schemes had predicted that the three-party schemes would not increase cardholder fees or reduce the value of reward programmes in any significant way after the RBA's regulations commenced in 2003. Some sources have concluded that this in fact is what has transpired. For example, in a 2005 report prepared for Visa International, NECG concludes that there is "no direct evidence of any reward benefit reductions, or increased card costs in closed card [American Express and Diners Club] schemes".[45]

Our review of available data on the cardholder fees charged by American Express suggests otherwise. Our analysis indicates that American Express appears to have increased cardholder annual and reward programme fees. Fees on selected American Express offerings are shown in Table 3 below.[46] Table 4 follows with a comparison of the increases in total annual fees on American Express charge cards (i.e. annual fees plus reward programme annual fees) between June 2002 and June 2005 with changes in the annual fees on standard and gold reward-based four-party credit cards over the same period as reported by the RBA. It is noteworthy that the increase in American Express annual fees over the period analysed is very similar to the increase in the annual fees on the analogous four-party cards.

45 NECG, Early evidence of the impact of the Reserve Bank of Australia regulation of open credit card schemes (May 2005), p. 35.

46 Information on Diners Club offerings was not available.

**Table 3: Annual and reward programme fees for selected American Express products, June 2002, June 2005 and April 2008 (AU$)**

| | Annual fee | | | Reward programme annual fee | | | Total (annual fee + reward programme fee) | | |
|---|---|---|---|---|---|---|---|---|---|
| | 6/02 | 6/05 | 4/08 | 6/02 | 6/05 | 4/08 | 6/02 | 6/05 | 4/08 |
| Amex Gold Credit | 70 | 70 | 70 | 33 | 59 | 80 | 103 | 129 | 150 |
| Amex Blue Credit | 35 | 35 | 0 | 33 | 59 | 0 | 68 | 94 | 0 |
| Amex Green Charge | 65 | 65 | 80 | 27.50 | 59 | 80 | 92.50 | 124 | 160 |
| Amex Gold Charge | 95 | 95 | 130 | 27.50 | 59 | 80 | 122.50 | 154 | 210 |
| Suncorp Gold Amex | 70 | 70 | 70 | 33 | 59 | 80 | 130 | 129 | 150 |
| Suncorp Blue Amex | 25 | 25 | No longer offered | 33 | 59 | No longer offered | 58 | 84 | No longer offered |

Source: Cannex, Product and Pricing Features as at 30 September 2005; American Express and Suncorp websites, accessed 23 April 2008. * Amex Blue Credit – Amex Blue Sky credit was used for current information. As of April 2008, American Express was offering this credit card with no annual fee. Previously, the annual fee was AU$95 inclusive of the reward programme fee (American Express website, accessed 15 November 2007).

**Table 4: Changes to annual fees (including reward programmes fees) for American Express charge cards and Visa/MasterCard rewards-based cards, June 2002 – June 2005**

| | Absolute change (AU$) | % change |
|---|---|---|
| Amex Green Charge | $31.50 | 34% |
| Amex Gold Charge | $31.50 | 26% |
| Visa/MC standard rewards-based cards | $24.00 | 39% |
| Visa/MC Gold rewards-based cards | $36.00 | 37% |

Source: CRA International. Changes are between June 2002 and June 2005. Visa/MasterCard figures are from RBA, "Banking Fees in Australia", *RBA Bulletin* (May 2007).

Unfortunately, we were unable to obtain much information on changes in the value of the card benefit programmes of American Express and Diners Club since the RBA's intervention. There have been suggestions that American Express has also diluted the value of its reward programmes,[47] but our impression is that, in general, issuers of Visa and MasterCard cards have reduced the value of these card benefit programmes by more than any reductions in the value of American Express and Diners Club card benefit programmes.

47 "Australian interchange: three years on", *Card International*, 20 February 2007.

The increase in annual fees for three-party cards (and the possible reduction in the value of reward programmes) is an additional harm to consumers related to the RBA regulations.

## 4.2. IMPACT ON ISSUERS

### 4.2.1. Impact on issuer profitability

Despite the increase in cardholder fees and reduction in card benefits, the reduction in interchange fees required by the RBA regulations appears to have reduced the profitability of issuing four-party credit cards. This conclusion is based on our interviews with major issuers in Australia, as well as on bank financials and other public information. In August 2002, following the RBA's release of the interchange standard, ANZ reported that the impact of the regulations and recent increases in the cost of frequent flyer points would likely reduce credit card annual after-tax profit by approximately AU$40 million by the 2004 financial year.[48] NAB reported in its half-year 2004 financial results that "the implementation of RBA designated credit card interchange margins from 31 October 2003 unfavourably impacted income by AU$20 million", and attributed flat operating income as compared to September 2003 in part to the RBA interchange standard.[49] In its full-year financials for 2004, NAB attributed a 3.6% decline in "other banking and financial services income" in part to "the negative impact of the Reserve Bank of Australia credit card interchange fee reform".[50] In its August 2007 submission to the RBA, St. George (Australia's fifth-largest bank) also stated that:

> *"St. George believes that in aggregate the reforms redistributed the net financial flows associated with interchange away from banks in favour of merchants, to the net cost of banks and consumers".*[51]

As mentioned above, issuers increased annual cardholder fees by approximately AU$40 (on a per account basis) between 2002 and 2006. Multiplied by the number of accounts, this implies an increase in issuer revenues of AU$480 million per annum in 2006. In contrast, the RBA's interchange regulation reduced interchange revenues in 2006 by approximately AU$647 million.[52] These figures imply that issuers have been able to recover about 74% of the loss in interchange revenues.[53] As discussed further in Part 4.10, to the extent RBA's regulations have

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48 ANZ Media Release, "Impact of RBA credit card scheme reform on ANZ", 27 August 2002, available at http://www.anz.com/australia/support/library/MediaRelease/MR20020827.pdf, accessed 23 April 2008.

49 NAB, Half-year 2004 Financial Results, p. 28.

50 NAB, 2004 Annual Report, p. 21.

51 St. George, Submission to the RBA in the Review of the Reforms to Australia's Payments System (31 Aug 2007), p. 6.

52 Total purchase value for personal Visa and MasterCard credit cards was AU$143.9 billion in 2006, and the regulations reduced interchange by approximately 0.45% (AU$143.9 billion x 0.45% = AU$647 million). RPS statistics, available at http://www.rba.gov.au/PaymentsSystem/PaymentsStatistics/ExcelFiles/RPS.xls, accessed 23 April 2008.

53 Note that this calculation focuses only on cardholder fees and does not take into account reductions in the value of benefit programmes.

reduced the profitability of issuing four-party cards, there is a reduction in the incentives of issuers to invest in new types of four-party cards and in other payment system innovations.

### 4.2.2. Transactors versus revolvers

The decision by issuers to reconsider their customer acquisition strategies and place a greater focus on customers that carry a balance ("revolvers") provides further evidence that the increases in cardholder fees and reduction in card benefits have not offset the negative effect on issuer profitability of the RBA-mandated reduction in interchange fees.[54] The reduction in interchange fees has reduced the profitability of issuing credit cards to all types of customers. But the negative effect in percentage terms has been greater on cards issued to individuals who rarely pay interest charges because they rarely carry a balance ("transactors"). Interchange fees account for a much higher percentage of total revenue on cards issued to transactors. It is for this reason that issuers have shifted their marketing efforts to customers likely to be revolvers.

### 4.2.3. Issuing of American Express and Diners Club cards

The reduction in interchange fees on Visa and MasterCard credit cards has also made issuers more interested in becoming issuers for American Express and Diners Club. We will show below how merchant service charges on American Express and Diners Club cards declined only slightly following the implementation of the RBA's interchange standard. At the same time, as shown above, annual fees at least on American Express charge cards have increased since the RBA's intervention at about the same rate as the annual fees on Visa and MasterCard credit cards which offer rewards programmes. The combination of these effects has meant less pressure on American Express than on issuers of Visa and MasterCard reward-based credit cards to reduce the value of cardholder benefit programmes since the RBA's intervention. While there are indications that American Express has reduced the value of its reward programmes to some extent, it seems clear that issuers have made larger reductions in the value of Visa and MasterCard reward programmes.

These developments have led some banks to realise that they could create an attractive offering for consumers especially interested in benefits (such as reward points) by offering American Express or Diners Club cards as a companion card to Visa or MasterCard credit cards. Issuers were also attracted of course by the fees that could be earned by issuing American Express and Diners Club cards – fees that the three-party systems found easier to offer because their merchant service charges declined only slightly following the implementation of the RBA's interchange standard.

Since September 2003, three of the four major issuing banks have introduced three-party credit or charge cards. This was a notable event in the history of the Australian payment card industry. Although the major issuers were first approached by American Express in the 1990s, they were not interested in working with the scheme at that time.[55] Except for Westpac's BusinessChoice American Express charge card, which was first issued in April 2001, the four major banks did not

54 Interviews with banks.

55 "Competition in Australia reaches new heights", *Cards International*, 16 November 1999.

issue American Express or Diners Club products to the personal or corporate segments prior to the implementation of the interchange regulation in 2003.[56]

Since 2003, both Westpac and NAB have started to issue American Express credit cards, while ANZ has started to issue Diners Club charge cards. All of these products are aimed at the consumer credit card segment, although some have also been made available as corporate card offerings. It is interesting to note that all but one of these offerings of American Express and Diners Club have been targeted at a bank's *existing* Visa and MasterCard credit card customers or have been issued in the first instance as a "companion card" in conjunction with a Visa or MasterCard (i.e. an account includes one American Express card and one Visa/MasterCard card). Issuing banks combined the offering of American Express or Diners Club with Visa or MasterCard because, while American Express and Diners Club have richer card benefit programmes (and therefore should be the preferred card for a consumer interested in these benefits), American Express and Diners Club are accepted at many fewer merchants (and therefore it would be useful for consumers to have a Visa or MasterCard credit card in their wallets because of the wider acceptance of these cards).

The American Express and Diners Club offerings issued by the major banks in Australia since 2003 are summarised in Table 5 below.

56 NECG, Delivering a level playing field for credit card payment schemes: A study of the effects of designating open but not closed payment schemes in Australia (Aug 2001), p. 53.

**Table 5: Recent Bank-issued American Express and Diners Club offerings in Australia, 2003 to present**

| Issuer | Card | Date Introduced | Companion card? | Details |
|---|---|---|---|---|
| ANZ | ANZ Rewards Diners Club | Sep-03 | YES | Issued to ANZ Telstra Visa cardholders |
| ANZ | ANZ Frequent Flyer Diners Club | Sep-03 | YES | Issued to ANZ Qantas Visa cardholders |
| Westpac | Altitude American Express | Feb-04 | YES | Issued to Westpac Altitude MasterCard customers, now available as part of a package with Altitude MasterCard; also available in corporate version |
| NAB | NAB Ant American Express | Jul-04 | NO | |
| NAB | Velocity NAB American Express | Nov-05 | YES | Offered as part of a package with Velocity NAB Visa card, also available in corporate version (aimed at small businesses) |
| Westpac | Earth American Express | Jun-06 | YES | Offered as part of a package with Earth MasterCard |

Source: ANZ Press Release, "ANZ and Diners Club to launch new cards: Announce changes to reward programs", 12 September 2003, available at http://www.anz.com/australia/support/library/MediaRelease/MR20030912.pdf, accessed 23 April 2008; "American Express and Westpac announce card issuing deal", *The Asian Banker Journal*, 29 February 2004; "National launches new American Express card", *The Asian Banker Journal*, 15 July 2004; NAB Media Release, "Flying high with NAB and Virgin Blue", 15 November 2005, available at http://www.nab.com.au/About_Us/0,,76275,00.html, accessed 23 April 2008; "Westpac launches earth: the first 'value rewards' credit card", 5 June 2006, available at http://www.westpac.com.au/internet/publish.nsf/Content/WIMCMR06+Archive+media+release+05+June+2006b, accessed 23 April 2008; Bank websites.

Additional detail on the American Express and Diners Club cards issued by the Australian banks is provided in Appendix D.

## 4.3. IMPACT ON MERCHANT SERVICE CHARGES

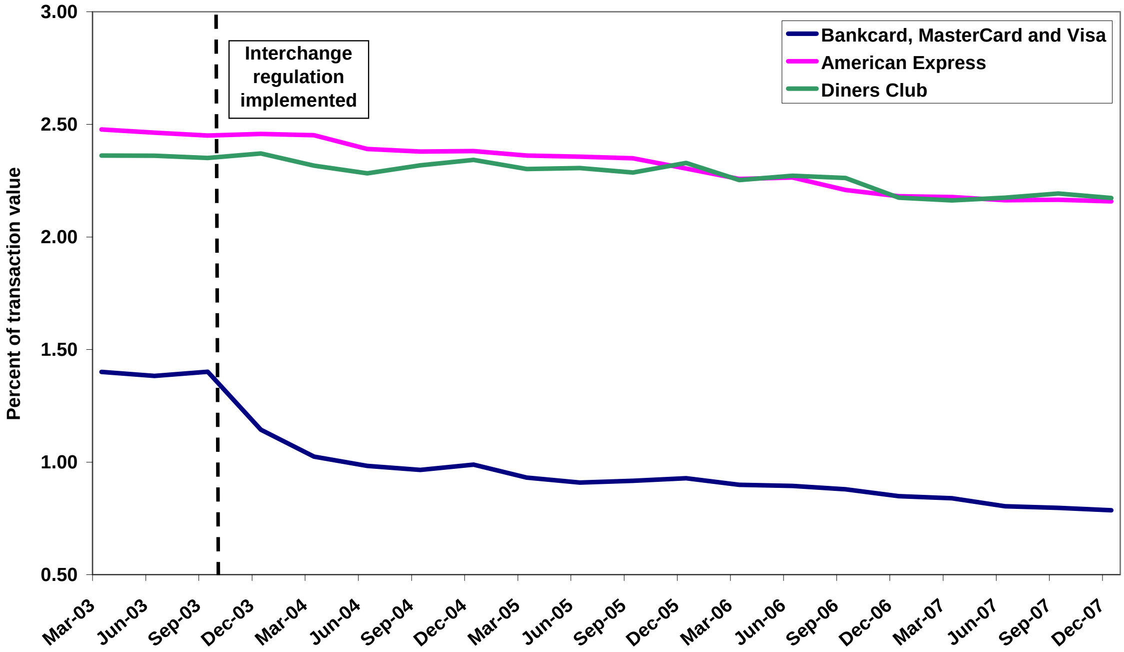
As expected, merchant service charges for Visa and MasterCard have declined considerably since the introduction of the interchange standard. Interchange fees fell by an average of approximately 40 basis points in October 2003, from approximately 0.95% to 0.55%. Between September 2003 and September 2004, merchant service charges for four-party credit cards fell by approximately the same amount. The average merchant service charge for four-party credit cards declined over this period by 44 basis points, from 1.40% to 0.97%.[57]

57 Data on merchant service charges are from RBA, C03 Merchant Fees for Credit and Charge Cards, available at http://www.rba.gov.au/Statistics/Bulletin/index.html, accessed 23 April 2008.

Merchant service fees for American Express and Diners Club also declined following the implementation of the RBA's regulations on interchange fees, but by much less than the decline in the merchant service charges on four-party credit cards. The average American Express merchant service charge declined by just 7 basis points between September 2003 and September 2004, from 2.45% to 2.38%. The average Diners Club merchant service charge declined over this period by just 3 basis points, from 2.35% to 2.32%.

Merchant service charges have continued to decline since September 2004 by amounts that are similar across cards. The average merchant service charge on four-party credit cards has declined by 18 basis points between September 2004 and December 2007, from 0.97% to 0.79%. The average merchant service charges on American Express and Diners Club cards have declined over the same period by 22 and 15 basis points respectively. Thus, as shown in Figure 1 below, the widening of the gap between four-party and three-party merchant service charges that occurred in the 12 months following the implementation of the RBA's interchange standard has largely remained in place over the ensuing period. This widening of the gap between merchant service charges for four- and three-party cards is what the schemes predicted when the RBA's regulations were under consideration in 2001-2002.

**Figure 1: Merchant service charges in Australia, March 2003-December 2007**




Source: CRA International, based on RBA, C03 Merchant Fees for Credit and Charge Cards, available at http://www.rba.gov.au/Statistics/Bulletin/index.html, accessed 23 April 2008.

The RBA estimates that the decline in Visa and MasterCard merchant service charges since the RBA's interchange regulation has reduced the costs of Australian retailers by approximately

AU$870 million per annum (at current levels of spending).[58] This RBA estimate is based on the decline in merchant services charges over more than three years (between September 2003 and March 2007) and therefore may include the effects of other factors.[59] But even if one focuses on the decline in merchant service charges during just the first 12 months following the implementation of the RBA's interchange standard, the regulations reduced the costs of Australian retailers by approximately AU$676 million per annum (at current levels of spending).[60]

## 4.4. IMPACT ON MERCHANT ACCEPTANCE

The RBA's intervention does not appear to have had any significant effect on merchant acceptance of four-party payment cards. Figure 2 below shows the growth in merchant acceptance of MasterCard payment cards in Australia, measured in terms of merchant acceptance locations.[61] Merchant acceptance of MasterCard payment cards grew at an average annual rate of 6.7% between the first quarter of 2001 and the third quarter of 2003 (just prior to the implementation of the RBA's interchange regulations). Since then (and through the second quarter of 2007), merchant acceptance of MasterCard payment cards has grown at an average annual rate of 8.4%. While there appears to have been some slight increase in the growth of acceptance between the 2001Q1-2003Q3 and 2003Q3-2007Q2 periods, the difference is not substantial and is largely due to increased growth in acceptance beginning in the latter half of 2005, approximately two years after the RBA's interchange standard was introduced.

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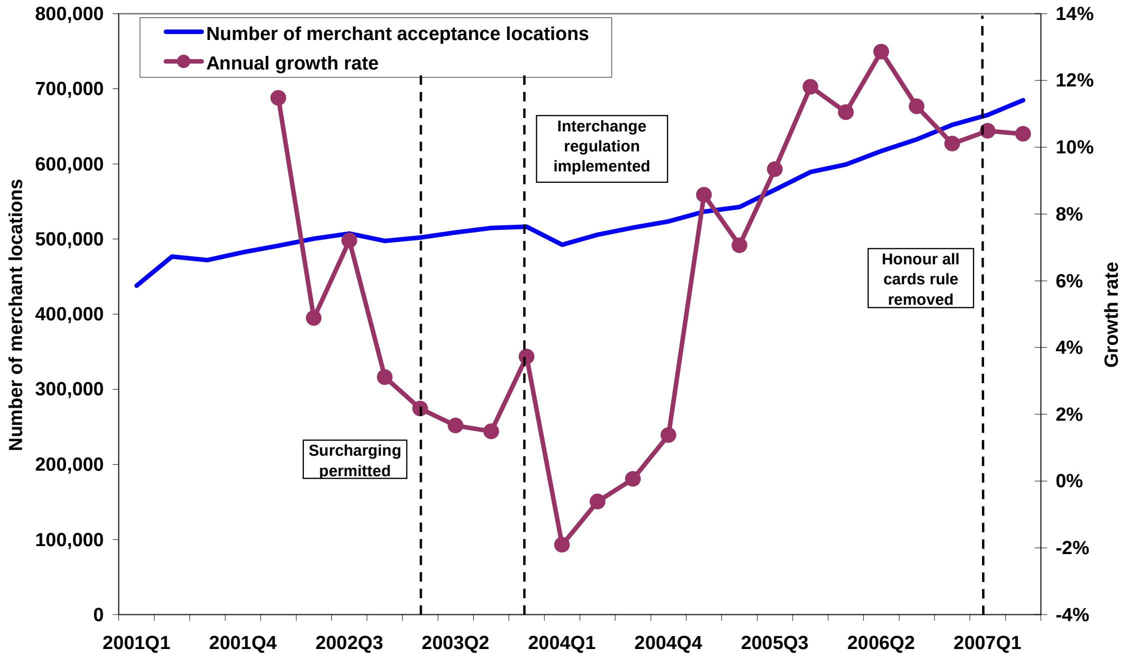
58 RBA, Issues for the 2007/08 Review (May 2007), p. 22.

59 In its preliminary conclusions of the 2007/08 review, the RBA claims that its regulations have resulted in "a significant decline in the margin between average merchant service fees and average interchange fees" and that this alleged decline in acquiring margins is an indication that the regulations "appear to have contributed to increased competition in acquiring". RBA, Preliminary Conclusions of the 2007/08 Review (Apr 2008), p. 22. The RBA's analysis, however, is based on the entire period since the introduction of the interchange fee regulations, September 2003 – December 2007. As discussed in the text above, in the first 12 months after the introduction of the RBA's interchange fee regulations (when one would expect the effects of the regulations to be most pronounced), merchant service charges on four-party cards declined in line with the reduction in interchange fees (implying no narrowing of acquiring margins).

60 Working backward from the RBA calculation that a 0.56 percentage point reduction is worth AU$870 million per year at current levels of spending, we can obtain the RBA's estimate of current levels of spending (AU$155.1 billion). Multiplying this figure by 0.44 percentage points yields a figure of $676 million per annum in savings (AU$155.1 billion x 0.44% = AU$675.5 million).

61 Growth rates are calculated as the difference between logs; the annual growth rate is difference between the log at quarter t and the log at quarter t-4, one year earlier.

**Figure 2: Growth in MasterCard merchant acceptance locations, 2001-2007**




Source: CRA International, based on MasterCard internal data.

The banks in Australia that we interviewed attribute the continued growth in merchant acceptance to normal industry expansion.[62] Merchant surveys find that most merchants which have started to accept credit cards since 2003 have done so because customers regularly asked to use these cards.[63]

The RBA claims that the removal of no-surcharge rules has led to increased merchant acceptance of payment cards. The RBA claims that some merchants have begun to accept credit cards with a surcharge where previously they were unwilling to accept cards.[64] The RBA provided no support for this claim. While the major banks with which we spoke agreed that there could be some merchants who only began to accept cards after surcharging was permitted, they did not believe that there were many merchants in this category. NECG also concluded that this phenomenon was rare.[65]

62 Interviews with banks.

63 NECG, Early evidence of the impact of the Reserve Bank of Australia regulation of open credit card schemes (May 2005), p. 50.

64 RBA, Issues for the 2007/08 Review (May 2007), p. 19.

65 NECG, Early evidence of the impact of the Reserve Bank of Australia regulation of open credit card schemes (May 2005), p. 49.

## 4.5. IMPACT ON SURCHARGING

As a result of the RBA's regulations, merchants have been permitted to add a surcharge to credit and charge card transactions since 1 January 2003. Discounts for other forms of payment and suggestions by merchants that customers use other means of payment had been permitted by MasterCard and Visa before 2003. But surcharging was not allowed until 2003.

While it is difficult to measure the take-up of surcharging in the Australian marketplace with precision, survey evidence suggests that surcharging is increasing. A merchant survey published in 2007 by the research firm East & Partners found that there has been a gradual increase in the number of merchants levying a surcharge and that, as of December 2006, approximately 14 percent of "very large" merchants and 5 percent of "very small" merchants engaged in surcharging.[66] A December 2007 update of the East & Partners study cited by the RBA in its preliminary conclusions of the 2007/08 review indicates that by the end of 2007 these percentages had increased to around 23% for very large merchants and 10% for small or very small merchants.[67] Another survey – carried out by UMR Research on behalf of Visa International – indicates that in May 2006 nearly half of credit and charge card holders had experienced surcharging since the implementation of the RBA's regulations.[68]

Whereas the RBA expected surcharging to be cost-based, the schemes expected merchants to use surcharging as a means of price discriminating against consumers who used payment cards. The schemes expected merchants to attempt to use surcharging as a means of capturing some of the value that would otherwise be derived by consumers from the use of payment cards.[69]

The available evidence on surcharging in Australia reveals that, in line with the schemes' expectations, surcharging on average has not been cost-based: merchants on average appear to have set surcharges on Visa and MasterCard transactions that are greater than merchant service charges.[70] The January 2007 East & Partners survey indicates the average surcharge for Visa and MasterCard transactions to be approximately 1%[71], 15 basis points higher than the average

66 Very large merchants are those with turnover in excess of $340 million, while very small merchants are those with turnover between AU$1 and AU$5 million. (East & Partners, Australian Merchant Acquiring and Cards Markets, Special purpose market report prepared for the RBA (Jan 2007), as cited in RBA, Issues for the 2007/08 Review (May 2007), pp. 18-19.)

67 RBA, Preliminary Conclusions of the 2007/08 Review (Apr 2008), p. 17.

68 UMR Research, Community Perceptions of the RBA Changes to the Credit Card System – DRAFT (May 2006), slide 18.

69 See, e.g. Marius Schwartz and Daniel Vincent, "The No Surcharge Rule and Card User Rebates: Vertical Control by a Payment Network", *Review of Network Economics*, Volume 5, No. 1 (Mar 2006), pp. 72-102.

70 The RBA suggests in its preliminary conclusions of the 2007/08 review that surcharges tend to be set in line with merchant service charges. RBA, Preliminary Conclusions of the 2007/08 Review (Apr 2008), p. 26. The data cited here on the relationship between average surcharges and average merchant service charges suggest otherwise.

71 East & Partners, Australian Merchant Acquiring and Cards Markets, Special purpose market report prepared for the RBA (Jan 2007), as cited in RBA, Issues for the 2007/08 Review (May 2007), p. 19.

merchant service charge in December 2006.[72] An earlier survey conducted by Cannex found that the average surcharge for Visa and MasterCard transactions was 1.8%, approximately 81 basis points higher than the average merchant service charge in December 2004.[73] The results of the East & Partners and Cannex surveys are shown in Table 6 below.

**Table 6: Survey evidence on average surcharges for three- and four-party cards**

| | **Cannex survey – Nov 2004** | | | **East & Partners survey – Dec 2006** | |
|---|---|---|---|---|---|
| | **Visa/MC** | **Amex** | **Diners Club** | **Visa/MC** | **Amex + Diners Club** |
| Average surcharge (%) | 1.80% | 2.60% | 2.50% | 1.00% | 2.00% |
| Average MSC (%) | 0.99% | 2.38% | 2.34% | 0.85% | 2.18% |
| Difference | 0.81% | 0.22% | 0.16% | 0.15% | -0.18% |

Notes and Sources: Average MSCs shown are for December 2004 (Cannex) and December 2006 (East & Partners), and are from RBA, C03 Merchant Fees for Credit and Charge Cards, available at http://www.rba.gov.au/Statistics/Bulletin/index.html, accessed 23 April 2008. Surveys are Cannex, Card Reforms in Australia: Monitoring of Market Effects (Nov 2004), as cited in NECG, Early evidence of the impact of the Reserve Bank of Australia regulation of open credit card schemes (May 2005), pp. 47-48 and 50-51; East & Partners, Australian Merchant Acquiring and Cards Markets, Special purpose market report prepared for the RBA (Jan 2007), as cited in RBA, Issues for the 2007/08 Review (May 2007), pp. 18-19.

The Cannex (2004) and East & Partners (2007) surveys also compared surcharges on Visa and MasterCard transactions with surcharges on American Express and Diners Club transactions. Both surveys found that merchants who surcharged tended to apply higher surcharges for American Express and Diners Club transactions than for Visa and MasterCard transactions, but that the difference in surcharges was less than the difference in merchant service charges. These findings thus suggest that merchants who surcharge on average apply a higher mark-up on Visa and MasterCard transactions than on American Express and Diners Club transactions.

The available evidence on surcharging also indicates that large merchants have adopted surcharging to a greater degree than smaller merchants. The East & Partners survey indicates that surcharging is three times more prevalent among very large merchants than among very small merchants.[74] This is despite the fact that smaller merchants are likely to face higher costs associated with accepting credit cards due to the greater level of bargaining power typically possessed by large merchants with respect to merchant service charges.

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72 Information on merchant service charges is from RBA, C03 Merchant Fees for Credit and Charge Cards, available at http://www.rba.gov.au/Statistics/Bulletin/index.html, accessed 23 April 2008.

73 Cannex, Card Reforms in Australia: Monitoring of Market Effects (Nov 2004), as cited in NECG, Early evidence of the impact of the Reserve Bank of Australia regulation of open credit card schemes (May 2005), pp. 47-48 and 50-51.

74 The Cannex survey from 2004 also found that surcharging was more common among larger merchants (Cannex, Card Reforms in Australia: Monitoring of Market Effects (Nov 2004), as cited in NECG, Early evidence of the impact of the Reserve Bank of Australia regulation of open credit card schemes (May 2005), pp. 47-48 and 50-51.)

Among the merchants that have adopted surcharging are Australia's major airlines (Qantas and Virgin Blue) and its major telecommunications providers (Telstra and Optus), all of which are large firms with a greater degree of bargaining power. It is interesting to note that these firms apply surcharges to scheme debit transactions in addition to credit and charge card transactions. Further, these firms have tended to set a single surcharge for all three forms of payment, regardless of the significant differences in merchant service charges for the different forms of payment. The current surcharges assessed by these companies are shown in Table 7.

**Table 7: Surcharges assessed by Qantas, Virgin Blue, Telstra and Optus**

| | Surcharge | Payment methods surcharged |
|---|---|---|
| Qantas | AU$6.60 per passenger per booking for domestic and trans-Tasman flights; AU$18 per passenger per booking for international flights | Credit, charge and scheme debit cards |
| Virgin Blue | AU$3 per passenger per flight segment for domestic flights; AU$5 per passenger per flight segment for international flights booked in Australian dollars | Credit, charge and scheme debit cards |
| Telstra | 0.69% for Visa, MasterCard and American Express; 1.68% for Diners Club | Credit and charge cards (and possibly scheme debit cards) |
| Optus | 1% | Credit, charge and scheme debit cards |

Sources: Telstra website, Payment Processing Fee, available at http://www.telstra.com.au/paymentprocessingfee/index.htm; Optus website, Payment Options, available at http://personal.optus.com.au/web/ocaportal.portal?_nfpb=true&_pageLabel=Template_wRHS&FP=/personal/customerhelp/accountsandbillinghelp/billpaymentinformation/paymentoptions&site=personal; Virgin Blue website, http://www.virginblue.com.au/Personal/Bookings/Feessurcharges/index.htm; Qantas, "Credit Card Service Fee Increase", 17 October 2007, available at http://www.qantas.com.au/agents/dyn/qf/news/200710/1042; Qantas website, FAQs, http://qantas.custhelp.com/cgi-bin/qantas.cfg/php/enduser/std_adp.php?p_faqid=526. All websites accessed 23 April 2008.

The experience with surcharging by Qantas is interesting with respect to the question of the relationship between the RBA's regulations and retail prices. The RBA anticipated that surcharging would provide merchants with an incentive to reduce prices to non-card users. Yet when Qantas announced its intention to surcharge in February 2003, it publicly stated that it would not reduce prices to consumers paying by cash or cheque. Qantas defended its position by arguing that the level of its surcharge was still less than the level of its "merchant fees" (i.e. merchant service charges). It is not clear whether the RBA would find this defence convincing. Even under these circumstances, the RBA presumably still would have expected surcharging to have resulted in some reduction in prices to non-card users. The fact that Qantas expressly declared that surcharging would have no effect on the prices paid by customers using other means of payment is thus noteworthy in assessing whether the RBA's regulations have had the impact that the RBA expected.[75]

75 Transcript from The World Today, ABC radio broadcast, "Qantas to introduce credit card surcharge", 10 February 2003, available at http://www.abc.net.au/worldtoday/stories/s780783.htm, accessed 23 April 2008.

In May 2006, the RBA's regulations were reviewed in a special hearing by the House of Representative Standing Committee on Economics, Finance and Public Administration. The Committee, which heard from the RBA, industry participants and academics, also observed that surcharging was often not cost-based and was taken up more widely by large merchants. In its report, the Committee concluded that:

> *"…surcharging has not yet become commonplace, particularly in highly competitive industries. Unsurprisingly, the committee heard that surcharging has only become common in industries where organisations have market dominance. While the committee is supportive of the rights of merchants to surcharge, the committee doubts whether surcharging will ever become widespread. Many merchants actually prefer being paid by card and therefore would not want to discourage its use by surcharging.*
>
> *The committee was concerned by evidence which suggested that some merchants are profiteering from the ability to surcharge…Surcharging - and in particular excessive surcharging - occurs in markets not subject to high levels of competition".*[76]

Numerous submissions made to the RBA as part of its 2007/2008 review also report that large Australian merchants have engaged in excessive surcharging[77], and call upon the RBA and the ACCC to take action. Abacus – Australian Mutuals, the industry association for credit unions and mutual building societies, calls for the RBA to work with the ACCC to prevent what it refers to as "predatory surcharging" by merchants.[78] Australian Settlements Limited, a service cooperative that aggregates member building societies' and credit unions' transactions to deliver volume-based pricing in the payment system, also recommends that the RBA to establish guidelines on the degree to which merchants can surcharge different payment options.[79]

## 4.6. IMPACT ON RETAIL PRICES

One of the key expectations of the RBA's regulations was that reductions in merchant service charges would be passed on to final consumers through lower retail prices. Without this pass-through, merchants – rather than final consumers – would be the main beneficiaries of the intervention. As previously discussed, there has been a clear increase in cardholder fees and reduction in the value of cardholder benefits as a consequence of the regulations. There has also been a significant reduction in merchants' costs associated with accepting credit cards. However, there is no evidence that the undeniable losses to cardholders have been offset by reductions in retail prices or improvement in the quality of service.

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76 House of Representatives Standing Committee on Economics, Finance and Public Administration, Review of the Reserve Bank of Australia and Payments System Board Annual Reports 2005 (Jun 2006), p. 63.

77 See, for example, Abacus- Australian Mutuals, Submission to the RBA's Payment Reform Review (31 Aug 2007), p. 5; PayPal, Submission to RBA in the 2007/08 Review of Australia's Payments System (11 Sep 2007), p. 3.

78 Abacus- Australian Mutuals, Submission to the RBA's Payment Reform Review (31 Aug 2007), p. 5.

79 Australian Settlements Limited, Submission to the Reserve Bank of Australia on Review of the Reforms to Australia's Payments System (31 Aug 2007), pp. 2-3.

Evaluating the extent to which merchants have passed through to consumers any part of the decline in merchants' costs resulting from the reduction in merchant service charges is complicated by several factors:

- First, the cost savings associated with reduced interchange are relatively small for retailers on a per-transaction basis. The reduction in merchant service charges has been about 62 basis points for purchases made with Visa and MasterCard credit cards,[80] which comprise only about one quarter of retail transactions.[81] For an average merchant, the overall cost reduction associated with the interchange reforms would therefore be 0.16 percent. The RBA has made a similar point regarding the difficulty of measuring price effects. The RBA has commented that "when fully passed through, the reduction in fees would be expected to reduce the Consumer Price Index (CPI) by between 0.1 and 0.2 percentage points. While important, this change is difficult to observe in the overall CPI, which is increasing, on average, by around 2.5 per cent per year".[82]

- Second, the empirical literature on price rigidities makes it doubtful that a small cost reduction would affect final goods prices very quickly, even if there was extensive retail competition.[83] In other words, merchants may hesitate to adjust prices to account for such a small reduction in overall cost.

- Third, even if one could obtain detailed data on retailer prices (or margins) and changes in the merchant service charges faced by these retailers, analysing the impact of the RBA's interventions on final goods prices would be complicated by the need to take into account other factors that could affect price levels or retailer margins.

When the RBA has considered this issue, it has relied on an assumption that competition in the retailing sector will ensure that most if not all of the reduction in merchant service charges will be passed through to final consumers. For example, the RBA explained in its December 2001 analysis of the likely impact of its proposed regulations:

> *"On the available evidence, the Reserve Bank is confident that, where merchants do not pass reductions in merchant service fees onto credit cardholders on a 'fee for service' basis [i.e.*

80 Change in merchant service charges between September 2003 and December 2007, from RBA, C03 Merchant Fees for Credit and Charge Cards, available at http://www.rba.gov.au/Statistics/Bulletin/index.html, accessed 23 April 2008

81 Howard Chang, David S. Evans and Daniel D. Garcia-Swartz, "The effect of regulatory intervention in two-sided markets: an assessment of interchange-fee capping in Australia", *Review of Network Economics*, 4(4): December 2005, pp. 328-358 at p. 340.

82 NECG, Early evidence of the impact of the Reserve Bank of Australia regulation of open credit card schemes (May 2005), p. 36, quoting RBA, Payment Systems Board Annual Report, 2004, p. 12.

83 Howard Chang, David S. Evans and Daniel D. Garcia-Swartz, "The effect of regulatory intervention in two-sided markets: an assessment of interchange-fee capping in Australia", *Review of Network Economics*, 4(4): December 2005, pp. 328-358 at p. 341.

> *surcharges], competitive pressures will ensure that merchants pass these reductions through to the prices of final goods and services."*[84]

The economics of pass-through are more complicated than the RBA's explanation. Even if firms are in a textbook perfectly competitive market, an increase or decrease in input costs will not be passed through fully to consumer prices unless the industry has constant marginal costs. In any market setting in which firms have even a measure of market power (i.e. in which firms are not pure "price takers"), the analysis becomes even more complex. Economists who have considered pass-through rates in markets where suppliers are oligopolists offering differentiated products find that the rate of pass-through depends on the nature of consumer demand for the different firms' offerings.[85] They find that, even when marginal costs are constant, pass-through rates can be significantly less than one.

The RBA recognises that the extent to which merchants have passed through the reduction in merchant service charges resulting from the interchange fee regulations is a critical issue in determining the net effect of these regulations on final consumers. In the absence of empirical evidence on the degree of merchant pass-through, the RBA attempts to rely on economic theory to support its implicit view that pass-through has been sufficient to more than offset the effects of higher cardholder fees and reduced card benefits. This appeal to economic theory, however, does not answer the question. There is no basis in economic theory for claiming that whatever degree of merchant pass-through occurs will be sufficient to more than offset the effects of higher cardholder fees and reduced card benefits.

Chang, Evans and Garcia-Swartz reach a different conclusion from the RBA regarding the extent to which merchants have passed through reductions in merchant service charges resulting from the regulation of interchange fees:

> *"The very limited empirical evidence there is suggests that, in fact, merchants have tended not to pass through the reduction in the merchant discount to consumers in the form of lower prices."* [86]

These authors base their conclusion on a merchant survey carried out by Cannex in 2004. The survey, which asked merchants about the impact of the interchange regulations on their regular business practices, found that less than five percent of merchants experiencing a change in their merchant service charge declared that they had reduced prices to consumers. By contrast, over 20 percent reported increased profits and nearly 60 percent reported no change in their regular operations.

Worthington reaches a similar conclusion:

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84 RBA, Consultation Document (Dec 2001), p. 127.

85 See, e.g. Johan Stennek and Frank Verboven, Merger control and enterprise competitiveness: empirical analysis and policy recommendations, chapter 4 in *European Merger Control: Do we need an efficiency defence?*, Fabienne Ilzkovitz and Roderick Meiklejohn, eds. (2006) , Edward Elgar Publishing.

86 Howard Chang, David S. Evans and Daniel D. Garcia-Swartz, "The effect of regulatory intervention in two-sided markets: an assessment of interchange-fee capping in Australia", *Review of Network Economics*, 4(4): December 2005, pp. 328-358 at p. 341.

> *"Retailers have adapted to the new interchange levels by broadly speaking 'pocketing' the reduction in MSC's (ie there is no evidence of reduced prices as the RBA had hoped) and using the new transparent MSC's (and the RBA's publication of them) to force down the MSC's they pay to all of the card schemes."*[87]

It is important to note that the RBA has publicly acknowledged that there is "no quantitative proof" on the extent to which merchants have passed-through savings in merchant service charges to final consumers.[88] It should also be noted that merchants in Australia have not provided evidence of the extent of pass-through to consumer prices. Rather, in their August 2007 submission to the RBA, the Australian Merchant Payments Forum simply states that pass-through has occurred without any supporting data or documentation.[89]

Recognising that it is difficult to isolate price effects, the fact remains that no evidence has been presented that would allow one to conclude that the undeniable losses to cardholders have been offset by reductions in retail prices or improvement in the quality of retail service. In contrast, we know with confidence that merchants have been beneficiaries of the RBA's intervention. We know this from the fact that merchants were in favour of the past reductions in interchange fees and now would like even further reductions. It is extremely unlikely that merchants would be taking this position if reductions in merchant service charges resulting from the RBA's regulations were simply passed through to consumers in the form of lower prices and/or higher quality service.

## 4.7. IMPACT ON CREDIT AND CHARGE CARD USAGE RELATIVE TO DEBIT CARD USAGE

As noted above, the RBA believed that a reduction in interchange fees would provide consumers with an incentive to switch to other payment methods. Based on the available evidence, it is still difficult to determine exactly what impact the RBA's intervention has had on the use of credit and charge cards relative to debit cards. Credit and charge card usage has continued to grow in Australia in recent years, notwithstanding the effects of the RBA's regulations on cardholder fees, card benefits and surcharges. However, as explained in more detail below, the introduction of low-rate credit cards and the growth of e-commerce in Australia are unrelated factors that

87 Steve Worthington, "The Payments System Regulator and the Retailers: The Australian Experience", *Monash Business Review*, 2006, 2(3), at p. 4. Visa and American Express have also concluded that there is no evidence of pass-through to retail prices. (See, e.g. Visa, Submission to the RBA Payments System Review (4 Sep 2007), p. 5; American Express, Review of Payments System Reforms – A Submission to the Reserve Bank of Australia (Aug 2007), p. 5.)

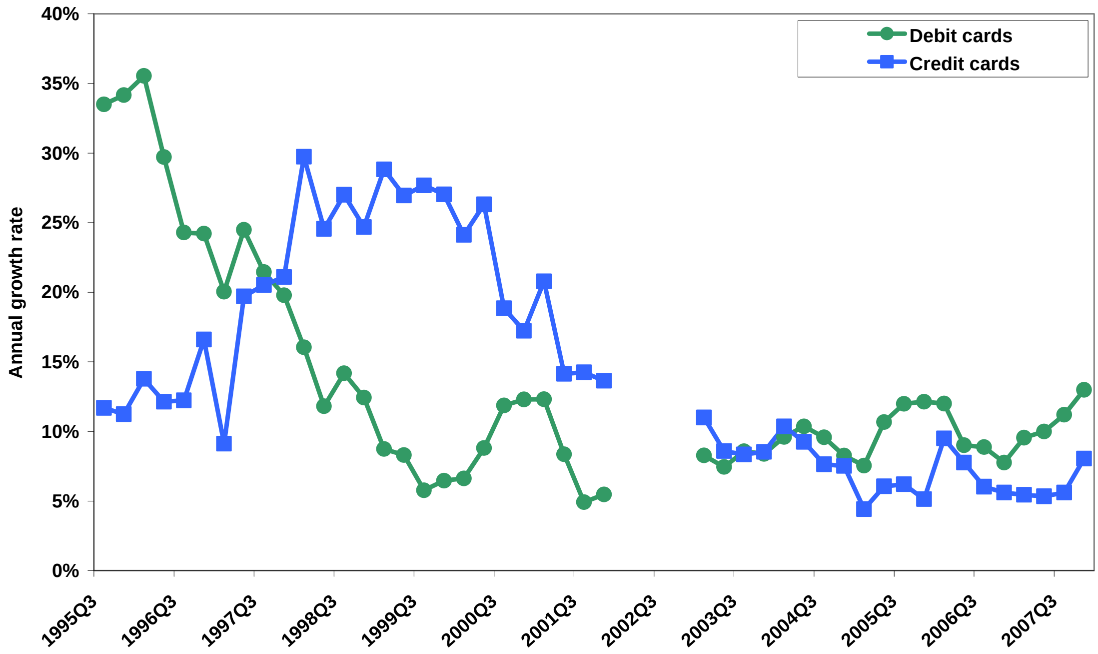
88 House of Representatives Standing Committee on Economics, Finance and Public Administration, Review of the Reserve Bank of Australia and Payments System Board Annual Reports 2005 (Jun 2006), p. 41. Several of the August/September 2007 submissions to the RBA make the point that there is no evidence of pass-through, and more specifically, that the RBA has failed to produce such evidence. See, e.g. St. George, Submission to the RBA in the Review of the Reforms to Australia's Payments System (31 Aug 2007), p. 1 of Appendix. The Visa, MasterCard, and American Express submissions to the RBA make similar statements.

89 The Australian Merchant Payments Forum is a coalition of Australian retailers. Members include the Australian Retailers Association, Australia Post, BP, Bunnings, Caltex, Coles Group, Mitre 10, Spark's Shoes Pty Ltd and Woolworths Limited. (Australian Merchant Payments Forum, The Reserve Bank of Australia's 2007/08 Review of Payment System Reforms (31 Aug 2007), pp. 4-5.)

occurred contemporaneously and could explain at least some of the observed increase in credit card usage. Thus, while there is no evidence that the RBA's intervention has had any significant effect on credit and charge card usage relative to debit card usage, it is possible that there has been an effect but the effect has been masked by confounding factors.

Figure 3 compares the annual growth rates over the period of 1995 to 2007 in the number of credit and debit card transactions. There is a break in the data series in 2002. In January 2002 the RBA increased the coverage of the data to include more reporting institutions and made several significant definitional changes. This change in the RBA's coverage means that meaningful growth rates for 2002 cannot be calculated.

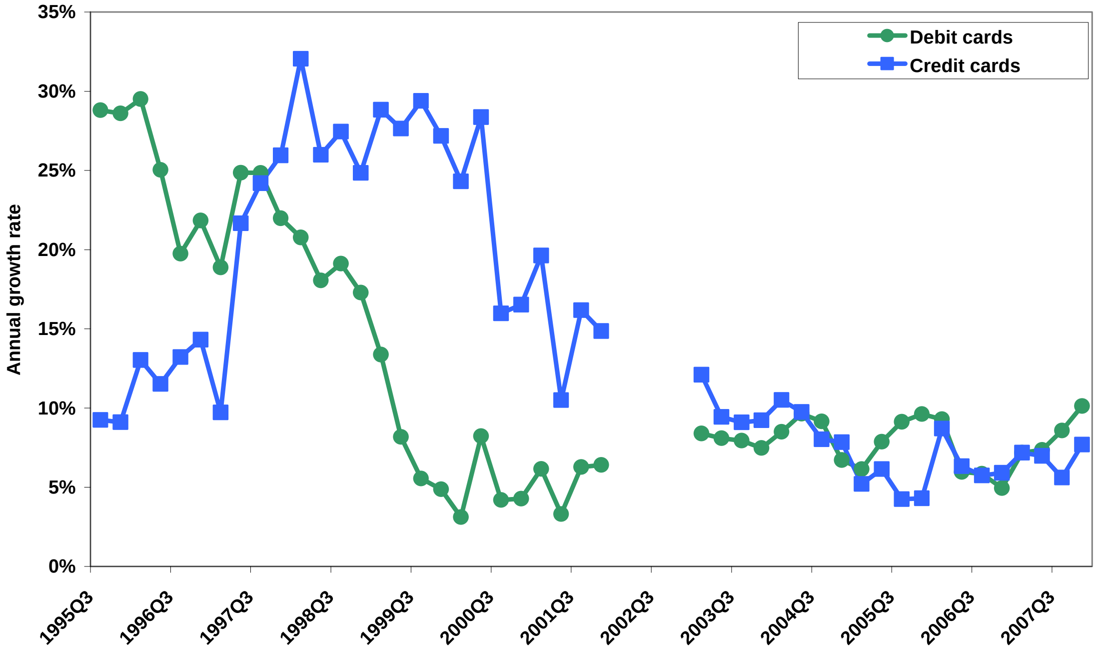
**Figure 3: Growth in the number of credit and debit card transactions, 1995Q3-2007Q4**




Source: CRA International, based on RBA payments data, accessed 3 March 2008. Credit cards include general-purpose credit cards issued to individuals (i.e. excluding charge cards and cards issued to businesses). Debit cards include EFTPOS and scheme debit. Credit card and debit card transactions include all point-of-sale transactions (i.e. excludes debit card ATM cash withdrawals and credit card cash advances).

Figure 4 presents the same growth rate comparison, but this time based on the credit and debit card transaction value.

**Figure 4: Growth in credit and debit card transaction value (AUD), 1995Q3-2007Q4**




Source: CRA International, based on RBA payments data, accessed 3 March 2008. Credit cards include general-purpose credit cards issued to individuals (i.e. excluding charge cards and cards issued to businesses). Debit cards include EFTPOS and scheme debit. Credit card and debit card transactions include all point-of-sale transactions (i.e. excludes debit card ATM cash withdrawals and credit card cash advances).

Whether one looks at growth in the number or value of transactions, the picture is the same. The growth in credit card transactions was lower in the period after the RBA's regulations, but the decline in the growth in credit card transactions began prior to the RBA's intervention. The growth in debit card transactions is somewhat higher in the period after the RBA's intervention than in the period immediately before. However this difference in growth rates is not dramatic.[90]

The RBA discusses the same data on the growth rates of credit and debit card transactions in its preliminary conclusions of the 2007/08 review but reaches a different conclusion. The RBA concludes "the available evidence strongly supports the idea that relative prices matter to consumers' choice of payment instrument".[91] This interpretation of the data on growth rates in

90 The figures presented above are for transactions occurring at the point-of-sale, i.e. excluding cash advances for credit cards and excluding ATM cash withdrawals for debit cards. We have also analysed total usage of credit and debit cards, including transactions occurring at ATMs such as cash advances and ATM cash withdrawals. The general trends are the same when looking at this measure of usage.

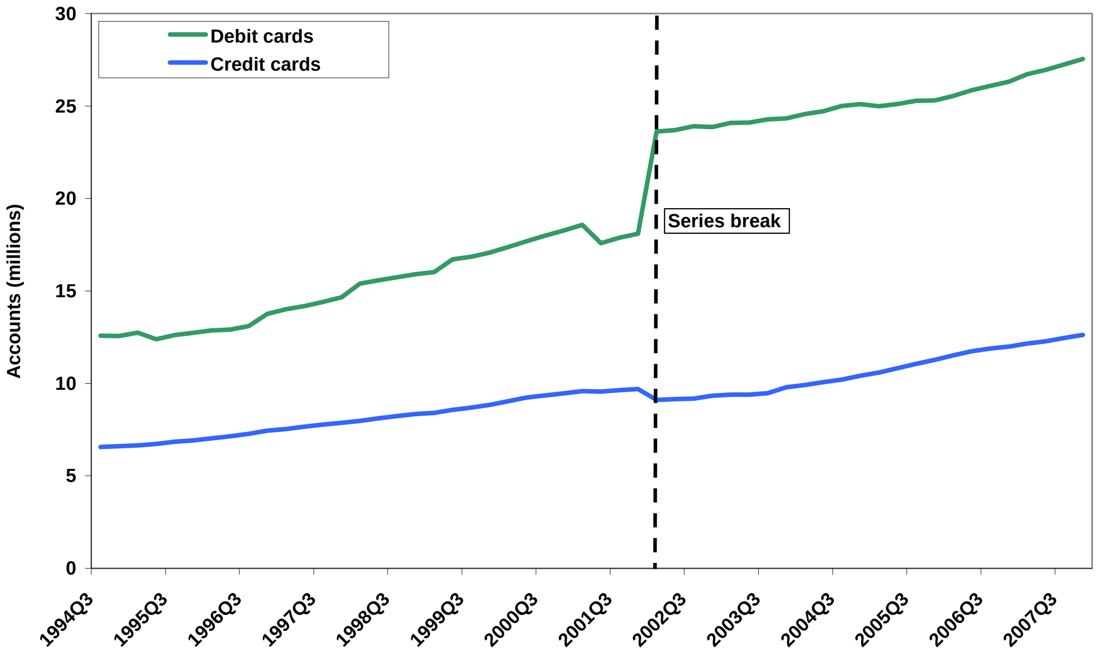
91 RBA, Preliminary Conclusions of the 2007/08 Review (Apr 2008), pp. 18-19.

credit and debit card transactions is difficult to reconcile with the growth-rate evidence shown in the figures above.[92]

Figure 5 compares the number of four-party credit card accounts with the number of debit card accounts (EFTPOS and scheme debit). Figure 6 compares the annual growth rates in the number of credit and debit card accounts. These data are also affected by the change in the coverage of the RBA's data in January 2002, so we have again excluded growth rate calculations for the four quarters of 2002 (because this would require comparing data from 2002 with non-comparable data from 2001). The data in these figures show that the growth rates for credit card accounts after the RBA's interventions were generally similar to the growth rates prior to the RBA intervention. The growth in debit card accounts was actually lower in the period after the RBA's intervention.

92 The RBA notes two other pieces of evidence in support of its conclusion that its interchange fee regulations have affected consumers' choice of payment instrument. The RBA notes first that confidential information provided by a scheme shows that, when a merchant imposes surcharges, use of cards at the merchant declines. This finding is not surprising: the relevant question however is whether, in the aggregate, these effects are material. The available evidence provides no support for this proposition. The RBA also observes that credit card "transactors" use credit cards more (22% of their transactions) than credit card "revolvers" (12% of their transactions). Conversely, credit card revolvers tend to use debit cards more frequently. This finding also is not surprising. It does not however address the relevant question, which is the extent to which the behaviour of each of these groups has been affected by the changes in fees and card benefits resulting from the RBA's interchange regulations. (See RBA, Preliminary Conclusions of the 2007/08 Review (Apr 2008), p. 18.)

**Figure 5: Number of debit and credit card accounts, 1994Q3-2007Q4**




Source: CRA International, based on RBA payments data, accessed 3 March 2008. Credit cards include general-purpose credit cards issued to individuals (i.e. excluding charge cards and cards issued to businesses). Debit cards include EFTPOS and scheme debit.

**Figure 6: Growth in the number of debit and credit card accounts, 1995Q3-2007Q4**


Source: CRA International, based on RBA payments data, accessed 3 March 2008. Credit cards include general-purpose credit cards issued to individuals (i.e. excluding charge cards and cards issued to businesses). Debit cards include EFTPOS and scheme debit.

The data analysed above provide no evidence that the RBA's intervention has had any significant effect on the use of credit and charge cards relative to the use of debit cards. This result is consistent with the results of prior studies.[93] However, there are at least two potentially confounding effects that make it difficult to reach firm conclusions with respect to the impact of the RBA's regulations on card usage: the introduction of low-rate credit cards and the growth of e-commerce. It is therefore possible that the RBA's intervention has in fact reduced the use of credit cards relative to the use of debit cards but that this result cannot be seen in the data because of confounding factors.

The first potentially confounding factor is the introduction in Australia of low-rate credit cards, a product that was introduced at roughly the same time as the reduction in interchange fees. Low-rate credit cards, as their name implies, offer lower interest rates than standard credit cards, and often provide low or zero interest rates on balances transferred from existing credit card accounts. The first low-rate credit cards were introduced in Australia by smaller issuers between 2000 and 2002. However, the Virgin Money MasterCard (a joint offering between Westpac and Virgin), launched in May 2003, was arguably the first "major" low-rate offering. Following on the

93 See Howard Chang, David S. Evans and Daniel D. Garcia-Swartz, "The effect of regulatory intervention in two-sided markets: an assessment of interchange-fee capping in Australia", *Review of Network Economics*, 4(4): December 2005, pp. 328-358; Richard Hayes, "An Econometric Analysis of the Impact of the RBA's Credit Card Reforms", mimeo, 26 August 2007.

successful launch of the Virgin Money card, large and small issuers alike began to develop and launch their own low-rate products, mostly in the period following the introduction of the credit card interchange regulation. Low-rate products have been very popular in Australia, and account for a growing share of total credit cards in circulation. For example, as of September 2007, low-rate credit card accounts made up between 5% and 22% of total credit card accounts at the four major Australian issuers.[94] It is therefore possible that the growth of low-rate credit cards in the post-regulation period has offset some of the reduction in the growth of standard, non low-rate credit cards brought about by the regulations.

It should be noted that, in our view, low-rate cards are not a reaction to the RBA regulations; rather, they are an international development. This view is supported by our interviews with the major banks, in which we were informed that the growth of low-rate cards was triggered by Virgin's entry into the Australian market.

Another potentially confounding factor is the growth of e-commerce in Australia in the post-regulation period. As shown in a recent report on electronic payments in Australia, the percent of Australian households making internet purchases and paying bills online has steadily increased since the late-1990s, and credit cards have been the payment method of choice for these types of card-not-present transactions.[95] This trend towards e-commerce has promoted the use of scheme payment cards because the EFTPOS debit card lacks the functionality that would allow it to be used in a card-not-present environment, such as with internet purchases. Figure 7 presents data on card-not-present transactions as a share of total MasterCard credit and scheme debit card transactions from October 2004 to November 2007. The figure shows a steady increase in the share of card-not-present transactions – from about 17% of total MasterCard transactions in 2004 to about 30% in 2007 – due mostly to growth in internet and standing order/recurring transactions. Although data are not readily available prior to October 2004, it is likely that a similar trend is evident in the first year of the RBA's intervention as well.

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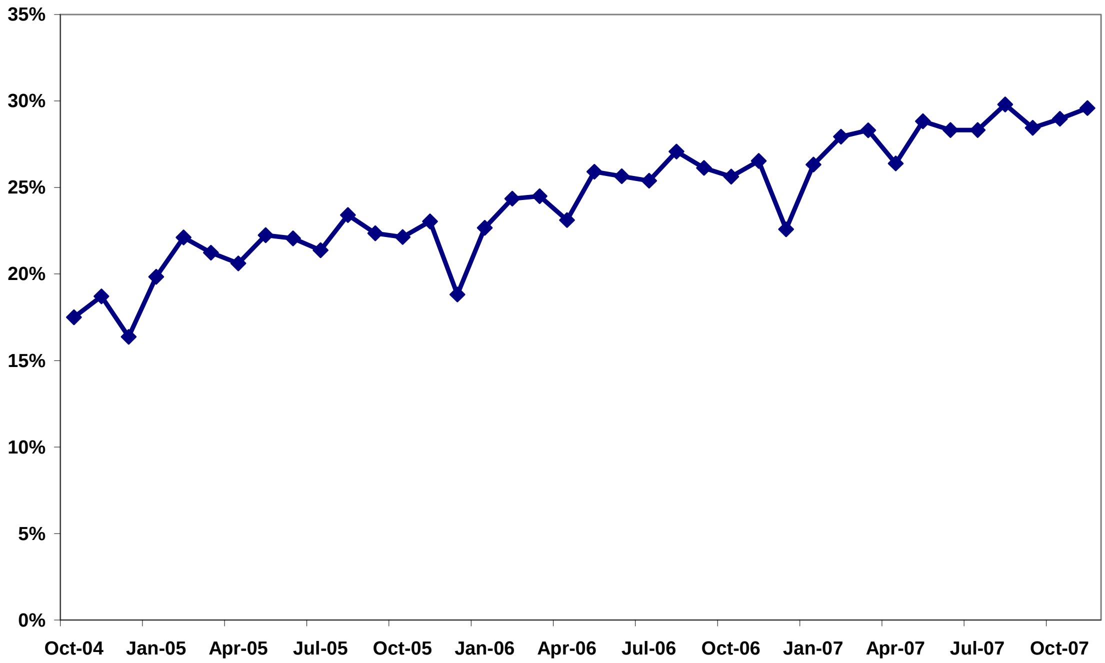
94 Information is based on confidential data provided by the four major Australian card issuers (ANZ, NAB, CBA and Westpac).

95 Centre for International Economics and Edgar, Dunn & Company, Exploration of Future Electronic Payments Markets, prepared for the Australian government department of communications, information technology and the arts (DCITA) and industry sponsors (Jun 2006), pp. 48-49.

**Figure 7: Card-not-present transactions as a share of total MasterCard credit and debit transactions (number of approved authorisations)**




Source: MasterCard data.

## 4.8. IMPACT ON USAGE OF FOUR-PARTY CARDS RELATIVE TO USAGE OF AMERICAN EXPRESS AND DINERS CLUB

As mentioned above, Visa and MasterCard expected that the RBA's regulations would provide American Express and Diners Club with a competitive advantage that would lead to increased use of the three-party cards. It appears that the RBA did not report data on usage of American Express and Diners Club until January 2002, therefore the "before" period for testing this hypothesis is necessarily limited.

The RBA has published data since August 2002 that allow one to exclude cash advances for credit and charge cards and cash-only transactions for debit cards[96] and to focus instead on the use of credit and debit cards for purchases only. The relative shares of the different payment methods on this basis, based on value of transactions, are shown in Figure 8. This figure shows a small increase in the debit card share over this period (from 30.1% to 31.7% between 2002 and 2007) as well as a small increase in the share accounted for by American Express and Diners club (from 10.3% to 10.8% between 2002 and 2007), but with no sharp jump in the share of either method of payment following the RBA's intervention in 2003.[97]

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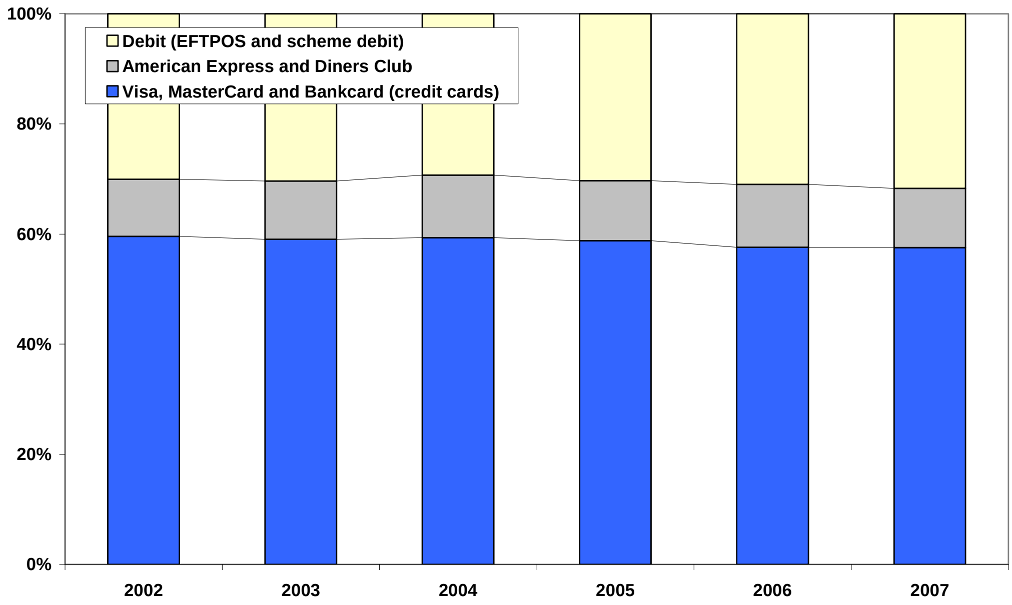
96 The RBA has published data that allow one to exclude cash advances for credit cards since 1994. However, the RBA did not begin to publish data that allow one to exclude cash-only transactions for debit cards until August 2002.

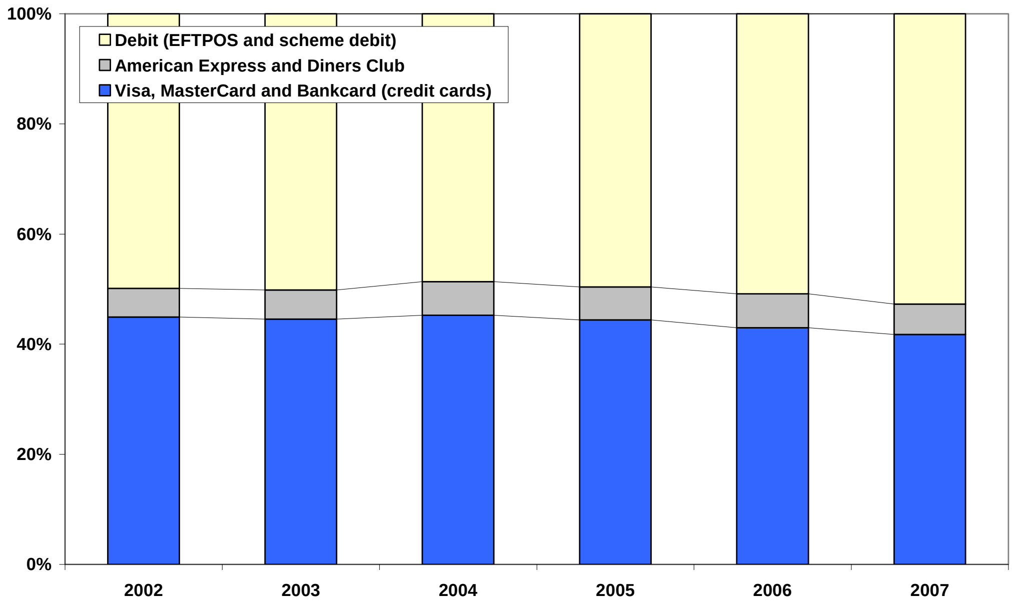
97 Percentages are for August of each year.

**Figure 8: Four-party credit card, three-party credit and charge card and debit card share of purchase transaction value (dollar value of transactions), 2002 –2007**




Source: CRA International, based on RBA payments data. Figures are for August of each year. Debit card transactions exclude ATM transactions and cash-only transactions. Credit and charge card transactions exclude cash advances. Data for purchase-only transactions for debit cards are not available prior to August 2002.

**Figure 9: Four-party credit card, three-party credit and charge card and debit card share of purchase transaction volume (number of transactions), 2002 –2007**

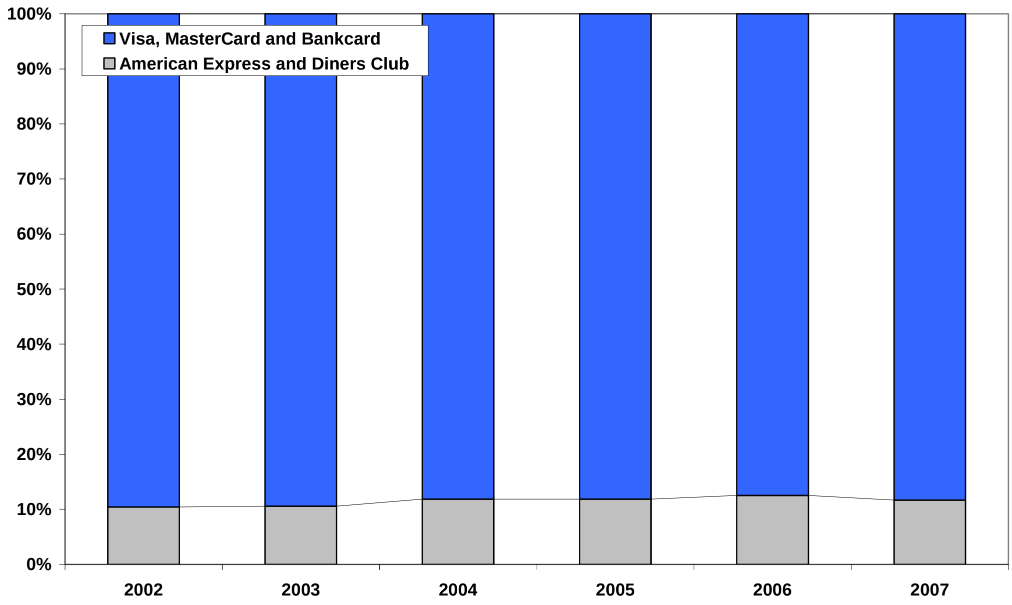



Source: CRA International, based on RBA payments data. Figures are for August of each year. Debit card transactions exclude ATM transactions and cash-only transactions. Credit and charge card transactions exclude cash advances. Data for purchase-only transactions for debit cards are not available prior to August 2002.

Figure 9 presents the same information, but in terms of the number of transactions. Because average debit card transactions tend to have lower average ticket sizes than average credit or charge card transactions, the credit and charge card shares are lower when shares are measured based on number of transactions. Even so, the conclusions are the same. The data show no sharp jump in debit card usage following the RBA's intervention in 2003. By this measure, the debit card share increased by 2.9%, from 49.8% to 52.7%, over the 2002-2007 period. The four-party credit card share fell by approximately 3.2% (from 44.9% to 41.8%) while the three-party credit and charge card share increased by 0.3% (from 5.2% to 5.5%).

Figure 10 looks more closely at the share of the four-party credit cards offered by Visa, MasterCard and Bankcard relative to the share of the three-party cards offered by American Express and Diners Club. As the schemes predicted when the RBA regulations were being considered, the increase in the share of the three-party cards has increased. But the increase was relatively modest and occurred mainly in the first half of 2004, when the share increased from 10.1% in January to 11.8% in July. This was right around the time Westpac began issuing American Express cards and ANZ began issuing Diners Club cards (see Section 4.2.3 above). Since then, the share of three-party cards has reached a peak of 12.8% in April 2006, but for the most part has hovered around 12%.

**Figure 10: Four-party and three-party credit and charge card share of purchase transaction volume (number of transactions), 2002-2007**




Source: CRA International based on RBA payments data. Figures are for August of each year.

## 4.9. IMPACT ON INDUSTRY STRUCTURE OF ACQUIRING AND ISSUING

As part of its intervention in the payment card industry, the RBA also introduced an "access regime" designed to facilitate entry into issuing and acquiring, particularly for non-financial institutions. However, as predicted by the schemes when this proposal was being considered in 2001-2002, the RBA's access regime has been largely ineffective at encouraging entry into either of these industries. To the contrary, when considered in their entirety, the RBA's regulations have, if anything, led to an increase in concentration among issuers by forcing smaller issuers out of the business.

To date, only two companies have taken advantage of the RBA's access regime: GE Money and MoneySwitch.[98] GE Money received authorisation in 2004 and is currently offering a suite of MasterCard credit card products to consumers.[99] In 2005, MoneySwitch (a start-up firm) received authorisation to acquire credit and debit card transactions. Moneyswitch, which changed

98 Unless otherwise noted, information in this paragraph is from RBA, Issues for the 2007/08 Review (May 2007), p. 24. The RBA states in its preliminary conclusions that two new acquirers and one new issuer have taken advantage of the RBA's access regime. RBA, Preliminary Conclusions of the 2007/08 Review (Apr 2008), p. 24. The website of the Australian Prudential Regulation Authority (APRA) however lists only two firms under the heading "specialised credit card institutions" – the category created by the RBA's access regime. APRA website, available at http://www.apra.gov.au/adi/ADIList.cfm#SCC, accessed 22 April 2008.

99 GE Money website, Credit Cards, available at http://www.gemoney.com.au/cardhome.html, accessed 23 April 2008.

its name to Tyro in 2007, currently offers merchant acquiring services to clients such as Toyota Financial Services.[100]

The RBA's regulations were not responsible for GE Money's entry. GE Money had issued credit cards in Australia through an overseas affiliate prior to the implementation of the access regime. The only effect of the access regime was a change of status. In its September 2007 submission on the RBA's 2007/08 review, GE attested to the fact that the access regime has had "very little effect" on access in the Australian payment system.[101]

Aussie Home Loans and Virgin have entered the issuing industry since 2003, but have chosen to do so through co-branding arrangements with existing issuers rather than as Specialised Credit Card Institutions (or SCCIs, the status created by the RBA's access regime for non-financial institutions desiring to enter the industry). Thus, it is not clear that the access regime has impacted entry into the issuing business at all.[102]

The main reason that the RBA's access regime has proven ineffective appears to be because it has not significantly reduced the financial and regulatory requirements needed to enter the payment card business. This was emphasised by the schemes in 2001-2002 when the RBA's regulations were under consideration, and has since been re-iterated by other parties such as American Express.[103] American Express also points out that SCCIs are actually subject to a 15% higher minimum capital ratio than existing competitors, which issue and acquire as Authorised Deposit-Taking Institutions (ADIs).[104]

Viewed in their entirety, the RBA's regulations appear to have reduced the incentives to enter the issuing business in Australia. The substantial reduction in interchange revenues appears to have reduced incentives to issue credit cards. In recent years, smaller issuers have begun to sell off their portfolios (e.g. CUSCAL's sale of its MyCard credit card portfolio to Citibank in December

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100 "Moneyswitch becomes Tyro", *Australian Banking and Finance*, 15 May 2007.

101 GE Money, Submission to the RBA for the 2007/08 review of payment system reforms (11 Sep 2007).

102 The RBA essentially agrees that the impact of its access reforms has been limited, noting that "further progress is required" in this area. After making this observation, this section of the RBA's preliminary conclusions then notes that "there have been a number of cards issued under co-branding arrangements with established issuers". (RBA, Preliminary Conclusions of the 2007/08 Review (Apr 2008), p. 24.) This is a curious juxtaposition in that it could be read to suggest (incorrectly) that the increase in co-branding arrangements was related to the RBA's access reforms. Co-branded credit cards have been present in Australia since the mid-1990s, and many of the most successful co-brand offerings were introduced prior to the RBA's intervention into the market (e.g. the Qantas ANZ Visa and the ANZ Rewards Visa). Thus, rather than supporting the efficacy of the RBA's access reforms, the fact that many companies choose to enter credit card issuing via co-branding arrangements rather than as SCCIs (the status created by the RBA's access reforms) is further evidence that these reforms have had little effect on the market structure of issuing.

103 American Express, Review of Payments System Reforms – A Submission to the Reserve Bank of Australia (Aug 2007), p. 17.

104 American Express, Review of Payments System Reforms – A Submission to the Reserve Bank of Australia (Aug 2007), p. 17.

2003 and the Bank of Queensland's sale of its issuing portfolio to Citibank in December 2006).[105] The Australian Bankers' Association concurs that the interchange regulations have had a larger negative impact on smaller issuers.[106]

It is also clear that the uncertainty brought about by the RBA's intervention has created concerns about the viability of smaller issuers and the likelihood of new entry. For example, under the RBA's current modification of the schemes' "honour all cards" rules, merchants are not required to accept a scheme's debit card as a condition of accepting the scheme's credit card (or vice versa). However, the RBA has discussed modifying the regulation to allow a merchant to accept some, but not all types of a scheme's credit cards (e.g. a merchant could accept standard cards but refuse premium cards).[107] In its August 2007 submission to the RBA, Abacus – Australian Mutuals argues that the removal of the honour all cards rule creates barriers to entry into card issuing: allowing merchants to refuse certain categories of cards creates uncertainty about card acceptance, such that issuers may be forced to offer multiple cards to consumers in order to compete effectively. This is particularly burdensome for potential entrants and existing small issuers, because it reduces economies of scale and commercial sustainability.[108] This point was also advanced by Cuscal, a wholesale provider of transactional banking, liquidity and capital management products to credit unions and other financial services institutions:

> *"In our view, however, the impact of the reform process has been to strengthen the market position of large merchants and to advantage larger financial institutions to the detriment of smaller issuers in the market…*
>
> *…the removal of the Honour All Cards rule has the potential to reduce the capacity of smaller institutions to promote and invest in product innovation. With unpredictability of card acceptance, the commercial reality for new participants is that multiple cards need to be offered to maximise acceptance options for consumers, reducing economies of scale and sustainability. In our view, the unintended outcome has been to increase barriers to entry for new entrants and to constrain smaller participants."*[109]

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105 Neither Bank of Queensland nor CUSCAL cited the RBA's regulations as the impetus for their decisions to sell; regardless, it is difficult to believe that the 50% reduction in interchange did not have an impact on the business case to sell. Our interviews with large banks confirmed this view. (Interviews with banks; Bank of Queensland Media Release, "BOQ to drive credit card portfolio growth through alliance with Citibank", 21 December 2006, available at http://www.boq.com.au/aboutus_media_20061221.htm, accessed 23 April 2008; Citibank Media Release, "Citibank and CUSCAL announce transfer of credit card portfolio", 18 December 2003, available at http://www.citibank.com.au/AUGCB/APPS/portal/loadPage.do?tabId=home&path=/info/sub_det/aboutus_news_20031218.htm, accessed 23 April 2008.)

106 Australian Bankers' Association, ABA's Submission: 2007/08 Payment Systems Review (31 Aug 2007), p. 17.

107 RBA, Issues for the 2007/08 Review (May 2007), p. 30; RBA, Preliminary Conclusions of the 2007/08 Review (Apr 2008), p. 33.

108 Abacus- Australian Mutuals, Submission to the RBA's Payment Reform Review (31 Aug 2007), pp. 3-4.

109 Cuscal, Review of Reforms to Australia's Payments System (31 Aug 2007), p. 2.

There is also anecdotal evidence that the regulatory uncertainty brought about by the RBA's intervention has limited incentives for large offshore issuers to enter Australia. In a February 2007 article from *Card International*, it was noted that:

> *"There is…evidence that major offshore card issuers have bypassed the Australia market because of the protracted nature of the RBA reforms, preferring to enter markets where conditions appear more stable."*[110]

In reviewing changes in the structure of the payment card industry since the RBA's intervention in 2003, another major development was the exit of Bankcard. Bankcard was a domestic credit card scheme launched by the major Australian banks in 1974, prior to the introduction of Visa and MasterCard in Australia.[111] When Visa and MasterCard were introduced to Australia in 1984, the Bankcard scheme began to lose cardholders, who preferred to hold cards that could be used abroad. In February 2006, Bankcard announced that its members would progressively withdraw Bankcard credit cards from Australia. Banks phased out cards over 2006 and merchants stopped accepting Bankcard in 2007. According to the media release announcing Bankcard's closure, the decision to close the scheme was precipitated by changing market conditions and the continued growth of Visa and MasterCard, which made a domestic, "Australia-only" credit card unattractive to consumers:

> *"Bankcard is no longer seen as attractive by today's market that seeks internationally accepted credit cards and other features and benefits that Bankcard is unable to match…With an evolving market and declining customer demand for Bankcard credit cards, the long-term future of the scheme would be doubtful if it were to continue."*[112]

## 4.10. IMPACT ON INVESTMENT AND INNOVATION

In adding up the costs and benefits of the RBA's interventions, it is important to consider the effects of the regulations on incentives to invest and innovate. Over the long run, innovation can have a much greater impact on consumer welfare than static effects on price levels.

It is generally accepted that market regulation can reduce the incentives to invest in a market by creating uncertainty about the returns that can be realised from these investments. In public submissions to the RBA, American Express, CBA, the Australian Bankers' Association and BPAY all expressed the view that regulation in the payment system introduces a level of uncertainty that

110 "Regulation: Australian Interchange – three years on", *Card International*, 20 February 2007.

111 Information in this section is from Bankcard Milestones, available at http://www.bankcard.com.au/, accessed 24 July 2007; Bankcard website, History, available at http://www.bankcard.com.au/, accessed 24 July 2007. This website has since become inactive.

112 Bankcard Media Release, "Bankcard announces progressive withdrawal from Australian credit card market", 2 February 2006, http://www.bankcard.com.au/, accessed 21 July 2007.

has had an inhibiting effect on investment decisions.[113] As noted by the Australian Bankers' Association, "the risk of sub-optimal levels of investment and innovation are very real".[114] Similarly, BPAY, a bill-payment scheme in Australia that remains unregulated, stated to the RBA that any fee regulation in BPAY could jeopardise innovation in the system.[115]

The RBA intended that its interventions would reduce the profitability of issuing four-party cards, and this reduction in profitability naturally reduces issuers' incentives to invest in new types of four-party cards. Our interviews with the major Australian banks confirmed these views. Each of the banks in Australia we interviewed told us that the interventions have made it more difficult to develop a "business case" for investments related to four-party cards. Banks cited the introduction of EMV/Chip and PIN and the provision of prepaid cards to commercial clients as examples of projects that have been adversely affected by the RBA's interventions.

Less obviously, but equally if not more important, the banks suggested to us that the RBA's interventions have adversely affected incentives to invest in other payment systems. Investments in EFTPOS cards, in particular adding card-not-present functionality, were mentioned as an example. While the lack of a governance structure for EFTPOS is likely the largest contributing factor to the lack of investment in the EFTPOS scheme, the banks suggested that the regulatory uncertainty caused by the RBA's intervention in the payment card industry has also been a factor in reducing the incentives to invest in the system. The impact of the regulations on incentives to invest in EFTPOS was explained as follows in CBA's August 2007 submission to the RBA:

> *"Given the extended period of regulatory uncertainty prior to the standard being set and now with the current RBA review, Acquirers and Card Issuers continue to be understandably reluctant to develop the EFTPOS payment system. This has resulted in a lack of innovation and development of EFTPOS despite obvious opportunities (e.g. online EFTPOS)."*[116]

If this is indeed the case, then the impact on payment cards is potentially significant. Currently, a major "selling feature" of scheme debit cards over EFTPOS debit cards is that scheme debit cards can be used for internet purchases whereas EFTPOS debit cards cannot. If EFTPOS debit cards added card-not-present functionality, then an important competitive advantage of scheme debit cards would be eliminated. Given the RBA's stated desire to correct distortions that it believed were leading to the over-use of credit and charge cards and the under-use of EFTPOS debit cards, the RBA should regard this kind of negative effect on the incentives to improve EFTPOS

113 American Express, Review of Payments System Reforms – A Submission to the Reserve Bank of Australia (Aug 2007), p. 17; CBA, Submission to the Reserve Bank of Australia – Reform of Australia's Payments System – Issues for the 2007/08 Review (31 Aug 2007), p. 7; BPAY, Submission by BPAY Limited on Reform of Australia's Payments System – Issues for the 2007/08 Review (31 Aug 2007); Australian Bankers' Association, ABA's Submission: 2007/08 Payment Systems Review (31 Aug 2007), p. 3.

114 Australian Bankers' Association, ABA's Submission: 2007/08 Payment Systems Review (31 Aug 2007), p. 3.

115 BPAY, Submission by BPAY Limited on 'Reform of Australia's Payments System – Issues for the 2007/08 Review (31 Aug 2007).

116 CBA, Submission to the Reserve Bank of Australia – Reform of Australia's Payments System – Issues for the 2007/08 Review (31 Aug 2007), p. 5.

functionality as an unintended and perverse consequence of its regulation of the payment card industry.

# 5. ASSESSMENT OF THE RBA'S REASONS FOR INTERVENING IN THE PAYMENT CARD INDUSTRY

The RBA's intervention in the payment card industry was driven by its view, derived from the cost calculations in the RBA-ACCC Joint Study (and updated by the RBA in 2007), that credit card transactions are more costly in resource terms than EFTPOS debit card transactions. The RBA anticipated that, by ordering a reduction in interchange fees, there would be a significant increase in the use of EFTPOS debit cards relative to credit cards and that, because credit card transactions were believed to be more costly than debit card transactions, this shift in card usage would imply a significant savings in real resources.

In its preliminary conclusions of the 2007/08 review, the RBA continues to assert that its interchange regulations have contributed "to an improvement in overall resource allocation and substantial gains in welfare to the community".[117] This conclusion is not based on the effects of the regulations on final consumers.[118] Instead, the RBA's conclusion is based on its view that (a) its regulations have induced a significant number of consumers to use EFTPOS debit cards for transactions that otherwise would have been conducted using credit cards; and (b) this shift from credit cards to EFTPOS debit cards has improved allocative efficiency because the incremental resource costs of EFTPOS debit card transactions are believed to be less than the incremental resource costs of credit card transactions. To punctuate this point, the RBA presents a back-of-the-envelope calculation in which it assumes that the regulations have reduced the number of credit card transactions by 5% and increased the number of EFTPOS debit card transactions by a like amount. The RBA claims that such substitution from credit cards to EFTPOS debit cards would have reduced costs by about AU$100 - AU$150 million per year.[119]

There is no basis for either of the key assumptions on which the RBA's analysis is based. As discussed in Part 4.7 above, the available data simply do not support the RBA's claim that its regulations have had a significant effect on the use of credit cards relative to EFTPOS debit cards. There is certainly no basis for assuming that the regulations have affected card usage by anything like the 5% figure assumed in the RBA's welfare calculation. Further, as explained in the remainder of this section, there are fundamental flaws with the RBA's resource cost analysis and its conclusions regarding the impact on allocative efficiency of shifting transactions from credit cards to EFTPOS debit cards.

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117 RBA, Preliminary Conclusions of the 2007/08 Review (Apr 2008), p. 38.

118 The RBA notes that it has received various submissions arguing that its regulations have made credit card holders worse off. The RBA states in response that it "does not accept this argument". It notes that "[w]hile the reforms have clearly affected different groups differently", its concern is with the impact of its regulations on "overall welfare" and claims that "the major benefits to the Australian economy" from the regulations accrue "through the improved allocative efficiency resulting from more appropriate price signals". RBA, Preliminary Conclusions of the 2007/08 Review (Apr 2008), p. 19.

119 RBA, Preliminary Conclusions of the 2007/08 Review (Apr 2008), p. 19.

## 5.1. SUMMARY OF THE COST STUDIES ON WHICH THE RBA HAS RELIED

We begin by reviewing the cost calculations in the 2000 Joint Study – the calculations on which the RBA relied when it made its decision to intervene in the payment system. We then summarise the updated study released by the RBA in November 2007.

### 5.1.1. The cost calculations in the 2000 Joint Study

The RBA's original analysis of the relative resource costs of conducting transactions using credit and debit cards is presented at pages 76-79, Table 5.1 (page 45) and Table 6.1 (page 65) of the Joint Study released in October 2000. The analysis is based on data for 1999 provided by the four major Australian banks and some smaller institutions.[120]

It is important to recognise that, when the RBA claims that credit card transactions are more costly in resource terms than debit card transactions, it is not referring to the difference in merchant service charges. The RBA recognises that merchant service charges are heavily influenced by interchange fees and that interchange fees are not a resource cost. Interchange fees are simply a transfer payment from one party to another which does not divert resources from an alternative use.[121]

The Joint Study attempted to analyse the resource costs per AU$100 transaction on the acquiring and issuing sides associated with credit card and EFTPOS debit card transactions. For credit card transactions, the Joint Study concluded that the sum of acquiring and issuing costs in 1999 averaged approximately AU$2.01 per AU$100 transaction. For EFTPOS debit card transactions, the Joint Study concluded that these costs in 1999 summed to an average of approximately AU$0.41 per AU$100 transaction. The RBA relied on these results for its conclusion that credit card transactions were significantly more costly in resource terms than EFTPOS debit card transactions.

### 5.1.2. The RBA's updated cost calculations

The RBA released updated cost calculations in November 2007 that are based on data from the respondents' 2005-06 fiscal year.[122] The updated calculations provide more detail on the costs of acquiring and issuing banks; they also attempt to estimate the resource costs to merchants and consumers associated with different payment methods.

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120 RBA & ACCC, Joint Study (Oct 2000), pp. 43, 64.

121 The RBA thus excludes interchange fees from its calculations of resource costs. See RBA & ACCC, Joint Study (Oct 2000), pp. 45 and 65. As an example of an activity that *would* constitute a resource cost, consider the time spent by employees to process card transactions. That time would be a resource cost if the employee could have spent the time in a productive alternative use.

122 RBA, Payment Costs in Australia – A study of the costs of payment methods (29 Nov 2007). The paper was prepared for the Payments System Review Conference organised by the RBA and the Centre for Business and Public Policy, Melbourne Business School, Sydney, 29 November 2007.

Table 8 summarises the RBA's updated calculations of resources costs. As in the Joint Study, these updated calculations exclude interchange fees and other items that are transfer payments rather than resource costs. The RBA estimated resource costs for an average size transaction using different payment mechanisms (AU$132 for credit cards and AU$59 for EFTPOS). Given that the issue is the costs that would have been incurred if transactions conducted using a credit card had been made with a debit card, this design in principle is imperfect. If the average credit card transaction is AU$132, it would have been better to calculate the costs for an EFTPOS transaction of AU$132. However, in practice, this difficulty with the design of the RBA's analysis may not be important – the RBA found that "[f]or transactions through the EFTPOS system, the resource costs are largely invariant with respect to the value of the transaction".[123]

123 RBA, Payment Costs in Australia (29 Nov 2007), p. 9.

**Table 8: Summary of the RBA's updated cost calculations, AU$ (unless stated otherwise)**

| | Reference to RBA, Payment Costs in Australia | Credit | EFTPOS | Difference |
|---|---|---|---|---|
| Average transaction size | | 132 | 59 | |
| **Financial institutions** | ***Table 2*** | **Credit** | **EFTPOS** | **Difference** |
| Acquiring | | 0.19 | 0.11 | 0.08 |
| Issuing | | | | |
| Authorisation and processing | | 0.08 | 0.05 | 0.03 |
| Scheme fees | | 0.11 | - | 0.11 |
| Fraud and fraud prevention | | 0.11 | 0.01 | 0.10 |
| Cost of capital (excl credit losses) | | 0.05 | 0.01 | 0.04 |
| Other | | 0.04 | 0.04 | - |
| | | 0.40 | 0.11 | 0.29 |
| **Sub-total** | | **0.59** | **0.22** | **0.37** |
| **Merchants** | ***Table 8*** | **Credit** | **EFTPOS** | **Difference** |
| Tender time | | 0.31 | 0.24 | 0.07 |
| Other point-of-sale | | 0.07 | 0.06 | 0.01 |
| Back-office processing | | 0.01 | 0.01 | - |
| Other | | 0.01 | - | 0.01 |
| **Sub-total** | | **0.40** | **0.31** | **0.09** |
| **Consumers** | ***Table 10*** | **Credit** | **EFTPOS** | **Difference** |
| Time (seconds per transaction) | | | | |
| Tender time | | 45 | 35 | 10 |
| Statement reconciliation | | 5 | 5 | - |
| Bill payment | | 13 | - | 13 |
| | | 63 | 40 | 23 |
| Assumed value of time (AU$ / hour) | *Page 20* | 12.50 | | |
| Assume value of time (AU$ / second) | | 0.0035 | | |
| Implied value of time spent | | 0.22 | 0.14 | 0.08 |
| **Total Resource Costs** | ***Table 11*** | **1.21** | **0.67** | **0.54** |

Taken at face value, the RBA's updated cost calculations imply that the resource costs for an average credit card transaction exceed the resource costs for an EFTPOS transaction by AU$0.54. Of this total difference, AU$0.37 is at the financial institution level (AU$0.08 on the acquiring side and AU$0.28 on the issuing side); AU$0.09 is at the merchant level; and AU$0.08 is at the consumer level.

Table 9 compares the results on the costs at the financial institution level from the updated study issued in 2007 with the results for issuing and acquiring in the Joint Study published in 2000. It is noteworthy that, after allowing for the effects of inflation, the cost estimates in the updated study are significantly lower than the cost estimates from the Joint Study on which the RBA originally based its decision to intervene. The sum of issuing and acquiring costs in the updated study (covering respondents' 2005-06 fiscal year) for credit and EFTPOS debit card transactions are 77% and 57% respectively lower than the estimates in the Joint Study (based on data from 1999).

**Table 9: Comparison of the RBA's Joint Study (2000) and Updated Study (2007) cost calculations, AU$ (unless stated otherwise)**

| | | | Nominal cost per transaction | | Real cost per transaction (2006 dollars) | | |
|---|---|---|---|---|---|---|---|
| Study | Year of study | Costs included | Credit | EFTPOS | Credit | EFTPOS | Difference (Credit – EFTPOS) |
| Joint Study (2000) | 1999 | Costs associated with financial institutions only | 2.01 | 0.41 | 2.52 | 0.51 | 2.01 |
| Updated Study (2007) | FY2005-06 | Costs associated with financial institutions only | 0.59 | 0.22 | 0.59 | 0.22 | 0.37 |
| | FY2005-06 | Costs associated with financial institutions, merchants and consumers | 1.21 | 0.67 | 1.21 | 0.67 | 0.54 |

Source: CRA International. Real costs were determined using the annual inflation rate between 1999 and 2006 according to the RBA's website (http://www.rba.gov.au/calculator/calc.go#divFrmCalcA, accessed 23 April 2008).

The fact that the updated study in 2007 has arrived at inflation-adjusted cost estimates that are so much lower than the cost estimates in the original Joint Study inevitably raises questions regarding the quality of the estimates. The RBA has not tried to explain this difference in its cost estimates, and it is improbable that there truly were changes in cost conditions that can explain the difference between the original Joint Study and updated cost estimates. If we are to accept the updated estimates, the natural conclusion is that the cost estimates in the original Joint Study – the study on which the RBA based its decision to intervene – were very significantly overstated.

Putting this same point in a different way, even if one accepts the accuracy of the updated cost estimates (which, for reasons explained below, we do not), the updated cost estimates imply that the RBA should regard its case for intervening in the payment card industry as significantly weaker than the case it thought it had in 2003 based on the cost calculations in the Joint Study. Table 9 shows that, even if one includes the estimates of transaction costs at the merchant and consumer level presented in the updated study, the RBA's own estimate of the difference between the costs of credit and EFTPOS debit card transactions in the updated study is approximately 73% less than the estimate in the Joint Study on which the RBA originally relied (after allowing for the effects of inflation).

## 5.2. COMMENTS ON THE COST STUDIES

### 5.2.1. The cost calculations should be based on incremental costs

As explained above, the RBA believes that interchange fees have promoted the use of credit cards relative to EFTPOS debit cards and that this has reduced the efficiency of the payment system in Australia because it believes, based on its cost studies, that credit card transactions are more costly in resource terms than EFTPOS debit card transactions.

Because the RBA is focusing on a subset of credit card transactions, namely credit card transactions that would be made using EFTPOS debit cards if interchange fees were lower or eliminated, the RBA's conclusion regarding relative resource costs requires evidence that the *incremental* resource costs of conducting additional credit card transactions are significantly greater than the *incremental* resource costs of conducting additional debit card transactions. The fixed costs of a credit card system should not be included in this calculation because, even if interchange fees were reduced, there would still be credit card transactions and thus there would still be need for the infrastructure required to conduct credit card transactions.

In its updated cost study issued in November 2007, the RBA makes clear that there is no disagreement that incremental costs are the relevant consideration. The RBA's updated report states clearly:

> *"In principle, this study is attempting to measure the long-run incremental resource cost of each payment method. This is the additional resource cost incurred in the long run if a substantial number of extra payments were made using a particular payment method."*[124]

### 5.2.2. The cost elements that should be included in incremental cost depend on the extent to which card usage is affected by the RBA's regulations

Even though the RBA agrees that incremental costs (and not average total costs) are the relevant consideration, the question remains as to what cost elements should be included in the calculation of incremental costs. As the quotation above makes clear, the RBA takes the position that the analysis should consider the impact on costs "if a *substantial number* of extra payments were made using a particular payment method" (emphasis added). Having defined the exercise in this manner, the RBA states that the costs which are relevant for calculating incremental costs "include those incurred in putting in place the additional infrastructure that would be needed to make a *substantial number* of extra payments" (emphasis added).[125] Because of this perceived need to include incremental infrastructure costs in the measure of long-run incremental costs, the

124 RBA, Payment Costs in Australia (29 Nov 2007), p. 2.

125 Ibid.

RBA concludes that long-run incremental cost "would be significantly higher than the marginal cost of making an extra payment through the existing infrastructure"[126].

This argument is driven by the assumption that, in calculating incremental costs, one should necessarily be considering the impact on costs "if a *substantial number* of extra payments were made using a particular payment method". This formulation is not necessarily correct. The calculation of incremental costs is not being conducted in a vacuum. To determine which costs should be included, it is important to remember the context: the issue is the incremental costs that would be avoided or incurred if interchange fees were reduced and if, as a result, use of credit cards declined and use of EFTPOS debit cards increased.

With this framework in mind, it is clear that determining which costs should be included in the measure of incremental cost depends on the effects of the RBA's regulations on card usage. If the effects of the regulations on card usage are relatively modest (and recall from Part 4.7 that there is no evidence to date that the regulations have had a significant effect on card usage), then the changes in card usage resulting from the regulations will have had little effect on the levels of infrastructure required to operate the credit and EFTPOS debit card systems. Under these circumstances, it would be inappropriate to include any significant allowance for infrastructure costs when analysing the impact on resource costs of the change in card usage resulting from the RBA's regulations. The correct measure of costs will be much closer to short-run marginal costs.

### 5.2.3. The updated study incorrectly uses average total costs as a proxy for incremental costs

The RBA has ignored this link between the impact of its regulations on card usage and the determination of which costs should be included in incremental cost. The RBA has measured incremental cost in a way that implicitly assumes that its regulations have affected the choice of payment method on a "substantial number" of transactions, yet there is no evidence to support this assumption.

The RBA has compounded this problem by assuming in its cost calculations that average total cost can be used as a reasonable proxy for long-run incremental costs. The RBA states in its report issued in November 2007:

> *"Given the practical difficulties involved with this forward-looking concept [long-run incremental cost], the approach taken here is to measure the average cost of different payment methods. In many situations, average cost is likely to be a reasonable indication of long-run incremental resource cost, although some caveats are discussed later in the paper."*[127]

For the reasons explained above, there is no basis for this assumption. Especially if the RBA's regulations have had only a modest effect on card usage, the relevant measure of incremental costs should be based almost exclusively on short-run variable costs (and should include little if any overhead or other infrastructure costs).

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126 Ibid.

127 Ibid.

### 5.2.4. Comments on specific elements of the RBA's updated cost study

Without access to the details of the calculations in the RBA's updated cost study, it is not possible to correct the RBA's analysis to eliminate the influence of infrastructure costs and to focus just on costs that are truly likely to vary in response to modest changes in the volume of credit and EFTPOS debit card transactions. We cannot, in other words, prepare alternative versions of the tables in the updated study that correct the RBA's mistaken use of average total costs.

This subsection highlights other problems in the RBA's updated cost study. The problems identified in this subsection are only a subset of the larger set of problems with the RBA's updated calculations.

*Fraud losses, prevention and investigation*

AU$0.10 of the difference in estimated costs on the issuing side relates to the costs of fraud losses, prevention and investigation associated with credit card transactions that are not associated with EFTPOS debit card transactions. In explaining why these costs are higher for credit cards, the RBA notes that these costs reflect "the practice of authorising credit card transactions by signature and the use of credit cards in situations in which the card is not present".[128] The implication is that fraud is a greater problem with transactions approved by signature (credit cards) rather than with a PIN (EFTPOS) and that fraud is also a greater problem with card-not-present transactions (where credit cards can be used, but EFTPOS cards cannot).

Here again there is a mismatch between the cost calculation in the RBA's updated study and the objective of the analysis. The RBA's focus is (or should be) on transactions conducted using a credit card that would have been made using an EFTPOS debit card if interchange fees had been lower. Precisely because EFTPOS debit cards cannot be used for card-not-present transactions, any fraud costs related to card-not-present credit card transactions should be excluded from the analysis. Even if the RBA's regulations caused EFTPOS debit cards to be used more (and credit cards less), there would be no material reduction in card-not-present transactions and hence no material reduction in fraud costs related to card-not-present transactions.

A similar point can be made with respect to point-of-sale transactions. If it is more difficult to perpetrate fraud when a PIN is required (as is the case with EFTPOS transactions), then the consumers who might be induced to use EFTPOS debit cards instead of credit cards in response to the RBA's regulations will not be the fraudsters. Fraudsters will continue using credit cards (which only require signature approval), because this is where the opportunities for fraud are greater. The cardholders who are induced to switch from credit cards to EFTPOS debit cards will tend to be the legitimate credit card users, who are not responsible for the point-of-sale fraud losses embedded in the RBA's cost of fraud calculations. Therefore, even if the RBA's regulations caused EFTPOS debit cards to be used more (and credit cards less), there should be no material change in the volume of fraudulent point-of-sale transactions and hence no material reduction in fraud cost related to point-of-sale transactions.

128 RBA, Payment Costs in Australia (29 Nov 2007), p. 8; RBA, Preliminary Conclusions of the 2007/08 Review (Apr 2008), p. 8.

### *Costs to merchants of longer tendering time*

Based on time and motion studies supplied by merchants, the RBA concludes that point-of-sale credit card transactions take 10 seconds longer on average to complete than EFTPOS transactions, primarily because obtaining signature approval (credit cards) takes more time than entering a PIN (EFTPOS). The RBA notes that "using typical wage rates in the retail industry, a 30 second saving in tender time could save a merchant around $0.17 per transaction".[129] Evidently based on this estimate of the value of a 30 second time saving, the RBA concludes that the 10 extra seconds that it takes merchants on average to process credit card transactions has a value of AU$0.07.[130]

This estimate almost surely overestimates the typical additional cost to merchants (in terms of increased tender time) associated with point-of-sale transactions conducted using a credit card that could have been made with an EFTPOS debit card. This method of calculating the costs of added tender time assumes that merchants have a goal of limiting customer queuing time to a particular figure so that any increase in queuing time resulting from an increase in tendering time means that the merchant should hire additional tellers. This is obviously a very crude method of estimation which assumes, among other things, that merchants always have queues that are near the maximum length that the merchant is willing to accept. This estimation method ignores important points that the RBA itself highlighted in its commentary (but which it seems to have disregarded in its calculations):

> *"For other merchants, particularly small businesses, tender time may be less important as a driver of costs. This is particularly so in environments in which queues at the check-out are atypical, and where the time taken for the payment to be processed can be used by the merchant to develop a stronger relationship with the customer. In our sample, some merchants with lower turnover estimated payment costs on the basis of informal estimates which were much closer across payment methods than those based on time and motion studies."*[131]

### *Transaction costs at the consumer level*

The RBA's comparison of the transaction costs at the consumer level for credit card and EFTPOS transactions has two main elements – differences in tender time (discussed above) and the time spent by consumers reviewing credit card statements prior to paying their bills that are unnecessary with EFTPOS transactions (because the monies are deducted from the consumer's account at the time of purchase). As mentioned above, it is assumed (based on time and motion studies) that credit card transactions take 10 seconds longer on average than EFTPOS transactions. The estimate for bill payment time is calculated as follows. The RBA assumes that it takes consumers, on average, two minutes to pay their credit card bills. The average number of credit card transactions on a credit card reportedly is approximately 9 per month. The RBA

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129 RBA, Payment Costs in Australia (29 Nov 2007), p. 16.

130 The RBA does not explain why its estimate is not AU$0.06 = AU$0.17 x (10 seconds / 30 seconds).

131 RBA, Payment Costs in Australia (29 Nov 2007), p. 16.

therefore concludes that each additional credit card transaction increases a consumer's bill payment time by about 13 seconds (= 120 seconds / 9).

The RBA's estimate of bill payment time is exceptionally crude. First, no source is provided for the estimate that the average consumer takes two minutes to pay his or her credit card bill. Second, there is no explanation as to why the length of time it takes to pay should vary with the number of transactions on the bill. The figure of 13 seconds is meant to cover bill *payment* time and does not include time spent reconciling the statement – statement reconciliation is listed as a separate item in the RBA's 2007 study. This is an important point because the issue, once again, concerns the costs associated with transactions conducted using a credit card that could have been made with a debit card. Even if a consumer made increased use of his or her EFTPOS debit card, the consumer might still have credit card transactions – because of on-line or other card-not-present transactions or because of large purchases where the consumer made use of the credit functionality of a credit card. Therefore, even if credit card holders made increased use of EFTPOS cards for transaction purposes, many if not most would still have credit card bills to pay – and it seems far more likely that the time spent actually paying a bill (as opposed to reconciling) would have little relation to the number of transactions on the bill.

### 5.2.5. Summary with respect to the cost studies

The RBA is clearly concerned about the reliability of its cost calculations. It cautions that "while every effort has been made to promote accuracy, precise estimation of payment costs is a challenging task". While expressing confidence in the rankings implied by the calculations, the RBA warns "these results should, however, be interpreted as providing a guide to the general orders of magnitude, rather than precise estimates".[132]

We submit that even this cautious interpretation of the RBA's updated cost calculations is not cautious enough. Aside from the difficulty which the updated study still faces of collecting comparable data across respondents, even an initial review of the RBA's updated study released in late November 2007 indicates a number of areas where it appears that the RBA includes costs that should be excluded or where the reliability of the RBA's estimates is highly questionable.

## 5.3. THE RELATIVE BENEFITS OF CREDIT AND DEBIT CARDS

The original cost analysis relied upon by the RBA was criticised by a number of parties because it focused only on costs and did not consider the relative benefits of credit and debit cards.[133] Various parties made the point that credit cards provide consumers with range of special benefits, most obviously access to credit, but also entitlement to refunds if goods or services are not

132 RBA, Payment Costs in Australia (29 Nov 2007), p. 21.

133 See e.g. MasterCard, Response to the December 2001 Consultation Document of the RBA (Mar 2002); NECG, Credit card schemes in Australia – A response to the RBA and ACCC Joint Study (Jan 2001); Appendix A to NAB, Letter to the Governor, Joint Study into Debit and Credit Card Schemes in Australia (5 Dec 2000) (Gans and King, Observations on the Joint RBA/ACCC Study 'Debit and Credit Card Schemes in Australia: A Study of Interchange Fees and Access' (9 Nov 2000)).

delivered and various other features. It was suggested that any comparison of the relative efficiency of credit and debit cards would need to take these benefits into account.

The RBA now agrees that relative benefits need to be considered as well as relative costs (while implying that it has never suggested otherwise):

> *"The Bank has repeatedly acknowledged that an outcome in which individuals use a payment method which involves higher resource costs can be efficient, particularly if the prices individuals base their choices upon are broadly reflective of the costs of providing the payment method."*[134]

# 6. SUMMARY OF CONCLUSIONS

Interchange fees and no-surcharge rules are issues that are being actively considered by regulators in various countries around the world. The effects of the RBA's decisions to order a 50% reduction in credit card interchange fees as of November 2003 and to prohibit no-surcharge rules as of January 2003 are therefore of great interest internationally, as well as in Australia.

The evidence on the actual effects of the RBA's interventions since 2003 should cause the RBA to reconsider and should give pause to regulators in other countries considering similar regulations. One of the main effects of the RBA's interventions has been a redistribution of wealth in favour of merchants. Merchant service charges have declined as a result of the RBA's regulations. The fact that merchants in Australia are lobbying aggressively for further reductions in interchange fees (indeed, the elimination of interchange fees) is clear evidence that they have benefited from the RBA's regulations and strongly suggests that they have not simply passed through reductions in merchant service charges in the form of lower prices and/or improved quality of service. In addition, there is evidence of merchants applying above-cost surcharges as part of an effort to capture some of the value that would otherwise be derived by consumers from the use of payment cards.

The RBA's regulations in contrast have harmed consumers by causing cardholder fees to increase and the value of card benefits such as reward programmes to decline. Consumers have also been harmed to the extent that the reduction in the profitability of issuers has reduced their incentive to invest in new types of cards and payment system innovations. Against these undeniable sources of consumer harm, merchants have not presented any empirical evidence documenting the extent to which reductions in merchant service charges have been passed through to consumers, and neither has the RBA or anyone else. Thus, while the RBA's regulations have clearly harmed consumers by causing higher cardholder fees and less valuable reward programmes and possibly reducing payment system innovation, there is no evidence that these undeniable losses to consumers have been offset by reductions in retail prices or improvement in the quality of service.

The RBA's case for intervening in the payment card industry was based on its belief that credit card transactions were more costly in resource terms than debit card transactions and its belief that interchange fees exacerbate this alleged inefficiency by promoting the use of credit cards

134 RBA, Issues for the 2007/08 Review (May 2007), paragraph 40.

relative to debit cards. In addition to analysing the impact of the RBA's regulations on final consumers, we have examined the cost studies on which the RBA has relied in reaching its conclusion that credit cards are more costly than debit cards. We have shown that the cost calculations on which the RBA relies (including the updated cost calculations) are deeply flawed and that, in fact, there is no basis for concluding that there is a significant waste of resources in Australia associated with transactions conducted using a credit card that could have been made using a debit card.

As we noted in the introduction, regulation should be employed only if there is clear evidence of a market failure and only if there is reason to believe that regulation is likely to benefit consumers. The evidence in this paper suggests that the RBA's intervention in the payment card industry in Australia failed both legs of this test. The market failures alleged (but not substantiated) by the RBA do not justify continuation of regulatory intervention. Moreover, the actual effects of the RBA's intervention provide no evidence that the payment system in Australia is now operating more efficiently or that consumers have derived any net benefits from the intervention.

# APPENDIX A: INTRODUCTION TO PAYMENT CARDS

## A.1 PAYMENT CARDS AND INTERCHANGE FEES

Payment cards such as debit cards and credit cards typically involve four parties, in addition to the systems themselves:

- The cardholder;
- The institution that provides the card to the cardholder – the issuer;
- The merchant that provides the goods or services to the cardholder; and
- The institution that provides services to the merchant – the acquirer.

In the case of MasterCard and Visa credit and debit cards, the schemes themselves do not issue or acquire transactions, but rather their member institutions provide these services to the end cardholder or merchant. In addition, the issuer and acquirer can be different institutions and hence these schemes are often referred to as "four-party schemes".

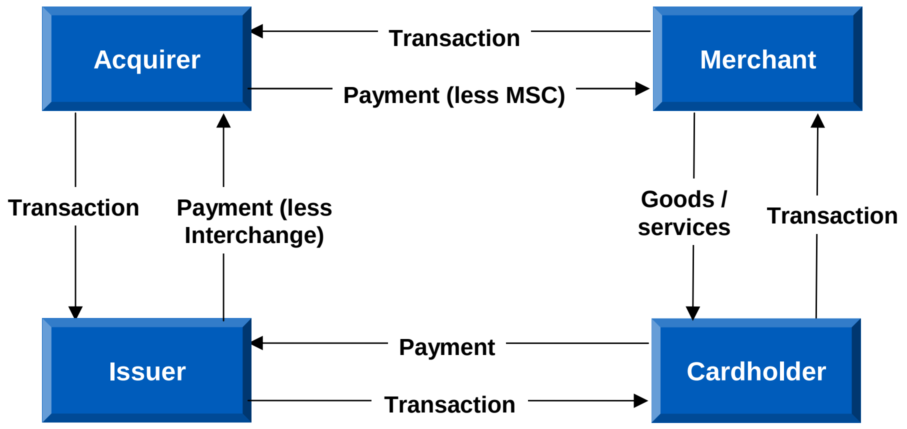
In the case of American Express and Diners Club, the schemes themselves both issue and acquire transactions. Hence these schemes are often referred to as "three party schemes" since the issuer and the acquirer is the same institution, namely the scheme.[135]

It is typical for payment cards to include an "interchange fee" which is a fee that is paid between issuers and acquirers. In the MasterCard and Visa schemes the interchange fee is paid by the acquirer to the issuer.

Figure 11 below provides a schematic of the parties involved and the flows of money within the MasterCard and Visa payment card schemes.

135 In some cases American Express and Diners Club will offer a franchise to other institutions to issue or acquire on their behalf.

**Figure 11: Four party scheme payment card**




Source: CRA International

## A.2 Role of interchange fees

In both the three party schemes and the four party schemes, there are two distinct sets of users of payment card functionality – the cardholders and the merchants. Both of these users need to participate in the system if it is to function:

- Cardholders could not use their cards if there were no merchants who accepted cards; and
- Merchants could not accept cards if there were no cardholders.

For this reason, payment card schemes are often referred to as “two sided markets”.

Furthermore, there are important interactions between these two “sides” of the market since the value of the system to one side depends on the participation of the other side:

- The greater the number of consumers who use cards, the greater the value to merchants from accepting them; and
- The greater the number of merchants accepting cards, the greater the value to consumers from having cards.[136]

Because interchange fees are a cost to acquirers, interchange fees tend to increase merchant service charges. Interchange fees however are a source of revenue to issuers. The receipt of

136 These are sometimes referred to as “indirect network effects”. Network effects arise where the value of being part of the network varies depending on the size of the network – typically where the value from joining the network increases as the network increases. The interactions above are described as indirect network effects because the value from joining the network increases as the size of the “other side” increases.

these revenues enables issuers to offer lower cardholder fees and/or increase the value of card benefits (e.g. interest-free periods and reward points).

Assuming that merchants do not apply surcharges to users of scheme credit or debit cards, interchange fees can be a method of encouraging card usage. If merchants do not surcharge, the cardholder benefits from interchange fees (lower cardholder fees and/or increased cardholder benefits) will not be offset by higher prices at the retail level.

Economists recognise that interchange fees can be used to realise the full benefits of the indirect network effects described above – cardholders benefit when more merchants accept payment cards; merchants benefit when more consumers use payment cards. Interchange fees can be used in four-party card systems to balance demand on the two sides of the market in a way that realises the full benefits of indirect network effects and which optimises card usage and acceptance.[137]

## A.3 NO-SURCHARGE RULES

Visa and MasterCard had a no-surcharge rule in Australia until January 2003, when no-surcharge rules were prohibited by the RBA. No-surcharge rules ensure that cardholders will not face above-cost surcharges in which merchants use surcharges as an opportunity to extract value from credit card users. The incentive of merchants to use surcharging in this manner is recognised in the economic literature.[138]

No-surcharge rules also ensured that schemes could use interchange fees to promote card usage and realise the full benefits of indirect network effects. Gans and King[139] have shown that, if surcharging is frictionless (so that all merchants surcharge), then changes in interchange fees might have no effect on card usage. For example, if surcharging was frictionless and there was an increase in interchange fees, the resulting decrease in cardholder fees and/or increase in card benefits would be exactly offset in the Gans-King analysis by the resulting increase in surcharges applied by merchants on card transactions. No-surcharge rules ensure that the use of interchange fees to promote card usage and to realise the full benefits of indirect network effects would not be "un-done" by surcharging.

137 For a non-technical discussion of these points, see e.g. David Evans and Richard Schmalensee, "The Economics of Interchange Fees and Their Regulation: An Overview", AEI-Brookings Joint Center for Regulatory Studies, Related Publication 05-12, May 2005, available at http://aei-brookings.org/admin/authorpdfs/redirect-safely.php?fname=../pdffiles/php6A.pdf, accessed 23 April 2008. For a more technical overview, see e.g. Julian Wright, "The determinants of optimal interchange fees in payment systems", *Journal of Industrial Economics* Vol. 52, Issue 1 (March 2004), pp. 1-26.

138 Marius Schwartz and Daniel Vincent, "The No Surcharge Rule and Card User Rebates: Vertical Control by a Payment Network", *Review of Network Economics*, Volume 5, No. 1 (March 2006), pp. 72-102.

139 Joshua Gans and Stephen King, "The Neutrality of Interchange Fees in Payment Systems", *Topics in Economic Analysis and Policy*, Vol. 3, Issue 1 (2003), pp. 1-16..

# APPENDIX B: BACKGROUND INFORMATION ON THE PAYMENT CARD INDUSTRY IN AUSTRALIA

This appendix provides some high-level background information on the Australian payment card industry.

## B.1 CREDIT AND CHARGE CARDS

There are currently two credit card schemes and two charge card schemes in the Australian payment system. Visa and MasterCard are four-party credit card schemes, while American Express and Diners Club are typically classified as three-party charge card schemes (although some banks now issue American Express and Diners Club products and American Express now offers credit card products in addition to charge cards). Until its demise in 2006, Bankcard was another four-party credit card scheme active in the Australian payment system.

Visa has historically been the largest credit/charge card scheme in Australia. In 2000, the RBA/ACCC Joint Study estimated that Visa had a 51.4% share of the general-purpose credit and charge card business based on cards issued. MasterCard and Bankcard were the next-largest schemes, followed distantly by American Express and Diners Club. The RBA's estimates are shown in Table 10 below.

**Table 10: Shares of major credit and charge card schemes, 1999/2000**

| | Share (based on cards on issue) |
|---|---|
| Visa | 51.4% |
| MasterCard | 22.7% |
| Bankcard | 19.2% |
| American Express (credit and charge cards) | 5.0% |
| Diners Club | 1.7% |

Source: Roy Morgan consumer survey, as cited in RBA & ACCC, Joint Study (Oct 2000), p. 15.

Credit cards are widely held and used in Australia. A survey conducted by Roy Morgan Research in May 2007 found that approximately 54 percent of adults hold a credit or charge card.[140]

## B.2 DEBIT CARDS (EFTPOS AND SCHEME DEBIT)

There are three debit card schemes in Australia: EFTPOS, Visa Debit and MasterCard Debit. While there has been some growth in the Visa Debit scheme over the past several years, EFTPOS continues to be the leading scheme, with an 86% share in terms of cards issued and an

140 RBA, Issues for the 2007/08 Review (May 2007), p. 17.

80% share in terms of transaction value in 2006.[141] Visa Debit holds most of the remaining share (due to the fact that MasterCard only entered the business in late-2005).

### B.2.1 EFTPOS

EFTPOS is a domestic PIN debit system that was established by the major banks in 1984.[142] The EFTPOS system consists of a series of bilateral links between issuers and acquirers (as opposed to a centralised switch like in the Visa and MasterCard schemes). EFTPOS is run through the bilateral links between the different banks, with the Australian Payments Clearing Association (APCA) playing a role to set technical standards. The APCA and Australian Bankers' Association have recently entered into discussions to put a more comprehensive governance system into place.[143]

One unique aspect to the Australian EFTPOS system is the interchange fee, which is bilaterally negotiated and flows from the issuer to the acquirer ("negative interchange"). The direction of interchange for EFTPOS likely relates to the beginnings of the system. According to several sources, merchants and acquirers invested heavily in the system at its start, with large retailers such as Coles Myer investing in their own EFTPOS terminals.[144] As a result, negative interchange fees were negotiated to finance the investments that were undertaken by these entities. This practice has not been altered since.[145]

### B.2.2 Visa Debit and MasterCard Debit ("scheme debit")

Visa Debit and MasterCard Debit are frequently referred to as "scheme debit" systems. In Australia, scheme debit cards are different from EFTPOS cards in several respects:[146]

- Scheme debit cards are signature debit cards (i.e. a customer signs a receipt to authorise a transaction). EFTPOS transactions are authorised by PIN.

141 Datamonitor, Payment Cards in Australia 2007 (Jun 2007), pp. 43-44.

142 Frontier Economics, Why does Australia have negative interchange for EFTPOS? (9 Jul 2004), p. 9. The report was prepared for the Australian Merchant Payments Forum.

143 "Banks talk EFTPOS governance", *The Sheet News Bites,* 3 August 2007.

144 See Frontier Economics, Why does Australia have negative interchange for EFTPOS? (9 Jul 2004), p. 9; "A boost for EFTPOS", *Electronic Payments International*, January 1997.

145 Frontier Economics, Why does Australia have negative interchange for EFTPOS? (9 Jul 2004), p. 9

146 RBA, Reform of the EFTPOS and Visa Debit Systems in Australia – A Consultation Document (Feb 2005), p. 5. (As a further point of clarification, a scheme debit card also has EFTPOS functionality. In other words, banks either issue an EFTPOS-only card or a scheme debit card with EFTPOS functionality as well as scheme debit functionality. Typically, a consumer can decide to use a scheme debit card as either an EFTPOS card or a scheme debit card. To use it as an EFTPOS card, they press the "Savings" button on the POS terminal and to use it as a scheme debit card they press "Credit" on the POS terminal.)

- Scheme debit transactions are processed through the Visa and MasterCard credit card processing networks, while EFTPOS transactions are processed through the EFTPOS network.

- Scheme debit cards can be used in card-not-present transactions; examples include payments over the internet or telephone. EFTPOS cards cannot be used for these types of payments.

- Scheme debit cards cannot currently be used to obtain cash-back at the point-of-sale, whereas EFTPOS cards can.

- Finally, scheme debit cards are accepted internationally and offer the same protections as other Visa transactions (e.g. customers can receive charge-backs in cases of fraudulent use or where goods and services are not delivered as promised). EFTPOS cards are only accepted domestically and do not have these types of protections.

Visa Debit was first issued by credit unions and building societies in the 1980s. By contrast, MasterCard's debit product was launched in Australia in November 2005.

## B.3 ISSUING AND ACQUIRING

The Australian banking sector consists of four "major" banks, several smaller regional banks, and hundreds of credit unions and building societies. Credit and debit issuing and acquiring activities are primarily carried out by the four major banks – Australia and New Zealand Bank (ANZ), Commonwealth Bank of Australia (CBA), National Australia Bank (NAB) and Westpac. For example, in 2000, the RBA/ACCC Joint Study reported that approximately 85% of credit card transactions involved cards issued by the four major banks and that these same four banks accounted for 93% of credit card transactions acquired.[147]

In addition to the four major banks, there are several other issuers of note. These include St. George Bank (the fifth-largest bank in Australia), Citibank and GE Money.

147 RBA & ACCC, Joint Study (Oct 2000), p. 17.

# APPENDIX C: ADDITIONAL DATA ON INCREASES IN CARDHOLDER FEES

Table 11 below provides detail on the fees of specific issuers. Since 2002, ANZ and Westpac have increased annual fees on at least one rewards card offering by over 50%, while St. George increased the annual fee for its low-rate MasterCard by 51%. Some issuers have increased annual fees by an even greater amount – for example, the annual fee on Citibank's Silver MasterCard/Visa card has increased by 130% since early 2002. Clearly, the interchange standard has left many cardholders facing significantly higher costs.

**Table 11: Examples of Visa/MasterCard products with increased annual fees**

| Issuer/Card Name | Fee Type | Change from (AU$) | Change to (AU$) | % change | Date |
|---|---|---|---|---|---|
| **ANZ** | | | | | |
| Qantas Visa | Annual Fee + Reward Programme Fee* | 60 (27 + 33) | 95 (40 + 55) | 58% | Dec-02 |
| Qantas Gold Visa | Annual Fee + Reward Programme Fee* | 100 (67 + 33) | 150 (95 + 55) | 50% | Dec-02 |
| Rewards Visa (formerly Telstra Visa) | Annual Fee + Reward Programme Fee | 30 (19 + 11) | 48 (26 + 22) | 60% | Dec-02 |
| First Free Days Visa | Annual Fee | 26 | 30 | 15% | Oct-03 |
| **Commonwealth** | | | | | |
| Standard MC/Visa with Rewards | Annual Fee | 45 | 59 | 31% | Jan-03 |
| Gold MC/Visa with Rewards | Annual Fee | 82 | 114 | 39% | Jan-03 |
| **NAB** | | | | | |
| NAB Gold Rewards | Annual Fee + Reward Programme Fee | 121.30 (88.30 + 33) | 145.50 (88.30 + 57.20) | 20% | Jul-05 |
| **Westpac** | | | | | |
| Standard MC/Visa | Annual fee | 24 | 30 | 25% | Mar-03 |
| Gold MC/Visa | Annual fee | 65 | 90 | 38% | Mar-03 |
| Altitude MC (Rewards) | Annual fee | 49 | 75 (now 100) | 53% | Mar-03 |
| Altitude Gold MC (Rewards) | Annual fee | 90 | 125 (now 150) | 39% | Mar-03 |
| **Citibank** | | | | | |
| Gold MC/Visa | Annual Fee | 90 | 99 (now 119) | 10% | Feb-02 |

| Issuer/Card Name | Fee Type | Change from (AU$) | Change to (AU$) | % change | Date |
|---|---|---|---|---|---|
| Silver MC/Visa | Annual Fee | 30 | 55 (now 69) | 83% | Feb-02 |
| **St George** | | | | | |
| MC Starts Low, Stays Low | Annual Fee | 39 | 59 | 51% | Jul-02 |

Notes and Sources: Grant Halverson, "Australian interchange review: three years on", *Australian Banking & Finance*, 15 February 2007; Bank Media Releases; Cannex, Pricing and Product Features – as at 30 September 2005. *The Reward Programme Fee also began to be charged on every add-on card, where previously there had been no fee. Westpac's Altitude MasterCard annual fees have been raised since the introduction of the Altitude American Express.

# APPENDIX D: ADDITIONAL DATA ON BANK-ISSUED AMERICAN EXPRESS AND DINERS CLUB CARDS

The American Express and Diners Club offerings issued by the major banks in Australia since 2003 are summarised in Table 12 below.

**Table 12: Recent Bank-issued American Express and Diners Club offerings in Australia, 2003 to present**

| Issuer | Card | Date Introduced | Companion card? | Details |
|---|---|---|---|---|
| ANZ | ANZ Rewards Diners Club | Sep-03 | YES | Issued to ANZ Telstra Visa cardholders |
| ANZ | ANZ Frequent Flyer Diners Club | Sep-03 | YES | Issued to ANZ Qantas Visa cardholders |
| Westpac | Altitude American Express | Feb-04 | YES | Issued to Westpac Altitude MasterCard customers, now available as part of a package with Altitude MasterCard; also available in corporate version |
| NAB | NAB Ant American Express | Jul-04 | NO | |
| NAB | Velocity NAB American Express | Nov-05 | YES | Offered as part of a package with Velocity NAB Visa card, also available in corporate version (aimed at small businesses) |
| Westpac | Earth American Express | Jun-06 | YES | Offered as part of a package with Earth MasterCard |

Source: ANZ Press Release, "ANZ and Diners Club to launch new cards: Announce changes to reward programs", 12 September 2003, available at http://www.anz.com/australia/support/library/MediaRelease/MR20030912.pdf, accessed 27 July 2007; "American Express and Westpac announce card issuing deal", *The Asian Banker Journal*, 29 February 2004; "National launches new American Express card", *The Asian Banker Journal*, 15 July 2004; NAB Media Release, "Flying high with NAB and Virgin Blue", 15 November 2005, available at http://www.nab.com.au/About_Us/0,,76275,00.html, accessed 27 July 2007; "Westpac launches earth: the first 'value rewards' credit card", 5 June 2006, available at http://www.westpac.com.au/internet/publish.nsf/Content/WIMCMR06+Archive+media+release+05+June+2006b, accessed 27 July 2007; Bank websites.

Further details on these offerings are provided below:

- ANZ-Diners Club: In September 2003, ANZ announced that it would offer two new Diners Club charge cards to its existing Qantas Visa and Telstra Visa customers.[148] The cards were introduced at the same time that ANZ announced changes to its reward programmes for the Qantas Visa and Telstra Visa cards. The changes to the reward schemes halved the number of points earned on spending in excess of AU$1,500 per month (AU$2,500 for Gold cards) and capped the number of points that could be earned in a month. Customers affected by these changes were offered the ANZ Frequent Flyer Diners Club charge card (Qantas Visa cardholders) or the ANZ Rewards Diners Club charge card (Telstra Visa cardholders), which continued to offer one point per dollar spent with no cap, with no annual fee for the first year. The introduction of the cards was intended to "minimise the impact [of the RBA's regulations] on customers who spent higher amounts on their card". Customers were encouraged to use their Diners Club card to continue to earn points at a higher rate and were given the option of transferring their Diners Club balance to their Visa card, to be paid off over time. This had the effect of giving the Diners Club charge card most of the characteristics of a credit card.

- Westpac-American Express (Altitude): In February 2004, Westpac and American Express announced the introduction of the Altitude American Express credit card.[149] The Altitude American Express was initially offered as a companion card to qualified Altitude MasterCard cardholders (for an annual fee of AU$45, waived for the first year) and is currently offered in conjunction with the Altitude MasterCard; i.e. with each account, customers receive an American Express and a MasterCard. The Altitude American Express offers twice as many reward points per dollar spent as the Altitude MasterCard, but all other card attributes are identical.

- NAB-American Express (Ant Card): In July 2004, NAB and American Express announced the launch of the National Ant American Express Card with Rewards.[150] The Ant Card is the only standalone American Express that has been issued by one of the four major banks. At the time, NAB marketed the product as having "the best credit card reward program the National has ever offered". The card offers one point per dollar spent on purchases with no cap on points and the ability to redeem points for Qantas frequent flyer miles at a rate of one for one. At present, a version of the card is also available with no annual fee and a scaled-back reward programme.

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148 Information on the ANZ Diners Club offerings is from: ANZ Press Release, "ANZ and Diners Club to launch new cards: Announce changes to reward programs", 12 September 2003.

149 Information on the Altitude American Express is from "American Express and Westpac announce card issuing deal", *The Asian Banker Journal*, 29 February 2004; Westpac website.

150 Information on the Ant Card is from "National launches new American Express card", *The Asian Banker Journal*, 15 July 2004; NAB website.

- NAB-American Express (Velocity): In November 2005, NAB launched the Velocity NAB Visa card and the Velocity NAB American Express card, which allow cardholders to earn Virgin Blue frequent flyer miles.[151] The cards, which at the time were the only Australian credit cards to offer points for Virgin Blue, are offered as a package; i.e. each account has a Velocity NAB American Express and a Velocity NAB Visa.[152] The American Express card earns higher rewards per dollar spent, but all other attributes are identical between the two cards. The product is also available as a corporate offering targeted at small businesses.

- Westpac-American Express (Earth): Most recently, in June 2006, Westpac issued a second American Express-branded product for the consumer segment. The Earth account provides cardholders with a MasterCard card and an American Express card, with higher points earned on purchases made with the American Express. Westpac has marketed Earth as a low-rate, low-balance transfer product with a high-value reward programme, allowing customers to get "the best of both worlds".[153]

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151 "Australia: Flying high with NAB and Virgin Blue", *The Asian Banker Journal*, 15 November 2005.

152 Product details from NAB website, accessed 26 July 2007.

153 Westpac Media Release, "Westpac launches earth: the first 'value rewards' credit card", 5 June 2006, available at http://www.westpac.com.au/internet/publish.nsf/Content/WIMCMR06+Archive+media+release+05+June+2006b, accessed 23 April 2008.

# APPENDIX E: MATHEMATICAL MODEL OF THE IMPACT OF CHANGES IN INTERCHANGE FEES

## E.1 INTRODUCTION

Even under circumstances in which a regulatory reduction in interchange fees has little effect on card usage, a regulatory reduction in interchange fees can have distributional effects such that final consumers as a group end up worse off. Roughly speaking, final consumers will tend to be worse off from a regulatory reduction in interchange fees if the extent to which issuing banks pass-through the reduction in interchange fee revenues (in the form of higher cardholder fees and reduced card benefits) is greater than the product of (a) the extent to which acquiring banks pass-through the reduction in interchange fee expenses to merchants in the form of reduced merchant service charges and (b) the extent to which merchants pass-through the reduction in merchant service charges to consumers.

This appendix demonstrates these points through a formal mathematical model. More specifically, the appendix analyses the distributional effects of exogenous changes in the level of interchange fees (IF) in a world with fixed levels of card membership and merchant acceptance and no surcharging. By assuming fixed levels of card membership and merchant acceptance, our model assumes away – deliberately and solely for purposes of analysis – the possibility of two-sided market effects in which IF are used to balance demands and to encourage optimal usage of the system. We assume no surcharging to reflect the fact that, in practice, relatively few merchants impose surcharges on payment card transactions even when surcharging is permitted. Using the simple model developed in this appendix, we demonstrate that, even in the absence of two-sided market effects, consumers as a group can be net losers from regulatory reductions in interchange fees over a wide range of plausible parameter values.

## E.2 DESCRIPTION OF THE MODEL

To incorporate the fact that merchants typically do not operate in perfectly competitive markets in which they are pure price takers but instead have an element of market power, we assume for modelling simplicity that there is a unit continuum of merchants who are monopolistic sellers of different (unrelated) goods, but are otherwise identical. We also assume in this analysis that all merchants accept cards as a means of payment.

On the consumer side, we also assume there is a unit continuum of consumers, of which a fraction $t \in (0,1)$ uses a credit card for all their purchases, while the rest of consumers use cash only.

As noted above, because we are assuming the absence of two-sided market effects in this analysis, we assume that the fraction of consumers that uses a credit card is fixed and, in particular, does not vary with changes in the level of interchange fees. We also assume that the level of interchange fees does not affect the fraction of merchants that accept cards (and that this fraction is fixed at 1). We normalise merchants' costs to zero and assume that they charge the same price *p* for both card and cash transactions.

Card transactions are subject to *ad valorem* bank fees *f* and *m*, where *f* is the transaction fee paid by the cardholder to its issuing bank (or, if *f* is negative, received from its issuing bank) and *m* is the transaction fee paid by the merchant to its acquiring bank.[154] We assume that banks' costs are also equal to zero and that an *ad valorem* IF *a* is paid by the acquiring bank to the issuing bank for each transaction.

Consumers in this model are interested in buying only one unit of each merchant's good, and do so as long as the corresponding price – which, for the card-using consumers, includes the (possibly negative) card fee *f* – is below the consumers' willingness-to-pay.[155] We assume that the distribution of the consumers' willingness-to-pay is identical for the population of card-using and cash-using consumers and equal to the uniform distribution on the unit interval $[0,1]$.

We do not model explicitly the behaviour of the banks or the card schemes. Instead, we take the IF level as an exogenous parameter and assume that banks' acquiring and issuing fees are linear functions of the IF: $m = m_0 + r_m \cdot a$ , and $f = f_0 - r_f \cdot a$, where the base rates $(m_0, f_0)$ and the pass-through rates $(r_m, r_f)$ are fixed numbers.

The timing of the model is as follows: given the IF level *a* and hence the bank fees *f* and *m*, merchants choose their price *p*; and then consumers decide whether to buy the merchants' goods or not.

The demand function faced by each merchant is thus[156]

$$D(p) = t \cdot [1-(1+f)\cdot p] + (1-t)\cdot(1-p)$$

To explain this demand function further, note that because consumers' willingness to pay ranges from 0 to 1, all consumers will purchase if the price they actually face equals 0 and no consumers will purchase if that price equals 1. Because willingness to pay is assumed to be distributed uniformly across consumers, the fraction of customers who purchase will equal 1 minus the price faced by the consumers.

In the case of card users (who account for a fraction *t* of all consumers), the net price they pay equals the price charged by merchants (*p*) times 1 plus the cardholder fee (*f*) – where the cardholder fee could be negative (as when issuers provide card users with rebates). In the case of cash customers (who account for a fraction (*1-t*) of all consumers), the net price they pay is just the price charged by merchants (*p*). The first term in the demand function shows the demand from card users while the second term shows the demand from cash customers.

Each merchant maximises profit

$$\pi(p) = t \cdot p \cdot (1-m) \cdot [1-(1+f)\cdot p] + (1-t)\cdot p \cdot (1-p) .$$

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154 We do not consider fixed annual card fees; given the assumption of fixed card memberships, such fees would be just lump sum transfers without any impact on the rest of the model.

155 If issuers offer interest-free periods or rewards linked to ticket value, *f* will be less than zero and the full price paid by card-using consumers will be less than the price paid by consumers who pay with cash.

156 Strictly speaking, the formula for the demand function and the ones that follow are only valid if $0 \le p \le 1$ and $0 \le (1+f)\cdot p \le 1$. These conditions are satisfied in all the cases of interest.

To explain this profit function further, the first term shows the net price realised by the merchant on card transactions – *p * (1-m)* – times the quantity demanded by card users; the second term shows the net price realised by the merchant on sales to cash customers – which is just *p* – times the quantity demanded by non-card users.

The profit maximising price is

$$p^* = \frac{1 - t \cdot m}{2 \cdot [1 - t \cdot m + t \cdot f \cdot (1-m)]}$$

The corresponding quantities demanded by card users and cash users are $Q^{card} = t \cdot [1-(1+f) \cdot p^*]$ and $Q^{cash} = (1-t) \cdot (1-p^*)$, respectively.

Consumer surplus measures the difference between consumers' willingness to pay for the goods purchased and the amount actually paid. In this model, the consumer surplus of card users is $CS^{card} = Q^{card}[1-(1+f) \cdot p^*]/2 = (Q^{card})^2/2$ and, similarly, the consumer surplus of cash users is $CS^{cash} = (Q^{cash})^2/2$.

Merchants' profits are

$$\pi = \frac{(1 - t \cdot m)^2}{4[1 - t \cdot (m + m \cdot f - f)]}$$

The profits of the issuing and acquiring bank are $\pi^I = f \cdot p^* \cdot Q^{card}$ and $\pi^A = m \cdot p^* \cdot Q^{card}$, respectively.

The expressions for the equilibrium values of the various components of welfare (consumer surplus of card users and cash users, merchants' profits, acquirers' and issuers' profits) are quite complex. As a result, it is difficult to derive general comparative statics results, i.e. general propositions regarding how changes in IF or other parameters affect the welfare of the different constituencies (consumers, merchants and banks) and total welfare.[157] However, we can say that, for any reduction in IF, the following forces are at work:

- First, by assumption, a decrease in IF leads to lower merchant fees *m* and higher cardholder fees *f*.
- Second, the decrease in merchant fees *m* reduces merchants' marginal costs of serving card users hence, *ceteris paribus*, tends to reduce merchants' prices *p*.

157 For example, although total bank profits are typically increasing in the IF *a*, there also parameter values for which increases in IF lower bank profits in this model.

- Third, the increase in consumer fees leads to a downward shift of card users' demand curve (for any given price charged by merchants, fewer card users are willing to purchase); in addition, the demand faced by merchants becomes more elastic (a percentage increase or decrease in merchant prices has a larger percentage effect on quantity demanded by card users). The negative effect on the demand from card users reduces the effective weight that merchants place on serving card users, but at the same time it makes those users more price sensitive, with uncertain consequences on profit maximising prices. The following section reports the results of some numerical simulations of the model.

## E.3 Results

As explained above, the purpose of the analysis in this appendix is to demonstrate that reductions in IF can reduce consumer welfare even in the absence of two-sided market effects. We show in this analysis that, for wide and plausible ranges of parameter values, a reduction in IF will indeed result in harm to card users that exceeds any gain to cash customers, implying a net reduction in consumer welfare.

Table 13 through Table 16 present some illustrative results from the model. The tables present consumer welfare, merchant profits, bank profits and total welfare for three different values of interchange (0.05, 0.025, 0) and for varying levels of the proportion of consumers using credit cards (0.25, 0.5 and 0.75) and for varying assumptions regarding issuer pass-through rates (0.3 and 0.7) and acquirer pass-through rates (0.75 and 1). In each table, the base rate of the consumer fee ($f_0$) is equal to -0.01 (recall that a negative value for the consumer fee implies that card users receive a rebate on purchases) and the base rate of the merchant fee ($m_0$) is equal to 0.03. We have tried to select parameter values that reflect the empirical evidence discussed in the text.

For the parameter values shown, which are designed to cover a range of plausible values, a reduction in IF has the following main effects in this model:

1) merchant prices decrease, thus leading to higher quantity demanded and higher consumer surplus for cash-using consumers;

2) with respect to retail purchases by card users, the decrease in merchant prices is offset by the increase in card fees, leading to an increase in the net price faced by card users, lower quantity demanded and lower consumer surplus for these consumers;

3) the negative impact on the consumer surplus of card users outweighs the positive impact on cash users: a reduction of the IF thus leads to lower total consumer surplus;

4) even though merchant prices decline, the equilibrium value of total sales decreases (because the negative effects on card user demand outweigh the positive effects on demand by cash users);

5) issuers' profits always decrease (as expected), while acquirers' profits may increase or decrease; however, for the parameter values shown, the impact on total bank profits is negative

6) even though the value of retail sales decreases in these scenarios because of the reduction in demand by card users, merchants' profits increase as a result of the reduction in merchant service charges.

**Table 13: Simulation results – consumer surplus**

| Fraction of consumers that use cards (t) | Acquiring bank pass-through rate ($r_m$) | Issuing bank pass-through rate ($r_f$) | Interchange fee (a) | | |
|---|---|---|---|---|---|
| | | | 0.05 | 0.025 | 0 |
| 0.25 | 0.75 | 0.3 | 0.125096 | 0.125048 | 0.125017 |
| | 0.75 | 0.7 | 0.125195 | 0.125082 | 0.125017 |
| | 1 | 0.3 | 0.125111 | 0.125053 | 0.125017 |
| | 1 | 0.7 | 0.125223 | 0.125090 | 0.125017 |
| 0.50 | 0.75 | 0.3 | 0.125131 | 0.125065 | 0.125022 |
| | 0.75 | 0.7 | 0.125267 | 0.125111 | 0.125022 |
| | 1 | 0.3 | 0.125152 | 0.125072 | 0.125022 |
| | 1 | 0.7 | 0.125306 | 0.125123 | 0.125022 |
| 0.75 | 0.75 | 0.3 | 0.125100 | 0.125049 | 0.125017 |
| | 0.75 | 0.7 | 0.125206 | 0.125085 | 0.125017 |
| | 1 | 0.3 | 0.125117 | 0.125055 | 0.125017 |
| | 1 | 0.7 | 0.125236 | 0.125094 | 0.125017 |

Source: CRA International. The base rate of the consumer fee ($f_0$) is equal to -0.01 and the base rate of the merchant fee ($m_0$) is equal to 0.03.

**Table 14: Simulation results – merchant profits**

| Fraction of consumers that use cards (t) | Acquiring bank pass-through rate ($r_m$) | Issuing bank pass-through rate ($r_f$) | Interchange fee (a) | | |
|---|---|---|---|---|---|
| | | | 0.05 | 0.025 | 0 |
| 0.25 | 0.75 | 0.3 | 0.247247 | 0.247998 | 0.248733 |
| | 0.75 | 0.7 | 0.248432 | 0.248599 | 0.248733 |
| | 1 | 0.3 | 0.246446 | 0.247600 | 0.248733 |
| | 1 | 0.7 | 0.247615 | 0.248197 | 0.248733 |
| 0.50 | 0.75 | 0.3 | 0.244512 | 0.246005 | 0.247468 |
| | 0.75 | 0.7 | 0.246924 | 0.247221 | 0.247468 |
| | 1 | 0.3 | 0.242910 | 0.245210 | 0.247468 |
| | 1 | 0.7 | 0.245289 | 0.246417 | 0.247468 |
| 0.75 | 0.75 | 0.3 | 0.241797 | 0.244022 | 0.246207 |
| | 0.75 | 0.7 | 0.245481 | 0.245866 | 0.246207 |
| | 1 | 0.3 | 0.239393 | 0.242829 | 0.246207 |
| | 1 | 0.7 | 0.243028 | 0.244661 | 0.246207 |

Source: CRA International. The base rate of the consumer fee ($f_0$) is equal to -0.01 and the base rate of the merchant fee ($m_0$) is equal to 0.03.

**Table 15: Simulation results – bank profits (issuers and acquirers)**

| Fraction of consumers that use cards (t) | Acquiring bank pass-through rate ($r_m$) | Issuing bank pass-through rate ($r_f$) | Interchange fee (a) | | |
|---|---|---|---|---|---|
| | | | 0.05 | 0.025 | 0 |
| 0.25 | 0.75 | 0.3 | 0.002723 | 0.001988 | 0.001263 |
| | 0.75 | 0.7 | 0.001471 | 0.001365 | 0.001263 |
| | 1 | 0.3 | 0.003524 | 0.002385 | 0.001263 |
| | 1 | 0.7 | 0.002288 | 0.001767 | 0.001263 |
| 0.50 | 0.75 | 0.3 | 0.005448 | 0.003976 | 0.002525 |
| | 0.75 | 0.7 | 0.002943 | 0.002731 | 0.002525 |
| | 1 | 0.3 | 0.007050 | 0.004771 | 0.002525 |
| | 1 | 0.7 | 0.004579 | 0.003534 | 0.002525 |
| 0.75 | 0.75 | 0.3 | 0.008173 | 0.005964 | 0.003788 |
| | 0.75 | 0.7 | 0.004417 | 0.004097 | 0.003788 |
| | 1 | 0.3 | 0.010576 | 0.007156 | 0.003788 |
| | 1 | 0.7 | 0.006871 | 0.005302 | 0.003788 |

Source: CRA International. The base rate of the consumer fee ($f_0$) is equal to -0.01 and the base rate of the merchant fee ($m_0$) is equal to 0.03.

**Table 16: Simulation results – total welfare**

| Fraction of consumers that use cards (t) | Acquiring bank pass-through rate ($r_m$) | Issuing bank pass-through rate ($r_f$) | Interchange fee (a) | | |
|---|---|---|---|---|---|
| | | | **0.05** | **0.025** | **0** |
| **0.25** | **0.75** | **0.3** | 0.375066 | 0.375033 | 0.375012 |
| | **0.75** | **0.7** | 0.375098 | 0.375046 | 0.375012 |
| | **1** | **0.3** | 0.375081 | 0.375039 | 0.375012 |
| | **1** | **0.7** | 0.375125 | 0.375054 | 0.375012 |
| **0.50** | **0.75** | **0.3** | 0.375090 | 0.375045 | 0.375016 |
| | **0.75** | **0.7** | 0.375135 | 0.375063 | 0.375016 |
| | **1** | **0.3** | 0.375112 | 0.375053 | 0.375016 |
| | **1** | **0.7** | 0.375173 | 0.375074 | 0.375016 |
| **0.75** | **0.75** | **0.3** | 0.375070 | 0.375035 | 0.375012 |
| | **0.75** | **0.7** | 0.375104 | 0.375048 | 0.375012 |
| | **1** | **0.3** | 0.375086 | 0.375040 | 0.375012 |
| | **1** | **0.7** | 0.375135 | 0.375057 | 0.375012 |

Source: CRA International. The base rate of the consumer fee ($f_0$) is equal to -0.01 and the base rate of the merchant fee ($m_0$) is equal to 0.03.