



21 October 2008

# Card Payments Forum - Discussion Paper

Report by Access Economics Pty Limited for

**APCA**



## CONTENTS

<b>Executive summary</b> .....	<b>i</b>
<b>1. Introduction</b> .....	<b>1</b>
<b>2. Description of the industry</b> .....	<b>3</b>
2.1 Market participants and platforms.....	3
2.2 Payment instruments .....	6
2.3 Evolution of card payments networks .....	9
2.4 Continued development and innovation .....	10
<b>3. The economics of payments markets</b> .....	<b>13</b>
3.1 The economics of two-sided markets and the payments system .....	13
3.2 Conclusions from the academic literature.....	15
3.3 Implications for regulation .....	17
<b>4. Indicators of competition</b> .....	<b>21</b>
4.1 Different markets within the payments system .....	21
4.2 Defining the market.....	23
4.3 Indicators of competition .....	26
4.4 Competition versus cooperation .....	34
4.5 RBA's consideration of competition .....	35
4.6 Summary of competition indicators.....	37
<b>5. Conclusions</b> .....	<b>39</b>
<b>6. References</b> .....	<b>40</b>

## FIGURES

Figure 2.1: Participants and linkages in four-party card schemes	4
Figure 2.2: Payment systems network structure	5
Figure 3.1: The balancing role played by interchange fees	14
Figure 3.2: Two sided markets for cards	14

## CHARTS

Chart 2.1: Shares of number of transactions by non-cash payment instrument	7
Chart 2.2: Credit card share of non-cash transactions volumes	7
Chart 4.1: Interchange fee differentials between instruments (\$)	31

While every effort has been made to ensure the accuracy of this document, the uncertain nature of economic data, forecasting and analysis means that Access Economics Pty Limited is unable to make any warranties in relation to the information contained herein. Access Economics Pty Limited, its employees and agents disclaim liability for any loss or damage which may arise as a consequence of any person relying on the information contained in this document.

Chart 4.2: Current levels of surcharging	32
--	----

## **TABLES**

Table 2.1: Electronic payment instruments in Australia	8
Table 4.1: Summary of possible indicators of competition and innovation	28

## EXECUTIVE SUMMARY

The retail payments system provides one of the key functions in the modern economy, facilitating transactions between retailers and consumers. Such transactions are not costless and studies have shown that the processing costs can differ widely depending on the payment instrument used. At the whole-of-economy level, these costs are non-negligible with studies estimating that the move to a cashless society could save somewhere in the order of 1% of GDP.<sup>1</sup>

The retail payments system has progressed substantially since payment cards took hold in the middle of the last century. Today, a wide variety of instruments are available to consumers, allowing payment to merchants over the counter, and more recently, via the telephone and internet. The instruments have offered increased flexibility to consumers, faster processing and settlement times and increased protection against fraud. Combined with transaction accounts, they have allowed a dramatic expansion of online shopping and bill payments, as well as provision of larger amounts of information to consumers. These trends are likely to continue into the future, with particular developments likely to come in the form of contactless and mobile payment instruments and chip-based security.

Electronic payment instruments have assumed steadily increasing share of the Australian payments system over the past few decades. Today, credit and debit cards account for the largest share of household non-cash retail transactions by volume.

In recent years the RBA and international regulators have begun to question whether these markets continue to be subject to the normal forces of competition. There are three main concerns in this regard:

- ❑ Are markets leading to competitive outcomes, particularly in terms of the price signals faced by participants, but also in relation to access and transparency?
- ❑ Are markets leading to an efficient level of innovation, both in terms of ongoing governance and network structure and in terms of product offerings to consumers?

The RBA's concern that these issues were not being satisfied led to it introducing, beginning in 2003, a range of regulations on, particularly, four-party credit and debit card systems. Of most importance were the capping on interchange fees for cards and removing the no-surcharge rule that schemes had imposed on merchants. Recently, the review of the reforms argued that developments in the market may allow the interchange regulations to be removed as long as the industry was able to meet several conditions aimed at ensuring competitive forces still applied.

APCA views this as an opportunity for the all parties in the industry to engage in a dialogue aimed at both moving towards a situation where some form of voluntary industry-led regulation could be applied and, more broadly, facilitating ongoing coordination within the industry into the future on matters that required for the efficient operation of payments networks. Such cooperation would help the Australian payments system at least match developments internationally.

---

<sup>1</sup> See for example Humphrey et al (2003).

The complexity of payments systems makes it difficult to determine whether the marketplace is delivering economically efficient outcomes and what, if any, regulations may be introduced to improve economic welfare. A small but growing literature has developed over the past few decades on the economics of two-sided markets and payments markets in particular. The primary focus of this literature is the efficiency or otherwise of interchange fees.

Few widely applicable results have been obtained and those results that have emerged have often been negative in nature. For example, it is generally agreed that:

- ❑ it is usually not possible to tell whether interchange fees in the market are efficient or whether they are above or below the social optimal level;
- ❑ interchange fees in two-sided markets play the role of 'balancing' the differing supply and demand conditions on the two sides. Typically, they will not be cost reflective and hence cost-based regulation is not appropriate;
- ❑ interchange fees are needed for two-sided markets to reach optimality. There is theoretical and empirical support from the literature for credit card interchange fees to be greater than those on debit cards although there are tentative results that indicate that the gap between the two should be capped; and
- ❑ the presence of merchant surcharging can undo the effects of interchange fees to some degree.

Given these rather inconclusive results, the role of regulators is made difficult. More pointedly, it is not clear whether there is a role for interchange regulation given that there is no clear evidence that existing fees are in some sense too high.

Despite these difficulties, there is a range of indicators that can be used to help assess the level of competition and efficiency in payments systems. These include other pricing issues, access, transparency, concentration and innovation. In considering such indicators, the two-sided nature of these markets needs to be taken into account.

In some cases it will be possible to measure the indicators quantitatively, and here the collection of data by the RBA has been, and will continue to be, useful. In other cases it is only possible to monitor the indicators in qualitative terms. Given this, and the lack of clear guidance on what efficient payment markets 'look like', it is not possible to arrive at a formulaic approach to determining the degree of competition in the market. However, it is clear that some indicators are more important than others.

The take-up of surcharging is useful in illustrating how the indicators may be applied. Given surcharging's role as a release valve for merchants to pass on costs to consumers, it partially undoes part of the effects of interchange fees. The incidence and level of surcharging needs to be assessed in light of other features of the market since it can point to a variety of motivations by merchants. For example:

- ❑ Significant differentials in the net benefits (i.e. both explicit and implicit costs and benefits) to merchants from accepting particular instruments will increase the number of merchants surcharging.
- ❑ Merchants with limited market power may be reluctant to surcharge because of negative customer reaction.
- ❑ Thus, any evidence of limited surcharging may reflect either narrow differentials in the net benefits faced by merchants, large transactions costs or limited market power by the merchants in question.

- In contrast, surcharging at levels well above differential in net benefits – or, for simplicity of measurement, above differentials in merchant service fees suggests that the merchant has a degree of market power and would benefit from price discriminating between customers.

The transparency resulting from the publishing of average interchange fees has had a positive effect on the market. It has allowed a closer monitoring of the market. This role is likely to be important into the future, especially if the RBA is to step back from direct regulation of interchange fees. Transparency plays a further role in the clearer price signals it sends to market participants.

In contrast, the RBA's regulations on access may have been less important in practice given the incentives already in place for networks to encourage use by as many participants as possible without compromising the integrity of the network. It is not clear that potential entrants have been turned off entry by cost or other barriers, nor is it clear that market concentration is necessarily too high for an efficient result to be achieved.

The extent of innovation is one of the most important but most difficult to measure aspects of economic efficiency. Active competition can encourage innovation in products and the use of payment instruments. However, innovation in networks is more difficult, requiring industry players to cooperate rather than compete. This is especially true given the governance structure of payment markets in Australia where developments cannot be achieved without the support of all key players. This will be a particular challenge for the industry in the near future, and it is hoped that this forum will be able to aid in providing a means for cooperation within the industry.

## 1. INTRODUCTION

In its conclusions to the 2007-08 review of its reforms to Australia's payments system, the RBA emphasised that the effects of the changes allowed for the possibility of the RBA stepping back from its regulation of interchange fees. This conclusion was subject to several provisos aimed at ensuring that competitive forces remained in the absence of direct regulation, notably:

- ❑ changes to the EFTPOS scheme to allow it to more effectively compete with the international card schemes;
- ❑ further changes to the honour-all-cards rule; and
- ❑ further improvements to the transparency of scheme fees.

More fundamentally, the RBA signalled that it may be willing to adopt a less direct approach to interchange regulation if it was satisfied that the retail payments system was operating in a competitive manner that would foster improvements in economic efficiency over time.

During the review, the RBA also explored with industry the possibility of the use of self-regulation, including possibly voluntary caps on interchange fees. This may relax pressure for continued oversight in other areas such as the further changes contemplated to the honour-all-cards rule.

The effect of this approach would be to place the future of regulation of payments markets in the hands of the industry. The RBA intends to consider during 2009 whether sufficient progress has been made to warrant the removal of interchange regulation, with the alternative being a further restriction of interchange regulation beyond the current level. As such, this provides an opportunity for the industry to explore approaches that would see the level of direct regulation wound back.

APCA has encouraged dialogue within the industry for some time and has provided several forums to this end. It views the current situation created by the RBA as an opportunity for the industry to create a lasting relationship through which it can deal with relevant issues of a cooperative nature. An initial aim would be to discuss progress which can be made before the RBA reconvenes to decide on interchange regulation. Such dialogue could also bring benefits that extend the specific focus of the RBA's deliberations.

The purpose of this paper is to examine the nature of competition and efficiency in the retail payments market. Its goal is to provide the industry with information which it can use in determining the degree of competitive forces active in the market, and how these forces can best be assessed, both in the short run and into the future.

In doing this it provides a set of 'indicators' which can be analysed by the industry. These indicators comprise key competition principles such as pricing, transparency, access and innovation which are central to any study of competition. They are then compared to the indicators which the RBA has used and key lessons are concluded.

The paper is structured as follows. Section 2 describes the market for payments in Australia, including a discussion of the market participants and instruments and how the market has evolved over time. Section 3 outlines the key economic principles for two-sided markets such as payments. It provides an analysis of the key conclusions which the academic literature has reached on payment markets and the implications this has for regulation.

Section 4 provides a discussion of the key indicators of competition. It first considers the various markets that constitute the retail payments system before listing and discussing the indicators in turn. It compares these indicators to those considered by the RBA. Section 5 concludes.



## 2. DESCRIPTION OF THE INDUSTRY

This section outlines the participants and products in the market for retail payments: that is, the market which facilitates the payments made between consumers and merchants of goods or services. This market occupies a central role in the economy.

The retail payments market has rapidly evolved from one consisting mainly of 'paper' transactions such as cash and cheque to one dominated by electronic payment instruments, particularly for higher value transactions. This trend shows no sign of slowing.

Potentially, the retail payments system can have an important bearing on the efficiency of retailing, banking services (especially with respect to transactions accounts) and the payments system itself. In Australia, both the retail banking and retailing industries are characterised by a few very large firms along with a range of smaller firms that are often operating in niche markets.

Also, the provision of payment services by financial institutions form part of bundles of transactions services that the institutions offer customers on both the issuing and acquiring sides of the market. Similarly, some retailers provide credit and payment facilities that have the potential to conflate the choices consumers face for payment instruments with their purchasing decisions. The bundling of products by financial institutions and retailers can produce significant efficiency benefits but, in doing so, complicate the analysis of the operation of the different markets and potentially affect the ability of smaller players to compete.

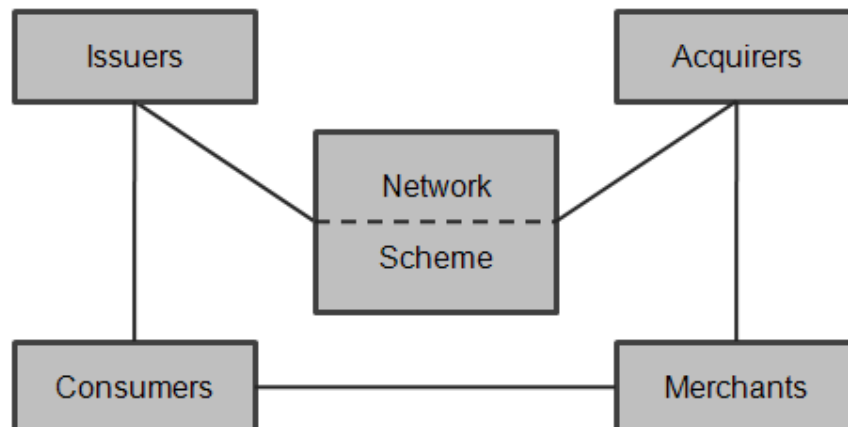
Accordingly, any comprehensive examination of the functioning of retail payments systems inevitably needs to incorporate implications for the functioning of the retail banking and retailing markets as well as the payments system itself.

### 2.1 MARKET PARTICIPANTS AND PLATFORMS

The complexities inherent in payments systems are due in no small part to the number of parties required for a transaction to be processed. While some instruments, such as cash or store debit, require only two parties for settlement to be completed, other instruments, particularly card payments, require information flows between up to six parties. In general, participants in transactions may include:

- ❑ consumers – those making the purchase, and who are generally responsible for the choice of payment instrument;
- ❑ merchants – those selling the good or service;
- ❑ issuers – the financial institution which made the payment instrument available to the consumer;
- ❑ acquirers – the merchant's financial institution;
- ❑ schemes – which provide the complex web of legal and economic relationships through which the transaction is processed; and
- ❑ networks – which provide the physical connection through which transactions can occur.

These participants, and the links between each, are illustrated in Figure 2.1 below.

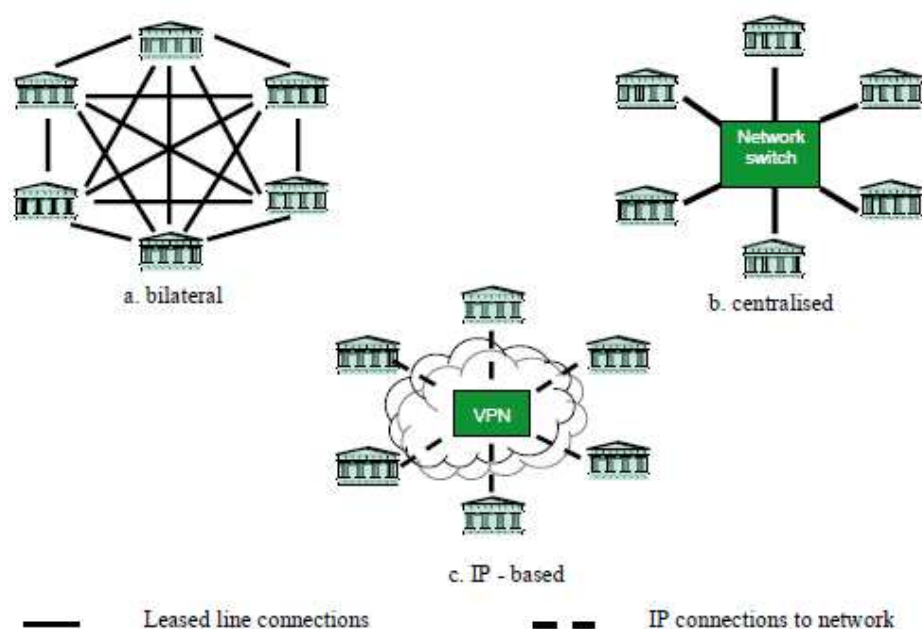
**FIGURE 2.1: PARTICIPANTS AND LINKAGES IN FOUR-PARTY CARD SCHEMES**

Coordination issues between these diverse participants have at times hampered progress within platforms. Similarly, the network benefits inherent in many payments platforms have required a critical mass of participants to become feasible. It was for this reason that most platforms evolved from situations where consumers already had existing relationships with the financial institutions.

Many payment instruments also require financial institutions (the issuers and acquirers) to develop relationships between each other to facilitate payments when the merchant's institution is different to that of the consumer's. The type of this relationship may differ between platforms and will generally consist of either:

- ❑ bilateral arrangements – whereby transfers are made directly between the acquirer and issuer, for a fee agreed by the two institutions;
- ❑ centralised arrangements – whereby all transfers are processed through a central switch; and
- ❑ IP-based arrangements – somewhat of a hybrid between the above two whereby transfers are made directly between the two institutions over internet links.

These are illustrated graphically below:

**FIGURE 2.2: PAYMENT SYSTEMS NETWORK STRUCTURE**

Source: RBA (2006)

While the centralised structure is by far the most common internationally, Australia has a particular reliance on bilateral networks. Whereas the card schemes are based on centralised networks, the EFTPOS, ATM and direct credit and debit systems are all reliant on a bilateral structure.

In part, this has developed out of necessity where no centralised switch has been available to establish a network. For example, the ATM network grew as banks established agreements amongst themselves in order to increase the convenience to their customers. Today the bilateral arrangements are saturated, with cardholders guaranteed access to any ATM regardless of their issuing bank.

However, generally the bilateral networks have drawbacks. Firstly, entrants to the platform may be required to negotiate fees and arrangements with all existing members. This was the case, at least in the early stages, in the ATM network, although today entrants may gain access through 'gateway' providers.

Secondly, the lack of a centralised setter of fees and connections may impede innovation or other changes to the network, which will instead require the cooperation of all network participants. For example, there have been calls by business to replace the current direct entry system which has been the format used for processing transaction information since the 1970s. However, the coordination requirements on industry to move to a more streamlined format would be large and to date little progress has been made.

In contrast, IP networks may offer advantages including increased flexibility and data capability, as well as added convenience to consumers who can use the internet to access payment information and other services. In addition, the reduced processing times for payments made over an IP-based network are likely to be crucial in the future as moves are made towards real-time settlement. While there have been some moves towards IP-based networks in Australia, this has not matched the take-up overseas.

There are numerous examples of IP-based payment networks. Both Visa and MasterCard moved to Virtual Private Networks (VPNs) for processing credit and debit card transactions several years ago. The greater flexibility of these systems has allowed improvements across a range of payment areas. Business-to-consumer and business-to-business payment products have developed, while consumers have been able to more closely track payments over the internet, such as through the BACS system in the UK. The ability to provide real-time settlement for even consumer-to-consumer settlements does not appear to be far off in a number of countries.

## 2.2 PAYMENT INSTRUMENTS

The options available for making payments include an increasing number of electronic methods. The most prevalent of these rely on the transfer of liabilities within the banking system. These include payments made through credit and debit card networks as well as various instruments where the transfers are conducted more directly over communications networks such as BPAY and direct debit. In addition, there are instruments that do not involve the direct participation of the banking system including instruments based on the pre-purchase of stored value.

In Australia, electronic instruments are widely used for transactions in most areas of retail activity. Compared with some other developed countries, electronic payments in Australia penetrate a wide range of consumer spending with coverage not only in mainstream retail shops but also in areas of the economy that do not lend themselves as readily to electronic payments such as transport and fast food.

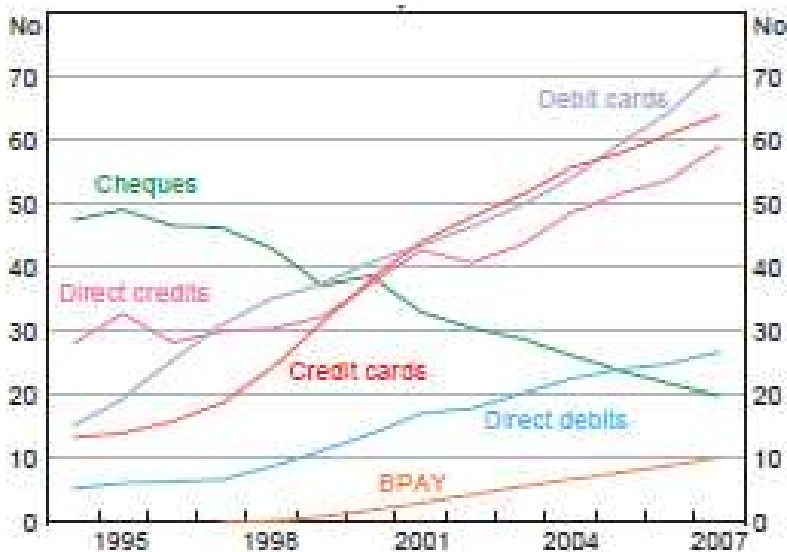
The technology in both the communications networks and cards needed to support electronic payments has been available for many years. Credit cards, for example, have been used for more than 50 years. However, the use of electronic payment instruments, especially plastic credit and debit payment cards, has accelerated sharply over the past fifteen years.

Alongside the growth in credit and debit cards, new forms of payment instruments have found their place in the changing commercial environment, including bill payments and direct debit applications. The convenience and security of these payment instruments have led to their popularity, predominantly at the expense of cheque payments. These payment types have been assisted by developments in communications infrastructure and, in particular, the internet.

There are no data collected on the extent of cash transactions. However, it appears that these have been replaced by cards, especially for higher transaction values. For lower transactions, cash still dominates due to the convenience it offers consumers.

A time series of transaction shares for the competing instruments is given in Chart 2.1 below. Note that the debit cards series includes data on both EFTPOS and scheme debit transactions, although the RBA is hoping to report these separately in future.

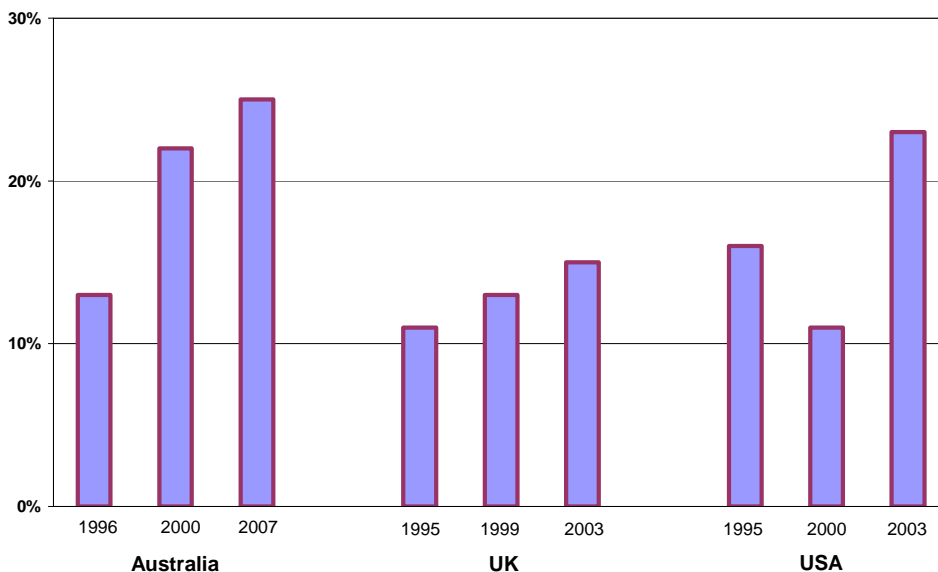
**CHART 2.1: SHARES OF NUMBER OF TRANSACTIONS BY NON-CASH PAYMENT INSTRUMENT**



Source: RBA (2008b).

These trends are not unique to Australia, with the credit card share of non-cash transactions volumes rising in all main markets.

**CHART 2.2: CREDIT CARD SHARE OF NON-CASH TRANSACTIONS VOLUMES**



Source: Weiner and Wright (2005) and RBA (2008b).

Electronic bill presentment and payment schemes (EBPMs) are increasingly offered via the websites of larger billers. These schemes conduct direct debit and credit transactions via the Bulk Electronic Clearing System. Third-party schemes, such as BPAY, also allow payments to be made on a wide range of transactions (including paper bills).

Similarly, other schemes have developed to facilitate low-value transactions over the internet including person-to-person transactions. Local as well as international e-money schemes (such as PayPal) now offer their products in Australia.

Electronic stores of monetary value (or 'e-money'<sup>2</sup>) have achieved some success in the so-called 'micro-payments' segment of the market. In Australia, e-money has primarily involved 'closed-loop' cards that are used for a given purpose such as transport tolls, ticketing, phone cards and merchant gift cards.

However, various forms of 'smart cards' or multi-purpose cards are being introduced. For example, the use of pre-paid cards is being increasingly promoted by the card schemes. The recent release of a national standard on smart cards by Standards Australia will support growth in this payment method across the financial and retail systems should the standard be widely adopted.<sup>3</sup>

The various electronic payment instruments available for use in Australia, and the types of situations in which they can be used, are summarised in the following table.

**TABLE 2.1: ELECTRONIC PAYMENT INSTRUMENTS IN AUSTRALIA**

	Via Internet	Via Mobile / Telephone	Face to face
<b>Access-style Instruments</b>			
Credit and debit cards	✓	✓	✓
EFTPOS	✗	✗	✓
Direct debit	✓	✗	✓
Bill payments (EBPM)	✓	✓	✓
<b>E-Money (Stored Value)</b>			
Transport tickets	✗	✗	✓
Electronic purse (pre-paid cards)	✗	✗	✓

<sup>2</sup> 'e-money' refers to forms of payment that involve the pre-purchase of stored value. While there is some element of overlap (for example, debit cards are in some sense stored value), Section 9(1) of the Payment Systems (Regulation) Act 1998 defines a "purchased payment facility" as a facility (other than cash) in relation to which the following conditions are satisfied:

- (a) the facility is purchased by a person from another person;
- (b) the facility is able to be used as a means of making payments up to the amount that, from time to time, is available for use under the conditions applying to the facility; and
- (c) those payments are to be made by the provider of the facility or by a person acting under an arrangement with the provider (rather than by the user of the facility).

<sup>3</sup> More information available on Standards Australia's website at <http://www.standards.org.au>

## 2.3 EVOLUTION OF CARD PAYMENTS NETWORKS

The development of credit card networks illustrates the nature of the technological and market forces at play in retail payments systems. There are two types of card networks. Under the 'four-party' or 'open' schemes, the scheme operators such as Visa and MasterCard provide platforms for financial institutions to coordinate card payments between merchants (through the 'acquiring' institution) and their customers (through the 'issuing' institution). The 'three-party' or 'closed' schemes such as American Express and Diners Club provide services directly to merchants and consumers.

The current array of sophisticated payment platforms owe their existence to more humble beginnings, some dating back to early last century. Store credit became commonplace in the 1920s with the rise of the automobile and the resulting demand for petrol while in the 1950s Diners Club offered its cardboard payment card at selected up-market Manhattan eateries. Over time these platforms grew in size and complexity to reach the networks which service many of today's payments.

Although the different payment platforms have different origins, the development of each shares one feature: the need to establish a critical mass of cardholders and merchants. Without this base on which to grow, the platforms would not have been able to overcome the 'chicken and egg' problem faced in establishing networks.

The large card networks which dominate the market today used various customer relationships to gain this critical mass:

- ❑ Diners Club marketed itself as an exclusive payment method, able to be used only at certain up-market restaurants. The card was provided free to selected consumers and profited through high merchant service fees. As membership grew it extended beyond eateries to include other entertainment goods.
- ❑ Following on the success of Diners Club came other credit systems which marketed themselves as less exclusive 'shopper cards'. These institutions included Interbank (MasterCard) and BankAmericard (Visa) which used various relationships with customers to market their cards. To establish the network these institutions invested heavily in infrastructure. For example, BankAmericard overcame the network dilemma by mailing 60,000 cards to existing bank customers.
- ❑ In Australia, the EFTPOS system grew naturally out of transaction banking services. Banks had begun issuing customers with cards to use at ATMs allowing them to withdraw cash. Extending these cards to use in the EFTPOS network was a natural progression.

The development of these card networks was aided by advancements in communications and related technologies. Banks were able to establish electronic networks allowing customers to use their cards with confidence and in real time at a range of merchants. Competition for issuing banks between the various schemes was intense and, through a combination of lower fees and attractive product offerings, the open card schemes were able to establish a greater market share than the closed schemes. This dominance remains today.

The closed card schemes have one natural advantage over the open card schemes, namely, they do not need to face the potentially difficult coordination issues that are inherent in the open schemes. They can internalise many potential problems. However, in practice, this natural advantage has not been sufficient to prevent the open card schemes growing more rapidly.

The success of the open schemes can be attributed to a number of key factors:

- ❑ The platforms made use of the existing banking system which allowed secure and reliable means of transferring funds. Merchants and cardholders already had relationships with their banks, thus easing potential problems associated with getting the participants to have confidence in the systems.
- ❑ For the banks (and other financial institutions), the card networks were a relatively simple extension to the existing payments system where the exchange of funds occurred as a matter of course.
- ❑ As the associations attracted additional banks as members, their reach grew rapidly. This was a much more effective means of reaching new customers than relying solely on marketing directly to customers.
- ❑ By having numerous issuers providing services to cardholders and acquirers providing services to merchants, competitive and innovative products could be offered to both sets of potential customers.
- ❑ As the network grew, the systems became increasingly convenient for both cardholders and merchants. The network externalities discussed above began to accrue, providing additional net benefits to participants on both sides of the market.

The result has been that the open schemes have grown rapidly over, especially, the past two decades and have broad customer bases throughout the community.

In contrast, the closed schemes have found it profitable to concentrate on narrower segments of the market targeting, especially, higher income individuals and the corporate market. Their pricing structures (to both merchants and consumers) as well as the various services being offered reflect this targeting.

The success of credit and debit cards in attracting market share in customer payments is evident from Chart 2.1 above. Presumably, the rise in card payments has developed because of the net benefits it confers to the participants. Consumers have benefited through increased convenience, while merchants have benefited through lower processing costs and the ability to attract business.

Furthermore, the benefits to both have expanded as the size of the networks has increased. For example:

- ❑ the more merchants that accept a given card, the greater the convenience for the cardholder; while
- ❑ the more customers who choose to use a given card, the more the merchant can spread its costs.

## 2.4 CONTINUED DEVELOPMENT AND INNOVATION

Several studies have attempted to quantify the benefits of the shift to electronic payments across whole economies with estimates typically of the order of 1-2% of GDP. For example:

- ❑ Humphrey *et al* (1996) estimated the cost of payments to be around 1-3% of GDP;
- ❑ Humphrey *et al* (2003) estimated the benefits of moving to a cashless society to be around 1% of GDP; while
- ❑ Winder and Brits (2005) studied Dutch data and estimated the costs of cash payments alone to be 0.65% of GDP.



These studies are likely to understate the full benefits from the use of electronic payments since they tend to identify a limited range of costs and benefits such as fraud, central bank costs, the time taken to process transactions or gain access to cash and the costs faced by acquirers and issuers. They do not capture the full network benefits of electronic payments networks nor account for the full benefits to consumers and merchants from the additional convenience electronic payments can entail.

Continued development of payments networks and new services are likely to further increase the net benefits to society. The internet has facilitated more direct processing of transactions, while at the same time increasing the range of product offerings. The rise of internet banking services and BPAY in Australia demonstrates the benefits available to consumers.

More recently, there has been a move towards alternative electronic processing instruments which have taken advantage of advances in telephony and contactless payment technology. In the US, the use of contactless payment instruments doubled over 2007. This has particularly been the case among younger consumers, with research reporting nearly 10% of 25-34 year olds using contactless payment instruments on a weekly basis.

A possible growth area may be payments via mobile phones and other near field communication devices. As well as offering additional convenience, these devices offer increased security for customers through, for example, PIN or fingerprint identification for mobile payments. The use of chips in card payments is also becoming commonplace in some overseas countries although is yet to become standard in Australia.

Despite these developments, credit and debit card payments still hold dominant positions within the market. The card schemes continue to innovate as they explore new market opportunities (such as prepaid and contactless cards).

In contrast, there have been fewer innovations based on the EFTPOS network in recent times. This raises the possibility that the structure of the card networks may impede innovation in other parts of the payments markets. The issue related to governance of bilateral networks has already been mentioned, while other difficulties in implementing changes which require cooperation among network members may also impede progress.

In a 2005 speech, Phillip Lowe from the RBA listed several concerns in this regard:<sup>4</sup>

- ❑ individual members may be able to block developments to networks, which they may desire to do for a variety of reasons;
- ❑ coordinated investment will offer no competitive advantage to any single institution, as competitors will benefit similarly;
- ❑ investment in new products or architecture may facilitate the entrance of new members; and
- ❑ the industry may be reluctant to come together to discuss the requirements of a new network if this reveals sensitive commercial information, or may be viewed harshly from the competition regulator.

While each of these concerns can be challenged, they do emphasise the desirability of assessing the dynamic nature of the retail payments system as a whole to see how it is contributing to economic welfare. Lowe concluded his address:

---

<sup>4</sup> Speech available at [http://www.rba.gov.au/Speeches/2005/sp\\_ag\\_160905.html](http://www.rba.gov.au/Speeches/2005/sp_ag_160905.html)

*I think it is fair to say that Australia has a reasonable record in terms of payments system innovation, although clearly some of our systems are no longer at the cutting edge. Notwithstanding this generally positive record, over recent years a number of parties have indicated to the Bank that they have considerable difficulty in gaining access to the system, and that, in some cases, the existing architecture and decision-making processes are inhibiting further innovation.*

### 3. THE ECONOMICS OF PAYMENTS MARKETS

To better understand the development of these platforms, it is useful to analyse the economics of the underlying forces at play. Payments systems are 'two-sided markets' with complex interactions between the behaviour of each side of the market; that is, the markets for transactions banking and retailing. Of particular interest is the role of interchange fees in these markets and whether market forces will lead to an outcome that is socially optimal.

This section begins with a discussion of two-sided markets, highlighting their key differences to standard markets, and the implications this has for the setting of fees. It then discusses the conclusions from the academic literature with regard to the efficiency of interchange fees which result from unregulated payments markets, before concluding with a discussion on the implications for regulation.

#### 3.1 THE ECONOMICS OF TWO-SIDED MARKETS AND THE PAYMENTS SYSTEM

Two-sided markets arise where a product supplier, or 'platform', requires two groups of consumers for its product to be successful. The costs involved in supplying the platform can be recovered from either side of the market or a combination of the two. For example:

- ❑ the Adobe platform is funded through payments for writers while Acrobat Reader is made available to customers free of charge; while
- ❑ the costs of newspapers can be met from subscriptions or advertisers.

For credit and debit card markets, both consumers and merchants are required for the scheme to be successful.

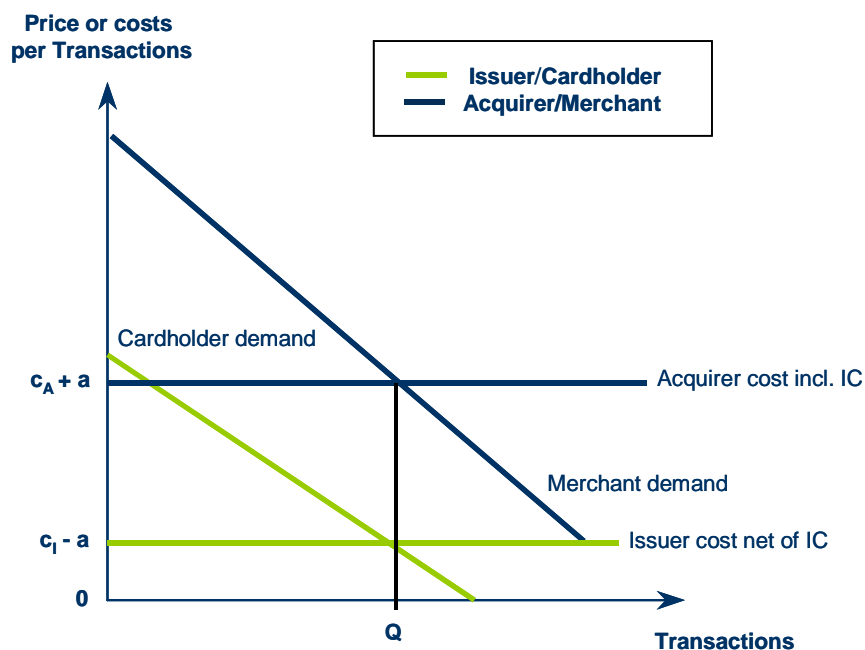
A wealth of literature has sprung up around the two-sided nature of payments markets over the last five years and the general lessons have begun to inform policy decisions. These papers have mainly focussed on how prices are set in these markets and whether this pricing leads to an optimal use of competing payment instruments. As a first step in understanding this analysis, it is useful to understand how prices are determined in two-sided markets.

The platform supplies each side of market with a product and may recover the total costs of this by charging each side separately. Each side of the market will face a different demand curve for the product and this will affect the degree of take up. The platform will have a natural interest in maximising the take up of the product and will adjust the charges to each side of the market to ensure that this occurs.

In doing so, there may be a 'balancing' transfer from one of the markets to the other. This balancing adjustment is termed the 'interchange fee'.

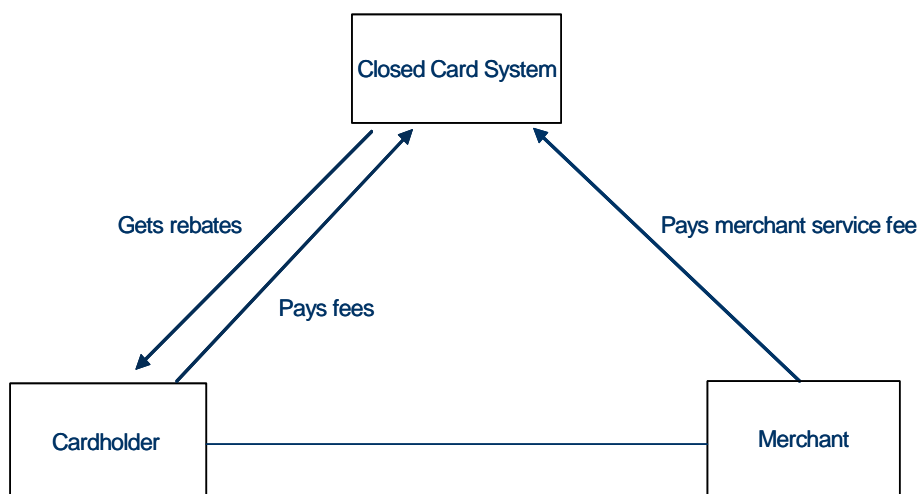
This concept is illustrated in the following diagram. It demonstrates the case where the merchant demand for electronic payments is greater than the demand from cardholders. In order to facilitate a level of transactions  $Q$ , the merchants will be required to pay a higher per-transaction fee of  $c_A + a$ , while cardholders would only be willing to pay  $c_C - a$ . These transaction fees are brought about through charging merchants an interchange fee equal to a per transaction.

**FIGURE 3.1: THE BALANCING ROLE PLAYED BY INTERCHANGE FEES**



Hence, the interchange fee plays a balancing role to ensure that the two sides of the market take up the product in appropriate proportions. Since the side which has the greater demand for the product has an incentive to encourage take up from the other side, the interchange fee will flow in that direction. The diagram below shows these flows for a simple three party (closed) scheme such as American Express or Diners Club.

**FIGURE 3.2: TWO SIDED MARKETS FOR CARDS**



Note that the interchange fee need not be a physical fee paid directly from one side of the market to the other. In the case of three party card schemes shown above, the network externality is internalised by the scheme and the interchange fee is implicit in the difference between merchant service fees and cardholder rewards. In the case of four party (open)

card schemes, the interchange fee consists of a direct payment from the acquirer to the issuer.

The intuition that the interchange fee flows from those that benefit most from the product being offered to those that would otherwise need to be encouraged is useful. In credit and debit card markets the interchange fee is paid (directly or indirectly) by merchants and flows to consumers with the implication that merchants benefit from these transfers. Various survey information supports this notion with merchants typically reporting that they believe they receive more sales by accepting card payments and that the benefits of doing so outweigh the costs. Rochet expressed it as follows:<sup>5</sup>

*The fact that retailers internalise some fraction of consumers' benefit (because the better quality of service offered to consumers by the option to pay by card makes their stores more attractive) implies that they are less resistant to high fees than cardholders. This is why the cost of payment instruments is often borne largely by merchants rather than consumers.*

Key to these markets is the concept of network externalities. These arise because each side benefits from the increased take-up of the product from the other side. In card markets cardholders benefit from the added convenience of additional merchants accepting card payments, while merchants benefit from accepting card payments when there are more consumers that use cards.

For this reason, card platforms have easily developed through banking networks which already distribute cards to customers, circumventing the 'chicken and egg' problem of developing sufficient take-up of the payment devices. In other cases, schemes have invested heavily in infrastructure at the outset to ensure that the network effects are sufficiently developed.

Once the networks mature, the optimal level of interchange fees may change. In these circumstances, the network benefits relate to usage rather than both membership and usage and thus may not be as extensive.<sup>6</sup> However, while it is likely that this role is diminished, interchange fees still play some role in ensuring the continued use of the payment instrument, providing the ongoing balancing needed to maintain demand across the two sides of the market.

### 3.2 CONCLUSIONS FROM THE ACADEMIC LITERATURE

Although the literature on two sided markets, and payments systems in particular, has grown substantially in recent years, it is yet to reach many useful conclusions for informing policy decisions.

The early literature considered simple models where the platform only competed with cash. The initial analysis by Baxter (1983) assumed perfect competition between banks so that no margins existed between user prices and marginal costs. Given these assumptions it is simple to arrive at the socially optimal interchange fee although it is cannot be said whether this fee will be the outcome in private markets.

---

<sup>5</sup> See Rochet (2008), p15.

<sup>6</sup> See Rochet (2008), p15.

This analysis was extended by Rochet and Tirole (2002) to allow for the more realistic assumption of imperfect competition in both issuing and acquiring. In these cases, the prices paid by cardholders and merchants will be greater than the marginal processing costs, allowing banks to earn positive returns. In this case the interchange fee will be higher than in Baxter's analysis as it will need to undo somewhat the margin between costs and price faced by cardholders. However, they note that determining the socially optimal level of interchange fees is difficult. This is complicated by the degree to which retailers pass on costs in terms of generally prices, and the extent to which issuers pass on interchange fees in terms of rewards instead of other bank fees.

In the model developed by Rochet and Tirole, the interchange fee arrived at in the market will be higher than the socially optimal fee. However, other papers followed, and using the same format they showed that under more general assumptions there is no systematic bias for interchange fees being either too high or too low.

More recently there has been a growth in the number of models which consider competing payment instruments beyond cash. Guthrie and Wright (2007) consider a market with perfect competition between issuers and acquirers and two competing card platforms. They conclude that the forces of competition in this case are not sufficient to achieve an optimal outcome, and a range of interchange fees can result depending on behavioural aspects of cardholders and merchants.

Rochet and Tirole (2007) consider the most general model, looking at the case of competing payments platforms and imperfect competition. Despite the complexity they reach the common conclusion that while the interchange fee arrived at need not be optimal, it cannot generally be decided whether it is too high or too low.

Hence, while many of the conclusions from the literature are negative in nature, giving little help to policy makers, there is a large degree of unanimity. Evans and Schmalensee (2005) summarise this sentiment in reviewing the relevant literature:

*Almost all of these papers find that profit maximising interchange fees are unlikely to be socially optimal, but none yields workable rules for welfare-improving regulatory intervention.*

Despite this discouraging assessment of how theory might be able to inform policy, at least in a proactive manner, research is continuing and there are some signs of useful conclusions emerging. Rochet (2008), with accompanying comments from King (2008) and Wright (2008), reviews the state of play.

Drawing on this work, the following conclusions can be drawn:

- ❑ There is an asymmetry between the two sides of card markets and thus an interchange fee will almost certainly be needed to achieve social optimality:
  - that is, it will not be optimal for the interchange fee to be zero.
- ❑ Markets, unaided, will not reach a socially optimal level of fees.
- ❑ Equally, however, no-one has been able to estimate the optimal level of IFs even in quite simplified models.

- ❑ Estimates of the costs of the resources needed to provide card platforms do not provide a valid basis for setting interchange fees. As Evans and Schmalensee (2005) note:<sup>7</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.*<sup>8</sup>

- ❑ More recent theoretical models provide rationales for interchange fees being larger for credit cards than debit cards as observed in practice.<sup>9</sup>
- ❑ On the other hand, there may be a basis for considering the gap the interchange fees on credit and debit cards when considering the desirability of regulation. This is one of the considerations cited by the RBA in its decisions to intervene in credit and debit card markets. In particular, Rochet notes:<sup>10</sup>

*Preliminary analysis of the substitutability between credit and debit cards ... seems to indicate a need for capping the difference between credit and debit IFs, in order to discourage socially inefficient behaviour of 'convenience users'. However, it seems difficult to recommend a cost-based regulation of credit IFs without a more complete understanding of this substitutability between credit and debit cards.*

- ❑ Market forces may lead to situations where merchants decide to reject credit cards for low-value transactions.
- ❑ Payments systems can create pressures for competitive action in both transactions banking and retailing. For example, Wright (2008) notes:

*... large retailers that are able to gain a competitive advantage over smaller rivals from being able to offer their own store-credit to customers, may have an interest in opposing the widespread use of general purpose credit cards.*

Given these conclusions, the following section discusses the implications for regulatory authorities.

### 3.3 IMPLICATIONS FOR REGULATION

The RBA is charged with, amongst other things, improving the efficiency and competition of Australia's retail payments market. While this has broader implications, it can generally be interpreted as regulating where necessary to ensure that the outcome of the payments market is socially optimal.

In more traditional markets, this is made simpler by economic theory suggesting that welfare will tend to be maximised when prices reflect costs. Since this will be facilitated in competitive markets, promoting competition has been seen as something of a panacea.

<sup>7</sup> Evans and Schmalensee (2005), page 76.

<sup>8</sup> In contrast Frankell (2008) argues that the card schemes left to their own devices will not deliver economically efficient interchange fees, and goes on to argue that the RBA's decision to reduce the level of interchange fees on credit cards has resulted in economic benefits

<sup>9</sup> See Rochet (2008) and Wright (2008).

<sup>10</sup> Rochet (2008), page 15.

The RBA has similarly looked to promoting competition as a way of increasing the efficiency of payments markets. For example, it recently stated that:<sup>11</sup>

*From the time of the Joint Study, the Board's view has been that the normal forces of competition have not acted effectively on interchange fees, and that the resulting configuration of fees was not conducive to the efficient evolution of the system.*

However, it is far from clear exactly which fees and fee structures would be “conducive to the efficient evolution of the system” or even that the current market structure and fees do not achieve this efficiency. That is, competition may not be a good proxy for efficiency – or maximising economic welfare – in payments markets given their two-sided nature. As outlined above, the determination of socially efficient interchange fees is complicated in payments markets given that:

- ❑ the role of interchange fees is to balance the two sides of the market, and not to recover the costs of providing the service;
- ❑ cards are typically part of a bundle of banking services and any costs related to this component can be recovered from elsewhere in the bundle; and
- ❑ the interplay of various competing instruments makes determining the optimal fee associated with any single instrument a difficult task.

Stepping back from this detail then, it is useful to reflect on the basic principles of best practice regulation. These principles note that regulation imposes burdens and therefore should only be implemented where it can clearly lead to an improved outcome. That is, regulation is justified only where:

- ❑ it can be shown that the current market conditions do not lead to an optimal outcome; and
- ❑ that regulation can remedy this market failure.

It would appear that the literature on payments markets indicates any regulation of interchange fees would fail this test. That is, while it can generally be concluded that interchange fees set in a private market need not be the same as those that would maximise social welfare, it cannot, except under certain restrictive conditions, be determined whether these fees will be too low or too high. Secondly, even if it could be determined in which direction fees would need to move, there is no guidance as to how far these fees should move to result in the optimal fee level.

Where then does this leave the regulatory role of the RBA given that the economic theory would suggest erring on the side of light-handed regulation given the uncertainty surrounding optimal interchange levels? Along these lines, Evans and Schmalensee (2005) conclude that:<sup>12</sup>

*There is no apparent basis in today's economics – at a theoretical or empirical level – for concluding that it is generally possible to improve social welfare by a noticeable reduction in privately set interchange fees. Thus, if antitrust or other regulators had to show that such intervention would improve welfare, they could not do so.*

<sup>11</sup> RBA (2008a), page 15.

<sup>12</sup> Evans and Schmalensee (2005), page 98.



More recently, and from an Australian perspective, Stephen King has argued:<sup>13</sup>

*Despite this theoretical uncertainty, however, in Australia we have direct intervention that restricts the interchange fee that can be charged by four-party credit card systems. In light of Professor Rochet's survey it is necessary to ask what, if any, policy relating to interchange fees can be justified by the state of economic understanding of payments systems.*

It should be noted that while conclusions such as this are now widely accepted, at the time that interchange regulation was implemented in 2003 the literature was only in its nascence. This is particularly evident in the Joint Study from 2000 which focused on interchange fees as tools for cost recovery and paid limited attention to their role in two-sided markets. Hence the state of knowledge of these markets is in a substantially improved condition currently than it was when the regulations were drafted.

In addition to regulation of interchange fees, the RBA has several other regulatory tools at its disposal. These include:

- removal of the no-surcharge rule;
- removal of the honour-all-cards rule;
- removal of other impediments to access such as connection charges and participation requirements; and
- improving the availability and transparency of key market data.

It has applied a range of these tools alongside interchange regulation and has stated a preference for continuing to do so. These at least gain greater support from economic theory which highlights the importance of information and contestable markets.

A major question then is the ongoing role of interchange regulation given the current conclusions from the literature, and the various alternative policy instruments available to the RBA. In recognition of this, the RBA's recent Preliminary Conclusions paper gives three options for regulation going forward. These are:

- Option 1 – retain the current interchange standards;
- Option 2 – reduce interchange fees further; and
- Option 3 – remove explicit interchange regulation.

The RBA states a preference for Option 2 over Option 1, and a preference for Option 3 over the others if it can be shown that it yields a workable solution and ensures ongoing competition between competing instruments. While the RBA does not expect workable systems to be in place when it reconsiders the options in 2009, it does expect progress to be made by the industry for Option 3 to be chosen.

Nevertheless, it has expressed a clear willingness for the removal of interchange fees, stating that:

*The Board's clear preference is for the industry to address issues of competition and efficiency rather than for the Bank to impose regulations. Exactly how this might be done remains unclear. One possibility might be for the industry to take meaningful steps to*

<sup>13</sup> See King (2008), p.20. Stephen King is an ACCC Commissioner although the views expressed in this quote are expressly his own and not necessarily those of the ACCC.

*improve the competitive environment and promote innovation in the Australian payments system, perhaps through changes to access arrangements and upgrading the existing technical infrastructure. Another might be for the industry participants, including the international card schemes, to directly address the Board's concerns about interchange fees, transparency and merchant restrictions, reducing the need for regulation.<sup>14</sup>*

Hence, the RBA perceives two types of changes to be required. The first include structural and technical changes to the current system to ensure that, in particular, the EFTPOS system remains competitive with the scheme platforms. The second requires a signal that the competitive pressures placed on the market from existing regulations will continue to operate under this option. To this end, the RBA emphasises that its belief is that Option 3 is only feasible given the changes to access, surcharging and other regulations that have occurred to date. These indicators of competition form the substance of Section 4 below.

---

<sup>14</sup> RBA (2008a), page 33.

## 4. INDICATORS OF COMPETITION

Under the *Reserve Bank Act 1959* the Payments System Board is required to, amongst other things, set policy to promote competition in the market for payment services. As outlined in Section 3, it is very uncertain as to how to analyse the nature of competition in two-sided markets and indeed what competition may imply for overall economic welfare. The RBA has acknowledged these difficulties but has sought to rely on various partial indicators to inform its decisions.

The standard approach to analysing competition involves a number of steps, notably:

- ❑ defining the extent of the market;
- ❑ determining the level of concentration in the market; and
- ❑ for markets where concentration exceeds certain levels, analysing the nature of the competition both in a static sense and over time. The ability of new participants to enter the industry and for the industry to innovate and respond to changing market and technological conditions becomes crucial.

In principle, the exercise for payments systems is no different. In practice, however, each of these steps can be complex as highlighted by the decade of debate and review that various parts of the retail payments system have been subjected to in Australia without achieving generally accepted resolution of key questions.

Accordingly, this section presents a framework for considering the different dimensions of the nature of competition in the payments industry. It begins by considering the scope of the markets in question. It then presents a series of possible indicators which, together, aim to present a framework in which the nature of competition can be reviewed over time.

### 4.1 DIFFERENT MARKETS WITHIN THE PAYMENTS SYSTEM

As outlined above and illustrated in Figure 2.1, the payments system cannot be adequately analysed as a single market but rather needs to be considered as a number of related markets, especially those involving:

- ❑ consumers and financial institutions or other issuers;
- ❑ merchants and financial institutions or other acquirers;
- ❑ merchants and consumers; and
- ❑ the payments platforms themselves (i.e. competition between platforms or instruments).

The analysis of each of these aspects of the payments system will entail different considerations and emphases. For example, as elaborated below, the starting point for the analysis of competition in issuing may be concentration levels among the issuers as well as the ease of entry. While these factors are also relevant for acquiring, countervailing power that is present between the large financial institutions and large retailers, at least in the Australian economy, will also play an important role.

The most significant aspect of the payments system that complicates the assessment of competition within payments systems – and, in turn, their impact on economic efficiency – relate to the network aspects of the systems. A number of complications arise.

Firstly, competition between payments platforms may improve economic efficiency up to a point but could compromise efficiency due to either:

- ❑ the reduction in scale; or
- ❑ through adding to costs for users on each side of the market.

Payments systems are no different to other networks in these respects. For example, it is unlikely that it will be economic to duplicate the basic infrastructure for next generation networks in many parts of the country (see Box 4.1). Also, effective coordination and price discovery mean that there tends to be at most two or three competitors in markets for providing broking services for securities (such as bonds or shares) or financial instruments (such as swaps or currency options). Duplication of networks also reduces the benefits from network externalities (both from usage and membership).

Similarly, scale efficiencies and the impact on end users are very relevant for payments networks.<sup>15</sup>

Secondly, the effectiveness of any given payments platform may be dependent on coordination among participants. By their nature, networks require participants to follow common sets of rules, whether they are technical or operational. Just how those rules are established can impinge on the smooth operation of the network and may affect the behaviour of participants in competing networks.

Again, the need for coordination in payments system is no different to that in other networks as illustrated in Box 4.1 for NGNs. The tension between competition and coordination in payments networks is addressed further in Section 4.4.

---

<sup>15</sup> In Australia, the costs involving in accepting different payments instruments has been significantly reduced by the use of terminals at retail outlets that accept multiple cards. Nevertheless, the acceptance of multiple instruments does add to costs.

**Box 4.1****Next Generation Networks**

Rapid advances in communications technologies are leading to the convergence of telecommunications and internet networks. The physical infrastructure of the so-called next generation networks (NGNs) is likely to involve a combination of means to convey packages of data including optical fibre, copper wire (using a variety of technologies such as ADSL2+ and VDSL), cable and wireless. This element of the NGNs is called the 'transport' layer.

Compared with existing telecommunications networks, NGNs involve a more distinct 'layering' between the basic transport layer and the downstream provision of applications and services.

In Australia, it is likely that direct competition between different transport networks is likely to be concentrated in high-density parts of cities. It is uneconomic to provide duplicated networks for many regions.

To the extent that the core infrastructure can be provided efficiently, economic efficiency will be helped. However, the great bulk of the potential benefits from the roll-out of NGNs will be derived from the applications and services layers of the systems.

To achieve these benefits, open access to a high quality transport layer is essential. In turn, this requires both appropriate investment in the core infrastructure and the establishment of technical standards and operational rules in order for the network to function. Given the complexity of the technology, such standards cannot readily be imposed by a regulator but rather need to be developed through the industry, both internationally and in Australia. Effective coordination is needed.

**4.2 DEFINING THE MARKET**

In competition policy, consideration of what may constitute the relevant market is informed by analysing the parts of the economy in which the company or companies involved operate. The scope of the market is determined by considering the degree of substitution between different products or activities. The more close substitutes there are, the lesser will any concerns be with competition.

Consider firstly competition between the instruments themselves. Different instruments will have features that allow them to be more or less suitable for different types of transactions. For example, stored-value cards designed for micro-payments may rarely compete directly with cheques but both may compete with debit cards.

However, there is enough overlap at different parts of the markets for the retail payments market to be viewed essentially in two:

- a payments market where the customer is physically present; and
- a payments market for remote transactions.

A formal evaluation of the competitive nature of these markets could be undertaken. It is likely that this would reveal that there was effective competition in these markets with concentration levels not being excessive and evidence of frequent entry of new participants and products.

However, such an analysis would not capture the extent to which the nature of the payments networks interact with the operation of related markets and thereby potentially affect the competitive landscape. In particular, much of the RBA's focus on competition in the payments system relates to issues of transparency and how payment instruments are provided as part of a larger bundle of services than narrower issues of concentration. Thus, for example, the Bank's deliberations involve whether market forces may lead to a widening in the differentials between, say, all credit cards and EFTPOS at least as much as they involve competition among the different credit cards themselves.

In large part, these issues relate to the relative demand and supply features of each side of the payments system. As outlined in Section 3, those relative features can lead to differences in pricing arrangements of the different systems – i.e., differences in the 'balancing' adjustments – as has been shown most pronouncedly between the fee structures for credit cards and EFTPOS. Similarly, the increases seen in merchant service fees in the United States in recent years appear to reflect participants responding competitively to market forces rather than some form of anti-competitive behaviour. Thus, it may be debatable whether differences in fee structures across instruments are a sign of too little competition.

At the same time, however, the interactions between markets can result in incentives faced by consumers that may not be socially optimal. Again as outlined in Section 3, economic theory cannot at this point say whether markets left to their own devices will generate fee structures for payments platforms that are efficient from the perspective of the whole economy, just as the theory cannot determine whether regulations constraining the setting of fees will assist. At this point, the regulator's position is essentially that if the differential incentives are not too pronounced in some sense, then other aspects of the market – such as access and innovation – can be relied upon to judge whether there is an appropriate level of competition.

Given the emphasis on considering incentives to use different payment instruments, the analysis tends to focus on particular reference points where it is feasible to use more than one instrument. As a general rule, merchants make decisions as to which payment instruments to accept, and the terms under which they are accepted, and the consumer chooses which instrument to use. Merchants' decisions will be influenced by a range of factors including:

- the turnover of the retail outlet;
- the average transactions value;
- whether the purchaser is present or the purchase conducted remotely; and
- location, including across countries.

Many high turnover retail outlets accept a range of payment instruments including cash, scheme credit and debit cards, EFTPOS, and maybe prepaid cards, the retailer's branded cards and personal cheques. For large items or if the purchase is conducted remotely, the merchant may also provide online payment instruments.

A possible starting point for considering the nature of competition across the system is to consider options at a number of reference points within retailing such as:

- ❑ a \$100 transaction at a retail outlet where the customer is present;
- ❑ a \$100 transaction conducted remotely (eg via the internet or phone);
- ❑ a \$5 micro-payment where the customer is present; and
- ❑ a \$100 transaction at a low-volume or distant retail outlet where the customer is present (eg restaurant or overseas).

Finally, as indicated above, the impact on competition in the related markets of issuing, acquiring and retailing is relevant. How these markets are affected is influenced very much by the fact that many payment instruments either are provided as part of a bundle of services or come with additional features. For example:

- ❑ debit cards are typically provided as part of a bundle of transactions services provided by financial institutions and are not offered, or priced, separately;
- ❑ the level of security or record-keeping varies across instrument and/or provider; while
- ❑ credit cards obviously provide credit along with a payment facility. (Credit cards may have very similar functionality to debit cards linked with a line of credit.)

The fact that the payment function tends to be an element of a larger bundle of services affects the analysis of each of issuing, acquiring and retailing:

- ❑ In Australia, the market for transactions banking tends to be national and involves a wide range of providers. Entry is possible, both through the establishment of branch networks and through online products. **Issuing** is one element of transactions banking. Based purely on measures of concentration, there would appear to be effective competition in this market. However, the fixed costs of establishing payment services means that it can be difficult for small institutions to compete in this aspect of transactions banking without some sort of support.<sup>16</sup>
- ❑ Similarly, **acquiring** services tend to be provided as part of a suite of services offered to merchants. Acquiring in Australia is more concentrated than issuing but still seems to be subject to active competition between the major banks and a number of regional banks.<sup>17</sup> In considering competition in acquiring, the authorities appear to have placed some weight on whether retailers enjoyed countervailing power or not. As discussed below, the ability to surcharge alters the balance of bargaining power.
- ❑ There are a multitude of market segments for **retailing**. The main issue that has been identified previously has been the potential impact that large merchants may have on competition by offering own-brand cards (possibly with some credit facility). Such cards could compete with a card provided by a financial institution which is neutral across retail outlets.

---

<sup>16</sup> Such a concern is evident in the submissions from credit unions on possible changes to the 'honour-all-cards' (HAC) requirements. The credit unions felt that HAC was important in their ability to offer scheme debit cards as part of their transactions accounts. This paper does not address the validity of the credit unions' concerns but rather aims to outline possible issues that need to be monitored in the ongoing assessment of the competitive environment.

<sup>17</sup> The consolidation of banking that is occurring because of the fall-out from the turmoil in credit markets will leave acquiring more concentrated than it has been.

### 4.3 INDICATORS OF COMPETITION

The overarching aim of encouraging competition is to improve economic welfare for the society as a whole. Competition is a means to an end, not an objective in its own right.

For example, increases in scale and the number of participants in a market can both improve efficiency and thus there tends to be a trade-off between the two. Furthermore, as noted above, the investment in, and development of, networks will necessitate a certain amount of coordination by the participants which may need to be balanced against competition objectives.

Competition policy attempts to encourage some notion of 'workable competition' without unnecessarily compromising the benefits from scale.

The assessment of the nature of competition in the payments system and related markets involves a number of steps.

Firstly, the degree of concentration is generally taken *prima facie* as an indication of the extent of competition acting on a market. However, while concentration is a necessary condition for low competition, it is by no means sufficient. That is, competition can thrive in markets dominated by few firms.

In circumstances where an industry is deemed to be concentrated to a level that may impinge on competition, a more detailed analysis of the manner in which competition is occurring is warranted. This will entail both features of the existing industry and its ability to innovate and respond to changing market forces. That is, the analysis has both a static and dynamic focus, asking whether the needs of consumers are being met in an efficient way, and whether they will continue to be in the future.

This sub-section develops a taxonomy for assessing, firstly, whether payment markets are subject to competitive forces and, secondly, what is the degree of these forces. Analyses such as these in regular markets will tend to focus on issues of pricing, such as cost reflectivity, barriers to entry and market development over time. In essence the analysis provided below is no different, although applying these notions to payment markets does warrant some judgement.

The following indicators are considered:

- ❑ **Pricing** – do the prices currently charged in the market lead to the efficient outcome being achieved? In the case at hand, prices (interchange fees, merchant service fees and reward points) provide balance, not cost recovery, in two-sided markets. Also, the responsiveness of pricing to changing market forces as well as changes to the structure of pricing that result from the ability to surcharge may be relevant.
- ❑ **Access and entry** – the ease of entry for new players makes for a more competitive market, whether this be at the platform or network level. Entry barriers may be high due to set up costs (in which case increased entry is not necessarily socially desirable) or other artificial barriers.
- ❑ **Innovation** – do the conditions in the market provide incentives for firms to innovate and is there evidence of innovation occurring? Firms will usually innovate to gain market share or cost savings over rivals. Innovation may be constrained in certain markets, including those characterised by networks, since innovation may require cooperative decisions and some participants may benefit from resisting incentives to innovate.



- ❑ **Related markets** – how does competition in the payments market impact on related markets? This is particularly an issue given that instruments used for payment often form part of a bundle of services which may also include transaction accounts, internet banking and the provision of credit.

The following table summarises these key indicators. They are grouped in six broad categories: concentration, access, transparency, pricing, innovation and the implications of competition in related markets. An assessment of competition in payment markets will include an analysis of each of these indicators, albeit with different weights attached to each.

**TABLE 4.1: SUMMARY OF POSSIBLE INDICATORS OF COMPETITION AND INNOVATION**

<b>Category</b>	<b>Indicator</b>	<b>Comment</b>
<b>Concentration</b>	Concentration ratios	High concentration in a market is necessary but not sufficient indicator for concerns over competition. Concentration levels for issuing, acquiring and platforms may all be relevant.
<b>Access</b>	Natural barriers	High start-up costs hinder entry but are not necessarily sub-optimal.
	Artificial barriers	Barriers imposed either by market participants or regulation should be scrutinised for their impact on economic welfare.
<b>Transparency</b>	For average pricing and system design	Provides information for analysis of the functioning of the relevant markets by regulators and observers.
	At point of sale	Provides information that may assist consumers in making informed decisions.
<b>Pricing</b>	Price differentials (for IFs or MSFs)	Can be an important influence on consumer decisions.
	Surcharging	The ability to surcharge provides merchants the scope to price according to relative costs and benefits. The extent of surcharging (by sector and type of firm) may indicate something about the nature of competition either in the payments system or the sector of retailing involved.
	Price flexibility	Pricing flexibility over time and across different parts of the economy may reflect responsiveness to changing market pressures.
	Resource costs	By themselves, of limited value in two-sided markets.
<b>Innovation</b>	Based on existing instruments	The development and marketing of new products can be a sign of a competitive market. This may occur in issuing or acquiring.
	Product innovation	International benchmarking could provide a basis for considering the state of technological advancement.
	Network innovation	International benchmarking could provide a basis for considering the state of technological advancement.
<b>Competition in related markets</b>	Retailing	Evidence of payment products being used to affect the competitive landscape in retailing (and economic efficiency more broadly).
	Transaction banking	As part of a bundle of transactions services, payment products can be packaged in a way that affects the ability of smaller, possibly niche players to provide competitive services unbundled.

The indicators in Table 4.1 provide a basis for analysing the nature of competition, both now and going forward. Several of these indicators have not played a central role in discussions of competition and efficiency to date, in part because they elude simple quantitative measurement techniques. Where possible, the section outlines the metrics which can be applied to each measure, although in some cases it is likely that a qualitative or anecdotal analysis must suffice.

### 4.3.1 CONCENTRATION

Market concentration has been a traditional way of measuring the degree of competition acting in a market. Various methods have been developed for measuring concentration, most of which arrive at a quantitative result based on the market share of the largest firms in the market. For example, one measure the ACCC uses to assess merger and acquisition cases is based on the post-merger market share of the four largest firms. Where this is greater than a pre-determined level, the merger could result in a substantial lessening of competition and is thus subjected to closer examination.

A similar approach could be applied to payments markets to provide a preliminary indication of areas where competition may be lacking. The relevant markets for this analysis could include firms offering competing platforms as well as markets for issuing, acquiring and retailing (as illustrated in Figure 2.1). Where concentration levels exceed a given benchmark, other indicators of competition would be given closer scrutiny in assessing the degree of competition.

Concentration could be easily tracked over time. The efficacy of reforms (access arrangements being an obvious example), or other developments, could be measured against the concentration metric, although again care must be taken to acknowledge that low concentration is necessarily indicative of a lack of effective competition or an increase in welfare.

### 4.3.2 ACCESS

Improved access arrangements are to be encouraged where high barriers are the result of artificial impediments to entry caused by the actions of either the industry or regulator. Where high barriers exist for natural reasons, such as high start-up costs, it may be beneficial to have higher market concentration to avoid duplicating costs.

Assessments of access of new payment instruments as well as issuing and acquiring for each instrument are potentially relevant. Initially, any analysis could be restricted to issuing and acquiring of credit and debit cards and to the entry of new payments platforms.

Quantitative indicators of entry may be difficult to develop but qualitative evidence along the following lines could be monitored:

- is there evidence that firms have considered entry but ultimately decided against it, and what was the basis for this decision;
- what are the costs of entry and how do these compare to the turnover or profits of incumbents; and
- what requirements are placed on firms in order to enter the market?

The first two of these can be used to determine whether barriers to entry exist in the relevant market and provide guidance as to the nature of these barriers. That is, a market where incumbents earn above normal profits would be expected to attract entrants. If no entry

occurs, this could be due to either natural or artificial barriers. If start-up costs are high and preclude profitable entry, then this is not indicative of a market failure, and there would be no need to investigate access arrangements as these would only encourage socially expensive duplication.

Connection charges are one example of these start-up costs. Charges are needed to cover the operation costs of the system although inflated rates could discourage entry. For example, connection to the EFTPOS platform is capped at \$78,000.

It would be of particular concern if potential entrants were deterred by unnecessary artificial barriers. It can be difficult to ascertain what constitutes an unnecessary barrier. In the card of four-party credit card schemes, the RBA judged that the requirement that members be authorised deposit-taking institutions (ADIs) in order to reduce the risk entrants place on existing members might have been excessive. Accordingly, APRA now regulates access for the new class of specialised credit card institutions (SCCIs).

Less clear than this requirement, but perhaps more relevant, are the other hurdles firms may face in entering the market. For example:

- are firms required to negotiate bilateral arrangements with existing members and could members potentially frustrate these negotiations;
- are excessive delays imposed on integrating entrants into a network; and
- how simple is it for new products to be integrated into existing networks?

While these metrics are necessarily qualitative, they do provide reasonable information on the ease of access and whether existing access requirements are excessive. High entry costs and concentration are only negatives if they are the result of artificial impediments, and listing access requirements is one way of refining areas to be looked at further.

While this exercise could be carried-out immediately, the evidence on entry decisions will need to be considered over time. New players in payment markets are a natural indicator of the restrictiveness or otherwise of the current environment and attention could also be paid to the rise of new instruments and how easily these are integrated into the market structure.

### 4.3.3 TRANSPARENCY

Transparency can play a number of roles in the payments market:

- it allows the regulator to monitor progress and competition in the markets as well as the impact of reforms;
- by making this information available to industry participants it can lead to more informed decisions being made; and
- the disclosure of fees and other information at point of sale can assist consumers making informed decisions.

The RBA currently collects and publishes several key market data including average interchange fees, merchant service fees and data on transaction volumes for various instruments. This level of detail is likely to be required at a minimum in the future, either as a part of an industry-led solution, or ongoing regulation. Hence, transparency should be reasonably easily achieved and simple to measure.

There are questions over how useful these data are especially since the payment services are typically being provided as components of bundles of services. Nevertheless, at a

minimum, the data help inform assessments on the differences in incentives derived from using different instruments.

Given the complexities involved, it is likely that disclosure of fees and conditions at point of sale will become widespread for payment instruments. However, disclosure of fees for foreign ATM transactions is currently being refined.

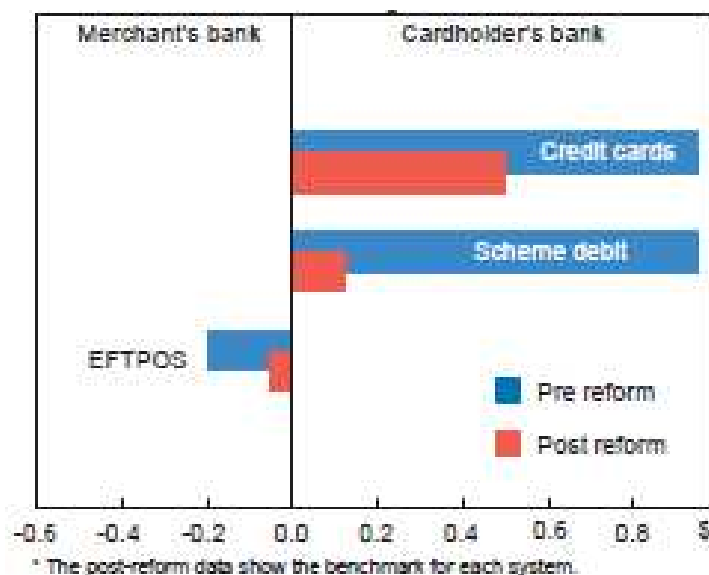
#### 4.3.4 PRICING

Four pricing indicators are considered here and are listed in rough order of importance.

The first indicator is that of **differentials in interchange fees** between instruments. Differential in interchange fees act as a proxy for differentials in fees and benefits, and hence incentives, for both consumers and merchants.

Given the reporting requirements of schemes to the RBA, these should be relatively simple to measure, and can be tracked over time in line with the releases from the RBA. In its Preliminary Conclusions paper, the RBA published the pre- and post-reform average interchange fees for the schemes and EFTPOS as shown in Chart 4.1.

**CHART 4.1: INTERCHANGE FEE DIFFERENTIALS BETWEEN INSTRUMENTS (\$)**



Source: RBA (2008a)

The RBA regulations placed a cap on these average fees with the result that the differentials have narrowed markedly on all four-party platforms. In turn, fees have risen and reward points been reduced for cardholders. Merchant service fees to retailers have declined.

While there is little support in the literature for capping differentials in interchange fees, differentials in interchange fees across various payment instruments will provide a useful litmus test for changes to incentives and the competitive landscape going forward.

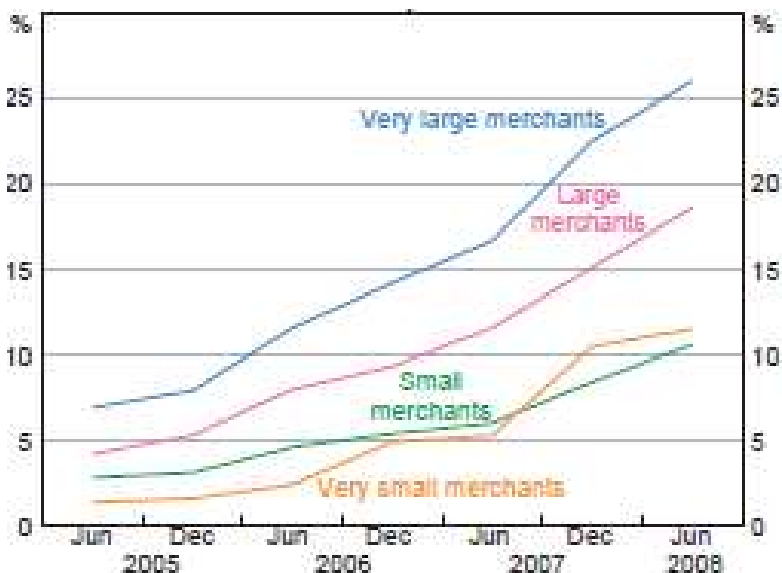
The degree of **surcharging** is a similarly important indicator for pricing, as it acts as something of a release valve for merchants to pass on fees to consumers, somewhat

undoing the role of interchange fees. The incidence and level of surcharging needs to be assessed in light of other features of the market since it can point to a variety of motivations by merchants. For example:

- ❑ Significant differentials in the net benefits (i.e. both explicit and implicit costs and benefits) to merchants from accepting particular instruments will increase the number of merchants surcharging.
- ❑ Merchants with limited market power may be reluctant to surcharge because of negative customer reaction.
- ❑ Thus, any evidence of limited surcharging may reflect either narrow differentials in the net benefits faced by merchants, large transactions costs or limited market power by the merchants in question.
- ❑ In contrast, surcharging at levels well above differential in net benefits – or, for simplicity of measurement, above differentials in merchant service fees suggests that the merchant has a degree of market power and would benefit from price discriminating between customers.<sup>18</sup>

East and Partners regularly survey the incidence of surcharging. These data have been reproduced below from the Payment Board's 2008 Annual Report.

**CHART 4.2: CURRENT LEVELS OF SURCHARGING**



Source: RBA (2008b).

The data indicate that surcharging has been growing at a constant rate since the no-surcharge rule was removed by regulation in 2005. The level of surcharging varies with the size of merchant – and presumably market – power, with 26% of very large merchants applying surcharges to some purchases while only around 11% of smaller merchants currently surcharge. In many cases, the level of surcharge is greater than that of the corresponding merchant service fee, implying that some firms are price discriminating between customers.

<sup>18</sup> Such price discrimination need not reduce economic welfare.

The extent of surcharging going forward is likely to be an important indicator of competition between players in payments markets. In particular, as the level of surcharging – and the threat of surcharging – extends to more than minimal parts of the economy, any implications for competition from setting interchange fees at particular levels recede.

The lack of **flexibility** in the setting of interchange fees was one of the reasons cited for considering regulation of interchange fees. The concern was that in competitive markets, fees would be expected to adjust to changing demand and supply conditions, both of which had changed substantially over the preceding decade in payments markets.

In two-sided markets, changes in demand and supply conditions on each side of the system need not result in a need for changes in the 'balancing adjustment' between the sides, especially if the costs of adjustment are non-trivial. Nevertheless, more frequent adjustments would provide *prima facie* evidence of a market responding to market forces.

Similarly, flexibility in the setting of interchange fees across different parts of the economy would suggest an industry responding to the market. Whether this was also indicative of something beneficial to the competitive landscape would require closer evaluation. For example, should lower interchange fees for large merchants than for small ones be seen as a market at work or an aggressive use of market power?

In previous reviews, particularly in that of the RBA and ACCC 'Joint Study', the **resource costs** of different transaction types were taken as an indicator of the efficiency of the payments system. These were used in two ways:

- ❑ firstly to assess whether interchange fees are reflective of costs with the notion that, in competitive markets, prices should reflect marginal cost; and
- ❑ secondly, to determine which instrument should be preferred from a social perspective, with the RBA arguing that EFTPOS is the lowest cost payment system.

Since this time there has been a raft of literature which has suggested that this narrow cost-based approach has little relevance for the efficiency of payments markets. For this reason, resource costs may be monitored, but should only be considered of being of marginal use as an indicator of competition.

#### 4.3.5 INNOVATION

The ease at which an industry innovates by adopting new products, technologies or market structures can be an important measure of its ability to deliver dynamic efficiencies and thus increases in economic welfare. Measuring innovation, however, is inherently difficult and qualitative metrics will be needed.

Innovation can be considered at three levels:

- ❑ Innovation using existing instruments – for example, the marketing strategies associated with the co-badging of credit cards by non-ADIs over recent years has resulted in substantial changes to the features of many credit cards.
- ❑ Product innovation – including both new instruments and significant new features to existing instruments. Developments in both plastic and online instruments may be important over the next few years. Comparisons with developments overseas could be used to benchmark trends in Australia.
- ❑ Network innovation – as outlined above, innovation in networks is likely to involve cooperation between the participants. As such, it may not strictly be a measure of

competition at work. Again, comparisons with international developments may provide a useful guide.

#### 4.3.6 COMPETITION IN RELATED MARKETS

Along with competition among the payment instruments themselves, other impacts on competition in the issuing, acquiring and retailing markets can be relevant. Possible implications arise, in part, because of the bundled nature of the services being provided. Just how competitive consequences may be manifested is difficult to anticipate in advance but two examples illustrate the possibilities.

The first is the rise of store cards and the potential impacts these could have on competition between retailers. In particular, it is possible that smaller retailers will lose ground to larger businesses that can offer their customers the added convenience of prepaid cards or store credit. Closer evaluation of the nature of any such offerings would be needed to determine whether there were any adverse consequences for competition and economic welfare. For example:

- ❑ the introduction of store cards may arise from attempts by merchants to offer their consumers a convenient product and be entirely consistent with competitive market forces; and
- ❑ it is possible that smaller retailers could respond in kind by developing a card network of their own, akin to the Rediteller network for ATMs.

Similarly, untangling any impact on competition in transaction banking can be complicated. Institutions may attract customers through additional features such as internet banking or fee-free transactions, but as above it is not clear that this can be regarded as anticompetitive or against social welfare.

Given the difficulties in isolating the implications of payments systems on competition and efficiency in related markets, explicit quantifiable indicators will not be possible. However, the regular monitoring of developments in these markets should help inform assessments of the evolution of competition in payments systems.

### 4.4 COMPETITION VERSUS COOPERATION

Implicit in much of the attention which has been given to payments markets is the notion that improvements in competition in all part of the markets will promote social welfare. In many respects, this will be the case.

However, while competition has a crucial role in fostering greater efficiency, this needs to be balanced with industry cooperation in markets dominated by network effects. The indicators outlined above help to inform the performance of the markets, but do not indicate how the industry can take action to best progress social interests.

In particular, cooperation is critical in the smooth operation of, and innovation in, networks. Development of standards and technical features of networks may require the joint efforts of industry participants for new instruments to emerge. Similarly, altering existing network arrangements, such as the outdated direct entry system, requires coordination and cooperation and will likely be a major challenge, and opportunity, for the industry in coming years.



Potential tensions between the desirability of cooperation over the development of networks and competition will need to be considered. There will be areas where trade practice implications will arise.

The RBA has cited the EFTPOS network as one area where greater industry cooperation to enter the online payments arena may deliver improved competition between platforms and as a result be welfare improving. In this particular case, the claim has not been proven and the industry has not acted to meet the RBA's aims. Any benefits from EFTPOS achieving online functionality would have to be weighed against the costs of developing the system and the implications for security and fraud. Given that there are other systems that enable online payments, including scheme debit cards, the need to reconfigure EFTPOS has apparently not been strong. (Also, scheme debit has additional functionality including for payments overseas that may be difficult to implement using EFTPOS.)

Whether an online capability for EFTPOS would improve social welfare is difficult to determine and the analysis of this extends beyond the purpose of the current paper. However, this is a topical example of an issue that would need industry cooperation to address. It is the type of issue that could arise when considering network innovation into the future.

#### **4.5 RBA'S CONSIDERATION OF COMPETITION**

The set of indicators outlined above may be reviewed against the emphasis placed on each in previous regulatory debates. The primary sources informing these debates were the RBA and ACCC Joint Study on retail payments systems regulation and subsequent documents flowing from the RBA's further development of its regulatory framework culminating in the 2007/08 review of the payments system.

Some general themes arose from these documents regarding how the RBA has assessed the degree of competition and efficiency in payment markets:

- ❑ Much attention was focussed on interchange fees, and in particular the differentials between instruments, with the notion that differentials between both credit cards and EFTPOS and scheme debit cards and EFTPOS were too high.
- ❑ Little explicit attention was focussed on innovation, concentration or some of the flow on effects on competition in related markets.
- ❑ The indicators changed slightly over time, particularly the emphasis placed on costs as an indicator of efficiency.

The following briefly outlines the major considerations of the RBA in its most recent assessment of the reforms. In doing so, it notes the differences in emphasis between the RBA's approach and that of this paper's with respect to the importance of various indicators.

Throughout, the measurement of indicators has been assisted by the RBA's recent focus on transparency, which has both assisted market participants in informing decisions, and allowed accurate measurements of the impacts of reforms. Ongoing collection and publication of this information is likely to be required, especially if the Bank is to step back from direct regulation, and moves by industry to publish data where it does not conflict with commercial sensitivity is encouraged.

The focus on interchange fees was based on the premise that although the EFTPOS system is a lower-cost payment instrument, the existing interchange arrangements encourage the

use of credit cards by consumers. This view is articulated in the RBA's Preliminary Conclusions paper:

*Given that these fees were set up to be paid from the issuer to the acquirer (the reverse direction to almost all other interchange fees in the world), the EFTPOS system has been at a significant disadvantage to the credit card system. The result has been a set of price signals to consumers that have encouraged credit card use at the expense of debit card use.<sup>19</sup>*

The RBA noted in its Preliminary Conclusions paper that while it believed interchange fees were justified, it did not believe that the level of network effects were sufficiently different between EFTPOS and credit card schemes to justify the large difference in interchange fees.<sup>20</sup>

Significant attention has been paid to the level of surcharging since the no-surcharge was removed in 2005. Indeed, the initial decision to regulate interchange fees was based on the assertion that surcharging would not be taken up to a significant degree and hence this has been an area of interest since the reforms were implemented.

While data have been collected and commented on in the RBA's reform process, no comment has been passed on whether it is judged to be sufficiently high to justify the removal of interchange fees, or on the level of surcharging that this decision could be made. In this sense, the RBA's analysis mimics this paper's in that, while high levels of surcharging imply a reduced importance of interchange fees, no judgement on a sufficient level is made.

The two remaining pricing indicators have received lesser emphasis from the RBA. Flexibility of interchange fees was considered in the Joint Study which stated this indicator as one of the two tests of whether interchange fees were subject to competitive forces, although it has received little recognition in the description of the motivation for the most recent reforms.

Finally, the focus on resource costs was initially strong in the Joint Study but somewhat toned down in the recent reforms. This is likely due to the development of the economic literature on two-sided markets which emphasised that fees need not reflect costs in a socially optimal outcome.

However, some attention is still paid to costs, albeit in a slightly different form in the recent debates. For example, the RBA is in favour of price signals steering consumers towards lower cost instruments, stating:

*In the Board's judgement, the reforms have met a key objective of improving the price signals that consumers face when choosing between use of credit and debit cards. In particular, the relative prices that consumers face for credit and debit transactions more closely reflect relative costs than was the case prior to the reform.<sup>21</sup>*

---

<sup>19</sup> RBA (2008a), page 16.

<sup>20</sup> Implicitly, this argument assumes that the supply and demand characteristics of the two sides of the EFTPOS and Credit card markets are essentially the same. This is not the case, in part, because the services are being provided as part of different bundles of services. It is because of these differences that the market-place generated quite different interchange fees (or balancing adjustments) for the different instruments.

<sup>21</sup> RBA (2008a), page 17.

Overall, the pricing indicators used by the RBA are broadly reflective of those argued for in this paper. Most attention is to be paid to interchange levels and surcharging, which can be measured using the data collected on a regular basis by the RBA. However, if anything, the RBA's analysis places more emphasis on capping differentials in interchange fees than implied by the discussion in this paper.

Analysis of access has formed an important part of the debate so far. This has predominantly focussed on the costs of connection to a network (resulting in the cap placed on connection charges in the EFTPOS system) and the requirements for card scheme members to be ADIs. In contrast, less attention has been paid to other requirements that could potentially frustrate entry, or an analysis of new products as a signal of the ease of access.

In reality, it is unlikely that access requirements have significantly prohibited new firms or products entering payment markets. Hence, it is judged that more attention than necessary has been paid to this as an indicator, especially when considering several more important indicators which have been less emphasised. Perhaps the costs of establishing and complying with the SCCI arrangements are judged to be low and hence the arrangements provide an added layer of confidence in relation to access without too much additional burden.

The final two indicators have received limited explicit analysis by the RBA, in part because of the difficulty in their measurement. However, innovation in particular is an important indicator of the efficiency of a payment system. If the goal is to arrive at a system which maximises community wellbeing, then a system which innovates in product offerings and network development is crucial. For example, innovations that have already taken place in some overseas jurisdictions could both provide faster payment clearance and be more convenient products for consumers.

The RBA is clearly concerned about possible impediments to innovation in networks as illustrated by its focus on possible extensions in the EFTPOS network. However, it recognises changes here will depend on decisions made by the industry and there will need to be solid net benefits before this is warranted.

Finally, little attention has been paid to the link between interchange fees, or other indicators, and levels of innovation.

## 4.6 SUMMARY OF COMPETITION INDICATORS

The above has presented a menu of indicators which can be used to assess the competitiveness and efficiency of the payments system. It may be hoped that, from this menu, a formulaic approach could be developed allowing the different indicators to be measured and weighed against each other. However, this would be a complex task, made difficult in that:

- ❑ some of the indicators cannot be easily quantified and only enumerated qualitatively;
- ❑ in many cases the literature offers little guidance on the optimal levels of these indicators, for example with the optimal level of interchange differentials; and
- ❑ some indicators may point policy in different directions. For example it may be that low interchange differentials are less conducive for innovation by hampering a new product's ability to gain market share.

Regardless, it is important that the indicators are looked at in their entirety, albeit with greater emphasis placed on those that can be accurately measured, and for which there is a clear understanding of what is 'optimal'. The discussion above provides a somewhat broader set of indicators, and metrics, than has been considered by the RBA in the past.

In particular, the RBA has focussed on matters of pricing, and predominantly, on interchange fees. While these provide useful information on the market, the lack of a clear conclusion on efficient fee differentials mean that there is little clear direction for policy to take. In contrast, the prevalence of surcharging appears to be increasing, and is likely to be undoing some of the effects of interchange fees.

The attention paid to access may have also been over-emphasised given that:

- ❑ within any platform, the operators have a strong incentive to encourage as many members as possible as long as they do not compromise the integrity of the platform; and
- ❑ while it is important that markets are contestable to prevent incumbents earning monopoly profits, it is far from clear that the payments market is best served by a large number of competing platforms at each level i.e. too many platforms may encourage competition between platforms at the expense of efficiency in the markets on either side of the platforms.

While it is difficult, it will be important to develop a deep rigorous appreciation of the nature of the innovation in retail payments systems. Innovation is the key to delivering dynamic efficiencies. Using the international experience as a benchmark is a natural metric and there is some anecdotal evidence that Australia may be falling behind, or at least no longer leading, in this regard both at the product and network levels.

What then should the market be looking for in determining what an 'adequate' level of competition could be? Interchange fees are clearly central to the working of a two-sided market but, given the lack of clear agreement on what the optimal level of interchange fees should be, it is difficult to recommend a level or range over which they are indicative of efficiency. Instead, the role of surcharging will be important from a pricing perspective.

Transparency is likely to be a crucial indicator of competition going forward, regardless of whether the approach is one of a regulatory or self-regulatory situation. At a minimum the current practice of reporting average interchange fees should be continued, and the RBA is unlikely to agree to a situation with any lower level of reporting. The information garnered by this data will inform progress in other areas, while also providing industry participants with the ability to make more informed decisions resulting in a more smoothly functioning market.

Innovation is a crucial indicator of the performance of an industry, although it is unclear where it fits in with the need for regulation. Instead it is more likely that cooperation rather than competition is what will result in the most meaningful gains being made. The RBA consultations raise some concern that the regulation of interchange fees will hamper the incentive for innovation, although it is not clear that this is the case. Instead, if Australia is to remain on an equal footing with developments overseas, this will need to come from action taken by the industry, not the RBA.

## 5. CONCLUSIONS

The discussion above sets out a framework for considering issues of competition and efficiency in retail payments markets. Some indicators are somewhat anecdotal in nature while others can be quantified directly.

Many of the indicators rely on information already collected and published by the RBA. However, going forward there appears to be a useful role for the industry in gathering the required data and making it available where possible. The framework is only a first step in this process.

That is not to say that this task is simple or that the indicators presented provide definitive answers to the issues at hand. As has been pointed out, these indicators may be inconclusive or difficult to measure, and provide only loose assistance in some cases. The extent of the debate over recent years is testament to the difficulties. Nevertheless, there is an opportunity present to the industry to build up a more complete picture of the payments market in Australia.

The indicators point to specific areas for the industry to focus on:

- ❑ **Pricing** – on top of the transparency requirements of the RBA, a deeper understanding of the incidence of surcharging could be developed, especially given the interplay of surcharging and interchange fees. This information could include how surcharging differs by firm size and industry, and what the motivations or barriers to surcharging are.
- ❑ **Product innovation** – tracking developments in product innovation both in Australia and internationally would be of use. An outline of where this is likely to go in the future, and any impediments to innovation could be provided.
- ❑ **Network development** – any impediments to the refinement of network infrastructures and governance along with the analysis of alternative regimes may be of use. International benchmarking would again be useful, as would an outline of any barriers to changing the current arrangements and a discussion of the logistics involved in making any changes.

It would also be very useful if the scope for improved cooperation in the context of a competitive landscape could be clarified. A continuing dialogue among industry participants may be able to help advance decisions on network infrastructure in ways that foster a dynamic retail payments systems.

## 6. REFERENCES

- Baxter, W (1983) "Bank Interchange and Transactional Paper: Legal and Economic Perspectives" *Journal of Law and Economics*, 26: 541-588.
- Evans, DS and Schmalensee, R (2005) "The Economics of Interchange Fees and Their regulation: An Overview" *MIT Sloan Working Paper No. 4548-05*, May.
- Frankel, AS (2008) "Towards a Competitive Card Payments Marketplace" Paper prepared for the RBA Payment System Review Conference.
- Guthrie, G and Wright, J (2007) "Competing Payment Schemes" *Journal of Industrial Economics*, LV: 37-67.
- Humphrey, D, Pulley, L and Vesala, J (1996) "Cash, Paper and Electronic Payments: A Cross-country Analysis" *Journal of Money Credit and Banking*, 33: 216-234.
- Humphrey, D, Willeson M, Lindblom T and Bergendahl G (2003) 'What does it Cost to Make a Payment?' *The Review of Network Economics*, Vol. 2, Issue 2.
- King, S (2008) Discussion on the paper by Julian Wright "Competing Payment Systems: Key Insights From the Academic Literature" presented at the RBA Payment System Review Conference in November 2007.
- RBA and ACCC (2000) "Debit and Credit Card Schemes in Australia: A Study of Interchange Fees and Access" Joint study by the Reserve Bank of Australia and the Australian Competition and Consumers Commission, October.
- RBA (2006) "Payment Systems Developments and Architecture: Some Background" Payments Policy Department, Reserve Bank of Australia, September.
- RBA (2008a) "Reform of Australia's Payment System: Preliminary Conclusions of the 2007/08 Review" Reserve Bank of Australia, April.
- RBA (2008b) "Payments System Board: Annual Report 2008" Reserve Bank of Australia, September.
- Rochet, JC (2008) "Competing Payment Systems: Key Insights From the Academic Literature" Paper prepared for the RBA Payment System Review Conference.
- Rochet, JC and Tirole, J (2002) "Cooperation among Competitors: The Economics of Payment Card Associations" *Rand Journal of Economics*, 33(4): 549-570.
- Weiner, SE and Wright, J (2005) "Interchange Fees in Various Countries: Developments and Determinants" Paper prepared for the *Interchange Fees in Credit and Debit Card Industries: What Role for Public Authorities?* Conference at the Federal Reserve Bank of Kansas City, May 4-6, 2005.
- Winder, C and Brits, H (2005) "Payments are no free lunch" *The Nederlandsche Bank DNB Occasional Studies* 3, No. 2.

Wright (2008) Discussion on the paper by Julian Wright "Competing Payment Systems: Key Insights From the Academic Literature" presented at the RBA Payment System Review Conference in November 2007.