



# **Review of Retail Payment Systems Issues Paper**

A Report for the NZBA

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## Contents

<b>Executive Summary .....</b>	<b>iv</b>
<b>1. Introduction.....</b>	<b>1</b>
<b>2. Two-sided markets and interchange fees .....</b>	<b>3</b>
2.1 Positive externalities.....	3
2.2 The role of credit card interchange fees .....	4
2.3 Implications.....	5
<b>3. Potential effects of interchange fee regulation .....</b>	<b>7</b>
3.1 Effect on cardholder fees and benefits.....	7
3.2 Effect on merchant fees.....	11
3.3 Pass through of merchant services fee reductions.....	13
3.4 Competition in issuing and acquiring.....	17
3.5 Changes in the relative use of payment methods.....	18
3.6 Summary and implications.....	21
<b>4. Review of \$45m ‘additional resource cost’ .....</b>	<b>24</b>
4.1 Average resource costs are not avoidable costs .....	25
4.2 The assumed level of switching is very high.....	27
4.3 Bare wealth transfers are not efficiency benefits.....	30
4.4 Benefits have not been considered.....	32
4.5 Summary.....	33
<b>5. Review of the \$187m ‘price increase’ .....</b>	<b>35</b>
5.1 Unsubstantiated assumptions.....	35
5.2 No distinction between efficiency gains and transfers.....	36
5.3 Pass-through by merchants would not be complete .....	37
5.4 Summary.....	38
<b>6. Application to debit cards.....</b>	<b>40</b>
6.1 It is the pricing of EFTPOS that is the problem.....	40
6.2 The quantitative estimates are not meaningful.....	41
6.3 Summary.....	42
<b>List of appendices</b>	
Appendix A Key economic concepts .....	43



## Executive Summary

*MBIE expresses 'significant concerns' about the credit card market.*

This report has been prepared by Axiom Economics (Axiom) for the New Zealand Bankers' Association (NZBA). It provides a high-level economic analysis of the Ministry of Business, Innovation and Employment's (MBIE's) Issues Paper: *Retail Payment Systems in New Zealand* (hereafter: 'Issues Paper'). Although the Issues Paper does not contain any firm recommendations, it expresses concerns about purported issues in retail payments markets – particularly the credit card market. For example, the paper contends that there is currently:<sup>1</sup>

- **\$45m** per annum of additional costs to the economy from the use of more expensive credit card networks, when those same transactions might instead be undertaken using supposedly lower cost EFTPOS networks; and
- increased prices for all consumers to the tune of **\$187m** per annum to fund credit card rewards, with higher-income consumers being the principal beneficiaries, at the expense of lower-income consumers.

*MBIE also expresses 'some concerns' about the debit card market.*

MBIE also expresses 'some concerns'<sup>2</sup> about similar supposed inefficiencies emerging in the debit card market over time as the use of scheme debit cards grows – particularly at the expense of the proprietary EFTPOS network. The Issues Paper notes that, if contactless usage of debit card payments increased to 60% of total debit card payments (i.e., scheme debit *plus* EFTPOS), then:<sup>3</sup>

- the increase in resource cost to the economy would be **\$97m** annually; and
- fees to merchants on scheme debit transactions could rise by **\$216m** per year.

Taken at face value, this suggests there might be merit in intervening to mitigate those issues. An obvious option would be to regulate the level of credit card interchange fees (that being the most 'significant concern'<sup>4</sup>). But of course, this type of intervention would represent a drastic and costly initiative. Accordingly, the NZBA has asked Axiom to examine the problems identified in the Issues Paper to determine whether they are legitimate and to set out our views on the likely implications for consumers if the level of interchange fees was regulated.

## Two-sided markets and interchange fees

*Credit card systems involve positive network externalities.*

It is not possible to comprehend the potential effects of intervening in retail payments markets without first understanding their 'two-sided' nature. A payment card – such as a credit card or an EFTPOS card – is only viable if consumers want to use it and merchants are willing to accept it, i.e., both sides of the market must 'get on-board'. To accomplish this, it is necessary to account for the strong positive 'network externalities' associated with payment networks. Every time a new

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<sup>1</sup> Issues Paper, p.7.

<sup>2</sup> Issues Paper, p.64.

<sup>3</sup> Issues Paper, pp.8 and 81.

<sup>4</sup> Issues Paper, p.64.



customer starts using a card, or a merchant starts accepting it, the network becomes more valuable for all the *existing* users; namely:

- the more customers there are that want to use a card, the more merchants there will be that want to accept it; and
- the more merchants there are that are willing to accept a card, the more customers there will be that want to use it.

Card issuers and acquirers therefore have a chicken-and-egg problem to solve. They need to encourage a critical mass of both customers and merchants to hold the cards or join the system. And, ideally, they want to ensure that parties account for the positive impacts their actions have on *other* network participants. As the Issues Paper acknowledges,<sup>5</sup> the challenge is that, if credit card issuers and acquirers set prices *independently* of each other, they would *not* consider these externalities. Instead, they would focus quite rationally on their own private costs and benefits. This means that, for example:

- issuers would not consider the fact that attracting additional cardholders and card usage generates additional revenues for card acquirers; and
- acquirers would not consider that each additional merchant acquired would generate additional transactions and revenue for card issuers.

That being the case, if left to their own devices, issuers and acquirers would tend to set prices to cardholders and merchants at inefficient levels that did not account for the interdependencies across both sides of the market, resulting in too few card transactions. The application of an additional interchange fee, payable by acquirers to issuers, seeks to overcome this problem.<sup>6</sup> Specifically, it reflects the now well-established view that these positive externalities are best captured *by attracting additional cardholders or card usage*.<sup>7</sup> The interchange fee therefore:

- increases the costs of acquirers and provides additional revenue for issuers; and
- results in higher fees to merchants, i.e., increased merchant services fees; and
- reduces fees (or, enhances protections, increases rewards, etc.) to cardholders.

Although the principle is clear enough, setting the interchange fee at the *right level* is a complex exercise that requires card platforms to consider the potential choices made by multiple parties. Any movement up or down can trigger a series of reactions that can resonate across both sides of the market, altering economic welfare in many ways – often unpredictably so. As Evans and Schmalensee (2005)

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<sup>5</sup> Issues Paper, pp.35-36.

<sup>6</sup> The situation is simpler in the case of ‘closed’ or ‘three-party’ systems such as American Express and Diners Club, since the issuing and acquiring functions are undertaken within the same entity. They can therefore directly set their fees to both cardholders and merchants at levels that take the relevant externalities into account. Put another way, they can set an ‘implicit’ interchange fee by directly altering these prices, e.g., by reducing cardholder fees and/or increasing merchant fees.

<sup>7</sup> This reflects the belief that the benefits arising from these factors exceed the benefits of attracting additional merchants.

*Without an additional price signal, positive externalities would be ignored by issuers and acquirers.*

*An interchange fee can overcome the ‘chicken-and-egg’ problem.*



*Any change in interchange fees would trigger a complex chain of effects that would resonate across both sides of the market.*

*It is very difficult to know if an interchange fee is 'too high' and if reducing it would improve overall welfare.*

*Regulating interchange fees could harm overall economic welfare – and there is no basis to presume otherwise.*

explain,<sup>8</sup> the overall impact of changes in interchange fees depends upon a host of complicated factors, including (amongst other things):

- the price responsiveness of cardholders and merchants and indirect network effects between cardholders and merchants;
- competition in issuing and acquiring and among merchants;
- price distortions in competing payment systems and transactions costs and liquidity constraints;
- the form that any fee increases to cardholders would take, e.g., whether they would manifest as fixed fees or variable fees;
- the marginal social costs of serving cardholders and merchants; and
- how competing systems would respond to changes in prices to cardholders and merchants alike.

Perhaps because of the sheer difficulty of the task, we are not aware of any serious attempts to estimate the 'socially optimal' (i.e., 'welfare maximising') interchange fee and to compare it to those *actually being set* by credit card networks.<sup>9</sup> This means that, even if one could look at a particular credit card interchange fee and say with a reasonable degree of confidence that it is 'too high' (which would be very difficult, in practice), it is not reasonable to *presume* that reducing it to some measure of cost would improve overall welfare. As Evans and Schmalensee (2005) explain:<sup>10</sup>

*'...there is no basis for believing that any particular cost-based formula for determining interchange fees would move one closer to the socially optimal interchange fee and improve welfare.'*

Gans and King (2000) reach an analogous conclusion:<sup>11</sup>

*'Some reasonable economic assumptions lead us to conclude that regulation of the interchange is at best, innocuous and, at worst, could seriously undermine the efficiency of the payments system.'*

Before one could be confident that altering the level of interchange fees would enhance overall welfare, it would be necessary to account for the many other factors listed above, e.g., price responsiveness, benefits to cardholders and merchants, the form that new fees would be likely to take, and so on. The complex interaction of these variables means it is entirely possible that such a step could *reduce* overall welfare. This is critical to bear in mind when analysing the problems and recommendations in the Issues Paper.

<sup>8</sup> Evans & Schmalensee, *The Economics of Interchange Fees and Their Regulation: An Overview*, MIT Sloan Working Paper, May 2005, p.37 (hereafter: 'Evans & Schmalensee').

<sup>9</sup> Most of the existing literature on the topic also makes assumptions (e.g., that competition is perfect, etc.) that do not reflect reality. Moreover, almost all studies focus only on the *cost* of serving cardholders and merchants and ignore *benefits*, i.e., they look at only half the picture.

<sup>10</sup> Evans & Schmalensee, p.38.

<sup>11</sup> Gans & King (2000), *The Role of Interchange Fees in Credit Card Associations: Competitive Analysis and Regulatory Issues*, December 2000, p.3.



## Potential effects of interchange fee regulation

Any change to the level of credit card interchange fees would trigger a chain of events that would have wide-reaching effects on both sides of the market and on economic welfare. Nevertheless, some of those outcomes are reasonably predictable. It is also relatively straightforward to identify the most likely ‘winners and losers’ from regulation – even if it is not possible to say for certain whether the wins would outweigh the losses in aggregate, i.e., if welfare would be enhanced *overall*.

### Credit cardholder fees would increase and benefits would decline

If the level of credit card interchange fees was regulated in New Zealand, resulting in a reduction in those rates, then this would decrease the revenues earned by card issuers. Those issuers would be expected to respond by either increasing the fees payable by credit cardholders and/or reducing the value of benefits received from the use of credit cards. This was certainly the outcome when the Reserve Bank of Australia (RBA) regulated the level of credit card interchange fees in Australia in the early 2000s: credit cardholders were made unambiguously worse off.

*Regulation would make cardholders worse off.*

What is also interesting is the *form* that those fee increases took in Australia. Specifically, they manifested primarily in the form of higher annual *fixed fees*, i.e., fees that were independent of transaction volume. For reasons that shall become clear later, this is important because, unlike usage fees, fixed fees have virtually no effect on the ‘marginal price’ for different payment mechanisms. Once a cardholder has paid that annual fee, she is no more likely to use an EFTPOS card than her credit card when paying for an item, since that cost is ‘sunk’ and forgotten.

### Merchant services fees would decrease

If credit card interchange fees were regulated in New Zealand, this would translate into reduced merchant services fees. This is certainly what transpired in Australia when interchange rates for the four-party networks were regulated in 2003 (and revisited in 2006). Over the period 2003 to 2009, Visa and MasterCard reduced substantially their merchant service fees in Australia. American Express and Diners Club also reduced their fees, but by less than half as much.<sup>12</sup>

*Regulation would make merchants better off.*

The RBA also concluded that both small and large merchants benefitted from the reduction in merchant service fees.<sup>13</sup> However, in our view, it is reasonable to expect that, post-regulation, larger merchants would have continued to pay proportionally lower merchant services fees than smaller merchants for all types of cards. Setting aside the precise breakdown of benefits, it seems clear that merchants would be the immediate beneficiaries of any interchange fee regulation in New Zealand.

<sup>12</sup> As we explain subsequently, this is due largely to the fact that the three-party networks were not formally regulated by the RBA.

<sup>13</sup> RBA, *Reserve Bank of Australia Bulletin*, July 2004, p.12.





## Merchant fee reductions would not be fully passed-through to consumers

Although interchange fee regulation would reduce costs for merchants, it is unlikely that 100% of those reductions would be passed through to New Zealand consumers in the form of lower prices for goods and services. It is only in very limited circumstances that full pass-through of an input cost reduction can be expected. Specifically, if a reduction is industry wide and there is perfect competition,<sup>14</sup> full pass through can be expected either if demand is ‘perfectly inelastic’, or if supply is ‘perfectly elastic’.<sup>15,16</sup>

*Pass-through of merchant fee reductions would be less than 100%.*

These conditions are seldom, if ever, seen in markets – and they are certainly not ubiquitous throughout the New Zealand economy.<sup>17</sup> There is therefore neither a sound basis in economic theory to support an assumption of ‘full pass-through’ of merchant fee reductions nor any empirical evidence.<sup>18</sup> Predicting a precise share of the reduction in merchant services fees that *would* be passed on is not possible. However, it is reasonable to assume that the extent of overall pass-through would be significantly less than 100%.

## No material effect on competition in issuing and acquiring

In principle, regulating the level of interchange fees could impact upon the level of competition in the provision of credit card services – both to cardholders and merchants. For example, the RBA anticipated that its interventions would enhance competition between issuers and acquirers alike; primarily by encouraging new entry by ‘non-financial corporations of substance’.<sup>19</sup> However, the interventions do not appear to have had this effect in practice and we see no reason to think that the experience would be any different in New Zealand.

*There would be no material effect on competition in issuing and acquiring.*

<sup>14</sup> The theoretical ideal of a perfectly competitive market has several distinguishing characteristics. These include many buyers and sellers; no barriers to entry, exit or expansion; homogeneous products; perfect information and zero transaction costs.

<sup>15</sup> The elasticity of demand (supply) measures the responsiveness of the demand (supply) for a product to changes in the price for that product. An elasticity of ‘zero’ is a situation of perfect inelasticity and is represented by a vertical demand/supply curve. This implies that a change in price does not affect the quantity demanded/supplied. An elasticity of ‘infinity’ is a situation of perfect elasticity and is represented by a horizontal demand/supply curve. This implies that any change in price will cause demand/supply to drop to zero.

<sup>16</sup> Stennek, J. & Verboven, F., *Merger Control and Enterprise Competitiveness – Empirical Analysis and Policy Recommendations*, Report for EC Contract III/99/065, February 20, 2001., pp.60-61. See also: Cotterill, R., *Estimation of Cost Pass Through to Michigan Consumers in the ADM Price Fixing Case*, Food Marketing Policy Center, University of Connecticut, Research Report, No.39, 1998.

<sup>17</sup> For example, sellers generally are not pure price takers, and parties are almost never perfectly informed. Goods rarely are homogeneous. Barriers to entry and expansion may exist. Firms may not be able rapidly to adjust supply up or down by acquiring or disposing of assets in response to changing market conditions. Entry and exit may not be easy or swift, with supply-side constraints hindering both processes. The two other criteria – perfect elasticity of supply and/or perfect inelasticity of demand – are similarly rare.

<sup>18</sup> For example, there is no empirical evidence to suggest that the reductions in merchant fees that were seen in Australia following the introduction of interchange fee regulation were passed-through fully to final consumers in the form of lower prices.

<sup>19</sup> RBA, *Payments System Board Annual Report: 2002, 2003*, p.15.





## Unclear effect on relative usage of different payment methods

If credit card interchange fees were regulated and credit cards became a less attractive form of payment – because card rewards diminished or fees increased – then this could cause cardholders to reduce their use of those cards and switch to other cheaper forms of payment, such as EFTPOS. However, if fee increases took the form of higher annual fixed fees and the value of reward benefits declined but did not disappear altogether (as was the case in Australia), it is not obvious why there would be significant switching away from credit cards, since:

*It is not obvious that interchange fee regulation would change significantly the relative usage of payment cards.*

- once an annual cardholder fee has been paid, it has no effect at all on a customer’s ‘marginal’ payment decision, i.e., whether to use, say, Visa or EFTPOS for any particular transaction;<sup>20</sup> and
- some reward benefits are still better than none, which means a customer’s marginal payment decision might still swing in favour of a credit card, even if it is not quite as attractive as before.<sup>21</sup>

In other words, although credit cardholders would face significantly higher costs to use their credit cards, this may not result in sharper price signals. Higher annual fixed fees and reduced reward programs would do little, if anything, to steer customers away from credit cards. The Australian experience is not especially instructive on this point, because the available data simply do not tell us whether the RBA’s regulation of interchange fees – as opposed to unrelated factors<sup>22</sup> – had a material effect on the relative usage of payment cards.

## Summary and implications

Credit card interchange regulation would create several winners and losers. Merchants would be better off, issuers would be worse off, and some consumers would benefit (e.g., lower income consumers who use credit cards less) at the expense of others (particularly those who use credit cards with reward schemes). But the key question is: would New Zealander consumers be better off overall? In our view, the answer could well be ‘no’. There are at least two reasons for thinking so; namely:

*Regulation would create winners and losers and consumers may not be better off overall.*

- regulating the interchange fee may not have a significant effect on the *variable* prices paid by cardholders and therefore on the volume of credit card transactions – which would presumably be the chief reason for intervening; and

<sup>20</sup> In addition, it seems unlikely to us that many customers would be prepared to relinquish their credit cards altogether in response to a higher fixed fee.

<sup>21</sup> Moreover, there may be other reasons why a customer might still prefer to use a credit card even if she received no reward benefits at all – such as to obtain the benefit of an interest-free period.

<sup>22</sup> In addition to the two factors described above there are several other ‘confounding factors’. For example, the introduction of interchange fee regulation coincided very closely with the launch of Visa and MasterCard scheme debit cards. It was also introduced at the same time as a long-standing ban on surcharging of Visa and MasterCard payments was lifted.



- even if cost-based interchange fee regulation could affect the variable prices paid by both merchants and cardholders, most contemporary economics literature agrees that it would improve overall welfare only by happenstance.<sup>23</sup>

Indeed, there are many other factors that would influence the overall effect of any such regulatory intervention on economic welfare that would be very hard to predict. These include the benefits that customers obtain from different payment types (which are hardly ever considered), price elasticities of demand and supply, and so on. Taking these varied and potentially counteracting impacts into consideration would be a very complicated and challenging exercise, as we highlighted above.

*The Issues Paper does not provide a sufficient basis to conclude that interchange fees are too high, or that it would be beneficial to regulate them.*

In comparison, the analysis in the Issues Paper is narrow and does not provide a sufficiently strong basis to conclude that credit card interchange fees are currently too high, or that overall economic welfare could be enhanced by controlling the level of those fees through regulation. Of course, the various quantitative estimates of purported inefficiencies contained in the Issues Paper that we noted earlier appear to be at odds with this conclusion. However, as we explain below, these estimates exhibit several analytical flaws.

## The \$45m ‘additional resource cost’

The Issues Paper claims that the interchange business model has resulted in too many purchases being made with credit cards that could instead be made using alternative payment methods that are said to be less costly – most notably, EFTPOS. This supposedly unnecessary additional resource cost is said to be around \$45m per annum.<sup>24</sup> To arrive at this number, the Issues Paper starts by:<sup>25</sup>

*The \$45m is characterised as a cost reduction that could be achieved if certain credit card transactions became EFTPOS transactions.*

- taking the total number of credit card transactions per annum (from data collected by Statistics New Zealand – available [here](#));
- multiplying that volume by the average resource cost of a credit card transaction, as estimated by the RBA in a December 2014 study;<sup>26</sup> and
- subtracting the average resource cost of a proprietary EFTPOS transaction – based again on the RBA’s December 2014 study.

The resulting figure (of \$137m) is described as the ‘annual reduction in resource cost that would be attained if *all* credit card transactions were instead proprietary EFTPOS transactions’.<sup>27</sup> However, the Issues Paper acknowledges that is not reasonable to assume that *all* credit card transactions would switch to EFTPOS, and so two adjustments are made to this number:<sup>28</sup>

<sup>23</sup> See for example: Evans & Schmalensee, p.38.

<sup>24</sup> Issues Paper, p.47.

<sup>25</sup> Issues Paper, p.81.

<sup>26</sup> See: Stewart et al., ‘The Evolution of Payment Costs in Australia’, *Research Discussion Paper 2014-14*, December 2014, Payments Policy Department Reserve Bank of Australia (hereafter: ‘RBA (2014)’).

<sup>27</sup> Issues Paper, p.81.

<sup>28</sup> *Ibid.*



- 20% of the transactions are assumed to be international and business card transactions (the basis for this number is not entirely clear) that would therefore be likely to remain credit card payments, i.e., would not switch to EFTPOS; and
- of the residual transactions, 40% are assumed to be made 'primarily for rewards' (frequent flyer points and so on), and would therefore switch to EFTPOS if, presumably, the value of those rewards decreased following intervention (and/or, possibly, cardholder fees increased).

The resulting \$45m (or, more accurately, \$43.84m) is characterised as 'the annual reduction in resource cost that would be attained *if the people who use credit cards for rewards* instead used proprietary EFTPOS.<sup>29</sup> But it is not. The figure is unsound from an economic perspective, because the methodology used to derive it is not robust, for the reasons we set out below.

### Average costs are not avoidable costs

The 'resource cost' estimates that have been used to derive the \$45m figure in the Issues Paper are based on the RBA's calculations of 'average costs' of transactions using different payment methods (cash, credit card, debit card, EFTPOS, etc.). Importantly, these will include all the *variable, fixed* and *common costs* of each payment type. As Appendix A explains in more detail, the critical distinction between these different types of economic costs is that:

- variable costs change with the number of transactions, e.g., the more credit card transactions that are made, the higher are the variable costs associated with things like employees' time; whereas
- fixed costs *do not* vary with volume, e.g., once a merchant has incurred the upfront cost of a terminal capable of accepting contactless payments, it does not matter whether she makes one sale or 1,000 – that cost remains the same; and<sup>30</sup>
- common costs are those required to produce *multiple services*, e.g., most card terminals can process *all* types of cards and so the cost of the terminal would only be avoided if a merchant chose not to accept *any* card payments.

*The average resource cost estimates include fixed and common costs that would not be avoided if credit card transaction volumes fell.*

The \$45m figure is predicated on the belief that this sum could be *avoided* if the assumed level of substitution from credit card transactions to EFTPOS was to occur. But because that sum is an *average* resource cost it will include a lot of *fixed* and *common* costs that would *not actually be avoided* if merchants experienced a decline in credit card sales. This error means that the \$45m estimate overstates the resource costs that would be saved if the assumed level of substitution was to occur.

### The assumed level of substitution is very high

The \$45m estimate also hinges on the very strong assumption that a large volume of credit card transactions – around 32% – would switch across to EFTPOS (the

<sup>29</sup> Issues Paper, p.81.

<sup>30</sup> At least up to a point. There are only so many transactions that can be made in a given period of time – and so, at a certain point, a merchant might need to open a new register and invest in another terminal in order to process more payments.



supposedly cheaper payment mechanism). It is certainly likely that, if interchange fees were regulated, cardholder fees would increase and that benefits would drop – making credit cardholders worse off, overall. However, it does not necessarily follow that there would be a large amount of substitution to other forms of payment, such as EFTPOS.

*The assumed level of substitution from credit cards to EFTPOS seems implausible.*

As we explained earlier, if cardholder fee increases took the form of higher annual fixed fees and the value of reward benefits declined but did not disappear altogether (as was the case in Australia), it is not obvious why there would be significant switching away from credit cards. Once an annual cardholder fee has been paid, it has no effect at all on a customer's 'marginal' payment decision – and so long as there are still some reward benefits, this may continue to tip the balance in favour of using a credit card.<sup>31</sup>

It is also unclear whether the '40% of personal credit card use made primarily for rewards'<sup>32</sup> that has been used as the benchmark includes any 'card-not-present' transactions. If it does, then those transactions *could not* switch to EFTPOS.<sup>33</sup> For these reasons, even if it is correct to conclude that '40% of personal credit card use is primarily for rewards'<sup>34</sup> it does not follow that all those transactions would switch to EFTPOS following a regulatory intervention. This overly optimistic rate of substitution to EFTPOS serves to inflate the potential cost saving.

### **Wealth transfers are not efficiency benefits**

*Genuine economic efficiency gains require new wealth to be created, not for existing wealth to be shifted from one consumer to another.*

The \$45m figure presented in the Issues Paper is characterised as a potential 'efficiency gain'. However, it is not. The figure is derived by assuming the same number of card payments occurs, but that a greater proportion of them is made using a supposedly cheaper option, i.e., EFTPOS rather than a credit card. This does not create any *new* wealth. It simply results in the same overall sum of money being transferred from one group of consumers to another, without necessarily generating any *additional* economic welfare – the basic prerequisite for an efficiency gain.

To illustrate, imagine that a person spends \$1m building a house. Now imagine that if she had used cheaper building materials she could have built it for \$750,000. It does not follow that there is a \$250,000 'efficiency gain' to be made in these circumstances. If she had spent less on construction, then that money would not have flowed into someone else's pocket, i.e., the manufacturers of the more

<sup>31</sup> Moreover, even if a customer received no rewards at all (which is possible, but rather unlikely), she might still derive other valuable benefits, e.g., a 55-day interest free period. That being the case, even if a customer's *primary* reason for using a credit card is to obtain rewards, that does not mean that there might not also be *secondary* reasons for her to continue favouring that payment option in the (highly unlikely) event that those rewards vanished altogether.

<sup>32</sup> Issues Paper, p.81.

<sup>33</sup> Until recently, EFTPOS could not be used for any online payments. Very recently the electronic payment company, Paymark, announced that it would begin offering EFTPOS as an online payment option – but only to ASB customers for purchases made in the Mighty Ape online store, i.e., only in very limited circumstances. See: [here](#).

<sup>34</sup> *Ibid.*



expensive building materials<sup>35</sup> In other words, every dollar of that saving would come at the expense of others – no ‘additional wealth’ would be created.<sup>36</sup>

In the same way, the \$45m simply represents wealth that would no longer be flowing to the providers of various credit card services, e.g., fraud prevention services. It is a bare transfer of wealth, not an efficiency gain. A genuine efficiency gain could only occur if there was an *increase in the number of card transactions* that enables: a) cardholders to make more payments and derive benefits in doing so; and b) merchants to accept those payments and derive benefits. Only then can economic welfare can be generated that *did not previously exist*.

*The Issues Paper has not shown that regulation would improve efficiency.*

As we noted earlier, the Issues Paper does not attempt the type of complex analysis that would be required to test whether regulating the level of interchange fees could give rise to this type of incremental demand that could deliver genuine efficiency gains. However, even if it did, the size of those gains would be many magnitudes smaller than the \$45m wealth transfer calculated in the Issues Paper (which, for the reasons set out above, is itself overstated substantially).

### **Benefits have not been considered**

The final shortcoming with the methodology in the Issues Paper is that it overlooks ‘half of the equation’. By focussing exclusively on the relative resource costs of credit card and EFTPOS transactions the analysis creates the impression that customers will obtain the same *benefits* from both forms of payment. That is unlikely to be the case, in practice. Returning to our earlier example, this is a bit like saying that a person who saves \$250,000 by using cheaper materials when building a house is ‘better off’ to the tune of that sum.

*Just because something costs more does not mean that consumers will not rationally prefer it over something cheaper.*

It is certainly true that the house owner *might* be better off overall from buying the cheaper materials; but to arrive reliably at that conclusion it is necessary to also consider the *relative benefits* that she derives from them *vis-à-vis* the more expensive alternatives. If the benefit/value that she derives from the costlier materials (e.g., having double glazed windows, nicer bathroom tiles, etc.) exceeds the extra expenditure she must incur, then she would be *worse off* using the cheaper materials, despite the saving.

In a similar vein, there is no reason to assume that customers derive the same level of benefits from credit card and EFTPOS transactions. Rather, any additional resource costs associated with credit card transactions are likely to be attributable – at least in part – to additional services not available via EFTPOS from which

<sup>35</sup> Moreover, as we explain in the following section, she would also then have a house made with poorer quality materials, from which she might derive fewer benefits, making her worse off overall, despite the \$250,000 cost saving.

<sup>36</sup> In a similar vein, a gas-fired electricity generation plant may have higher ongoing fuel costs than, say, a hydro-electric plant. Producing a MW/h of electricity with a hydro plant instead of a gas fired plant may therefore result in a reduction in resource costs. However, this substitution would not result in an economic allocative efficiency benefit. That cost reduction would simply result in a bare transfer of wealth from gas plants (and, in turn, gas producers) to hydro plants (and, in turn, end customers). There would again be no *additional* welfare created.





customers derive material benefits, e.g., online payment functionality. It therefore does not follow that customers would be better off by being steered, through a regulatory intervention, towards EFTPOS, even if it was cheaper in some cases.<sup>37</sup>

## The \$187m ‘price increase’

The Issues Paper claims that the credit card interchange fee business model has increased prices for all consumers by \$187 million annually to fund credit card rewards.<sup>38</sup> It contends that it is mainly higher-income consumers that have benefited from those rewards, resulting in an ongoing cross-subsidy from low-income households to high-income households of \$59 million per annum.<sup>39</sup> These numbers are said to be calculated in the following way:<sup>40</sup>

*The \$187m is said to be the annual price increase needed to fund credit card rewards.*

- taking the total value of credit card expenditure for the year to March 2016 (from data collected by Statistics New Zealand – available [here](#));
- discounting that figure by 10% to account for transactions made by international credit cardholders;
- taking 75% of the resulting figure, based on the assumption that only  $\frac{3}{4}$  of credit card spending attracts rewards; and
- taking 1% of the resulting number, based on the supposition that the average value of credit card rewards benefits is 1% of that expenditure.

The \$59m ‘cross-subsidy’ from low to high-income households appears then to be calculated by taking the \$187m estimate, and assuming:

- that 100% of the credit card reward benefits funded by the \$187m are received by only the highest-earning 40% of New Zealand households; and
- because the lowest-earning 60% of households account for 32% of retail expenditure, that they are contributing \$59m of the \$187m (i.e.,  $\$187\text{m} \times 32\%$ ), but without receiving any benefits in the form of credit card rewards.

In the following sections, we examine the methodology that has been used to arrive at the \$187m estimate and consider whether it provides a reasonable indication of the potential price reduction that might be attained through regulatory intervention. We also assess whether it would be appropriate, from a regulatory policy perspective, to be seeking to redistribute wealth in this fashion.

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<sup>37</sup> This would be akin to forcing the customer in our simple example to build her house with cheaper materials, when she might prefer to spend more.

<sup>38</sup> Issues Paper, p.47.

<sup>39</sup> Issues Paper, p.50.

<sup>40</sup> Issues Paper, p.81. Note that the Issues Paper does not contain any detailed spreadsheets or tables containing the numbers that MBIE has used/obtained at each of these steps. When we attempt to implement the methodology set out above, we instead obtain a figure of \$234m per annum. It is unclear to us where MBIE’s approach has differed from our own, and how it consequently arrived at \$187m per annum. In any event, for the reasons we set out below, either number would be equally problematic, from an economic perspective.



## Unsubstantiated assumptions

*Several of the assumptions that are made to arrive at the \$187m and \$59m estimates appear to have little foundation.*

MBIE acknowledges that all the figures used in its Issues Paper are ‘rough estimates for illustrative purposes only’.<sup>41</sup> Indeed, several of the assumptions that are made to arrive at the \$187m and \$59m estimates have little basis at all.<sup>42</sup> We expect that modest changes in these underlying assumptions could result in substantial variations in the numbers ultimately calculated. Unfortunately, although the ‘rough’ nature of the estimates is disclosed in Annex 4 on page 80 of the Issues Papers, this disclaimer does not feature at all prior to that point.<sup>43</sup>

## No distinction between wealth transfers and efficiency gains

The \$187m figure does not represent an economic efficiency gain. Again, at most, it constitutes a potential bare transfer of wealth. Even if one assumed, for the sake of argument, that price reductions of \$187m could be achieved throughout the economy, this would come entirely at the expense of credit cardholders, who would see their cardholder benefits drop by the same sum. In other words, one group of consumers (‘high income’ consumers with credit cards) would be paying to deliver benefits to another (‘low income consumers’).

*It is arguably not the role of regulation to engineer wealth transfers – the focus should be to maximise overall economic welfare.*

Nevertheless, the Issues Paper appears to suggest that it may be worth engineering this bare wealth transfer – even if there was no genuine overall efficiency gain. This sentiment is, presumably, based on the implicit belief that \$1 in the hand of one type of consumer (e.g., a low-income consumer) is somehow ‘worth more’ than \$1 in the hand of another type of consumer (e.g., a high-income consumer). In our opinion, there are at least two reasons why that belief is misplaced, or at least questionable.

First, as Appendix A explains in more detail, from a purely practical perspective, it is much easier to focus on maximising total welfare than it is to try and deliver bespoke outcomes for categories of customers.<sup>44</sup> Second, and more fundamentally, it is arguably not the primary role of regulation to orchestrate wealth transfers. There are more effective policy instruments available to address the *cumulative* impacts of cross-subsidies than using regulation to try and engineer wealth transfers in individual markets – the tax system being an obvious example.

## Pass-through by merchants would not be complete

Even if one assumes that the \$187m estimate is accurate (which, as we explained above, is far from clear), it is not correct to characterise this as the total reduction in

<sup>41</sup> Issues Paper, p.80.

<sup>42</sup> For example, there appears to be no basis at all for the assumption that 100% of credit card reward benefits are received by the top 40% of New Zealand households (based on income).

<sup>43</sup> By that time, the figures have been referenced repeatedly without that important ‘health warning’. It is worth noting also that the same criticism could be levelled at the \$45m estimate considered in section 4 – but perhaps not to quite the same extent.

<sup>44</sup> Attempting to isolate and provide greater weight to outcomes that benefit ‘low-income’ consumers through introducing regulation is likely to be very challenging, in practice, because those consumers may be influenced in lots of different ways.





*Even if the \$187m is accurate, at best, it represents a potential windfall to merchants – consumers would not receive 100% of that sum.*

the price of goods and services that consumers could expect to receive if interchange fees were regulated. As we described earlier, if the level of interchange fees is reduced through regulation, the immediate consequence would be that *merchant services fees* would decrease.

But even if merchant services fees did decline by \$187m, it does not follow that merchants would respond by reducing the prices for the goods and services that they sell by an equivalent amount. As we set out above, it is altogether more likely that significantly less than the full quantum of any such reduction would be passed on by merchants. In other words, they would ‘pocket’ at least some share of any reduction in merchant services fees – conceivably a sizeable proportion.

## Application to debit cards

The analysis set out hitherto has explained why there is no sound basis to be concerned about the level or impact of credit card interchange fees. By extension, there is also no cause to be concerned about the ‘same trends’ emerging in the debit card market. For the reasons presented already, there is no persuasive evidence that debit card interchange fees are too high, or that consumer welfare would be improved if EFTPOS usage was more common. In other words, if the debit card market does ‘go down the same path’, this could *benefit* consumers.

*There is no sound basis to be concerned about the same trends in the credit card market emerging in the debit card market.*

The loss of market share by EFTPOS to scheme debit cards also appears to be nothing more than a simple case of a less-efficiently priced product losing ground. The absence of interchange fee revenue is likely to have made EFTPOS a less attractive investment proposition than scheme debit to one side of the market, leading to more investment in the latter. This has then had a reinforcing flow-on effect when consumers decided that they liked the new features created through that investment, such as contactless payments.

Finally, the Issues Paper’s estimates of the additional resource costs (\$97m) and merchant services fees (\$216m) that would supposedly arise if contactless usage of debit card payments increased to 60% of total debit card payments (i.e., scheme debit plus EFTPOS) employ the same approaches as we described above. They therefore exhibit all the same methodological shortcomings, e.g., conflating average costs with avoidable costs, efficiency gains with bare wealth transfers, etc. Accordingly, they are not robust from an economic perspective.

## Conclusion

*The Issues Paper does not provide a robust rationale for market intervention.*

We do not consider that the analysis in the Issues Paper provides a sufficient basis to conclude that either credit or debit card interchange fees are currently too high (or could become so), or that overall economic welfare would be enhanced by controlling the level of those fees through regulation. In our opinion, much more work would need to be done before a robust rationale for regulatory intervention could be established.



## 1. Introduction

*MBIE expresses significant concerns about the current level of credit card interchange fees.*

This report has been prepared by Axiom Economics (Axiom) for the New Zealand Bankers' Association (NZBA). It provides a high-level economic analysis of the Ministry of Business, Innovation and Employment's (MBIE's) Issues Paper: *Retail Payment Systems in New Zealand* (hereafter: 'Issues Paper'). Although the Issues Paper does not contain any firm recommendations, it expresses concerns about purported issues in retail payments markets – particularly the credit card market. The extent of these purported problems is quite striking. For example, the paper contends that there is currently:<sup>45</sup>

- **\$45m** per annum of additional costs to the economy from the use of more expensive credit card networks, when those same transactions might instead be undertaken using supposedly lower cost EFTPOS networks; and
- increased prices for all consumers to the tune of **\$187m** per annum to fund credit card rewards, with higher-income consumers being the principal beneficiaries, at the expense of lower-income consumers.

*MBIE also expresses 'some concerns' about debit card markets.*

MBIE also expresses 'some concerns'<sup>46</sup> about similar supposed inefficiencies emerging in the debit card market over time, as the use of scheme debit cards grows – particularly at the expense of the proprietary EFTPOS network. The Issues Paper notes that, if contactless usage of debit card payments increased to 60% of total debit card payments (i.e., scheme debit *plus* EFTPOS), then:<sup>47</sup>

- the increase in resource cost to the economy would be **\$97m** annually; and
- fees to merchants on scheme debit transactions could rise by **\$216m** per year.

Taken at face value, this suggests that there might be merit in intervening in the retail payments market to mitigate those issues. An obvious option would be to regulate the level of credit card interchange fees (that being the most 'significant concern'<sup>48</sup>) – a step which was taken in the early 2000s by the Reserve Bank of Australia (RBA). But of course, this type of intervention would represent a drastic and costly initiative. It is therefore natural and quite appropriate to expect that any such step would be accompanied by robust, comprehensive analyses that established it would serve the long-term interests of New Zealanders.

The NZBA has consequently asked Axiom to undertake an independent economic review of the analysis and conclusions set out in the Issues Paper. Specifically, we have been asked to examine the problems identified in the Issues Paper to determine whether they are legitimate and to set out our views on the potential implications for consumers of regulating the level of credit card (or debit card)

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<sup>45</sup> Issues Paper, p.7.

<sup>46</sup> Issues Paper, p.64.

<sup>47</sup> Issues Paper, pp.8 and 81.

<sup>48</sup> Issues Paper, p.64.



interchange fees. Although time constraints have prevented us from undertaking an exhaustive review of all the material set out in the Issues Paper, our relatively high-level assessment has been sufficient for us to conclude that:

- it would be very difficult to predict the overall effects on consumers of any decision to regulate the level of credit (or debit) card interchange fees in the manner contemplated in the Issues Paper and **there is no basis in economic theory to presume that they would be better off**; and
- the figures in the Issues Paper – most notably, the \$45m, \$187m, \$97m and \$216m estimates set out above – exhibit **significant methodological flaws and are likely to overstate considerably the true welfare benefits** that could be achieved – if any – through intervention, e.g., regulating interchange fees.

*The Issues Paper does not identify a market failure worth addressing through regulation.*

For those reasons, more work would need to be done by MBIE in conjunction with the industry before it could be confident that it had identified a substantial and enduring market failure, and that addressing that problem through regulatory intervention would be welfare enhancing. In our opinion, the analysis set out in the Issues Paper does not provide a sufficient basis from which to draw any such inference. We set out the detailed reasons for these conclusions in the remainder of this report, which is structured as follows:

- in **section two**, we provide an overview of the basic economics of two-sided markets and the role that credit card interchange fees play in harnessing desirable positive ‘network externalities’;
- in **section three**, we step through the potential implications for various market participants if credit card interchange fees were to be regulated, drawing in part upon what happened in Australia following the RBA’s interventions;
- in **section four**, we set out how MBIE has arrived at its \$45m estimate of the purported inefficiency in the credit card market and identify some problems with its approach and the inferences consequently drawn;
- in **section five**, we describe the way that MBIE has calculated its \$187m estimate of the price increase supposedly resulting from the need to fund credit card rewards, and set out some of the issues with that analysis; and
- in **section six**, we explore whether there is a sound basis to be concerned about the same trends that have been observed recently in credit card markets emerging in debit card markets.

Finally, in **appendix A** we provide a more detailed description of some of the crucial economic concepts employed throughout this report – including the vital distinction between ‘efficiency gains’ and ‘bare wealth transfers’. Any inquiries about any of the material contained in this report should be directed to the head of our New Zealand office, Hayden Green, at: [hayden.green@axiomeconomics.co.nz](mailto:hayden.green@axiomeconomics.co.nz), or on: 021 2664 884.



## 2. Two-sided markets and interchange fees

Businesses in two-sided markets operate platforms that provide goods or services to two distinct groups of customers who need each other in some way and rely on the platform to intermediate transactions between them. A payment system – whether it be cash, cheques or emerging e-pay systems – is one such example of a two-sided market. Put simply, a payment method is only viable if buyers want to use it and sellers are willing to accept it.

In the case of cash, this problem is overcome by governments making their national currencies legal tender. However, payment card providers do not have that luxury. To be successful, a payment system must get both sides of the market ‘on-board’ voluntarily. Below, we provide an overview of how ‘three-party’ and ‘four-party’ credit card systems have sought to overcome this challenge and the important role interchange fees have played in that process.

### 2.1 Positive externalities

Credit card systems involve ‘network externalities’. A network externality arises when a decision by one party raises the return to others from adopting a similar form of behaviour. For example, customers are more willing to hold a particular type of credit card if more merchants are willing to accept it, and merchants are more willing to accept a card if there are more customers who wish to use it. In this way, a decision by a customer to get a particular type of credit card makes that network more valuable to all of its existing participants.

In this way, customers’ and merchants’ decisions regarding a particular type of card are mutually reinforcing and generate benefits for *both sides* of the market. The association of issuers and acquirers therefore has a chicken-and-egg problem to solve. They need to encourage a critical mass of both customers and merchants to hold the cards or join the system. And, ideally, they want to ensure that parties account for the positive impacts their actions have on other network participants when making their decisions, i.e., to consider the positive network externalities.

As the Issues Paper acknowledges,<sup>49</sup> the problem is that if credit card issuers and acquirers set prices *independently* of each other, they would *not* consider these externalities. Instead, they would focus quite rationally on their own private costs and benefits. This means that, for example, issuers would not take into account the fact that attracting additional cardholders and card usage generates additional revenues for card acquirers by increasing the number of card transactions, i.e., the positive network externality.

In a similar vein, acquirers would not take into account that each additional merchant acquired would generate additional transactions and revenue for card issuers. They would instead focus, quite reasonably, on their *own* private costs and

*Credit card systems involve positive network externalities.*

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<sup>49</sup> Issues Paper, pp.35-36.



benefits. That being the case, if left entirely to their own devices, credit card issuers and acquirers would tend to set prices to cardholders and merchants respectively at inefficient levels that did not take account of the critical interdependencies across both sides of the market, resulting in too few card transactions. More specifically:

- if the net benefit of attracting additional cardholders or card usage exceeded that of attracting additional merchants to accept cards, cardholder fees would be too high and merchant fees too low; and
- conversely, if the net benefit of attracting additional merchants to accept cards exceeded that of attracting additional cardholders or card usage, then merchant fees would be too high and cardholder fees would be too low.

*Without an interchange fee, positive externalities would be ignored by issuers and acquirers.*

In either scenario, there would be instances where the total sum of benefits to all parties arising from a credit card transaction (issuers, acquirers, merchants, customers, etc.) exceeded the total sum of costs, but where it did not take place, because the benefits (i.e., the positive externalities) were not considered when issuers and acquirers set their prices. This problem can be solved through application of either an explicit (in the case of 'open' systems) or implicit (in the case of 'closed' systems) interchange fee.

## 2.2 The role of credit card interchange fees

In the 'open' or 'four-party' card platforms run by Visa and MasterCard, independent issuers and acquirers compete to attract cardholders and merchants, respectively. These parties each seek to maximise their individual profit, in competition with other issuers and acquirers, and with other payment systems. In the absence of an interchange fee (or if the fee was fixed at zero), the open- card system would face the problem described above, i.e., positive externalities across issuing and acquiring would not be considered by the various parties.

*An interchange fee can overcome the 'chicken-and-egg' problem.*

The establishment of a positive, explicit interchange fee to be paid by acquirers to issuers per the value or volume of transactions between them seeks to overcome this problem. Specifically, it reflects the now well-accepted view that the positive externalities referred to above are best captured by attracting *additional cardholders or card usage*, i.e., that the benefits arising from these factors exceed the benefits of attracting additional merchants. The interchange fee increases the costs of acquirers and provides revenue for issuers, which tends to result in:

- higher fees to merchants, i.e., increased merchant services fees; and
- lower fees (or, enhanced protections, increased rewards, etc.) to cardholders.

A higher interchange paid by acquirers to issuers can therefore contribute to lower card fees, enhanced consumer protections, services and card rewards, thereby expanding the use of cards at merchants that accept them. However, this will also mean higher merchant fees, making more merchants unwilling to accept cards, or more aggressive in steering consumers to other forms of payment. This highlights again the 'chicken-and-egg' problem faced by participants in an open card system.



The situation is somewhat simpler in the case of ‘closed’ or ‘three-party’ systems such as American Express and Diners Club, since the issuing and acquiring functions are undertaken within the same corporate entity. These platforms can therefore directly coordinate the actions and prices of its issuing and acquiring departments, i.e., they can set their fees to both cardholders and merchants at levels that take the relevant externalities into account. Put another way, they can set an ‘implicit’ interchange fee by directly altering these prices, e.g., by reducing cardholder fees and/or increasing merchant fees.

## 2.3 Implications

The two-sided nature of the market means that setting interchange fees at an appropriate level is a very complex exercise that requires card platforms to consider the potential choices made by multiple parties.<sup>50</sup> For example, the four-party networks need to account for the incentives created for issuers, acquirers, merchants and, of course, cardholders themselves. Any change in the level of interchange fees can consequently trigger a series of reactions that can resonate across both sides of the market, affecting all these parties and altering economic welfare in many ways – often unpredictably so.

*Any change in interchange fees would trigger a complex chain of effects that would resonate across both sides of the market.*

Increasing the interchange fee shifts the balance in that price towards merchant charges and away from customer charges, and vice versa for decreases. Such changes cannot simply be likened to changing the price of an input into the service. This is because, as we have explained above, for credit card systems, the interchange fee represents both a cost to one complementary supplier and a cost-offset to another. There is no straightforward relationship between the interchange fee and the overall price of the service.

As Evans and Schmalensee (2005) explain,<sup>51</sup> the complexities arising from setting interchange fees in a two-sided market mean that the theoretical ‘socially optimal’ (i.e., ‘welfare maximising’) fee would depend upon a host of complicated factors. Specifically, when setting the level of interchange fees (or deciding whether to change it), it is necessary to consider (amongst other things):

- the price responsiveness of cardholders and merchants and indirect network effects between cardholders and merchants;
- competition in issuing and acquiring and among merchants;
- price distortions in competing payment systems and transactions costs and liquidity constraints;

<sup>50</sup> As we explain in more detail in section 6.1, the pricing of the proprietary EFTPOS network in New Zealand is arguably an example of where the right balance was *not* struck, with this form of payment losing market share to scheme debit cards.

<sup>51</sup> Evans & Schmalensee, *The Economics of Interchange Fees and Their Regulation: An Overview*, MIT Sloan Working Paper, May 2005, p.37 (hereafter: ‘Evans & Schmalensee’).





- the form that any fee increases to cardholders would take, e.g., whether they would manifest as fixed fees or variable fees;
- the marginal social costs of serving cardholders and merchants; and
- how competing systems would respond to changes in prices to cardholders and merchants alike.

*It is very difficult to know if an interchange fee is 'too high' and if reducing it would improve overall welfare.*

Perhaps because of the sheer difficulty of the task, we are not aware of any serious attempts to estimate the socially optimal interchange fee and to compare it to those *actually being set* by credit card networks. Instead, most of the existing literature on the topic make simplifying assumptions (e.g., that competition is perfect, that interchange fees will result in higher variable charges for cardholder, etc.) that do not reflect the real world. Moreover, almost all studies focus only on the *cost* of serving cardholders and merchants and ignore *benefits*, i.e., they only look at half the picture. As Evans and Schmalensee (2005) note:<sup>52</sup>

*'...there is a consensus among economists that, as a matter of theory, it is not possible to arrive, except by happenstance, at the socially optimal interchange fee through any regulatory system that considers only costs.'*

This means that, even if one could look at a particular credit card interchange fee and say with a reasonable degree of confidence that it is 'too high' (which is very difficult in practice, given the complexities cited above), it is not reasonable to *presume* that reducing it to some measure of cost would improve overall welfare. As Evans and Schmalensee (2005) explain:<sup>53</sup>

*'...there is no basis for believing that any particular cost-based formula for determining interchange fees would move one closer to the socially optimal interchange fee and improve welfare.'*

*Regulating interchange fees could harm overall economic welfare – and there is no basis to presume otherwise.*

Gans and King (2000) reach an analogous conclusion:<sup>54</sup>

*'Some reasonable economic assumptions lead us to conclude that regulation of the interchange is at best, innocuous and, at worst, could seriously undermine the efficiency of the payments system.'*

Before one could be confident that altering the level of interchange fees would enhance overall welfare, it would therefore be necessary to account for the many other factors listed above, e.g., price responsiveness, benefits to cardholders and merchants, the form that new fees would be likely to take, and so on. The complex interaction of these variables means it is entirely possible that such a step could *reduce* overall welfare. We elaborate on these points in the following sections.

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<sup>52</sup> Evans & Schmalensee, p.5.

<sup>53</sup> *op cit.*, p.38.

<sup>54</sup> Gans & King (2000), *The Role of Interchange Fees in Credit Card Associations: Competitive Analysis and Regulatory Issues*, December 2000, p.3.





### 3. Potential effects of interchange fee regulation

The previous section highlighted that any change to the level of credit card interchange fees would set off a chain of events that would have potentially wide-reaching effects on both sides of the market, impacting upon market participants in many ways – with complex impacts upon welfare. In the following sections, we step through some of the more predictable of these potential effects, and identify the likely ‘winners and losers’. In doing so, we draw heavily upon what happened in Australia following the RBA interventions in the early 2000s.

#### 3.1 Effect on cardholder fees and benefits

If the level of credit card interchange fees was regulated in New Zealand, resulting in a reduction in those rates, then this would decrease the revenues earned by card issuers (holding all other things constant). Those issuers would be expected to respond by either increasing the fees payable by credit cardholders and/or reducing the value of benefits received from the use of credit cards. Indeed, the Issues Paper is quite explicit about these potential consequences – the figures evaluated in sections 4 and 5 are predicated on precisely these outcomes.

*Any reduction in interchange fees would be likely to result in higher cardholder fees and reduced benefits.*

To gauge the potential extent of these effects, it is instructive to consider what happened to credit cardholder fees and benefits when the RBA ‘capped’ the level of interchange fees<sup>55</sup> for the four-party card networks (and, indirectly, the merchant services fees charged by the three-party networks<sup>56</sup>) in 2003. The annual fees and other charges payable by credit cardholders between 2002 and 2007 are presented in Table 3.1. These data reveal that there was a marked increase in cardholder fees in the five years following the introduction of regulation.

<sup>55</sup> The Interchange Fee Standard came into force on 1 July 2003, although changes to interchange fees were not required to be put into effect until 31 October 2003 (The original *Interchange Fee Standard* was set out in RBA, *Reform of Credit Card Schemes in Australia IV: Final Reforms and Regulation Impact Statement*, August 2002, pp.41-44). Under this Standard, the interchange fees for Visa, MasterCard and Bankcard credit card transactions were subject to a weighted average benchmark. This benchmark was set by reference to a series of ‘eligible costs’ incurred by issuers, including those costs incurred in respect of processing, fraud and fraud prevention, providing authorisation and funding the interest-free period on credit card transactions. A different weighted average benchmark was established for each credit card network. The Interchange Fee Standard had the effect of reducing the average interchange fee for credit card transactions from around 0.95% to around 0.55% of transaction value, although there were differences in the average interchange fees applied to Visa, MasterCard and Bankcard transactions. See: RBA, *Payment System Board Annual Report 2004*, 2004 p.9.

<sup>56</sup> Note that although the three-party networks (American Express and Diners Club) were not explicitly regulated, in the ensuing period they entered several voluntary agreements with the RBA under which they – amongst others things – undertook to reduce their merchant services fees. These steps ameliorated the RBA’s concerns and at its meeting of 15 February 2005, the RBA decided not to designate (i.e., regulate) either the American Express or Diners Club networks. In other words, the three-party networks were subject to ‘de-facto’ regulation.

**Table 3.1: Bank fees charged to credit cardholders and bank fee income received from credit cardholders, 2002 – 2007 <sup>(1)</sup>**

	Pre-regulation	Post-regulation					% change, 2002-07
	2002	2003	2004	2005	2006	2007	
<b>Annual fees <sup>(2)</sup></b>							
No-frills cards	n.a.	n.a.	n.a.	\$38	\$41	\$48	n.a.
Standard cards	\$25	\$27	\$28	\$28	\$28	\$29	16%
Standard rewards-based cards	\$61	\$76	\$85	\$85	\$85	\$85	39%
Gold rewards-based cards	\$98	\$128	\$128	\$134	\$140	\$140	43%
<b>Other Fees</b>							
Late payment fee (A\$)	\$21	\$23	\$29	\$29	\$31	\$31	48%
Over limit fee (A\$)	\$13	\$25	\$28	\$29	\$30	\$30	131%
Foreign currency conversion fee (%)	1%	1.3%	1.5%	2.4%	2.4%	2.5%	140%
Cash advance fees – own bank’s ATM <sup>(3)</sup>							
A\$ charge	\$1	\$1.40	\$1.40	\$1.40	\$1.40	\$1.40	40%
% of value	0.8%	0.8%	1.1%	1.1%	1.1%	1.1%	38%
Cash advance fees – other bank’s ATM <sup>(3)</sup>							
A\$ charge	\$1.60	\$1.60	\$1.60	\$1.60	\$1.60	\$1.60	0%
% of value	0.8%	1.1%	1.4%	1.4%	1.4%	1.4%	75%
Cash advance fees – overseas ATM <sup>(3)</sup>							
A\$ charge	\$3.90	\$3.60	\$3.60	\$3.60	\$3.60	\$3.60	-8%
% of value	0.8%	1.1%	1.4%	1.4%	1.4%	1.4%	75%
<b>Bank’s fee income from credit cardholders</b>							
\$million	\$438	\$589	\$761	\$899	\$1,089	\$1,199	174%

Source: RBA Bulletin, May 2005, pp.65-69, RBA Bulletin May 2007, pp.59-62 and RBA Bulletin, May 2009, p.11-15.

Notes: (1) Simple average fees for cards with interest-free periods issued by major banks as at 30 June each year, except for annual fee on no-frills cards, which is based on a wider sample of banks. Note that changes in the sample affect the average fee. (2) Includes fees for membership in rewards programs where separately charged. (3) Most banks charge the greater of a flat fee or a percentage of the cash advance. (4) Calculated as total bank fee income divided by the average number of credit card accounts for the year ended 30 June.

Credit cardholders were clearly made worse off by the RBA's interventions.

Table 3.1 illustrates that from the year before interchange fees were regulated (2002) to five years' subsequent (2007), average annual credit cardholder fees increased significantly. Specifically, annual fees for standard cards increased by 16% (from \$25 to \$29), annual fees for standard rewards-based cards rose by 39% (from \$61 to \$85) and annual fees for gold or premium rewards-based cards increased by 43% (from \$98 to \$140). During the same period, many other fees also increased substantially – in some cases more than doubling. Overall, banks' fee income from credit cardholders increased by 174% (from \$438 million to \$1.19 billion per annum).<sup>57</sup>

In other words, the RBA's intervention made credit cardholders unambiguously worse off. Holders of premium credit cards (e.g., gold and platinum cards with higher rewards benefits) appear to have been the most adversely affected, with increases in annual fees being significantly higher than for those in possession of standard cards. This is relatively unsurprising (and consistent with the analysis set out in the Issues Paper).

Fee increases took the form of higher annual fixed fees, which would have had little effect on customers' payment choices.

What is perhaps more interesting is the *form* that those increases took. Specifically, they manifested primarily in the form of higher annual *fixed fees*, i.e., fees that were independent of transaction volumes. This is important because, unlike usage fees, fixed fees have virtually no effect on the marginal price for different payment mechanisms. Once a cardholder has paid that annual fee, she is no more likely to use an EFTPOS card than her credit card when paying for an item, since that cost is 'sunk' and forgotten (see Appendix A.2 for more detail).

This means that if the intention of introducing interchange regulation was to steer customers away from credit cards, but it resulted primarily in higher fixed annual fees – as was the case in Australia – then it may not have this effect (or, at least, not to the desired extent). Rather, increases in fixed fees would only affect overall credit card usage if they led to a significant number of cardholders relinquishing their cards altogether. We expect that overwhelming majority of cardholders would be unwilling to take such a step – particularly given the growing prevalence of online shopping, i.e., 'card-not-present' transactions, for which EFTPOS cannot be used.<sup>58</sup>

As part of its annual monitoring process, the RBA also assessed the value of the rewards programs offered by the four major Australian banks (Commonwealth Bank, ANZ, NAB and Westpac). Specifically, as Table 4.2 below illustrates, these data indicate that the various benefits to cardholders from using their credit cards

<sup>57</sup> Analysis undertaken by CRA indicates that the cardholder fees charged by the three-party networks – American Express and Diners Club – also increased in line with the data set out in Table 4.1, despite those networks not being *officially* regulated (although, as we explained above, they were essentially subject to *de facto* regulation). Between June 2002 and June 2005, the annual fees on American Express green and gold charge cards (i.e., annual fees and reward program fees) were estimated to have increased by 34% and 26%, respectively. These increases in cardholder fees were greater than the reduction in merchant services fees that occurred over the same period. See: CRA International, *Regulatory intervention in the payment card industry by the Reserve Bank of Australia: Analysis of the evidence*, April 2008, p.18.

<sup>58</sup> Note that electronic payment company, Paymark, announced recently that it would begin offering EFTPOS as an online payment option to ASB customers for purchases made in the Mighty Ape online store, i.e., there is now a very limited exception. See: [here](#).

declined by around 25% between 2003 (the year that interchange regulation was introduced) and 2007 (i.e., five years afterwards).<sup>59</sup> Most of that reduction happened between 2003 and 2004.

**Table 3.2: Changes to value of credit card rewards programs, 2003 – 2007<sup>(1)</sup>**

Year	Average spending required for \$100 gift voucher (A\$)	Benefit to cardholder as a proportion of spending (basis points)	Cumulative percentage reduction in the value of benefits
2003	\$12,400	81	
2004	\$14,400	69	15%
2005	\$15,100	66	19%
2006	\$16,000	63	22%
2007 <sup>(2)</sup>	\$16,300	61	25%

Source: RBA, Reform of Australia’s Payments System: Issues for the 2007/08 Review, May 2007, p.23 and RBA, Payments System Board Annual Report: 2009, 2009, p.14.

Notes: (1) Analysis based on ANZ Telstra Rewards Visa card, Commonwealth Bank MasterCard Awards card, NAB Visa Gold card and Westpac Altitude MasterCard. (2) Data for 2007 as shown in the RBA Issues Paper did not match that shown in the Payments System Board Annual Report for 2009. We therefore used the data from the Payments System Board Annual Report for 2009.

*It is not clear why reduced reward benefits would prompt customers to switch away from credit cards – some reward is better than none.*

However, it is worth noting again that it is not obvious why these reductions in the value of credit card reward point would prompt customers to switch to other payment methods (such as debit cards) in the manner the RBA intended if they had decided, notwithstanding those reductions, to continue to hold a credit card (we return to this point subsequently in section 3.5). Indeed, if a customer had decided to retain her credit card, and the marginal cost of the two forms of payment was otherwise identical, she might still have preferred to use her credit card, since some reward is better than none.

In summary, the RBA’s interventions corresponded with a significant increase in cardholder fees for most categories of cards and a material reduction in cardholder benefits – especially in the years immediately following the introduction of regulation.<sup>60</sup> These increases were mainly to *annual fixed fees* that were independent of transaction volumes which, as we explained above (and explore in more detail in section 3.4), has important implications for the relative use of different payment methods. In our opinion, it is reasonable to expect that analogous outcomes would arise if interchange fees were regulated in New Zealand.

<sup>59</sup> Note that the reduction in the value of rewards appeared to manifest primarily in the form of a reduction in the number of points earned per dollar spent above a certain level, or an increase in the number of points required to redeem a prize. Banks also started to introduce caps on the number of points that cardholders could accrue over a specified period.

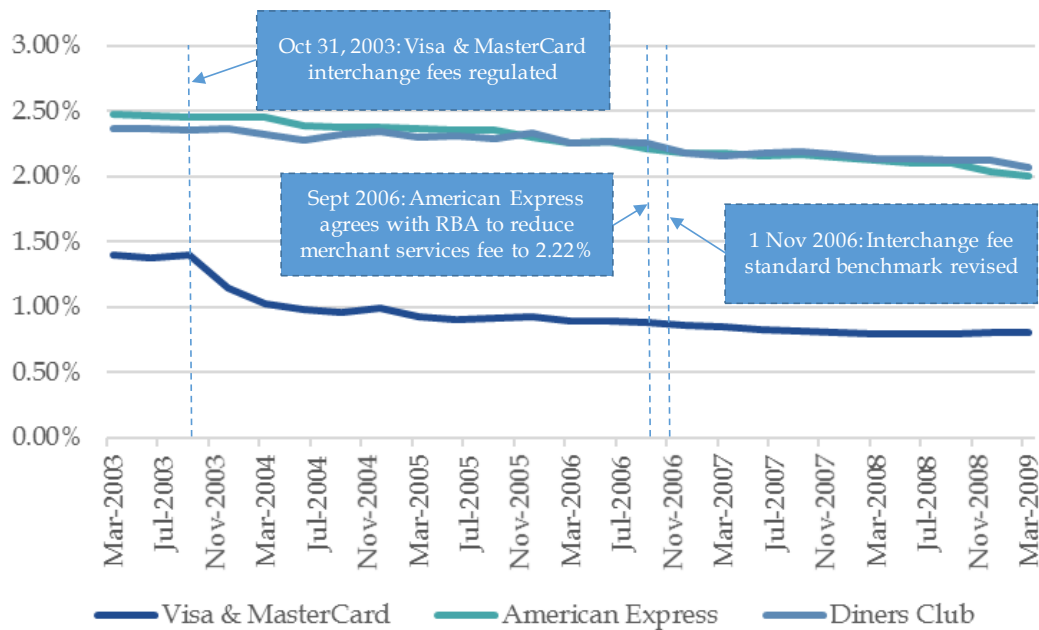
<sup>60</sup> This period also coincided with the introduction of low-rate cards, with reduced fees and benefits. However, low-rate cards would have been seen in Australia even without the intervention and, notwithstanding their significant uptake, banks plainly recovered substantially more credit card fee income from cardholders following the interventions. Note that issuers also responded to the regulations by beginning to issue American Express and Diners Club cards as optional ‘companion cards’ to Visa or MasterCard credit cards – presumably to obtain the higher fees.

### 3.2 Effect on merchant fees

If the level of credit card interchange fees was regulated in New Zealand, this would translate into reduced merchant services fees. That is what transpired in Australia when interchange rates for the four-party networks were regulated in 2003 (and revisited in 2006). The RBA monitors and publishes the average merchant fee applying to Visa and MasterCard, American Express and Diners Club transactions on a quarterly basis.<sup>61</sup> Figure 3.1 illustrates the changes in merchant service fees that followed the introduction of interchange fee regulation.

**Figure 3.1: Merchant service fees, March 2003 to March 2009**

*If interchange fees were regulated, merchant services fees would fall.*



Source: RBA, Bulletin Table C3: Merchant Fees for Credit and Charge Cards - available [here](#).

Figure 3.1 illustrates that, in the three years immediately following the introduction of interchange fee regulation in Australia (i.e., from 2003 to 2006), Visa and MasterCard's merchant services fees fell by around 50 basis points (from 1.4% to 0.9%). American Express' fell by a significantly smaller amount over the same window (approximately 30 basis points from around 2.5% to 2.2%), as did Diners Club's (which fell by approximately 20 basis points from around 2.4% to 2.2%).

On an aggregate basis over the period 2003-2009, Visa and MasterCard merchant service fees fell by 43%, while the American Express and Diners Club merchant service fees fell by 20% and 17%, respectively.<sup>62</sup> In this respect, in Australia, the three-party networks (which did not have their merchant services fees *explicitly*

<sup>61</sup> The RBA began collecting quarterly data on merchant service fees and other related costs in March 2003. The results of the RBA's survey are available [here](#).

<sup>62</sup> In its Preliminary Conclusions paper, the RBA noted that the decline in merchant service fees for American Express and Diners Club transactions had been approximately half that of the four-party networks and had occurred a little more slowly than it had expected. See: RBA, *Reform of Australia's Payment System, Preliminary Conclusions of the 2007/2008 Review*, April 2008, p.20.

regulated) benefitted from the RBA interventions at the expense of four-party networks, since:

- American Express and Diners Club both reduced their merchant fees by much less than Visa and MasterCard;<sup>63</sup> but
- as the previous section explained, each increased its annual cardholder fees by about the same amount as the four-party networks.<sup>64</sup>

While the fall in merchant service fees was anticipated by the RBA, those reductions were not necessarily entirely attributable to competitive forces. NECG (2005),<sup>65</sup> noted that the major banks made various commitments to the RBA to pass the lower interchange fees through to merchants when the Interchange Fee Standard came into force. We also understand that American Express reached an 'informal agreement' with the RBA under which it agreed to reduce its merchant services fees in return for not being 'designated' (regulated).

The RBA estimated that, at then current levels of spending, the reduction in merchant service fees for Visa and MasterCard that occurred from 2003 to early 2007 was worth approximately A\$870 million<sup>66</sup> per annum to merchants, and the reduction American Express and Diners Club cards a further A\$90 million<sup>67</sup> per annum. After taking account of the increased market share of the three-party networks, the RBA estimated that merchants' costs of accepting credit cards were around A\$900 million less than they would have been, absent the regulations.<sup>68</sup> This figure was subsequently revised upwards to A\$1.1 billion per annum.<sup>69</sup>

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<sup>63</sup> American Express pointed to a decrease in its fees that occurred prior to the RBA's regulation to explain why its fees did not fall by as much as the four-party networks. However, RBA data illustrates that merchant service fees applicable to transactions on the four-party networks also fell by broadly the same amount over this period, and so that does not explain the difference. In this respect, the three-party networks benefitted from the RBA interventions at the expense of four-party networks. See: RBA, *Reserve Bank of Australia Bulletin, Merchant Service Fees for Credit Cards*, July 2004, p.13 and Boreham, T., "Diners, Amex on notice", *The Australian*, July 16, 2004, p.19.

<sup>64</sup> See: CRA International, *Regulatory intervention in the payment card industry by the Reserve Bank of Australia: Analysis of the evidence*, April 2008, p.18.

<sup>65</sup> NECG, *Early evidence of the impact of the Reserve Bank of Australia regulation of open credit card schemes*, May 2005, p.60.

<sup>66</sup> This was based on a 0.56 percentage point reduction in the merchant service fees charged for Visa and MasterCard transactions, i.e., a decrease in the average merchant service fee from 1.40% to 0.84%. See: RBA, *Reform of Australia's Payments System: Issues for the 2007/08 Review*, May 2007, p.22.

<sup>67</sup> This was based on a 0.27 percentage point reduction in the merchant service fees charged for American Express transactions and a 0.19 percentage point reduction in the fees for Diners Club transactions. See: RBA, *Reform of Australia's Payments System: Issues for the 2007/08 Review*, May 2007, p.22.

<sup>68</sup> RBA, *Reform of Australia's Payments System: Issues for the 2007/08 Review*, May 2007, p.22. The RBA also estimated that, based on levels of spending after the regulations were introduced, merchants saved in the order of \$2.2m in the form of reduced merchant service fees. It also noted that if customers had switched from using credit cards to debit cards to a significant extent following the regulations, then there would have been additional savings.

<sup>69</sup> RBA, *Reform of Australia's Payment System, Preliminary Conclusions of the 2007/2008 Review*, April 2008, p.23. In its Bulletin dated July 2004, the RBA noted that there were concerns that banks were seeking to recoup some of the lost revenue from merchant service fees by raising other charges such as terminal fees, charges for paper and fees for transactions that were charged back.



The RBA also concluded that both small and large merchants benefitted from the reduction in merchant service fees.<sup>70</sup> However, in our view, it is reasonable to expect that, post-regulation, larger merchants would have continued to pay proportionally lower merchant services fees than smaller merchants for all types of cards, i.e., regulation would not have removed the entirety of any such differential.

In summary, over the period 2003 to 2009, Visa and MasterCard reduced substantially their merchant service fees. American Express and Diners Club also reduced their fees, but by less than half as much. The immediate beneficiaries of these reductions were consequently merchants and, to a lesser extent, the three-party networks.<sup>71</sup>

*Merchants would be the immediate beneficiaries of interchange regulation.*

In our opinion, it is reasonable to assume that if interchange fees were regulated in New Zealand there would also be a reduction in merchant services fees, from which merchants would be the immediate beneficiaries (if three-party networks were not formally regulated – as was the case in Australia – they too may benefit). However, as we explain in the following section, it does not necessarily follow that 100% of any such fee reductions would be passed through to New Zealand consumers in the form of lower retail prices.

### **3.3 Pass through of merchant services fee reductions**

If merchant services fees were to decrease following any introduction of interchange fee regulation, then some of that input cost reduction would be expected to flow-through to consumers in the form of lower prices for final goods and services. But how much? When the RBA regulated interchange fees in Australia, it predicted that *all* reductions in merchant services fees would be passed-through to consumers in the form of lower prices (as opposed to being retained by the merchants as a ‘windfall gain’) – at least over the longer-term. For example, in its 2001 analysis of the expected effects of its regulations the RBA stated that:<sup>72</sup>

*‘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 (ie, surcharges), competitive pressures will ensure that merchants pass these reductions through to the prices of final goods and services.’*

But did that pass-through occur? In 2005, the RBA contended that it had, and would continue to do so over time. Specifically, it claimed that lower merchant costs were resulting in lower prices and, when ‘fully passed through’ would result in the

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However, it considered that such increases were outweighed by the reduction in merchant service fees. See: RBA, *Reserve Bank of Australia Bulletin*, July 2004, p.12.

<sup>70</sup> RBA, *Reserve Bank of Australia Bulletin*, July 2004, p.12.

<sup>71</sup> American Express and Diners Club reduced their merchant fees by much less than Visa and MasterCard, but apparently increased cardholder fees by a similar amount.

<sup>72</sup> RBA, *Reform of Credit Card Schemes in Australia I - A Consultation Document*, December 2001, p.127.



consumer price index (CPI) being 0.1 to 0.2 percentage points lower than it otherwise would have been absent the RBA's actions:<sup>73</sup>

*'The lower merchant costs are feeding through into lower prices for goods and services (or smaller price increases than otherwise would have occurred). While merchants would undoubtedly have hoped that these lower costs translated into increased profits, competition means that just as banks passed on their lower costs to merchants, so too must merchants pass on their lower costs to consumers. It is, however, not possible to monitor the speed and extent to which this is occurring, as the effect is relatively small compared to changes in the overall price level in the economy.'*

*The Bank estimates that when fully passed through, the Consumer Price Index (CPI) will be 0.1 to 0.2 percentage points lower than it otherwise would have been as a result of the reforms. There are no statistical techniques with fine enough calibration to separately identify this change against a background where the overall CPI increase is about 2.5 percent. But the fact that it cannot be separately identified does not mean that it has not happened.'*

There is no 'concrete' evidence of the level of pass-through of merchant services fee reductions in Australia.

The RBA reached a similar conclusion in an issues paper published during its subsequent 2008 Review; although it did concede that it did not have any 'concrete evidence' that reductions in merchant services charges had been passed through to consumers:<sup>74</sup>

*'No concrete evidence has been presented to the Board regarding the pass-through of these savings, although this is not surprising as the effect is difficult to isolate. The Bank had previously estimated that the cost savings would be likely to lead to the CPI being around 0.1 to 0.2 percentage points lower than would otherwise be the case over the longer term (all else constant). It is very difficult to detect this against a background where other costs are changing by much larger amounts and the CPI is increasing by around 2½ percent per year on average.'*

*Despite the difficulties of measurement, the Board's judgement remains that the bulk of these savings have been, or will eventually be, passed through into savings to consumers. This judgement is consistent with standard economic analysis which suggests that, ultimately, changes in business costs are reflected in the price that businesses charge. A similar conclusion was reached by the House of Representatives Standing Committee on Economics, Finance and Public Administration when it considered the Bank's payment system reforms in 2006.'*

It is important to recognise that the contentions contained in this statement are based exclusively on the RBA's interpretation of economic theory and *not* on any empirical analysis. Its aversion to undertake the empirical analysis that would be required to substantiate this contention is understandable, given the difficulties associated with isolating the effects of the interventions upon CPI levels. What is less explicable, however, is its assertion that 'standard economic analysis' could be

<sup>73</sup> RBA, *Payments System Board Annual Report: 2005, 2005*, p.11.

<sup>74</sup> RBA, *Reform of Australia's Payment System, Preliminary Conclusions of the 2007/2008 Review*, April 2008, p.23.

relied upon to conclude that the reductions in merchant service fees must have been fully passed through. The RBA had no basis for this conclusion.

*Full pass-through of cost reductions only happens in very limited circumstances, which do not always apply.*

The economics of cost pass-through are altogether more nuanced than the RBA's explanation. It is only in very limited circumstances that a reduction in input costs can be expected to be fully passed through to final prices. Specifically, if an input cost reduction is industry wide and there is perfect competition,<sup>75</sup> full pass through can be expected either if demand is perfectly inelastic, or if supply is perfectly elastic.<sup>76,77</sup> Of course, the distinguishing characteristics of perfect competition are seldom, if ever, seen in markets.<sup>78</sup>

Most markets are instead *imperfectly* competitive, which complicates matters considerably. The economics literature suggests that in imperfectly competitive markets, the degree of pass through will be influenced by many factors. Importantly, the quantum of pass through will be influenced by the prevailing market structure, and so the degree of competition. In principle, pass through rates can vary from significantly less than 100%, to more than 100%.

In industries characterised as oligopoly or monopoly, pass through of industry wide cost savings may be incomplete even if supply is perfectly elastic.<sup>79</sup> This is especially true where the market is supplied by a monopoly provider.<sup>80</sup> As the

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<sup>75</sup> The theoretical ideal of a perfectly competitive market has several distinguishing characteristics. These include many buyers and sellers; no barriers to entry, exit or expansion; homogeneous products; perfect information and zero transaction costs.

<sup>76</sup> The elasticity of demand (supply) measures the responsiveness of the demand (supply) for a product to changes in the price for that product. An elasticity of 'zero' is a situation of perfect inelasticity and is represented by a vertical demand/supply curve. This implies that a change in price does not affect the quantity demanded/supplied. An elasticity of 'infinity' is a situation of perfect elasticity and is represented by a horizontal demand/supply curve. This implies that any change in price will cause demand/supply to drop to zero.

<sup>77</sup> Stennek, J. & Verboven, F., *Merger Control and Enterprise Competitiveness – Empirical Analysis and Policy Recommendations*, Report for EC Contract III/99/065, February 20, 2001., pp.60-61 (Hereafter: 'Stennek & Verboven (2001)'). See also: Cotterill, R., *Estimation of Cost Pass Through to Michigan Consumers in the ADM Price Fixing Case*, Food Marketing Policy Center, University of Connecticut, Research Report, No.39, 1998 (Hereafter: 'Cotterill (1998)').

<sup>78</sup> For example, sellers generally are not pure price takers, and parties are almost never perfectly informed. Goods rarely are homogeneous. Barriers to entry and expansion may exist. Firms may not be able rapidly to adjust supply up or down by acquiring or disposing of assets in response to changing market conditions. Entry and exit may not be easy or swift, with supply-side constraints hindering both processes. The two other criteria – perfect elasticity of supply and/or perfect inelasticity of demand – are similarly rare.

<sup>79</sup> The reason is that such firms do not set their prices at the level of short-run marginal cost (unlike suppliers in perfectly competitive markets), but instead charge markups, which depend on the price elasticity of consumer demand. In the 'typical' case, consumers become more price sensitive as the price increases. If this is the case, then firms will absorb cost changes by adjusting their markups and pass-on will be incomplete. See: Stennek & Verboven (2001), p.61.

<sup>80</sup> Even in the monopoly case firms can be expected to pass on at least *part* of an industry-wide cost saving to consumers. Cotterill (1998) explains that if an industry is a monopoly, demand is linear, and the monopolist maximises profits, then the pass-through rate will be less than 100%. For a monopolist facing a linear demand curve, pass-through will be 50%.

number of firms increases, pass-through of industry-wide cost savings becomes more complete. Further complications arise in differentiated product industries.<sup>81</sup>

In short, 'standard economic analysis' does not provide a clear indication of the likely quantum, if any, of pass-through, and the RBA was incorrect to suggest otherwise. The determinants of the quantum of pass-through are numerous and, in many instances, it will be significantly less than absolute. For those reasons, it would have been altogether more reasonable for the RBA to have concluded that merchants in Australia did *not* pass-through 100% of the reduction in merchant services fees described in the previous section.

*Standard economic analysis suggests that pass-through would have been less than 100%.*

Support for this conclusion can also be found in the extensive empirical literature spanning many areas, including pass-through of exchange rate fluctuations, cost reductions arising from mergers, and changes to tax rates. Yet more support can be found in Chang *et al* (2005) which identified myriad empirical studies in which the rate of pass-through of input cost reductions was estimated to be less than 100%.<sup>82</sup>

Casting further doubt on the RBA's conclusion that cost reductions were passed through is the *quantum* of the reduction for merchants. Even if fully passed-through by acquirers, the interchange fee reductions would have amounted to less than 62 basis points, and only on those transactions that took place on credit cards (around 20% of the value of all transactions at that time<sup>83</sup>). For an average card-accepting merchant, the overall cost reduction would have been in the order of 0.12%, i.e., a rather paltry sum.<sup>84</sup> Chang *et al* (2005) estimated that the reduction in costs would have amounted to around 8c on an AU\$40 transaction.<sup>85</sup>

In our view, many Australian merchants would have been disinclined to pass-through such a small cost reduction, and New Zealand merchants would be no different if faced with a reduction of similar magnitude. Rather, it is likely that a significant number would instead retain any reduction in merchant service fees. That was the conclusion reached by Chang *et al* (2005) when assessing the Australian experience, as well as Worthington (2006), who stated that:<sup>86</sup>

*'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.'*

<sup>81</sup> See: Stennek & Verboven (2001). Another consideration is whether a cost-reduction is industry-wide or affects only a smaller number of firms. It is unclear precisely where in the spectrum of firm-specific to industry-wide cost changes the RBA interventions would fall.

<sup>82</sup> Chang *et al* (2005), pp.334-335.

<sup>83</sup> See: Emery, D., West, T. and Massey, D., *Household Payment Patterns in Australia, Proceedings of a Conference held in Sydney on 27 November 2007: Payment System Review Conference*, p.144.

<sup>84</sup> Twenty per cent of 62 basis points.

<sup>85</sup> Chang *et al* (2005), p.341.

<sup>86</sup> Worthington, S. 'The Payments System Regulator and the Retailers: The Australian Experience', *Monash Business Review*, 2006, 2(3), p.4.

*Although merchants would experience lower costs, the extent to which consumers would see lower prices is less clear.*

It is also possible that the cost reduction would be so modest that it would not even register with merchants. For example, over the 2003 to 2004 period, when merchant service fees declined substantially in Australia, research data compiled by Roy Morgan Research showed that some 60% of merchants surveyed were not even aware of the RBA's interventions.<sup>87</sup> In our view, it is reasonable to conclude that if a merchant is unaware of a cost reduction, it is much less likely to reflect that cost reduction in the prices that it charges its customers (although it is not implausible).

For those reasons, although merchants would certainly be the conspicuous near-term beneficiaries of any regulation of interchange fees, the extent to which consumers would benefit subsequently from reduced prices for final goods and services is much less clear. There is neither the empirical evidence to support an assumption of 'full pass-through', nor a sound basis in economic theory. Predicting a precise percentage is not possible, but it is reasonable to assume that it would be significantly below 100%.

### **3.4 Competition in issuing and acquiring**

*In principle, interchange fee regulation could impact upon competition in issuing and acquiring.*

In principle, regulating the level of interchange fees could impact upon the level of competition in the provision of credit card services – both to cardholders and merchants. For example, the RBA anticipated that its interventions would enhance competition between issuers and acquirers alike; primarily by encouraging new entry by 'non-financial corporations of substance'.<sup>88</sup> However, there is no evidence that the interventions have had this effect in practice.

Prior to 2003, the provision of credit card acquiring and issuing services in Australia was relatively concentrated, with the four major banks accounting for approximately 85% of all credit card transactions based on cards issued, and 93% of transactions based on transactions acquired.<sup>89</sup> In our opinion, there is no reason to think that the RBA's interventions led to any significant changes in the degree of competition among issuers or acquirers of credit card services in Australia.

In the years following the reforms, only two new players, GE Money and Tyro Payments, applied to the Australian Prudential Regulation Authority (APRA) to become issuers and/or acquirers.<sup>90</sup> Of these, GE Money was already involved in the issuing of credit cards through an overseas affiliate prior to the reforms coming into

<sup>87</sup> See: Roy Morgan Research, *Tracking Study on Credit Card Surcharging and the Interchange Fee*, August 2005.

<sup>88</sup> RBA, *Payments System Board Annual Report: 2002, 2003*, p.15.

<sup>89</sup> RBA and ACCC, *Debit and Credit Card Schemes in Australia: A Study of Interchange Fees and Access*, October 2000, p.17.

<sup>90</sup> GE money received authorisation from APRA in 2004 as a Specialist Credit Card Institution (SCCI), which allowed it to undertake credit card issuing and acquiring. MoneySwitch Limited (trading as Tyro Payments) received an SCCI authorisation from APRA in 2005, permitting it to acquire credit and debit card transactions. Several other non-bank institutions such as Virgin Money and Aussie Home Loans also become involved in the issuing of credit cards by establishing partnerships with banks. See: RBA, *Reform of Australia's Payments System: Issues for the 2007/08 Review*, May 2007, pp.23-24.

force, i.e., its entry cannot be attributed to those regulations.<sup>91</sup> Moreover, at least two credit card issuers exited the market following the RBA's interventions.<sup>92</sup>

*There is little evidence the RBA's reforms influenced competition in issuing and acquiring.*

In summary, in our view, there is little evidence to suggest that the RBA's interventions led to significant changes in the degree of competition between issuers or acquirers of credit card services in Australia. There was little or no new entry to speak of in either issuing or acquiring in the wake of those reforms, and the interventions may have played a material role in the exit of two small issuers. We see no obvious reasons to think that the outcome would be any different if credit card interchange fees were regulated in New Zealand.

### 3.5 Changes in the relative use of payment methods

If credit card interchange fees were regulated and credit cards became a less attractive form of payment (e.g., because card rewards diminished or cardholder fees increased – see section 3.1) then this could cause cardholders to reduce their use of those cards and switch to other cheaper forms of payment. For example, as we explain in more detail in section 4.2, the Issues Paper assumes that large numbers of credit card transactions would become EFTPOS payments instead.

*Regulation of credit card interchange fees may result in some switching to other forms of payment.*

This was also the RBA's expectation when it regulated the level of interchange fees and prohibited Visa and MasterCard's 'no-surcharge rule' in Australia in the early 2000s. The intention was to foster the growth of what the RBA considered to be lower cost form of payment by sharpening the price signals that consumers saw when deciding how to pay. However, looking back, it is very difficult to determine what effect these regulations had in steering customers away from credit cards.

Figures 3.2 and 3.3 track the number of credit and debit card (i.e., EFTPOS and scheme debit card<sup>93</sup>) transactions, and their value, from the period immediately preceding the RBA's interventions to September 2016. They illustrate that both the number of debit card transactions, and their value has grown significantly more quickly than for credit cards over this period. Figure 3.2 illustrates that the monthly volume of debit card transactions grew by over 400% over this 14-year period, and the total value of those transactions more than doubled.

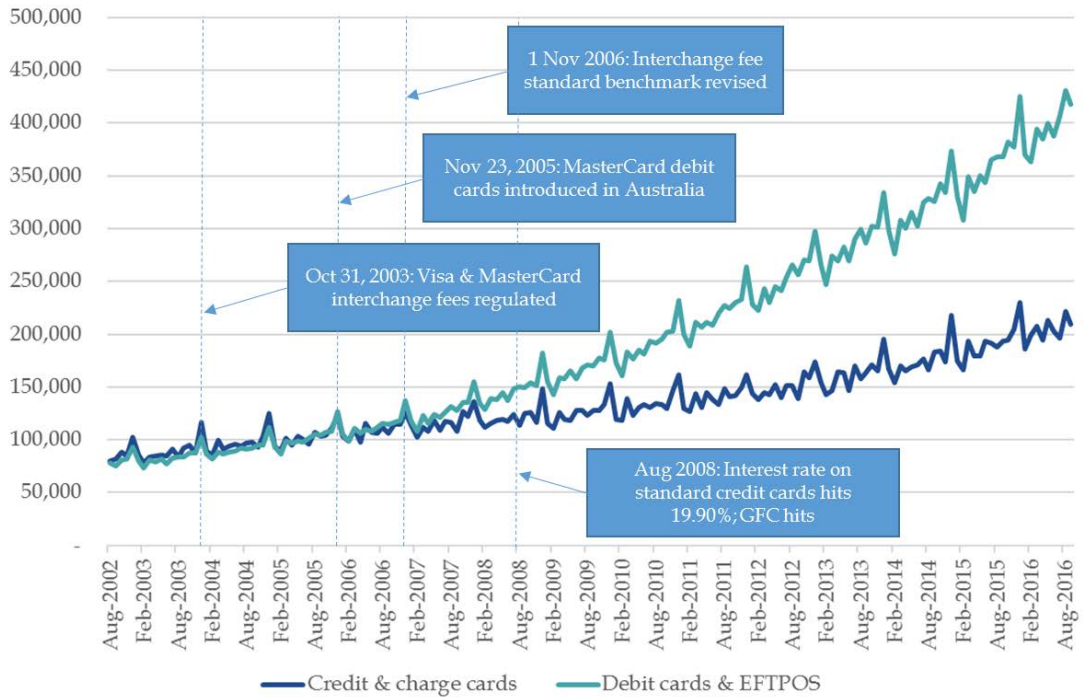
<sup>91</sup> CRA International, *Regulatory intervention in the payment card industry by the Reserve Bank of Australia: Analysis of the evidence*, April 2008, pp.43-44.

<sup>92</sup> In December 2003, Cuscal's sold its MyCard credit card portfolio to Citibank and, in December 2006, the Bank of Queensland also sold its issuing portfolio to Citibank. Although neither vendor cited the RBA's regulations as the impetus for its decision to sell, it is not hard to imagine that the fall in interchange fees that followed those interventions was a material contributing factor.

<sup>93</sup> Note that the RBA does not distinguished between EFTPOS and 'scheme debit' card transactions.



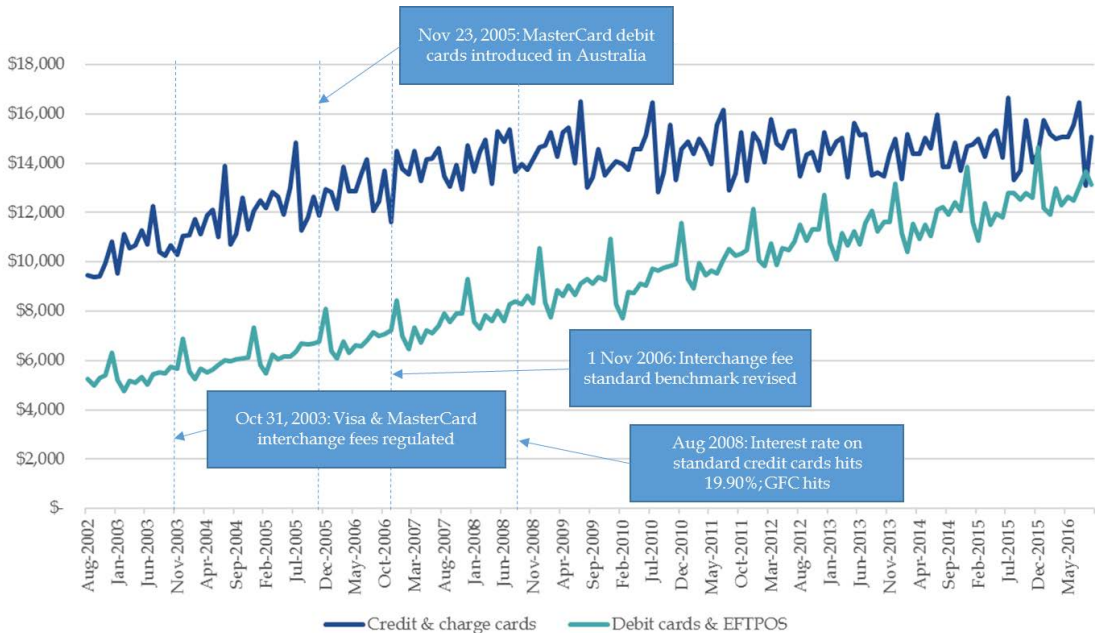
**Figure 3.2: Total number of credit and debit card<sup>(1)</sup> transactions (000s)**



Both the number and value of debit card transactions have grown by more than for credit cards in the 14 years following the RBA's interventions.

Source: RBA, Data C01: Credit and Charge Card Statistics and RBA, C05: Debit Card Statistics, available: [here](#) and [here](#). Notes: (1) Debit card transactions include both EFTPOS and scheme debit cards, e.g., Visa and MasterCard debit cards.

**Figure 3.3: Total value of credit and debit card<sup>(1)</sup> transactions (\$m), CPI adjusted**



Source: RBA, Data C01: Credit and Charge Card Statistics and RBA, C05: Debit Card Statistics, available: [here](#) and [here](#). Values adjusted for inflation using the Australian All Groups CPI, available: [here](#). Notes: (1) Debit card transactions include both EFTPOS and scheme debit cards, e.g., Visa and MasterCard debit cards.

Taken at face value, this suggests that there has been a material amount of substitution from credit cards to debit cards over this period. However, that does not mean that all – or even a substantial proportion – of that switching is attributable to the RBA’s decision to regulate interchange fees in the early 2000s. In our view, there are several other factors that are important to consider, including many potential confounding effects that are likely to have contributed to the trends observed in the charts.

First, the ‘upward trend’ in the total number of debit card transactions is most noticeable from around 2008 onwards. This is more than five years *after* the RBA initially capped the level of interchange fees. To be sure, it is somewhat more proximate to the time at which the RBA revised the standard interchange benchmark downwards by 5 basis points (on 1 November 2006).<sup>94</sup> However, the effect of this subsequent adjustment was far more modest than the application of the initial benchmark rate (which reduced rates by around 40 basis points).<sup>95</sup> It is not obvious why a 5 basis point interchange fee reduction would prompt widespread switching, when a reduction of eight times that size had no obvious impact.

Second, it is important to note that the RBA’s regulations came into force at around the same time that Visa and MasterCard released their scheme debit cards. The ensuing rise in the popularity of such cards (to be distinguished from EFTPOS cards) may have been a key driver of much of the growth seen over the period. Recall that, unlike EFTPOS cards, ‘scheme’ debit cards can be used for ‘card-not-present’ transactions (including, most notably, online sales<sup>96</sup>), which made them a particularly attractive new option for Australian consumers. The RBA’s interventions would not have been a key driver of this type of substitution and these cards are now well-established in New Zealand.

Third, it is worth also recognising that the distinct upsurge in debit card payment volumes also coincided with the highest credit card interest rates over this entire period (19.90% on standard cards<sup>97</sup>), as well as the global financial crisis (which was at its height around September and October 2008). It is quite plausible that during this period – and throughout the following ‘great recession’ – that customers may have been more reluctant to go into debt (particularly when faced with higher rates of interest), and favoured ‘spending their own money’ instead.

Fourth, it should be remembered that, at the same time the RBA regulated interchange fees, it also forced Visa and MasterCard to stop applying their ‘no-surcharge’ rules, which meant that Australian merchants were permitted to start

*There are many other factors that could have contributed to the growth in debit card usage in Australia.*

<sup>94</sup> The common benchmark interchange fee for both Visa and MasterCard credit card transactions was reduced from 0.55% to 0.5% of transaction value.

<sup>95</sup> The Interchange Fee Standard had the effect of reducing the average interchange fee for credit card transactions from around 0.95% to around 0.55% of transaction value, although there were differences in the average interchange fees applied to Visa, MasterCard and Bankcard transactions. See: RBA, *Payment System Board Annual Report 2004, 2004* p.9.

<sup>96</sup> Previously the only option for consumers to make such payments was either a credit card or alternative payment systems like BPay or PayPal.

<sup>97</sup> See: RBA, *Data F5: Indicator Lending Rates: Personal loans; Revolving credit; Credit cards; standard* – available: [here](#).



levying surcharges on credit card payments. Although most merchants chose not to do so (and still eschew from doing so), some did (and still do). This surcharging – however modest – may have driven some substitution away from credit cards; but for reasons unrelated to the regulated interchange fee. Because surcharging is already permitted in New Zealand, there would be no such effect seen here.

Finally, there are two other ‘in principle’ reasons to think that the level of substitution from credit cards to debit cards arising from the RBA’s regulation of interchange fees could have been modest. Specifically, as we set out in section 3.1, the reduction in interchange fees manifested primarily in an increase in *fixed* cardholder fees and, although the value of reward benefits declined, they did not disappear altogether. Intuitively, it is not obvious why either of these effects would prompt significant switching away from credit cards, since:

- once an annual cardholder fee has been paid, it has no effect at all on a customer’s ‘marginal’ payment decision, i.e., whether to use, say, Visa or EFTPOS for a particular transaction;<sup>98</sup> and
- some reward benefits are still better than none, which means a customer’s marginal payment decision might still swing in favour of a credit card, even if it is not quite as attractive as before.<sup>99</sup>

*Interchange fee regulation may not lead to significant substitution away from credit cards.*

In summary, although any decision to regulate interchange fees in New Zealand would see credit cardholders facing significantly higher costs to use their credit cards overall, this may not result in sharper price signals. Higher annual fixed fees and reduced reward programs would do little, if anything, to steer customers away from credit cards towards EFTPOS. Moreover, the Australian experience is not especially instructive, because the available data simply do not tell us whether the RBA’s regulation of interchange fees – as opposed to unrelated factors – had a material effect on the relative usage of credit and debit cards.

### 3.6 Summary and implications

If the level of credit card interchange fees was regulated in New Zealand to reflect some ‘cost-based’ benchmark (consistent with the approach taken by, say, the RBA in Australia), this would have potentially wide-ranging effects for participants on both sides of the market. Based on the recent experience with a very similar reform in Australia, some of the more likely effects include the following:

- credit card issuers would increase their cardholder fees for most (if not all) categories of credit cards (perhaps by more for premium cards), with these increases most likely manifesting in the form of higher *fixed* fees;

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<sup>98</sup> In addition, as we explained above, it seems unlikely to us that many customers would be prepared to relinquish their credit cards altogether.

<sup>99</sup> Moreover, as we explain in more detail in section 4.2, there may be other reasons why a customer might still prefer to use a credit card even if she received no reward benefits at all – such as to obtain the benefit of an interest-free period.

- credit card issuers would reduce the value of cardholder benefits, but these benefits would be highly unlikely to disappear altogether;
- merchant services fees would decrease, but this reduction would not be fully passed-through to final consumers in the form of lower prices for goods and services sold by merchants;
- there would be unlikely to be any material impact upon competition between issuers and acquirers of credit card services – and it is possible that rivalry may even be diminished; and
- there may be some reduction in the use of credit cards – although, this may be limited if credit card fee increases take the form of additional fixed fees (which seems likely) and reward benefits continue (albeit at a reduced level).

In other words, interchange fee regulation would be likely to make merchants better off (due to the ‘windfall gain’ arising from the reduction in merchant services fees), issuers worse off, and some consumers would benefit (e.g., lower income consumers who use credit cards less) at the expense of others (particularly those who use credit cards with reward schemes). But would New Zealanders be better off overall? That is very difficult to say, but there are two reasons to be sceptical; namely:<sup>100</sup>

- regulating the interchange fee may not have a significant effect on the *variable* prices paid by cardholders and therefore on the volume of credit card transactions – which is generally the reason for intervening in the first place; and
- even if cost-based interchange fee regulation could affect the variable prices paid by both merchants and cardholders, as section 2.3 explained, cost-based regulation would improve overall welfare *only by happenstance*.

Indeed, there are many other factors that would influence the overall effect of any such regulatory intervention on overall economic welfare that would be very hard to predict. These include the benefits that customers obtain from different payment types (which are hardly ever considered – the Issues Paper being no exception), price elasticities of demand and supply, and so on. Taking these varied and potentially counteracting impacts into consideration would be a very complicated exercise, as we highlighted at length in section 2.3.

All of this means that one cannot simply assume that a regulatory intervention to, say, force a reduction in interchange fees would make New Zealand consumers better off overall. The complex interaction of demand- and supply-side factors described above means that it is entirely possible that such a step could reduce welfare. In this respect, we are reminded of an observation made by Evans (2002), when he opined upon the reforms undertaken by the RBA:<sup>101</sup>

*‘The RBA had not established that interchange fees were too high. It relied on the existence of theoretical models that showed that they could be too high. But the same models also showed that privately set interchange fees could be at the socially optimal level or lower. It makes no sense to seek to lower interchange fees when we*

<sup>100</sup> See: Evans & Schmalensee, p.38.

<sup>101</sup> Evans, D., *The Antitrust Economics of Two-Sided Markets*, 2002, pp.81-82.

*Regulation would create winners and losers, but it is unclear whether New Zealanders would be better off overall and there is no basis for presuming so.*

*do not know if they are too high. All we know, and this should come as no surprise in any two-sided market, is that one side (the merchants in this case) would prefer to pay less ... There is no economic basis for believing that the RBA method for determining the interchange fee would increase or decrease the overall welfare of the consumers in the two sides of the market.'*

The material set out in the Issues Paper risks giving rise to precisely this error. In our opinion, the analysis is too narrow and does not provide a sufficiently strong basis to conclude that credit card interchange fees are currently too high, or that overall economic welfare could be enhanced by controlling the level of those fees through regulation. This conclusion is not affected by the various quantitative estimates of purported inefficiencies contained in the Issues Paper because, as we explain in the following sections, they exhibit several analytical flaws.

## 4. Review of \$45m ‘additional resource cost’

The Issues Paper claims that the interchange business model has resulted in too many purchases being made with credit cards that could instead be made using alternative payment methods that are said to be less costly – most notably, EFTPOS. This supposedly unnecessary additional resource cost is said to be around \$45m per annum.<sup>102</sup> To arrive at this number, the Issues Paper starts by:<sup>103</sup>

- taking the total number of credit card transactions per annum (from data collected by Statistics New Zealand – available [here](#));
- multiplying that volume by the average resource cost of a credit card transaction, as estimated by the RBA in a December 2014 study;<sup>104</sup> and
- subtracting the average resource cost of a proprietary EFTPOS transaction – based again on the RBA’s December 2014 study.

*The \$45m is characterised as a cost reduction that could be achieved if certain credit card transactions became EFTPOS transactions.*

The resulting figure (of \$137m) is described as the ‘annual reduction in resource cost that would be attained if *all* credit card transactions were instead proprietary EFTPOS transactions’.<sup>105</sup> However, the Issues Paper recognises that is not reasonable to assume that *all* credit card transactions would switch to EFTPOS, and so two adjustments are made to this number:<sup>106</sup>

- 20% of the transactions are assumed to be international and business card transactions (the basis for this number is not entirely clear) that would therefore be likely to remain credit card payments, i.e., would not switch to EFTPOS; and
- of the residual transactions, 40% are assumed to be made ‘primarily for rewards’ (frequent flyer points and so on), and would therefore switch to EFTPOS if, presumably, the value of those rewards decreased following intervention (and/or, possibly, cardholder fees increased).

In other words, the \$45m estimate is calculated by taking the \$137m figure, multiplying it by 0.8 (to ‘quarantine’ the assumed 20% of international and business transactions) and then multiplying it by 0.4 (to isolate the total resource cost of those transactions that are assumed to be candidates for switching to EFTPOS). This \$45m (or, more accurately, \$43.84m) is then characterised as:<sup>107</sup>

*‘The annual reduction in resource cost that would be attained if the people who only use credit cards for rewards instead used proprietary EFTPOS.’*

In the following sections, we examine the various facets of the methodology that has been used to arrive at its \$45m estimate. We then consider whether it provides a

<sup>102</sup> Issues Paper, p.47.

<sup>103</sup> Issues Paper, p.81.

<sup>104</sup> See: Stewart et al., ‘The Evolution of Payment Costs in Australia’, *Research Discussion Paper 2014-14*, December 2014, Payments Policy Department Reserve Bank of Australia (hereafter: ‘RBA (2014)’).

<sup>105</sup> Issues Paper, p.81.

<sup>106</sup> Issues Paper, p.81.

<sup>107</sup> *Ibid.*

reasonable indication of the efficiency gains potentially achievable through a regulatory intervention, such as limiting the level of interchange fees.

## 4.1 Average resource costs are not avoidable costs

The 'resource cost' estimates that have been used to derive the \$45m figure in the Issues Paper are based on the RBA's calculations of 'average costs' of transactions using different payment methods (cash, credit card, debit card, EFTPOS, etc.). Importantly, these estimates of average resource costs include both the *variable* and *fixed costs* of each payment type. As Appendix A explains in more detail, the critical distinction between these two types of economic costs is that:

- variable costs change with the number of transactions, e.g., the more credit card transactions that are made, the higher they become; whereas
- fixed costs *do not* vary with the number of transactions, e.g., they remain the same, regardless of whether transaction volumes increase or decrease.

An example of a variable cost would be the time taken to process a typical credit card payment, e.g., the cost of the various employees' time. These costs are only incurred if an additional transaction is made. An example of a fixed cost would be the costs associated with any payments infrastructure that a merchant must procure before she can accept card payments, e.g., a terminal capable of completing contactless card payments. Once that up-front cost has been incurred, it does not matter whether she makes one card sale per day or 1,000 – the cost would remain the same (at least, up to a point<sup>108</sup>).

*The average resource cost estimates include fixed and common costs that would not be avoided if credit card transaction volumes fell.*

Furthermore, those RBA estimates will also include an allocation of *common costs*. As Appendix A again explains in more detail, these are costs that are necessary to produce two (or more) services, but that are only avoided if *both* of those services cease to be produced. For example, most card terminals can process credit card, debit card and EFTPOS transactions. The cost of the terminal is therefore 'common' across all these retail payment options.

This means that, even in the highly unlikely event that, say, a merchant's credit card sales disappeared altogether (i.e., she made no credit card sales at all), she would not *avoid* the costs that are common across other payment mechanisms. For example, she would not avoid the common cost of, say, her terminal if she still wished to be able to make debit card and EFTPOS sales. She would still need the same machine, and the fixed cost would remain unchanged. We expect that there would be many other costs that fit into the same category.

This is all highly relevant to the \$45m estimate. That figure is predicated on the implicit assumption that this whole sum could be *avoided* if the assumed level of substitution from credit card transactions to EFTPOS transactions was to occur. But because that sum is an *average* resource cost it will include a lot of *fixed* and *common*

<sup>108</sup> There are only so many transactions that can be made in a given period of time – and so, at a certain point, a merchant might need to open a new register and invest in another terminal in order to process more payments.

costs that would *not actually be saved* if merchants experienced a decline in credit card sales. As noted above, just because a merchant has fewer credit card sales does not mean she would avoid the costs she has outlaid on a terminal.

All those *unavoidable* costs will be wrapped up in the RBA's average cost estimates, and yet this has not been factored into the calculation in the Issues Paper. It instead conflates *average costs* with *avoidable costs*. As Appendix A explains in more detail, these costs are not synonymous. This represents a significant error in the methodology employed in the Issues Paper. Box 4.1 illustrates the potential effect of this mistake with a simple example using round numbers.

#### Box 4.1: Difference between average costs and avoidable costs

Imagine that before a merchant can accept any credit card and EFTPOS payments, she must outlay \$2,000 and \$1,000, respectively, i.e., these are the 'fixed costs' of providing each payment option (to keep things simple, let's also assume that those costs are not 'common' and that they are the only fixed costs<sup>109</sup>). Now suppose that the variable resource cost of processing each credit card transaction is \$2, and \$1 for EFTPOS. Lastly, let us assume that there are 1,000 transactions of each type. What happens if we apply the Issues Paper's methodology?

- First, it is necessary to calculate the 'average costs' of credit card and EFTPOS transactions. These are \$4  $((\$2,000 + \$2 \times 1,000) \div 1,000)$  and \$2  $((\$1,000 + \$1 \times 1,000) \div 1,000)$ , respectively.
- Second, the total cost of credit card transactions per annum is calculated. In our example, this is equal to \$4,000 (i.e., \$4 average cost of a credit card transaction  $\times$  1,000 transactions).
- Third, by the Issues Paper's rationale, if all these credit card transactions had instead been EFTPOS transactions, this total cost would have been \$2,000 instead (i.e., \$2 average cost of EFTPOS  $\times$  1,000 transactions).
- Fourth, the extent of the supposed 'overspend' can then be calculated by subtracting the \$2,000 total 'EFTPOS cost' from the \$4,000 total 'credit card cost', i.e., yielding a \$2,000 'inefficiency'.
- Fifth, because not *all* those credit card transactions would switch to EFTPOS, it is necessary to make an adjustment, i.e.,  $\$2,000 \times 0.8 \times 0.4$  (to isolate those transactions that *would* switch) = \$640.

In other words, applying the Issues Paper's approach to this simple example, would yield a purported inefficiency of \$640. This would be the costs that the Issues Paper would say could be *avoided* if the assumed level of substitution from credit cards to EFTPOS took place. However, that number is wrong. To see why, let us assume for the sake of argument that 32% of credit card transactions would indeed switch to EFTPOS (i.e.,  $0.8 \times 0.4 = 0.32$ ). Given the cost structures described above, what costs would actually be *avoided*?

By including unavoidable costs, the methodology overstates the achievable cost saving.

<sup>109</sup> There would be a host of other costs incurred by multiple parties, e.g., the issuing and acquiring banks and so on.



Prior to any substitution occurring, the total cost of credit card transactions was equal to \$4,000 (i.e., \$2,000 + \$2 × 1,000). The *new* total cost of the credit card transactions would be equal to \$3,360, which can be derived as follows:

- the \$2,000 in fixed costs, which would *not be affected* by the reduction in transaction volume, i.e., merchants would not avoid the costs they had incurred installing terminals, etc.; *plus*
- the \$2 variable cost multiplied by 680 transactions, i.e., a volume that would be 32% lower than what it was previously (i.e., \$1,000 × 0.68 = \$1,360)

Before customers switched from credit cards to EFTPOS, the total cost of EFTPOS transactions was \$2,000 (i.e., \$1,000 *plus* \$1 × 1,000). Afterwards, the total cost of the EFTPOS transactions would be equal to \$2,320, which can be derived as follows:

- the \$1,000 in fixed costs, which would *not be affected* by the increase in transaction volume, i.e., the costs that merchants had incurred previously installing terminals, etc., would not increase; *plus*
- the \$1 variable cost multiplied by 1,320 transactions, i.e., a volume that would be 32% higher than what it was before (i.e., \$1,000 × 1.32 = \$1,320).

In other words, in this simple example, the new combined cost of credit card *and* EFTPOS transactions would be \$5,680. This is \$320 lower than the total cost of completing those transactions *without* the assumed level of substitution from credit cards to EFTPOS (i.e., \$6,000 *less* \$5,680). However, most importantly, it is **half of what the Issues Paper's approach would predict** in these circumstances. Recall that its approach suggested a potential avoided cost saving of \$640.

This methodological error means that the \$45m estimate overstates the level of costs that could, in fact, be avoided if the assumed level of substitution was to occur. It is not possible to isolate with any precision the overall quantitative effect of this mistake. However, if the ratio of fixed to variable costs is quite high (which we expect it would be), then the impact would be substantial. In our opinion, this means that no weight can reasonably be placed on the \$45m estimate.

## 4.2 The assumed level of switching is very high

The \$45m estimate also hinges on the very strong assumption that a large volume of credit card transactions (around 32%) could switch across to EFTPOS – the supposedly cheaper payment mechanism. The Issues Paper does not explain what would prompt so many transactions to switch over in this manner. However, there are two things that might, in principle, cause customers to be less inclined to pay with a credit card and, in turn, more likely to use their EFTPOS cards:

- any increase in the incidence of credit card surcharging by merchants, which would act as a direct disincentive to use that form of payment; and
- any reduction in reward benefits and/or increase credit card fees, which increased the effective price of a credit card transaction.

However, there are some important things to note in practice. Firstly, although it is true that any imposition of a surcharge clearly would make using a credit card more

*The assumed level of switching to EFTPOS seems very high – perhaps implausible.*

expensive, the Issues Paper notes that the substantial majority of credit card transactions do not attract such charges.<sup>110</sup> Furthermore, it is not obvious why regulating the level of interchange fees would result in more surcharging – the two effects are not related in any obvious way.

In any event, even if it was possible to somehow incentivise additional surcharging by merchants, it is not clear whether that would be in the interests of consumers. For example, it is unclear how many merchants who are currently surcharging are doing so by providing a cost-reflective price signal to steer customers towards other payment mechanisms, and how many are simply motivated by the opportunity to extract additional revenue from their customers (i.e., ‘inefficient’ surcharging) by:

- withholding information from consumers until they are nearly committed to a transaction and less inclined to ‘back out’;<sup>111</sup> and/or
- imposing surcharges that exceed the acceptance costs on consumers for whom credit cards are the most (or only) practicable or desirable form of payment.<sup>112</sup>

Secondly, while it is certainly likely that if interchange fees were regulated in New Zealand that credit card fees would increase, this would most likely manifest in the form of higher *fixed* fees, e.g., increased annual card fees (as opposed to, say, a usage charge per transaction – which would represent a major change). As section 3.1 explained, that is what happened in Australia when credit card interchange fees were regulated by the RBA in 2003.

*Increases in fixed fees would be unlikely to prompt much switching.*

Any such change would have virtually no effect on the marginal prices payable for different payment mechanisms, i.e., on variable costs. Once a cardholder has paid her fixed annual fee, that cost is ‘sunk’ (see Appendix A for more detail), and it has no bearing on her decision about whether to pull out her Visa or EFTPOS card to pay for a purchase. Accordingly, if there is no other difference in the marginal cost of a credit card transaction and an EFTPOS transaction, customers are no more likely to favour the latter.

Increases in fixed cardholder fees would therefore only affect overall credit card usage if they led to a significant number of cardholders relinquishing their cards altogether. As we explained in section 3.1, we expect that overwhelming majority of cardholders would be unwilling to take such a step – particularly given the growing prevalence of online shopping, i.e., ‘card-not-present’ transactions, for which EFTPOS is not a viable alternative. At the very least, we do not think that it is

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<sup>110</sup> Issues Paper, p.42.

<sup>111</sup> The tactic of withholding information about surcharges is likely to be more prevalent amongst businesses selling online to customers that may have a strong preference for paying with a credit card. Having been initially drawn by an attractive advertised price, a customer may learn of the surcharge only once they have expended time and effort entering information, at which point they may be reluctant to ‘back out’ of the transaction.

<sup>112</sup> This became a significant problem in Australia following the removal of the ‘no-surcharge rule’. The *Competition and Consumer Amendment (Payment Surcharges) Act 2016* bans “excessive” credit card surcharges. Credit card surcharges are supposed to represent the cost to the merchant of accepting payment by credit card. The new laws declare it is excessive when a merchant charges the customer any more than the cost of the transaction, determined by reference to the RBA’s standards.

reasonable to anticipate the levels of substitution implied in the Issues Paper, i.e., 32% switching. In our view, that rate seem very unlikely – perhaps implausible.

Thirdly, if regulation of interchange fees resulted in a reduction in the value of credit card reward points, it is not obvious why this would prompt customers to switch to their EFTPOS cards if they have decided, notwithstanding the reduction in the value of those rewards, to continue to hold a credit card. As we set out in section 3.1, if a customer decided to retain her credit card, and the marginal cost of the two forms of payment was otherwise identical, she might still prefer to use her credit card, since some reward is better than no reward.

*Reductions in rewards may not prompt much switching, since some reward is better than none.*

Moreover, even if a customer received no rewards at all (which is possible, but rather unlikely), she might still derive other valuable benefits, e.g., a 55-day interest free period. That being the case, even if a customer’s *primary* reason for using a credit card is to obtain rewards, that does not mean that there might not also be *secondary* reasons for her to continue favouring that payment option in the (very unlikely) event that those rewards vanished altogether. Indeed, a *primary* reason is not necessarily a *sole* reason.

Fourthly, it is unclear whether the ‘40% of personal credit card use made primarily for rewards’<sup>113</sup> that has been used as the benchmark includes any ‘card-not-present’ transactions. If it does, then those transactions could not switch to EFTPOS in the manner contemplated, since EFTPOS cannot be used in these circumstances (e.g., it cannot be used for online purchases<sup>114</sup>). To be sure, a debit card might be used instead, but that would result in a smaller saving than the Issues Paper has estimated, based on its application of the RBA’s resource cost estimates.

For these reasons, even if the Issues Paper is correct to conclude that ‘40% of personal credit card use is primarily for rewards’<sup>115</sup> (noting that the basis of this estimate is unclear) it does not follow that all those transactions would switch to EFTPOS (or even could, in the case of card-not-present transactions) following a regulatory intervention – even in the unlikely event that credit card rewards vanished entirely. This serves to reinforce the impression that the assumed rate of substitution is overly optimistic.

*The overly optimistic rate of substitution to EFTPOS serves to inflate the potential cost saving.*

This serves to exacerbate the shortcoming described in the previous section. The Issues Paper overestimates the costs that could be avoided by substituting an EFTPOS payment for a credit card payment and then compounds that mistake by overstating the likely level of switching. In our opinion, these two errors are individually and collectively sufficient to render the \$45m estimate unreliable. However, there are also several other problems with the methodology.

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<sup>113</sup> Issues Paper, p.81.

<sup>114</sup> Note that electronic payment company, Paymark, announced recently that it would begin offering EFTPOS as an online payment option to ASB customers for purchases made in the Mighty Ape online store, i.e., there is now a very limited exception. See: [here](#).

<sup>115</sup> *Ibid.*

### 4.3 Bare wealth transfers are not efficiency benefits

Even if the \$45m is what the Issues Paper says that it is – i.e., an additional and unnecessary cost – it does not follow that it represents a potential ‘efficiency gain’. The Issues Paper simply assumes that the same level of demand can be served at a lower cost. It then characterises that reduction as a potential efficiency benefit. Specifically, as we explained above, it takes the total number of annual credit card and EFTPOS transactions ‘as given’ and assumes that there would be some switching from the former to the latter. To illustrate using a simple example:

- suppose that there were 1,000 credit card and EFTPOS transactions per annum in total, split equally between the two payment methods, and that the cost of a credit card transaction was \$2, and the cost of an EFTPOS transaction was \$1;
- under the Issues Paper’s methodology this implies that the total cost of credit card and EFTPOS transactions is \$1,500 in this simple example (500 x \$1 (EFTPOS) plus 500 x \$2 (credit cards));
- now suppose that half of the credit card transactions could become EFTPOS transactions (to use a round number), i.e., that there were instead 250 and 750 transactions per annum, respectively (but still 1,000 transactions overall); then
- the total cost of credit card and EFTPOS transactions would be \$1,250 (i.e., 250 x \$2 (credit cards) plus 750 x \$1 (EFTPOS)), i.e., \$250 less than it would otherwise have been if the transactions had been split 50:50.

*The methodology assumes that the same number of transactions occurs at a lower cost – but this does not result in an efficiency gain; it is a bare wealth transfer.*

In the above example, there *appears* to be a \$250 saving from the substitution of 250 transactions from credit card to EFTPOS. Indeed, the Issues Paper would characterise this as a potential efficiency gain. But it is not. What the methodology in the Issues Paper does not recognise is that any such ‘saving’ would come entirely at the expense of some other party (or parties). Specifically, even if one party (say, a merchant) is incurring lower costs by accepting more EFTPOS transactions (e.g., fraud prevention costs, etc.), there would be *some other party* receiving fewer benefits (e.g., the party providing fraud prevention services).

Specifically, if the costs of accepting card payments decrease, but there is *no change in the number of transactions completed* (which is the scenario modelled in the Issues Paper), then all that would have happened is some money would have shifting around *between parties*. But no *new wealth* would have been generated, and there would have been no efficiency gain in any conventional economic sense. As Appendix A explains in more detail, economic efficiency (or, more specifically, *allocative efficiency*) can only be enhanced if there is an *increase in demand*.

An improvement in ‘allocative efficiency’ can only occur if there is an *increase in the number of card transactions*. In other words, if there are *new* transactions made that would otherwise not have happened that enable: a) cardholders to make more payments and derive benefits in doing so; and b) merchants to accept those payments and derive benefits, then economic welfare can be generated that *did not previously exist*. Those benefits would not come at the expense of anyone else and would represent a *genuine efficiency gain*, not just a bare transfer of existing wealth.

To use a simpler example; imagine that a person spends \$1m building a house. Now imagine that, if she had used cheaper building materials, she could have built the house for \$750,000. Does that mean that there is a \$250,000 ‘efficiency gain’ to be made? No, of course not. If she had spent \$250,000 less on construction, then that money would not have flowed into someone else’s pocket, i.e., the manufacturers of the more expensive building materials<sup>116</sup> In other words, every dollar of that saving would be implicitly financed by other parties – there would be no ‘additional wealth’ created.

*Genuine economic efficiency gains require new wealth to be created, not for existing wealth to be shifted from one consumer to another.*

For an allocative efficiency gain to arise, it would be necessary for the cost reduction to lead to an increase in demand. This could happen if, say, the widespread use of cheaper building materials led to lower housing prices, causing end customers to build (and buy) *more houses than they would otherwise have done* – creating *new wealth* throughout the broader economy. In other words, an efficiency gain can only be achieved if there is a reduction in previously inefficiently unserved demand for a product or service.<sup>117</sup>

However, the overall economic welfare gain from any such incremental demand will almost always be much smaller than the bare transfer of rent that will inevitably accompany it. As the more detailed analysis set out in Appendix A explains, this is because any reductions in ‘deadweight loss’ (i.e., the genuine efficiency gains) will, mathematically, almost always be much less than the attendant transfer of wealth. To put it colloquially, this is because, when it comes to assessments of economic effects, ‘rectangles are nearly always bigger than triangles’. The credit/EFTPOS card scenario is no different.

*The Issues Paper has not shown that regulation would reduce deadweight loss.*

The relevant question is therefore whether the higher resource costs (if any) associated with credit card transactions, are causing any inefficient reduction in demand for card payments and, in turn, goods and services throughout the economy (a ‘deadweight loss’). Such an effect is certainly possible. And if that is indeed the case, then it is possible that a regulatory intervention *might* give rise to an ‘allocative efficiency improvement’ that enhanced overall economic welfare. However, as we explained in section 2.3, the analyses required to test that theory would be altogether more complex than those contained in the Issues Paper.

Instead, the Issues Paper simply conflates a bare rent transfer – which has no effect on efficiency – with a reduction in deadweight loss. This serves to compound further the shortcomings described hitherto. Specifically, for the reasons set out in the previous two sections, the \$45m estimate cited in the Issues Paper overstates the extent of the potential wealth transfer. And for the reasons explained in this section,

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<sup>116</sup> Moreover, as we explain in the following section, she would also then have a house made with poorer quality materials, from which she might derive fewer benefits, making her worse off overall, despite the \$250,000 cost saving.

<sup>117</sup> In a similar vein, a gas-fired electricity generation plant may have higher ongoing fuel costs than, say, a hydro-electric plant. Producing a MW/h of electricity with a hydro plant instead of a gas fired plant may therefore result in a reduction in resource costs. However, this substitution would not result in an economic allocative efficiency benefit. That cost reduction would simply result in a bare transfer of wealth from gas plants (and, in turn, gas producers) to hydro plants (and, in turn, end customers). There would again be no *additional* welfare created.



the potential *genuine efficiency gain* – if any – would then only be a fraction of whatever that lower figure happened to be.

#### 4.4 Benefits have not been considered

The final shortcoming in the methodology in the Issues Paper is that it overlooks ‘half of the equation’. By focussing exclusively on the relative resource costs of credit card and EFTPOS transactions, the analysis creates the impression that customers will obtain the same *benefits* from both forms of payment. That is unlikely to be the case, in practice. Returning to our earlier example, this is a bit like saying that a person who saves \$250,000 by using cheaper materials when building a house is ‘better off’ to the tune of that sum.

*The methodology overlooks the relative benefits that customers obtain from credit card versus EFTPOS cards.*

It is certainly true that the house owner *might* be better off overall from buying the cheaper materials; but to arrive reliably at that conclusion it is necessary to also consider the *relative benefits* that she derives from them *vis-à-vis* the more expensive alternatives. If the benefit/value that she derives from the costlier materials (e.g., having double glazed windows, nicer bathroom tiles, etc.) exceeds the extra expenditure she must incur, then she would be *worse off* using the cheaper materials, despite the saving. As Evans and Schmalensee (2005) explain:<sup>118</sup>

*‘There is nothing unusual about a high-cost product driving out cheaper competition if the high-cost product is much better. U.S. drivers generally prefer automatic to manual transmissions in their automobiles, for instance, even though automatic transmissions cost more and are more expensive to maintain. Drivers seem to believe the difference in benefits outweighs the difference in cost.’*

*Just because something costs more does not mean that consumers will not rationally prefer it over something cheaper.*

In a similar vein, there is no reason to assume that customers derive the same level of benefits from credit card and EFTPOS transactions. Rather, any additional resource costs associated with credit card transactions are likely to be attributable – at least in part – to additional services not available via EFTPOS from which customers derive material benefits. The RBA make this very point in the study upon which the analysis in the Issues Paper relies. The authors caution that:<sup>119</sup>

*‘The study does not measure the benefits associated with different payment instruments nor whether the structure of the market promotes innovation. Both these factors need to be considered when drawing policy implications from these numbers; increased use of the lowest-cost payment system or less use of the higher-cost systems does not necessarily imply better outcomes ...*

*... Relative resource costs also reflect the features of the different products. For example, the fact that eftpos did not offer card-not-present or international payments at the time of the study is likely to be one reason why the average resource cost per transaction is estimated to be significantly lower for*

<sup>118</sup> Evans & Schmalensee, p.30.

<sup>119</sup> RBA (2014), pp.12 and 17.



*eftpos transactions than for MasterCard & Visa debit card transactions or credit card transactions.'* [emphasis added]

*Credit cards offer some valuable services that EFTPOS cards do not.*

Given that credit cards offer features that EFTPOS cards do not – such as the ability to make card-not-present and international payments – both of which are of significant value to customers, it is natural to expect that they would cost more. But it does not follow that customers would necessarily be better off being steered, through a regulatory intervention, towards EFTPOS – even if it was cheaper in some circumstances. This would be akin to forcing the customer in our simple example to build her house with cheaper materials, when she might prefer to spend more.

We are not aware of any studies that consider both the marginal social costs *and* benefits for merchants and cardholders of different payment mechanisms. Evans and Schmalensee (2005)<sup>120</sup> note that there is some evidence on the costs for merchants (the RBA's study being one such example), some highly incomplete evidence on marginal benefits for merchants, but essentially nothing on marginal costs or benefits for cardholders or other parties. The analysis in the Issues Paper exhibits precisely these limitations, which is yet another reason to eschew from placing any weight on the \$45m estimate.

## 4.5 Summary

The Issues Paper describes the \$45m estimate as: 'the annual reduction in resource cost that would be attained if the people who only use credit cards for rewards instead used proprietary EFTPOS.'<sup>121</sup> But it is not. The potential for genuine efficiency gains to be made via regulatory intervention – if any – would be only a small fraction of this number, since the methodology set out in the Issues Paper:

*The errors in its derivation mean that the \$45m estimate is not robust from an economic perspective.*

- does not recognise that many of the fixed and common costs that feed into the 'average resource cost' estimates *would not be avoided* if some customers switched from credit cards to EFTPOS;
- assumes an extremely high – and most likely implausible – rate of substitution between credit cards and EFTPOS, with 32% of annual credit card transactions presumed to switch to EFTPOS;
- mischaracterises the \$45m as a potential 'efficiency gain' when, in fact, it would simply result in a transfer of wealth from one group of consumers to another, without necessarily generating any extra economic welfare; and
- overlooks the fact that customers may derive more benefits from credit cards than EFTPOS cards – including from things like the ability to complete 'card-not-present' transactions – which may cost more to provide.

Predicting the effects of a market intervention on the overall level of welfare would necessitate a far more complex analysis than the calculation contained in the Issues Paper. One cannot safely *presume* that a regulatory intervention to, say, force a reduction in interchange fees would make New Zealand consumers better off. The

<sup>120</sup> Evans & Schmalensee, p.32.

<sup>121</sup> Issues Paper, p.81.

complex interaction of demand- and supply-side factors described in section 2.3 means that it is entirely possible that such a step could *reduce* welfare.

## 5. Review of the \$187m ‘price increase’

The Issues Paper claims that the credit card interchange fee business model has increased prices for all consumers by \$187 million annually to fund credit card rewards.<sup>122</sup> It contends that it is mainly higher-income consumers that have benefited from those rewards, resulting in an ongoing cross-subsidy from low-income households to high-income households of \$59 million per annum.<sup>123</sup> These numbers are said to be calculated in the following way:<sup>124</sup>

*The \$187m is said to be the annual price increase needed to fund credit card rewards.*

- taking the total value of credit card expenditure for the year to March 2016 (from data collected by Statistics New Zealand – available [here](#));
- discounting that figure by 10% to account for transactions made by international credit cardholders;
- taking 75% of the resulting figure, based on the assumption that only ¾ of credit card spending attracts rewards; and
- taking 1% of the resulting number, based on the supposition that the average value of credit card rewards benefits is 1% of that expenditure.

The \$59m ‘cross-subsidy’ from low to high-income households appears then to be calculated by taking the \$187m estimate, and assuming:

- that 100% of the credit card reward benefits funded by the \$187m are received by only the highest-earning 40% of New Zealand households; and
- because the lowest-earning 60% of households account for 32% of retail expenditure, that they are contributing \$59m of the \$187m (i.e., \$187m x 32%), but without receiving any benefits in the form of credit card rewards.

In the following sections, we examine the methodology that has been used to arrive at the \$187m estimate and consider whether it provides a reasonable indication of the potential price reduction that might be attained through regulatory intervention. We also assess whether it would be appropriate, from a regulatory policy perspective, to be seeking to redistribute wealth in this fashion.

### 5.1 Unsubstantiated assumptions

MBIE acknowledges that all the figures used in its Issues Paper are ‘rough estimates for illustrative purposes only’.<sup>125</sup> This high-level approach is certainly evident in the methodology used to derive the \$187m and \$59m estimates. Several of the

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<sup>122</sup> Issues Paper, p.47.

<sup>123</sup> Issues Paper, p.50.

<sup>124</sup> Issues Paper, p.81. Note that the Issues Paper does not contain any detailed spreadsheets or tables containing the numbers that MBIE has used/obtained at each of these steps. When we attempt to implement the methodology set out above, we instead obtain a figure of \$234m per annum. It is unclear to us where MBIE’s approach has differed from our own, and how it consequently arrived at \$187m per annum. In any event, for the reasons we set out below, either number would be equally problematic, from an economic perspective.

<sup>125</sup> Issues Paper, p.80.

assumptions that are made to arrive at these numbers appear to have little foundation. For example:

*Certain key assumptions have very little foundation.*

- the assumptions about the percentage of credit card transactions that attract rewards (75% of transactions), and the average value of those rewards (1% of the spend) are said to be based on ‘conversations and data from banks [sic]’,<sup>126</sup> but there is no further elaboration; and
- there appears to be no basis at all for the assumption that 100% of credit card reward benefits are received by the top 40% of New Zealand households (by income) and, in our opinion, this assumption (albeit intended clearly only as a simplification) does not seem robust.

We expect that modest changes in these underlying assumptions could result in substantial variations in the numbers ultimately calculated. Unfortunately, although the ‘rough’ nature of the estimates is disclosed in Annex 4 on page 80 of the Issues Papers, this disclaimer does not feature at all prior to that point. By that time, the figures have been referenced repeatedly without that important ‘health warning’.<sup>127</sup>

## 5.2 No distinction between efficiency gains and transfers

It is important to realise once again that the \$187m figure set out in the Issues Paper does not represent an economic efficiency gain. Again, at most, it constitutes a potential bare transfer of wealth. Even if one assumed, for the sake of argument, that price reductions of \$187m could be achieved throughout the economy (which, as we explain the following section is unlikely, since merchants would be likely to ‘pocket’ a share of any reduction in merchant services fees), this would come entirely at the expense of credit cardholders who would see their cardholder benefits drop by the same sum.

*The \$187m does not represent an efficiency gain – at best, it is a potential bare wealth transfer.*

The analysis set out in section 4.3 remains equally applicable here. Any such transfer is not an efficiency gain. We reiterate that, for an efficiency gain to occur, there would need to be an increase in the number of payments made and, in turn, an increase in demand for goods and services. As we noted earlier, the Issues Paper does not explore this matter. What it appears to suggest instead is that it may be worth engineering a bare transfer of wealth between two groups of consumers (from high-income to low-income households) for its own sake – even if there was no genuine overall efficiency gain.

In other words, the implication seems to be that, even if a market intervention – e.g., regulation of interchange fees – does not create any *new wealth* (i.e., through improving efficiency and economic welfare), it may nonetheless be worthwhile to seek to *redistribute the existing wealth*. This sentiment is, presumably, based on the implicit belief that \$1 in the hand of one type of consumer (e.g., a low-income consumer) is somehow ‘worth more’ than \$1 in the hand of another type of

<sup>126</sup> Issues Paper, p.80.

<sup>127</sup> It is worth noting that the same criticism could be levelled at the \$45m estimate considered in section 4 – but perhaps not to quite the same extent. For example, the resource cost estimates that MBIE has used are well-referenced (albeit then subsequently misapplied) and the basis for the assumed levels of substitution is also disclosed (although, as we explained, it is not robust).

consumer (e.g., a high-income consumer). In our opinion, there are at least two reasons why that belief is misplaced.

First, as Appendix A explains in more detail, from a purely practical perspective, it is much easier to focus on maximising total welfare than it is to try and deliver bespoke outcomes for categories of customers. For example, attempting to isolate and provide greater weight to outcomes that benefit ‘low-income’ consumers through introducing regulation is likely to be very challenging, in practice, because those consumers may be influenced in lots of different ways, for example:

- some of them may hold shares in companies that are affected adversely by regulation – these may be held either directly or through financial institutions tasked with investing financial assets, i.e., any benefits from price reductions may be offset to some degree by reductions in dividends; and
- the affected businesses may also employ a significant proportion of New Zealand’s workforce, and so any effect that the decision to regulate has on worker compensation and conditions, etc., might naturally affect those consumers – including those on low incomes – in their capacities as employees.

*It is arguably not the role of regulation to engineer wealth transfers – the focus should be to maximise overall economic welfare.*

Second, and more fundamentally, it is arguably not the primary role of regulation to orchestrate wealth transfers. As the Issues Paper quite rightly observes,<sup>128</sup> there are all sorts of cross-subsidies present across New Zealand markets that oftentimes have regressive effects on low-income consumers, e.g., flybuys programmes, petrol rebates and so on. In our view, there are more effective policy instruments available to address the *cumulative* impacts of these cross-subsidies than using regulation to try and engineer wealth transfers in individual markets. As the New Zealand Treasury has observed:<sup>129</sup>

*‘We consider regulation is best used to improve the efficiency of markets. The Government has other policy instruments to address concerns about distribution of income.’*

In our opinion, the chief policy objective of regulatory interventions should consequently be to maximise *total* economic welfare through promoting efficient resource allocation, i.e., by focusing on reducing or eliminating deadweight loss (including over time, thereby promoting both allocative and dynamic efficiency). That wealth can then be redistributed through governmental mechanisms such as taxation policies and targeted subsidy schemes to give effect to any desired distributional outcomes.

### **5.3 Pass-through by merchants would not be complete**

Even if one assumes that the \$187m estimate is accurate (which, as we explained above, is far from clear), it is not correct to characterise this as the total reduction in the price of goods and services that consumers could expect to receive if interchange fees were regulated. As we explained in section 3.2, if the level of interchange fees

<sup>128</sup> Issues Paper, p.50.

<sup>129</sup> The Treasury, *Treasury Report No T2004/774: Briefing for EDC Local Loop Unbundling and Fixed PDN in New Zealand*, 10 May 2004, p.8.

was reduced through regulation, the immediate consequence would be that *merchant services fees* would decrease.

But even if those merchant services fees did indeed decline by \$187m, it does not follow that merchants would respond by reducing the prices for the goods and services that they sell by an equivalent amount. Indeed, for the price of goods and services to reduce by \$187m per annum across the economy, merchant services fees would first need to fall by that amount and, more importantly, merchants would then need to ‘pass-through’ 100% of that input cost reduction.

*Even if the \$187m is accurate, at best, it represents a potential windfall to merchants – consumers would not receive 100% of that sum.*

As we explained in section 3.3, complete and ubiquitous pass-through of input costs reductions can only be expected in very specific circumstances. In reality, there are very good reasons to think that significantly less than the full quantum of any such reduction would be passed on by merchants. Rather, merchants would ‘pocket’ at least some share of any reduction in merchant services fees – conceivably a very significant proportion.

As such, even if one assumes that the \$187m estimate of the cost of rewards schemes in the Issues Paper is accurate (and, in turn, the \$59m cross-subsidy that is derived subsequently from that figure) then, at best, this represents a potential windfall gain to merchants. One cannot reasonably assume that this would then flow-through in its entirety to consumers in the form of cheaper prices for goods and services. In our opinion, the effect of any price reductions would be significantly less.

## 5.4 Summary

The Issues Paper contends that the credit card interchange fee business model has increased prices for all consumers by \$187 million annually to fund credit card rewards.<sup>130</sup> It says that it is mainly higher-income consumers that have benefited from those rewards, resulting in an ongoing cross-subsidy from low-income to high-income households of \$59 million per annum.<sup>131</sup> However, there are several problems with this contention:

*The factors set out above mean that the \$187m estimate is not robust.*

- the methodology used to calculate the \$187m figure entails a significant number of assumptions that appear to have little foundation – and, in some cases, no apparent basis at all;
- even if the \$187m is accurate, it does not represent a potential efficiency gain – it is simply a sum of money that might be transferred from one group of consumers to another;
- there are many practical reasons to eschew from seeking to redistribute income from one group of consumers to another through regulatory interventions – including the fact that more effective policy tools exist, e.g., the tax regime; and
- at best, the \$187m represents a potential windfall gain to merchants – it is highly unlikely that 100% of that potential input cost reduction would flow-through to lower prices for final goods and services.

<sup>130</sup> Issues Paper, p.47.

<sup>131</sup> Issues Paper, p.50.



For these reasons, we are again of the view that the \$187m estimate presented in the Issues Paper is not robust from an economic perspective. What is far more relevant – and what the Issues Paper does not explore – is the extent to which regulating interchange fees might produce *genuine efficiency improvements*. As we have noted several times hitherto, answering this question would require altogether more complex analyses than those set out in the Issues Paper.

## 6. Application to debit cards

Although most of the ‘significant concerns’ identified in the Issues Paper reside around credit cards, there are also ‘some concerns’<sup>132</sup> expressed about debit cards. The paper suggests that analogous issues to those described above in relation to credit cards could start to emerge for debit cards as well, as the use of ‘scheme’ cards increases at the expense of proprietary EFTPOS products. The Issues Paper suggests, that if contactless usage of debit card payments increased to 60% of total debit card payments (i.e., scheme debit plus EFTPOS), then:

- the increase in resource cost to the economy would be **\$97m** annually; and
- fees to merchants on scheme debit transactions could rise by **\$216m** per year.

These contentions can be dealt with quite briefly. First and foremost, there is no reason to be concerned about the ‘same trends’ emerging in the debit card because, as we have explained in the previous sections, there is no compelling evidence of inefficiencies in the credit card market, i.e., that credit card interchange fees are too high, or that consumer welfare would be improved by reducing them.

Nevertheless, in the following sections we consider whether there might be any other legitimate reasons to be concerned about the emerging dynamics in the debit card market. We also review the methodology that it has used to arrive at its \$97m and \$216m per annum estimates and the conclusions consequently drawn.

### 6.1 It is the pricing of EFTPOS that is the problem

We explained in section 2 that, to be successful, a payment option must get ‘both sides of the market’ on board. The payment option must be something that consumers want to use and that merchants want to offer and accept. Credit and scheme debit card interchange fees help to solve this ‘chicken-and-egg’ problem by boosting revenue for issuers, providing them with greater incentives to sign-up additional cardholders – including by investing in card features that will be of value and help to boost uptake.

There are no such fees for EFTPOS transactions and this is likely to be an important reason why it has not made the same strides as scheme debit cards in recent years in terms of investment in additional features of benefit to consumers. Most notably, as we have observed several times hitherto, an EFTPOS card cannot be used to make contactless and online payments. In this sense, it has arguably become an inferior product and is consequently losing the battle to get ‘both sides of the market on board’, as the Issues Paper acknowledges:<sup>133</sup>

*‘New Zealand is different to many economies in still having a domestic EFTPOS system that does not charge per-transaction fees to merchants. It is, however, unlikely that such a model is sustainable when competing with scheme products, regardless of the underlying efficiency of domestic EFTPOS.’*

<sup>132</sup> Issues Paper, p.64.

<sup>133</sup> Issues Paper, p.8.

*The Issues Paper also identifies ‘some concerns’ with debit cards.*

*Scheme debit cards have done a better job of getting ‘both sides of the market on board.’*

*The growth of scheme debit products provides many benefits – such as additional security, and the ability to make contactless and online transactions – in contrast to proprietary EFTPOS which has suffered from a sustained lack of investment.’ [emphasis added]*

Specifically, as the passage above suggests, the absence of interchange fee revenue is likely to have made EFTPOS a less attractive investment proposition than scheme debit to one side of the market, leading to more investment in the latter. This then had a reinforcing flow-on effect when consumers decided that they liked the new features that had been invested in, such as contactless payments. Put simply, the pricing of scheme debit cards appears to have been more effective at solving the ‘two-sided market’ problem and they are consequently winning market share from EFTPOS. The Issues Paper effectively concedes this when it says that:<sup>134</sup>

*‘The imposition of fees in itself is not inherently a problem, given that the lack of fees is a key reason behind the lack of investment in proprietary EFTPOS.’*

*The Issues Paper therefore has not identified an economic problem that needs solving.*

The Issues Paper therefore appears not to have identified an economic problem that needs solving. This appears to be a straightforward case of a less-efficiently priced product losing ground – an unremarkable occurrence in a competitive market. In this sense, the suggestion in the earlier passage (on page 40) that EFTPOS is unable to compete ‘regardless of its underlying efficiency’ is not an accurate characterisation. If one side of the market does not want to invest in a product and the other side does not want to buy it, then it is *not an efficient product*.

Furthermore, as we noted above, the concern that this loss of market share by EFTPOS could result in the interchange dynamics we currently see in the credit card market is similarly unfounded. It rests on the beliefs that: a) there are large inefficiencies in the credit card market (which has not been established) and b) that it is worth engineering large wealth transfers between different types of consumers to pursue distributional objectives (the wisdom of which is highly questionable).

## **6.2 The quantitative estimates are not meaningful**

The Issues Paper’s \$97m estimate of the increase in resource cost that would result if contactless usage of debit card payments increased to 60% of total debit card payments (i.e., scheme debit plus EFTPOS) is derived using the same methodology as we described in section 4. It therefore exhibits all the same shortcomings and is, ultimately, not robust. In brief, the approach:

- does not recognise that many of the fixed and common costs that feed into the ‘average resource cost’ estimates for EFTPOS and debit cards would be the same regardless of the number of transactions made using each;
- mischaracterises the \$97m as a potential ‘efficiency gain’ when, in fact, it would simply result in a transfer of wealth from one group of consumers to another, without necessarily generating any extra economic welfare; and

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<sup>134</sup> Issues Paper, p.9.

*The estimates entail the same flaws as those set out in sections 4 and 5 and are consequently not robust.*

- overlooks the fact that customers may derive more benefits from debit cards than EFTPOS cards – including from things like the ability to complete ‘card-not-present’ transactions – which may cost more to provide.

In a similar vein, the \$216m estimated increase in merchant services that would supposedly occur is problematic because:

- even if the \$216m is accurate, it does not represent a potential efficiency gain – it is again simply a sum of money that might be transferred from one group (merchants) to another (issuers); and
- for the same reasons set out in section 5 – it is highly unlikely that 100% of that potential input cost increase<sup>135</sup> would flow-through to higher prices for final goods and services.

Once more, predicting the effects of any increase in market share by debit card schemes on overall consumer welfare would require altogether more complex analyses than those contained in the Issues Paper. For the same reasons that we set out in sections 3 to 5, there is no reason to assume that New Zealand consumers would be worse off if the relative use of debit cards increased and the use of EFTPOS fell. It is again quite possible that this would *enhance* overall welfare.

### 6.3 Summary

There is no sound basis to be concerned about the ‘same trends’ that have been observed in the credit card market emerging in the credit card market. As we have explained at length in the previous sections, there is no compelling evidence that credit card interchange fees are too high, or that consumer welfare would be improved by reducing them. In other words, if the debit card market does ‘go down the same path’, this could benefit New Zealand consumers – there is nothing in the Issues Paper that should cause one to be alarmed by this trend.

*There is no sound basis to be concerned about the ‘same trends’ in the credit card market emerging in the debit card market.*

The loss of market share by EFTPOS to scheme debit cards also appears to be a simple case of a less-efficiently priced product losing ground. The absence of interchange fee revenue is likely to have made EFTPOS a less attractive investment proposition than scheme debit to one side of the market, leading to more investment in the latter. This has then had a reinforcing flow-on effect when consumers decided that they liked the new features that have resulted, such as contactless payments. This happens all the time in competitive markets and does not represent a problem.

Finally, the Issues Paper’s estimates of the additional resource costs (\$97m) and merchant services fees (\$216m) that would arise if contactless usage of debit card payments increased to 60% of total debit card payments (i.e., scheme debit plus EFTPOS) employ the same approaches as we described in sections 4 and 5, respectively. Accordingly, they exhibit all the same methodological shortcomings, e.g., conflating average costs with avoidable costs, efficiency gains with bare wealth transfers, etc. They are consequently not robust.

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<sup>135</sup> Recall that the \$187m figure reviewed in section 5 represented a potential input cost *reduction* to merchants. The \$216m is a potential *increase*, but the analysis remains equally applicable.

## Appendix A Key economic concepts

Many of the analyses in the Issues Paper conflates different economic concepts in ways that have the potential to confuse. The purpose of this appendix is therefore to provide a basic overview of some of those key principles that form a critical part of the analysis in the body of this report.

### A.1 Efficiency gains versus wealth transfers

When deciding whether to intervene in a market there is a key distinction to be drawn between *genuine efficiency gains* – which are relevant to such decisions – and *bare transfers of wealth from one group of consumers to another*, which are not. The Issues Paper repeatedly conflates these two effects, and it is therefore important to understand the difference between them.

#### A.1.1 Genuine efficiency gains

Economists recognise three different – but related – types of efficiency that can be enhanced or improved either through improved competitive rivalry between producers or, when competition is lacking (e.g., when substantial market exists), through market interventions such as introducing regulated pricing. These three forms of efficiency are:

- **Productive (or technical) efficiency**, which refers to a market outcome whereby products and services are provided at the lowest possible cost, using facilities of optimal scale, over the long run, with existing technology;<sup>136</sup>
- **Allocative efficiency**, which refers to market outcomes whereby prices and profit levels are consistent with the real resource cost of supplying each product, including a normal profit reward to suppliers - where this is case, society's resources will be allocated between end uses in an optimal way such that those goods and services best reflect what consumers want;<sup>137</sup> and
- **Dynamic efficiency**, which refers to the ability of markets to adapt over time in response to changes in consumer preferences and/or technology through the development of new products and services and/or production processes.

Put another way, efficiency requires firms to produce the goods and services that consumers want (allocative efficiency) at the lowest cost (productive efficiency) and to continue to do so over the long-run (dynamic efficiency). The classic example of the *absence* of these types of efficiency is where a product is provided by an unregulated, unrivalled monopoly. When a monopolist faces no competition – or any prospect of such rivalry emerging – this can:

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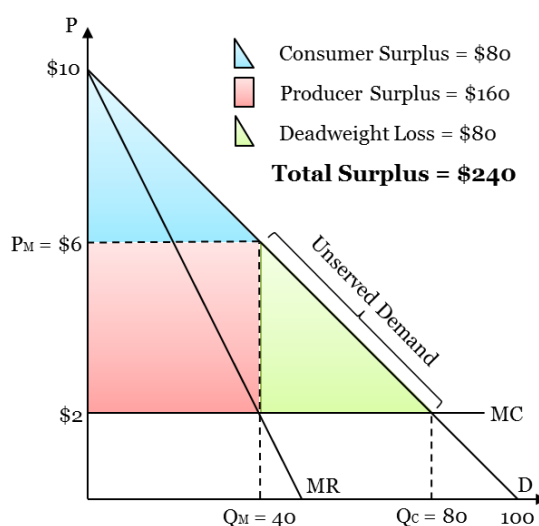
<sup>136</sup> Pass, C and Lowes, B, 1993, *Collins Dictionary of Economics: Second Edition*, Harper Collins, Great Britain, p.434.

<sup>137</sup> *op. cit.*, p.14.

- compromise productive and dynamic efficiency, since the monopolist faces limited pressure to reduce its cost of supply or to invest and innovate in response to changes in market conditions;<sup>138</sup> and
- reduce allocative efficiency, since there will be unmet demand from some consumers whom would otherwise be prepared to pay a price that exceeds the marginal cost of supply, but are not prepared to pay the ‘monopoly price’.

The second effect described above – the allocative inefficiency – is particularly important to grasp, and is best explained using a simple diagram. Figure A.1 illustrates that a monopolist maximises its profits by restricting output – in this case to 40 units<sup>139</sup> – giving rise to a price of \$6 ( $P_M$ ) that exceeds significantly the cost of producing those units (a constant \$2/unit). At this price, there are customers who do not buy the product whom would have done so at a price that would have allowed the firm to cover the costs it had incurred producing that extra output.

**Figure A.1: Economic inefficiency**



By increasing its price above its cost of supply (\$2), the firm causes \$80 in economic welfare (in this case, ‘consumer surplus’<sup>140</sup>) to be lost altogether from ‘inefficiently

<sup>138</sup> While the producer may have an incentive to reduce the cost of supply and increase profits, it does not face a penalty in terms of loss of custom to competitors if it supplies a given level of output at a higher unit cost than that which is attainable. The difference between the actual and minimum attainable supply cost is referred to as ‘X-inefficiency’. In the Collins dictionary of Economics, the authors note: “X-inefficiency is likely to be present in large organisations which lack effective competition ‘to keep them on their toes.’” See: Pass, C and Lowes, B, 1993, *Collins Dictionary of Economics: Second Edition*, Harper Collins, Great Britain, p.568.

<sup>139</sup> This is where its “marginal revenue” (MR) equals its “marginal cost” (MC), i.e., where the additional revenue it makes from the sale of one more unit is equal to the additional cost it incurs in producing that unit. If the revenue that the monopolist would earn from selling one more unit exceeds the cost of producing it, then it is better off expanding its output and producing that additional unit. Similarly, if the revenue that the monopolist earned from selling its last unit was less than the cost of producing it, then it would increase its profits by cutting back its production and selling fewer units.

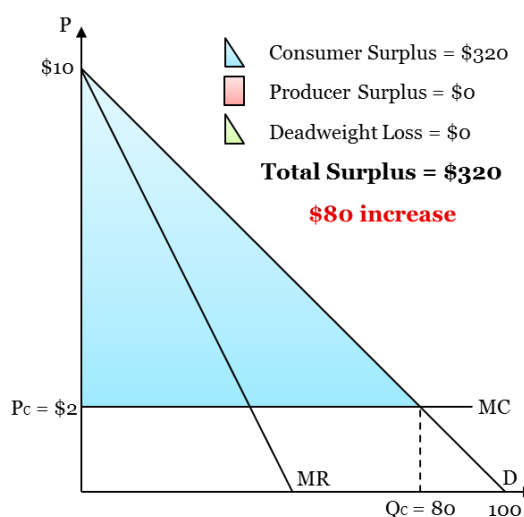
<sup>140</sup> At a price of \$6 there are still ‘infra-marginal’ consumers who would have been prepared to pay more for the product, i.e., whom derive more than \$6 in private benefits. This margin is known as “consumer surplus” and is represented by the blue triangle.



unserved demand', i.e., demand that could have happened at a lower price, but does not due to the monopoly pricing. This is a 'deadweight loss' that is not recovered by anyone else (represented by the yellow triangle). The corollary of this is that, when prices are at this level, it is possible to make an allocative efficiency improvement, by making someone better off without making anyone else equally worse off (this is also known in economics as a 'Pareto improvement').<sup>141</sup>

For example, if the monopolist was to reduce its price to, say, \$2/unit, then it would sell (and consumers will buy) 40 extra units that would not otherwise have been exchanged. Figure A.2 highlights that this would eliminate the previous deadweight loss (the yellow triangle in Figure A.1) and generate \$80 in economic welfare (in the form of extra consumer surplus) that *did not previously exist*. In other words, that \$80 welfare gain for consumers has not come at the expense of anyone else – say, producers. It therefore represents a *genuine allocative efficiency gain*.

**Figure A.2: Allocative efficiency gain**



It is the potential to improve allocative efficiency by reducing the deadweight loss from unserved demand that is one of the chief motivations for intervening in markets by introducing regulation, e.g., controlling prices. Specifically, it may be possible to generate additional consumer welfare that is not predicated on an *equivalent reduction* in welfare for someone else. As Figures A.1 and A.2 illustrate, this is achieved by reducing the size of the yellow triangle.

### A.1.2 Bare wealth transfers

A reduction in deadweight loss (of \$80) would not be the only outcome from moving away from monopoly pricing to more 'cost-reflective' tariffs in Figures 2.1 and 2.2. There would also be a transfer of wealth from producers to consumers. This would be equal to the \$160 reduction in 'producer surplus'<sup>142</sup> – represented by the

<sup>141</sup> This is also known in economics as a 'Pareto improvement'.

<sup>142</sup> At a price of \$6 there are infra-marginal units that would have cost less than \$6 each to supply, enabling the monopolist to make an "economic profit" on each unit sold. This margin is known as "producer surplus" and is represented by the yellow triangle.

red triangle in Figure A.1 – that subsequently becomes ‘consumer surplus’ in Figure 2.2. However, this \$160 would *not* represent an allocative efficiency gain – it would be a bare transfer of wealth. More specifically:

- it represents additional welfare that consumers would obtain from the reduced price that they would pay *for all the units they would have bought anyway*, i.e., the 40 units that would also have been bought at the monopoly price; and
- it would come *entirely at the expense of the producer*, i.e., the firm’s profits (its producer surplus) would be \$160 lower than they would otherwise have been if it had sold those 40 units at the monopoly price.

In other words, the \$160 does not represent additional welfare that did not previously exist. Rather, it is a bare transfer of current wealth, and *welfare neutral*. All that matters to the assessment of allocative efficiency is the units that the customer *would not otherwise have consumed*, but now does, i.e., the 40 units of previously unserved demand in Figure A.1. Only through reducing this previously unmet demand is it possible to ‘make someone better off, without making someone else equally worse off’.

It would therefore be a mistake to characterise the potential economic benefit from setting a regulated price of \$2 as being equal to the reduction in deadweight loss (\$80) *plus* the transfer from producers to consumers (\$160), i.e., as the total increase in *consumer* welfare. This would imply inaccurately that the potential benefits of regulation were \$240 when, in fact, that is *three times higher* than the *true* achievable economic efficiency benefit, i.e., the potential \$80 reduction in deadweight loss (the yellow triangle in Figure A.1).

In other words, whilst a *consequence* of regulation may be a transfer of wealth between producers and consumers (and/or between different types of consumers), it does not follow that these transfers represent a *benefit* of regulation. Counting wealth transfers as a benefit when deciding whether to intervene in a market would risk regulation being introduced that makes New Zealanders worse off, i.e., where the *true* efficiency benefits are outweighed by the costs.<sup>143</sup> The New Zealand Treasury has highlighted this risk in the past:<sup>144</sup>

*‘...including distribution effects in a cost benefit analysis could justify regulation where there is an inefficient outcome, but offsetting wealth transfers.’*

[...]

*“Treasury considers that the assessment framework should only include efficiency gains, as these gains are the actual benefit to New Zealand ...”*

Even if one believed that, in theory, an extra \$1 in the hands of consumers – or some subset of consumers (e.g., low-income or vulnerable consumers) – was somehow

<sup>143</sup> It is also worth noting that imposing regulation is not a costless exercise, which will compound existing inefficiencies.

<sup>144</sup> The Treasury, *Treasury Report No T2004/774: Briefing for EDC Local Loop Unbundling and Fixed PDN in New Zealand*, 10 May 2004, pp.18 and 7.

more valuable than \$1 in the hands of producers, or some other group of consumers, this is not a meaningful distinction *in practice*. It is not possible to distinguish neatly between these groups of people when predicting the overall effects of introducing regulation. For example, attempting to isolate and provide greater weight to consumer surplus is infeasible, since every 'consumer' may also be a 'producer' in some capacity. For example:

- in some cases, some of the businesses being regulated might be government-owned, or owned by local councils – in which case the 'end-customers' will also be the 'ultimate' shareholders, i.e., any reduction in prices would also lead to a reduction in returns/dividends;
- those businesses that are publicly listed will have consumers who hold shares – either directly or through financial institutions tasked with investing financial assets – these people may also be effected in their capacities as 'producers' by any decision to regulate; and
- the businesses in question might employ a significant proportion of New Zealand's workforce, and so any effect that the decision to regulate has on worker compensation and conditions, etc., would naturally affect those employees in their capacities as 'producers'.

For every \$1 that is gained by a person in her capacity as a 'consumer' of a product following regulation, that person may lose more (or less) than \$1 in her capacity as a shareholder, rate/taxpayer, trust recipient or employee. As we noted above, this means that an approach that counted all potential transfers to 'consumers' (or even a sub-set of consumers) as potential benefits of regulation might conclude that they would be better off, even though many of them may be indifferent or worse off. In any event, there are more efficient vehicles to redistribute income than through regulatory policy, as the New Zealand Treasury has observed:<sup>145</sup>

*'We consider regulation is best used to improve the efficiency of markets. The Government has other policy instruments to address concerns about distribution of income.'*

The principle policy objective of regulatory interventions should consequently be to maximise *total* economic welfare through promoting efficient resource allocation, i.e., by focusing on reducing or eliminating deadweight loss (including over time, thereby promoting both allocative and dynamic efficiency). That surplus can then be redistributed through governmental mechanisms such as taxation policies and targeted subsidy schemes to give effect to any desired distributional outcomes. In this way, any redistribution of wealth would be taking place using the most effective policy tools available.

## **A.2 Cost concepts**

The Issues Paper makes various contentions about inefficiencies arising in retail payments markets due to the overuse of 'most costly' payment options – most notably credit cards. However, the paper's application of different concepts of

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<sup>145</sup> The Treasury, *Treasury Report No T2004/774: Briefing for EDC Local Loop Unbundling and Fixed PDN in New Zealand*, 10 May 2004, p.8.

'costs' is very imprecise. In this appendix, we therefore briefly explore the relevant economic cost concepts and some subtleties in understanding them – particularly in a multi-product environment.

### **A.2.1 Fixed costs**

Fixed costs are those costs that do not vary for a given variation in the level of output. For example, before a merchant can accept contactless credit and debit card transactions, she must invest in a terminal that possesses that technology. Once that up-front cost has been incurred, it does not matter whether the merchant makes 1 credit card sale per day or 1,000 – the cost of that terminal remains the same, i.e., it is a 'fixed cost'.

However, costs that may be fixed when units of output are below some specific level may be variable when output exceeds that level. For example, if the merchant from the previous example sees her business grow to the point where she needs to invest in a second terminal to handle more transactions then, at that point, the 'cost of terminals' becomes variable to some degree (or, at least, the cost associated with that new increment is variable).

### **A.2.2 Variable costs**

Variable costs are those that vary for a given variation in the level of output. For example, when a merchant completes a credit card transaction, she will incur costs that would not have arisen *but for* that transaction. For example, a merchant services fee will be levied (that typically represents a percentage of the sales value) and there will also be costs associated with the time spent processing the transaction, e.g., the value of employees' time, etc.

These variable costs are quite simply the opposite of fixed costs. Once fixed costs have been defined all other costs of producing a given increment of output (e.g., undertaking a transaction) are variable (and *vice versa*). All costs are either fixed or variable depending on the increment of output under consideration, e.g., 1 credit card transaction, 1,000 or 1 million.

### **A.2.3 Sunk costs**

Sunk costs are defined as any expenditure on durable or specific factor inputs such as plant and machinery which cannot be used for other purposes or easily be resold. The essential characteristic of sunk costs is that they have no effect on variable costs and do not affect short-term production decisions. For example, once a merchant has invested a terminal to accept contactless credit and debit card transactions, that cost may be 'sunk' for all practical purposes.

This is because the terminal is likely to have no alternative use – i.e., it cannot be used for anything besides accepting card payments – and may not be worth very much on the second-hand market. This means that, once the merchant has paid that up-front fixed cost, that historical outlay is unlikely to have any bearing on how she

runs her business from that point forward, since there is no way of recouping that cost (or avoiding it – see below).

#### **A.2.4 Avoided costs**

Avoided costs are that part of the cost of any output that could be saved by not producing it. The avoided costs associated with an increment of output are those *variable* costs associated with producing it. To define avoided costs, it is therefore necessary to define the relevant ‘counterfactuals’ and to compare costs in those ‘states of the world’. For example, the costs that a merchant avoids by not making credit card sales depends on the *volume of sales* in question.

If a merchant makes *one fewer* sale, then the costs she would avoid would be modest. These would include the variable costs of the transaction described above, e.g., the merchant services fee, the ‘time-related’ costs, etc. However, there would be no ‘fixed cost’ savings. However, if a merchant’s credit card sales dropped by, say, 75%, it is possible she might also save some fixed costs, e.g., by reducing the number of credit card terminals in her store (assuming those costs were not ‘sunk’ – see above – or ‘common’ – see below).

#### **A.2.5 Common costs**

Common costs are those that must be incurred to produce two (or more) services separately, but that do not need to be duplicated when producing the two together. Equivalently, common costs are those that are necessary to produce the two (or more) services, but that are only avoided if both cease to be produced. The existence of common costs implies that cost synergies exist between providing two services, i.e., the cost of providing both services is less than the sum of the costs of providing them each independently.

For example, most merchant terminals accept credit card, debit card and EFTPOS transactions. The cost of the terminal is therefore ‘common’ across all these retail payment services. Returning to our previous example, even if a merchant’s credit card sales disappeared altogether (i.e., she made no credit card sales at all), she would not avoid the costs that are common across other payment mechanisms. For example, she would not avoid the common cost of, say, her terminals if she still wished to be able to make debit card and EFTPOS sales.