Delivering a Level Playing Field for Credit Card Payment Schemes

A study of the effects of designating open but not closed payment schemes in Australia

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Executive Summary

On 12 April 2001 the Reserve Bank of Australia (RBA) formally designated the open credit card systems operated in Australia by Bankcard, MasterCard, and Visa. The closed card schemes, such as the credit, charge, and store card schemes offered by American Express, Diners Club, and GE Capital were not designated.

This report provides an economic analysis of the likely consequences of this asymmetric approach to regulatory policy. Its primary focus is on one aspect of the designation of the open credit card schemes – the regulation of the level of the interchange fee in these schemes. It determines the economically rational response of the closed schemes to a decrease in the interchange fee in open schemes, and evaluates the competitive and efficiency implications of such a response.

The report's main findings are as follows:

1. Lowering interchange fees in open credit card schemes below current levels will decrease merchant service fees and reduce cardholder benefits, including reward programmes. Cardholder fees will increase and card usage will decrease.

2. Closed schemes will not match these changes, even if they are subject to strong competitive pressures.

   - Consumers will make greater use of the cards offered by the closed schemes, which will be able to offer more generous reward programmes for card usage.

   - Merchants will pay a premium for accepting such cards, since by doing so they will attract customers who wish to capture these rewards.

   - Competition will not lead one card system to match another system where the latter system is forced to set a structure of fees that leads to an overall lower level of benefits to its cardholders and merchants. If one system is restricted to using a structure of pricing that leads to fewer card transactions, the rival system will not want to adopt a similar pricing structure, even though strong inter-system competition may tend to constrain the overall level of fees.

3. Open schemes will lose market share and profits vis-à-vis closed schemes.

4. Economic efficiency will decrease with closed systems being able to expand despite higher cost structures, lower network benefits, and higher overall levels of fees. There

will be greater duplication of facilities and costly switching as customers migrate to the unregulated providers.

5. The average merchant service fee across open and closed schemes could actually increase as a result of lowering the interchange fee in open schemes.

6. The negative repercussions of regulating open credit card schemes but not closed card schemes will not be evenly distributed among the different sectors of society.

   - Small banks will be disadvantaged relative to large banks.
   - Small merchants will be disadvantaged relative to large merchants.
   - A few large multinational corporations will gain at the expense of Australian banks and credit unions.

7. An assessment of current trends in the Australian marketplace suggests that the negative consequences of the proposed asymmetric approach to regulation are likely to be substantial and swift. American Express, Diners Club, and GE Capital are all well placed to take advantage of the regulation of open card schemes in Australia.

   - The closest substitutes for credit cards issued by members of the open schemes are the closed card schemes, such as those offered by American Express (charge and credit cards), Diners Club (charge cards), and GE Capital (credit and store cards).
   - Two of the three main proprietary schemes in Australia are owned by the largest and second largest corporations in the United States. The third, American Express, is the largest issuer of payment cards in the world.
   - Estimates based on market share data in Australia suggests that these systems already account for around 15% of credit and charge card expenditure, a figure substantially higher than that implied by the RBA / ACCC Joint Study.
   - These schemes are currently growing rapidly, and aggressively enticing institutions through partnership deals to issue their cards in Australia.

The analysis in this paper focuses on the implications of one aspect of designating open but not closed card schemes – the regulation of the interchange fee in open schemes. Regulating the interchange fee in open schemes, but allowing closed schemes freedom to set what amounts to either an implicit interchange fee (where cardholder and merchant fees are set directly by the scheme owner) or even an explicit interchange fee (where the proprietary system has monetary arrangements with issuing and acquiring agents) amounts to

asymmetric regulation. More generally, the proposed asymmetric regulation of the two types of payment systems prevents open credit card schemes, which operate as a joint venture, from setting the rules and terms they require to effectively compete with closed schemes.

In its designation notice, the RBA noted, "The Board will take into account the competitive dynamics of the industry in any decisions it takes…" The analysis in this report shows that the competitive dynamics clearly call for a more symmetric approach to regulatory policy. Work already carried out by NECG shows that the Australian economy would be best served by designating neither open nor closed schemes. Failing this, both types of scheme should be designated and regulated in a manner consistent with maintaining competitive neutrality.

Contents

1 Introduction

The Reserve Bank of Australia (RBA) has not designated proprietary payment systems (such as those offered by American Express, Diners Club, and GE Capital) although these schemes provide the same services as open schemes (Bankcard, MasterCard, Visa) which the RBA has recently designated. This report addresses the economic consequences of this asymmetric approach to regulation. It focuses primarily on one aspect of the designation of open payment systems – the regulation of the level of the interchange fee in these schemes.

The report begins by noting that asymmetric regulation is sometimes justified on the basis of offsetting an existing bias in favour of one firm over others, most commonly where the regulated firm is a dominant incumbent and the unregulated firms are entrants that require access to the incumbent's facilities in order to compete. However, this rationale does not apply to the exclusive designation of open payment systems.

Open schemes have less pricing flexibility than closed schemes, and are unable to use interchange fees to limit competition from closed card schemes. Moreover, the major closed schemes are controlled by large multinational corporations, with two of them being older than the open schemes currently operating in Australia. Hence, the regulation of open but not closed schemes amounts to differential regulation based purely on differences in organisational form.

In fact, in some cases the closed schemes make payments to issuing institutions for their cardholders' transactions, suggesting these schemes already use what amounts to an interchange fee. Any argument that suggests only open schemes should be regulated because they are the only schemes setting an effective interchange fee is therefore simply false.

The existing economic literature on regulation suggests that such asymmetric regulation is likely to lead to allocative, productive and dynamic efficiency losses, as well as the compromising of competitive neutrality. Specifically, the effects of asymmetric regulation on efficiency depend on the reaction of rival unregulated firms. A standard result is that asymmetric regulation is not competitively neutral when firms compete in outputs, even if the firms' output is highly substitutable. In essence, this is because when one firm is forced to produce less, consumers will purchase more from the unregulated firm even though the regulated firm's product may cost no more to produce and is valued more highly by these consumers. Efficiency losses arise as a result.

This result is relevant to understanding the effects of regulating open but not closed schemes. The analysis presented in this report demonstrates that competition between open and closed payment systems cannot be characterised as normal price competition between

firms. Rather, because the interchange fee is not a retail price, the regulation of the interchange fee in open schemes has similar consequences to asymmetric regulation where firms compete in outputs. In this case, asymmetric regulation reduces the output level of open schemes, and allows closed card schemes, including store card schemes, to capture market share lost by open schemes.

To understand this result, note that the essential difference between open and closed schemes is that closed schemes do not need to use an explicit interchange fee since their pricing decisions are made centrally. Closed schemes decide how much to charge merchants and what benefits to offer cardholders so as to maximise their profits.[1] In contrast, open schemes need to use an interchange fee so that competing issuers and acquirers set levels of cardholder and merchant fees that maximise the number of card transactions within the system.

Designation of open schemes can impair their ability to maximise the number of card transactions. In particular, where the designation involves regulators mandating a lower level of the interchange fee, this tends to decrease the merchant service fees set by acquiring institutions and increase the cardholder fees set by issuing institutions.[2] As a consequence, there will be too much merchant demand and too little cardholder demand, relative to the levels that maximise the total number of card transactions.

The unregulated schemes will not be induced to match these changes. This is obviously true if there is limited competition between the payment schemes. However, it is also true even under strong inter-system competition. By maintaining their existing fee and reward structures, the unregulated closed card schemes will attract customers who want to use their cards to continue to obtain the benefits of reward programmes and interest free benefits that they are used to. Even though fewer merchants may accept these cards (facing relatively higher merchant service fees), consumers will want to use them for purchases wherever they are accepted. Merchants, on the other hand, will be willing to pay a premium for accepting these cards, since by doing so they will attract additional customers who wish to use them. Ultimately, the unregulated schemes can increase profits by not matching the terms imposed on the regulated open schemes.

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[1] Non-unitary closed card schemes decide how much to charge acquiring agents and how much to rebate to issuing agents. Merchants that operate their own store card only have to decide how much to rebate cardholders since the cost of providing the scheme is covered by them directly.

[2] Equivalently, it tends to reduce cardholder rebates, rewards, and interest free benefits.

This paper discusses the economic consequences of the resulting differential fee structures between open and closed schemes. It demonstrates that the increased market share won by closed card schemes as a result of asymmetric regulation is likely to lead to efficiency losses and negative equity implications.

There will be reductions in allocative efficiency because consumers will be artificially encouraged to use closed schemes, which tend to have higher overall fee levels and lower network benefits compared to open schemes. Unlike open schemes, unitary closed schemes do not exploit the benefits of competition.

Efficiency will also be decreased because of the imbalances created between merchant and cardholder demand in open schemes as a result of the regulation. Productive efficiency will be impaired because of costly switching between open and closed schemes, unnecessary duplication of card services and customer relationships, and the higher cost structures for closed card schemes. Given the inflated profitability of closed schemes, dynamic inefficiencies will arise, as more investment is directed to these schemes.

There will also be equity implications, which are likely to be unintended by the regulator. In particular, small financial institutions will be disadvantaged relative to large banks as the smaller institutions have less ability to set up their own card systems and thereby avoid the regulatory intervention. Small merchants will be disadvantaged relative to large merchants as it is more costly (on a per-unit basis) for small merchants to offer their own store card scheme in the wake of any downturn in consumer use of general purpose credit cards. Finally, domestic banks and credit unions will be disadvantaged relative to the multinational corporations that own closed card schemes.

This report assesses the likelihood that closed card schemes will be able to benefit from the above scenario, basing its conclusions on an empirical assessment of current trends in the Australian marketplace. In particular it is noted that in Australia, these schemes offer the main alternative to the schemes run by Bankcard, MasterCard, and Visa – all offer deferred payments, interest free payment periods, and reward programmes. The major closed card schemes are in strong financial positions, being owned by some of the largest corporations in the world. Their market shares are substantially higher than those measured in the RBA / ACCC Joint Study. Moreover, American Express and Diners Club are already targeting institutions to form partnerships with, and to issue their cards, making it relatively easy for them to take over the business previously conducted by open systems.

While this report focuses on the implications of the regulation of interchange fees in open payment schemes, it notes more generally that there are far ranging implications of designating open but not closed schemes, arising from the bias such a regulation creates against a particular organisational form – the joint venture. The proposed asymmetric approach to dealing with open and closed schemes will have the effect of deterring future

innovation and developments that are based on the joint venture structure. This leads to significant policy implications, which are discussed in this report.

The rest of the paper is structured as follows:

- **Section 2** discusses the concept of asymmetric regulation; distinguishes between two different types of asymmetric regulation; sets out the standard economic welfare criteria for evaluating regulatory outcomes; and summarises the economic literature on asymmetric regulation.

- **Section 3** discusses the economics of open and closed card systems, looking also at store cards as a particular type of proprietary scheme. It does this by exploring the differences between these payment systems in terms of their respective pricing structures, the dynamics of inter-system competition and finally an evaluation of the respective advantages and disadvantages of each system.

- **Section 4** uses the conceptual background introduced in the previous two sections to discuss the economic effects of designating only open card systems. It investigates the effects of this asymmetric regulation on fee structures, the competitive responses instigated by such regulation, and brings these together to predict the likely efficiency consequences of this policy.

- **Section 5** describes the implications for the Australian marketplace with respect to the analysis and results discussed so far. In particular, it provides empirical evidence to show that closed schemes are well placed to take advantage of the proposed asymmetric regulation. It notes the extent to which open and closed schemes provide similar products, the size of closed schemes' current cardholder base and financial and organisational resources, and quantifies the likely effects on pricing of the advantages given to closed schemes.

- **Section 6** briefly discusses some dynamic implications of designating open but not closed systems, not just for existing payment systems, but also for emerging forms of payments, and innovation more generally.

- **Section 7** concludes by summarising the findings of the paper and stating its recommendations for regulatory policy.

2 Asymmetric regulation

The most frequent rationale given for the use of regulation is that it constrains firms from exploiting market power that they would otherwise have. Bottleneck facilities, defined as monopoly assets that provide essential inputs to a contestable industry, almost always confer some market power on their owners and are therefore one of the most frequent and obvious targets for regulation.

By their very nature, many bottleneck facilities, such as airports, have few direct competitors. The question of whether to also regulate the firm's competitors does not arise, because there are no such competitors. In other less extreme cases, the firm in question may have some market power, and it is a concern over the use of this market power to lessen competition that leads to regulation. Such concerns arise in the telecommunications industry, where carriers previously controlled by the government have been subjected to competition as a result of liberalisation. Where the incumbent can set terms for access or pricing which prevent entrants from competing with it on an equal basis, regulation focuses on the actions of the incumbent firm rather than the entrants.

More generally, there is a non-trivial question about whether some regulation should be imposed on all carriers in a symmetric way, or whether the recent entrants should be excused and regulation restricted to the incumbent carrier. We can characterise this as a choice between symmetric regulation, in which everyone is treated in a similar fashion, and asymmetric regulation where incumbent and entrant are treated differently. Asymmetric regulation of incumbent carriers is controversial, but has been used in some jurisdictions; telecommunications laws in Germany and Switzerland are prominent examples of asymmetric regulatory frameworks (see Knieps, 1997); other examples include AT&T vs. rivals in long distance phone markets, and British Telecom vs. Mercury.[3]

A second type of asymmetric regulation arises when regulation – the type with which this paper is concerned – is applied to a firm or group of firms due to some characteristic that distinguishes them from unregulated firms and for no other substantial reason. For example, one group of firms might be regulated while their competitors are not because they employ a specific organisational structure or technology of production, or simply because they are located in a different regulatory jurisdiction.

[3] Knieps (1997) argues all forms of asymmetric regulation contain an intrinsic bias towards over-regulation. Perucci and Cimatoribus (1997) summarise the theoretical debate on the advantages and disadvantages of asymmetric regulation in the context of telecommunications industry.

An example of this type of asymmetric regulation is the differing treatment of broadband Internet access in the United States. Title VI of the 1934 Communications Act governs cable companies while basic services offered by telecommunications companies are governed under Titles I and II. Even though cable and telecommunications companies provide many of the same services, such as broadband Internet access, the asymmetric nature of the Communications Act treats them differently. The 1996 US Telecom Act, in updating the definition of cable services, significantly broadens what services can be covered, thereby allowing any Internet service that is available to all subscribers and that is not "subscriber specific" to be considered a cable service. Where cable services include information and enhanced services as well as Internet-based services the FCC has essentially created two separate regulatory frameworks for the same service. Telecommunications broadband Internet services are delivered over xDSL technology, which is required by legislation to be unbundled. Thus, any access seeker can lease parts of the network to deliver broadband Internet access services and/or content to consumers. Cable companies use cable networks to provide Internet access and so fall under a different regulatory regime, which does not require them to unbundle their products.

The consequences of this differing regulatory treatment are stark. AT&T, traditionally a telecommunications company, has invested heavily in cable, in part by attempting to merge with existing cable companies such as TCI. Additionally, access seekers such as AOL prefer providing ISP services over telecommunications rather than cable networks since they can access these on favourable regulated terms and retain more control over their consumers, even though cable may be the more efficient delivery platform in some circumstances.[4]

This paper is concerned with asymmetric regulation of this second type. The first type of asymmetric regulation, based on incumbent/entrant competition, does not apply to open and closed payment schemes. As Section 3 shows, closed schemes are likely to have more market power, not less, relative to open schemes. Open schemes set only the interchange fee, which determines the allocation of fees between cardholders and merchants, not the overall level of fees. In contrast, closed schemes not only determine the allocation of fees between cardholders and merchants, but also directly determine the overall level of fees set to cardholders and merchants. Since closed schemes have more control over their pricing

[4] According to Hellerstein (1999) "The asymmetric regulation of Internet access, favoring cable TV operators over incumbent wireline operators, is untenable and will likely collapse under its own weight in a few years. Allowing for the creation of two parallel universes goes against the stated public policy goal of promoting competitive and technology neutrality as called for in the 1996 Act, but is exactly what the FCC seems to be doing in creating two parallel universes; creating regulatory distinctions based on technology." Hallerstein also notes that top FCC officials have stated that the current system is unsustainable.

compared to open schemes, open schemes have no way to use interchange fees to limit the ability of closed schemes to compete with them. Closed schemes have been around longer than open schemes, and are governed by some of the largest corporations in the world. Thus, the incumbent/entrant view of asymmetric regulation simply does not apply.[5]

The rest of this section focuses on the effects of asymmetric regulation. We begin by describing some principles against which all forms of regulation can be evaluated, and then discuss the impact of asymmetric regulation in conventional product markets. These results provide a useful starting point for the analysis of asymmetric regulation of open payment systems in the rest of the paper.

2.1 Evaluating regulatory outcomes

There are three standard measures of economic efficiency that are often used to evaluate whether economic outcomes are desirable or not: allocative, productive, and dynamic efficiency.[6] These can be defined briefly as:

Allocative efficiency

An allocatively efficient outcome is one where resources (products and the inputs that make products) are allocated (at a point in time) to those who value them the most. At any allocation other than the allocatively efficient one, an agent (consumer or firm) will consume a resource that is valued more by another agent. Allocative inefficiencies can occur from price signals being distorted through market power, taxes, and other government regulation.

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[5] It is sometimes suggested that open systems enjoy an advantage over rival systems because they have a larger number of cardholders and merchants. This suggestion ignores the fact open systems obtained more cardholders and merchants in a neutral regulatory environment, and despite the fact that closed schemes set up their payment systems prior to open schemes. The success of open schemes presumably reflects the fact they offer a service which is simply more popular than that offered by closed schemes. Moreover, while having access to a large number of merchants confers a benefit to cardholders who face annual fees, as Section 3.5.2 shows, a system does not need a large number of cardholders for merchants to benefit from accepting cards. Moreover, as Section 5.1 describes, closed card schemes offer zero annual fee products in Australia, so that they can attract cardholders even if consumers can only use the cards at fewer outlets, and as Section 5.2 notes, such systems already have a sizeable number of subscribing cardholders and merchants.

[6] Promotion of efficiency is a key element of the public interest test in Australia's Payment Systems (Regulation) Bill 1988. (Part 2, No.8).

Productive efficiency

Productive efficiency requires firms to employ methods of production that minimise the use of inputs to production, for a given level of output, and to optimise the mix of inputs in this production. Productive inefficiencies can arise from firms using inferior technologies or from poor resource allocation.

Dynamic efficiency

Dynamic efficiency dictates that, over time, the allocation of resources in the economy could not be rearranged so that someone could be made better off without making someone else worse off. Consequently, resources must be efficiently allocated in an inter-temporal sense. The optimal level of investment and innovation will be made if dynamic efficiency holds. In-period allocative efficiency does not guarantee dynamic efficiency since it may lead to inefficient outcomes over time. For instance, if prices reflect only short-run marginal costs, sunk investments would never occur, even though such investments could be extremely valuable.

Economists often say outcomes are efficient if they satisfy allocative efficiency. Strictly speaking, such outcomes only satisfy static efficiency. In fact, in most cases, dynamic efficiency subsumes both (in-period) allocative and productive efficiency. Dynamic efficiency consequences, such as providing appropriate returns for sunk assets, are usually far more important, but are often overlooked because they are typically harder to evaluate and quantify.

A related way to evaluate outcomes is the property of competitive neutrality. Competitive neutrality occurs where no consumer prefers a good or service produced by one firm to the identical good or service produced by another firm with the same or higher costs of production.[7] Under regular conditions, if competitive neutrality does not hold, then the allocation will not be efficient. In addition to efficiency consequences, different allocations may have different equity implications. Regulations may sometimes sacrifice economic efficiency to promote some equity or national interest considerations, such as delivering benefits to small merchants versus large merchants, or assisting domestic firms instead of foreign firms.

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[7] Competitive neutrality is a condition underlying Section 13.3 (1) of Part 13 of the 1974 Trade Practices Act in Australia. The Act says "The objective of competitive neutrality policy is the elimination of resource allocation distortions arising out of the public ownership of entities engaged in significant business activities: Government businesses should not enjoy any net competitive advantage simply as a result of their public sector ownership."

Asymmetric regulation has potentially important consequences for economic efficiency, competitive neutrality, and equity. Some of these consequences are laid out in the next section.

2.2 The economic effects of asymmetric regulation

There is only a limited economic literature addressing the effects of asymmetric regulation at a general level, possibly reflecting the fact that asymmetric regulation is neither widely used nor often advocated by economists.

Shankerman (1996) provides a rationale for symmetric regulation based on its role in maximising productive efficiency. It is an unavoidable fact that firms differ in their cost of production, their managerial ability, and other factors that describe their ability to produce efficiently. It is also generally accepted that regulators can obtain only imperfect information about these factors of firms. Consequently, a regulator is not in a position to accurately distinguish which firms are more efficient than others. However, asymmetric regulation, by its very nature, favours some firms over others and so implicitly requires the regulator to 'pick the winner'.

The regulator, armed with asymmetric regulation, may not always choose the right firm(s) to promote efficiency. Instead, the entry of higher cost firms may be promoted. If this is the case, the higher cost firms, to produce a given level of output, spend more resources than the lower cost regulated firms. Inefficient entry, therefore, may come at the expense of allocative efficiency, as the output of higher cost firms is consumed, and of productive efficiency, as not all output is produced by the least cost technology.[8] Additionally, inefficient firms can be competitive (and even gain market share), not due to their relative merits, but simply because of asymmetric regulation.

Weisman (1994) puts forward a similar view of asymmetric regulation. By favouring the entrance and development of unregulated companies, asymmetric regulation impedes the access of regulated firms to new markets or forces them to abandon certain business activities. In so doing, it is argued that asymmetric regulation denies firms the possibility of

[8] Additionally, Shankerman mentions two additional causes of associated inefficiency. First, once inefficient entry takes place it creates political constituencies limiting the possibility of reform. Second, large customers and secondary suppliers may sink investment in the technology used only by the inefficient entrants. This suggests even a transitional period of asymmetric regulation can have serious lasting consequences.

achieving a technically and economically efficient production framework, hence reducing their ability to exploit economies of scope.

Along similar lines, Haring et al. (1995) argues that asymmetric regulation impedes the evolution of markets towards free competition, thereby increasing the need for continued regulation to correct market failure, which may have otherwise ultimately been corrected by competition.

Lyon and Huang (1995) analyse the effects of asymmetric regulation on an aspect of dynamic efficiency – the rate of technological change. They find that a higher tax on a firm's profits may slow the rate of technological change. Faced with lower returns from investment, a regulated firm innovates less and instead waits to imitate an unregulated firm's innovations. Profits, and therefore incentives to innovate, are reduced for the regulated firm, while innovation by unregulated firms may increase.

More generally, the effects of asymmetric regulation on efficiency and competitive neutrality depend on the reaction of rival unregulated firms. Consider the case of two competitors, one of which (firm A) has its price regulated. Assuming firms compete in prices, if firm A has its price regulated below the unregulated equilibrium level firm B will match this price decrease.[9] Whether firm B matches firm A's price decrease completely depends on the extent of substitutability in demand. Where products are highly substitutable, many consumers will switch to firm A's product if its price is lower than firm B, and firm B will not be able to sustain a higher price. In this case, a regulator that only regulates firm A will have the same effect as regulating both firms' prices. Market shares will be unaffected and the profits of both firms will fall. Where demand is not highly substitutable, firm A will unambiguously gain market share but lose profits as a result of a regulation restricting its price below the unregulated equilibrium level.[10]

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[9] When firms compete in prices it is standard to assume their prices are strategic complements – any increase in one firm's price will increase the optimal price set by the rival firm. See Tirole (1988, p.208).

[10] Over time any short term losses in market share of firm B may be overcome as the higher profits obtained by firm B encourage greater entry and more innovation relative to firm A.

If firms compete according to quantity competition then if one firm (firm A) is regulated in a way which restricts its output, the rival unregulated firm (firm B) will respond by increasing its output.[11] In this case, the market share of firm A will decrease, as will its profits. The market will become more concentrated towards the unregulated firm(s), with the degree of change depending on how substitutable demand is. Allocative efficiency will be reduced as consumers purchase from firm B even though firm A's product may cost no more to produce and is valued more highly by these consumers. Asymmetric regulation is not competitively neutral when firms compete in outputs, even if the firms' output is highly substitutable.

Clearly, the way in which firms compete has important implications for the way in which the effects of asymmetric regulation play out. As the next section shows, competition between open and closed payment systems cannot be characterised as normal price competition between firms. Rather the regulation of open schemes is best thought of as a regulation that reduces the output level of open schemes.[12] As a result, rival systems (such as closed schemes, including store card schemes) will gain market share and profits, implying that such asymmetric regulation fails to satisfy competitive neutrality. The full effects of asymmetric regulation in payment systems, including their implications for the different types of efficiency, are analysed in Section 4. The next section discusses the economics of payment systems, which provides the basis for this analysis.

2.3 Summary

Closed schemes such as those offered by American Express, Diners Club and GE Capital have been around longer than open schemes such as Bankcard, MasterCard and Visa, and are governed by some of the largest financial institutions in the world. Thus the usual rationale for asymmetric regulation – that there should be asymmetric regulation of powerful incumbents to offset existing biases in their favour – is not applicable in this case. Rather such asymmetric regulation seems to discriminate against open credit card schemes simply because of their particular organisational form.

In such circumstances, the relevant literature suggests that asymmetric regulation almost always leads to allocative inefficiency, productive inefficiency and dynamic inefficiency. Nor is asymmetric regulation competitively neutral. The negative effects of asymmetric

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[11] When firms compete by each setting their level of output it is standard to assume their outputs are strategic substitutes – any increase in one firm's output level will decrease the optimal level of output determined by the rival firm. Again, see Tirole (1988, p.208).

[12] This is presumably also the intention of policy makers that seek to shift payment transactions away from credit card schemes towards alternatives such as EFTPOS.

regulation are particularly severe where regulating one type of firm results in reduced output for these firms, thus allowing rival firms to increase their output and market share. The rival firms benefit despite being less preferred by consumers.

3 The economics of open and closed card systems

Credit and charge card payment systems can be distinguished according to whether they are run under a joint venture structure (open schemes), with members competing against each other on both the issuing and acquiring sides of the business, or a proprietary structure (closed schemes), with the card system proprietor setting the rules and fees on a profit maximising basis. A particular type of proprietary or closed card system is one offered by a third party to customers of a merchant or group of merchants (for example, GE Capital offers cards for Coles Myers, Grace Bros, Kmart, and Target, as well as the Buyer's Edge card which provides a card used by over 2,000 retailers across Australia). These cards, along with those offered directly by stores to their customers (for example, the David Jones card) will be referred to as 'store cards' where they need to be distinguished from other closed card systems.

To evaluate the effects of designating one structure but not the others, one must first understand the economics of each type of system. Although credit and charge card systems, whether open or closed, have the same functionality from the perspective of cardholders and merchants, their pricing will generally differ, as will the efficiency properties of their organisational structures. This section examines how each structure works, focusing on how pricing differs across the structures, and how competition between and within systems influences this pricing. The advantages and disadvantages of each approach are then examined from the perspective of economic efficiency.

3.1 Pricing in open and closed card systems

Regardless of the type of system considered, a payment service is a joint service that both cardholders and merchants can benefit from. Depending on the fees facing cardholders and merchants in each system, there will be some number of merchants that accept cards, some number of consumers that hold cards, and some amount of card usage by these cardholders. Economic efficiency suggests that the efficient pricing and usage of the card system will relate to the fees (or rebates) faced by cardholders and merchants considered jointly and the costs incurred by issuers and acquirers considered jointly. However, the allocation of fees and rebates also matters, since it would not be efficient to have a card system in which there were very many cardholders and few merchants that accepted cards, nor a system in which there were many merchants that accepted cards, but few cardholders. For this reason, both the overall level of fees and the allocation of fees between cardholders and merchants matter.

3.2 Pricing in open card systems

Open card systems such as Bankcard, MasterCard, and Visa are often called four-party payment systems, since a typical card payment involves four parties – the cardholder, the cardholder's financial institution (the issuer), the merchant, and the merchant's financial institution (the acquirer). In an open card system, the interchange fee plays a pivotal role in determining the allocation of fees between cardholders and merchants.

When a consumer who holds a card issued by bank A makes a purchase with a merchant who has an agreement with bank B, the acquiring bank B pays the issuing bank A an interchange fee, which is a predetermined percentage of the value of the consumer's purchase. As the interchange fee is one of the costs of acquiring, its level will influence the fees charged to merchants for accepting cards in a transaction (the merchant service fee). A higher level of the interchange fee will raise the costs to acquirers of accepting card purchases, and depending on the rate of pass-through by acquirers, the merchant service fee. Similarly, the interchange fee is a payment to issuers based on their cardholders' purchases, and so its level will influence the 'rebates' cardholders obtain for using cards.[13] A higher level of the interchange fee will raise the payment to issuers for cardholder transactions, and, depending on the rate of pass-through by issuers, the rebates cardholders obtain from using cards.

In an open card system, the overall level of fees (in other words, the sum of merchant and cardholder fees) is primarily determined by the underlying costs of the payment system and by the strength of two types of competition: intra-system competition (competition between the member banks within the system) and inter-system competition (competition between different systems). The interchange fee in an open scheme has only, at best, an indirect effect on these determinants of total fees. An increase in the interchange fee will increase merchant service fees and lower cardholder fees, leaving total fees largely unchanged. Rather the primary role of the interchange fee is to reallocate total fees between cardholders and

[13] For the payment cards examined (credit and charge cards) cardholders often effectively face a negative fee (a rebate) for transactions made. These rebates arise in many different forms, including cash rebates, the benefits of an interest-free payment period, and various reward programmes. Logically, it would make no difference if the analysis of cardholder pricing in this paper were conducted in terms of fees rather than rebates. Cardholders typically face annual fees as well as interest charges on outstanding balances. Some cardholders will end up paying more fees than benefits rebated, that is, a positive net fee, while others will end up with a net rebate over a given period, that is, a negative net fee. Throughout the paper we refer to a positive net fee as simply a fee, and a negative net fee as simply a rebate.

merchants so as to strike the right balance between cardholder and merchant demand, in order to maximise the number of card transactions, and thus the profits of its members.

For instance, if merchants tend to readily accept cards because card acceptance attracts (or maintains) their customer base, while consumers tend to be sensitive to cardholder fees when choosing their preferred form of payment, then, to maximise card transactions, an open scheme will want to set a positive interchange fee. A positive interchange fee will result in the side of the market with relatively inelastic demand (the merchant side in this example) covering more of the costs of the joint service. This property of charging more to one side of the network than the other is common in almost all two-sided networks where demands differ across the two sides of the network.[14]

Whatever the rationale for the interchange fee, we assume it will be set by an open payment system to maximise the total number of card transactions within the system. In the model of Rochet and Tirole (2000), the interchange fee set by an association of issuing banks has this property. Likewise in the benchmark case considered by Schmalensee (2001, p.12), in which demands are linear, the interchange fee that maximises total bank profits also maximises total system output.

Given the interchange fee is a balancing tool, which raises the fees to one type of card user at the same time it lowers the fees to the other type of user, it cannot generally be used by card schemes to restrict output so as to extract rents. By having an interchange fee that is too low or too high, the card scheme will no longer maximise the number of card transactions, thus restricting output. However, because this will not result in a higher overall level of fees, the total profits of the members of the card scheme will fall.

As mentioned previously, in an open system the overall level of fees (cardholder plus merchant fees) will depend on the level of competition between issuers and between acquirers. Where there is no competition between issuers and between acquirers, a coordination problem will arise in which issuers and acquirers will each mark up their fees above cost, but neither will take into account the fact that in marking up their fees the other

[14] Examples include charging merchants more than cardholders in closed schemes, charging calling parties more than receiving parties in phone networks, charging sellers rather than buyers for auctions, car fairs, and virtual marketplaces on the Internet, charging for Adobe writer and not Adobe reader, charging merchants and not shoppers for parking facilities in shopping malls, charging advertisers and not viewers in media outlets, and charging employers and not employees for recruitment services.

side of the system will face reduced demand.[15] Schmalensee (2001, p.11) notes the interchange fee cannot solve this coordination problem. Rather, the problem is solved by building a proprietary system that can internalise the externalities, or by introducing competition into issuing and acquiring.

3.3 Pricing in closed card systems

Closed card systems can be distinguished from open card systems by their proprietary structure. There are two types of closed card systems: unitary and non-unitary. Unitary closed card systems, such as those offered by American Express and Diners Club in Australia in the past, involve a single organisation providing an issuing and acquiring service (and setting the relevant fees) to cardholders and merchants. Such closed schemes have no need for an interchange fee since they set fees to cardholders and merchants directly. They can achieve the balancing role that results from the use of an interchange fee in an open network by simply deciding to charge more to merchants and less to cardholders. They can internalise externalities that exist across cardholders and merchants by providing an internal transfer to their issuing or acquiring divisions.

Unitary closed card systems may make use of third parties through co-branding arrangements, so as to exploit the customer loyalty which other organisations enjoy, but they still retain responsibility for providing and pricing the issuing and acquiring service internally. A non-unitary closed card system differs in this respect. Although the card system (the brand, the rules that govern its use, and the clearing and settlement facilities) is owned by a single firm (like American Express), the issuing and acquiring services can be offered by separate institutions. The non-unitary closed card system sets fees (or makes payments) to these issuing and acquiring agents, which in turn set fees to cardholders and merchants. As Section 5.3 explains, American Express and Diners Club have recently moved towards such a non-unitary structure.

3.3.1 Unitary closed card systems

A unitary closed card system will set the fees (or rebates) to cardholders and merchants directly to maximise its profits. If the closed scheme has market power it will use this to increase the overall level of fees above cost. Different card systems can be best thought of as

[15] This assumes that merchant demand for accepting cards depends positively on the benefits provided to cardholders (and so positively on cardholder rebates), and consumer demand for using cards depends positively on the number of merchants that accept (and so negatively on the merchant service fee). Sections 3.5.1 and 3.5.2 show that both conditions apply.

providing differentiated services. The existence of some product differentiation implies a closed scheme will have some ability to raise the overall level of fees above its rivals without losing all its customers. As an open scheme does not set fees to cardholders and merchants at the system level, the scheme does not have the power to raise the overall level of fees determined by its members. Rather, the overall level of fees (relative to costs) in an open scheme will reflect the intensity of competition between member institutions *and* the intensity of competition between card systems. To the extent the product differentiation between the card services offered by different issuers within one card system is likely to be less than the product differentiation between card systems themselves, the overall level of fees in closed schemes will be higher than that set through competition in an open scheme. In the terminology of Economides and Salop (1992), a closed scheme has higher fees because of 'horizontal integration'. This is certainly the conclusion reached by the only two papers that try to compare fees across the two types of systems.[16] It is also consistent with anecdotal evidence on fees set by the two types of systems in Australia.

While closed schemes may have the ability to set the overall level of fees to take advantage of any market power they enjoy, they will still set the *structure* of fees between cardholders and merchants to take into account the need to strike a balance between the demand by cardholders and the demand by merchants. Thus, unitary closed card systems can be expected to set a similar pattern of pricing between cardholders and merchants to that achieved by unregulated open card systems that set an interchange fee to maximise the number of card transactions.

3.3.2 Non-unitary closed card systems

Like a unitary closed card system, a non-unitary closed or proprietary card system also separately determines the fees charged to cardholders and merchants. A non-unitary closed card system may make a payment to banks and other institutions for providing the issuing service. Similarly, such a scheme may charge banks and other institutions for allowing them to acquire merchants and obtain merchant service fees. By making a payment to issuers and setting a fee to acquirers, the non-unitary closed card system can obtain the same cardholder

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[16] Schmalensee (2001, p.21) shows that even with only limited competition among issuers of the open system, the total number of transactions resulting from pricing in a closed card system will be lower than that obtained in the open card system, indicating the closed card system chooses to set a higher overall level of fees in order to increase profits. Rochet and Tirole (2000, pp. 25-26) finds a similar result in a different model in which cardholders' demand is derived from first principles. They show the merchant service fee that arises in an open card system will generally be lower than that set by a proprietary closed card system.

and merchant fees set by the unitary closed card system. However, a non-unitary closed card system will generally give rise to an even higher level of fees.[17] Because the issuing and acquiring agents set their retail fees as mark-ups on the 'access fees' set at the system level, and because the system sets 'access fees' to maximise its profit, there will be a classic 'double-marginalisation' problem.[18] This implies that not only will the overall level of fees set by non-unitary closed card systems be too high from a welfare perspective, but that a reduction in the overall level of fees by either the card system or the issuing and acquiring agents would result in an increase in cardholder plus merchant surplus *and* in an increase in the total profits that the system and its agents jointly obtain.

3.4 Pricing in store card systems

A store card scheme is a special type of closed system which involves a merchant (or a third party on behalf of a merchant or merchants) offering cards to its customers so they can obtain credit and payment services when making purchases with the store(s). A merchant offering a store card directly sets the level of fees or rebates to offer its cardholders.

For small merchants the cost of running their own store card scheme is prohibitive. For this reason, a third party is often used to run the scheme, and the costs are shared over other merchants that want a similar service (for example, the Buyer's Edge card). The economics of such schemes is similar to that of other proprietary card schemes.

Larger merchants (such as David Jones) can afford to run their own store card scheme, although the costs of operating their own finance business, and the desire to outsource non-core business, will often cause large merchants to use a third-party to handle the running of the store card. For example, in Australia, GE Capital offers separate store cards on behalf of several members of the Coles Myer Group.

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[17] Schmalensee (2001, p.20) shows that the total number of transactions resulting from pricing in a non-unitary closed card system with the same number of issuing and acquiring agents as in an issuing-bank controlled open card system will reduce output by between 50 and 56 percent by raising fees in order to increase profits.

[18] Double marginalisation occurs when a retail price is set as a mark-up on the wholesale price, but the wholesale price is already marked up relative to the costs faced by the original producer. This assumes the upstream firm (the card system) does not set the wholesale price at cost and use a lump-sum charge to recover revenue from the downstream agents. It also assumes that the card system does not use retail price maintenance to fix a maximum retail fee.

An important distinguishing feature of store cards versus other closed card schemes is that they are used to build loyalty to a particular merchant.[19] Thus, they will provide targeted advertising, special promotions, discounts, and extended credit to attract and retain the merchant's customers. The high level of cardholder rebates set by store card systems (such as interest-free periods, discounts, special offers, and extended warranties) compared to other card systems is consistent with the view that such promotions, rather than simply lowering prices to cardholders, are a way for merchants to obtain additional sales.

Additionally, store cards can also be used as a way for merchants to track customer purchasing behaviour and to extend credit to higher risk customers than general-purpose credit cards. Merchants may also be able to use store cards to facilitate a form of price-discrimination, whereby only more price-sensitive consumers will bother obtaining and using the store card to obtain discounts on purchases. Because the various benefits are obtained by only those consumers who make use of the store card, those customers who do not use store cards will be paying the same or higher prices, but without the corresponding cardholder benefits.[20]

The explicit (or implicit) merchant service fees associated with store cards may well be higher than other card schemes. Certainly, it appears that the benefits provided to loyal customers are higher.[21] Despite this, the incentives faced by those offering store cards are somewhat similar to those offering rival card schemes. Store cards, like other charge and

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[19] Since competing merchants accept the Buyer's Edge card its primary purpose is not likely to be to build customer loyalty to a particular store. Rather, the Buyer's Edge card appears to be accepted by only a narrow range of merchants (retailers that sell auto and household items), suggesting the card is tailored to the needs of a certain type of merchant, as opposed to a general-purpose payment card. This is another important distinguishing feature of store cards.

[20] This, in itself, does not imply those paying with a store card are cross-subsidised by those who pay through other means. If merchants profit from the extra sales due to the use of the store card there need not be any cross-subsidy.

[21] For instance, the GE Capital MyerCard offers consumers the following benefits: No annual fees, no transaction fees, up to 62 days interest free, interest free offers including 6 month and 12 month interest free, exclusive offers (shopping discounts of up to 25%), Fly Buys offers to cardholders, special previews, and special shopping events. Similarly, the David Jones card offers no annual fees, up to 57 days interest-free credit, 12 months interest free available all year round on all homewares, furniture, bedding and electrical purchases over $500, 2 years interest free from time to time during special promotional periods, extended payment periods with no interest at Christmas, extended warranties, instant rewards, complimentary gift wrapping, among other things.

credit cards, provide benefits to cardholders for card usage, while the cost of the running the system is primarily covered by the merchant(s).

Where a merchant operates their own store card, they will internalise any margins in issuing and acquiring. Due to scale economies in card schemes, the cost saving to merchants from avoiding bank margins is likely to be offset by the higher costs of setting up and running their own card scheme, except perhaps for the very largest merchants. For this reason, store cards are likely to be outsourced to third parties who can offer the issuing and credit services exploiting economies of scale. In this case, the margins the third party obtains will no longer be internalised by merchants. Instead, the third party will set fees to the merchants that allow it to cover the cost of providing the benefits offered to cardholders and merchants, as well as some margin for operating the service. In this sense, the pricing implications of a third party store card scheme will be much the same as those for a unitary closed scheme.

3.5 Inter-system card competition

Clearly if there is only limited competition between open and closed systems, it is easy to see why closed systems will not want to match a change in fee structure imposed on open systems. With little inter-system competition, the optimal fee structure (between merchant service fees and cardholder rebates) for closed systems will not depend much on what happens in open systems. If it is optimal for American Express to charge merchants a lot and cardholders little because this leads to a greater number of card transactions, then it will still be optimal even if open systems are prevented from using such differential pricing. Closed schemes will also not want to match the rebalancing of fees forced upon open schemes to the extent they set their fees in reference to fees in other systems (such as cash, cheques, and EFTPOS), whose fee structures are likely to remain unchanged.

What is less obvious is that closed schemes will not match a change in the fee structure for open schemes when inter-system competition is primarily between the two types of systems, and when such competition is intense. It is this more complex case that the next three sections address.

It seems reasonable that competition between open and closed systems is actually quite strong. Customers are well aware of the different card systems, and with solicitations by open and closed card systems being commonplace, it is relatively easy for users to sign up to closed card systems. For instance, for a customer to switch to using an AMP credit card in Australia (which makes use of the American Express network) they pay no joining fee, and by transferring across their credit balances they earn two AMP reward points for every

dollar transferred.[22] Thus, if the services offered by open card systems were to suddenly become less attractive to users, the rival closed card systems would be well placed to pick up a large share of the market over a relatively short space of time.[23]

Of all the payment systems available to consumers in Australia, charge and credit card services offered by closed schemes are the closest in functionality to the credit card services currently offered by open schemes. Transactors (those who pay their balance off in full each month) will most likely switch to charge cards, such as those offered by American Express and Diners Club, while revolvers (those who do not pay their balance off in full at the end of each month) will most likely switch to credit cards, such as those offered by American Express and GE Capital. To further understand how the dynamics of inter-system card competition work, it is helpful to first examine from an economics perspective the decision by consumers about which card(s) to hold and use, and the decision by merchants about which card(s) to accept.

3.5.1 Cardholders' membership and usage decisions

When choosing which card system(s) to join, consumers will compare a number of card features. Among the most important of these are the annual fees, the interest-free float period, reward schemes, access to credit, and interest rates on outstanding balances. Taking into account how often they will likely use their card, consumers will evaluate the trade-off that often exists between higher annual fees and greater usage benefits. Those consumers who are likely to make more purchases will prefer a card that has more valuable reward schemes, even if it involves a higher annual fee. Those consumers who are likely to make use of the credit facility will prefer a card that has lower interest rates or greater access to funds. Those consumers who only use cards for occasional unplanned purchases will prefer a card that has low annual fees. Where consumers need additional access to credit, they will sometimes hold multiple cards. Multiple cards can also help consumers avoid being stuck without a usable card if each individual type of card is not widely accepted.

If open schemes were suddenly unable to offer as much (if any) of the rewards and interest free benefits they (and closed schemes) currently offer, then many card users who previously used an open scheme's card would either not renew their existing card and instead obtain a closed scheme's card, or would continue carrying their existing card but use the card offered by closed schemes wherever possible. Whether they continue holding their existing card

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[22] There are also no subsequent annual fees as long as the cardholder spends at least $5,000 on their card in subsequent years. See Section 5.1 for more details.

[23] More evidence on this fact is provided in Section 5.

would depend in part on the annual fees charged, their level of spending, and how widely accepted the card offered by the closed scheme is.

Where annual fees for open and closed schemes are high, only consumers who make a sufficiently large number of purchases will be justified in obtaining multiple cards. In this case, it is easier to justify holding a closed scheme card in addition to an open scheme card where the level of card spend will be high. This feature of closed card schemes would be further intensified by a relative increase in the expenditure based rewards available to users of closed card schemes and any decrease in merchant acceptance of these schemes. The possibility of a shift in spending patterns, with higher spending customers shifting to using closed card schemes, justifies an even greater shift towards closed card schemes in the analysis of Section 3.5.3 below, and a further reason why merchants will be willing to pay an additional premium for accepting these cards. However, given that the American Express credit card and store cards do not require annual fees in Australia, the analysis that follows makes no use of any shift in the mix of cardholder types across the different systems.

3.5.2 Merchants' acceptance decision

Merchants, in deciding whether to accept a particular type of card, trade off a number of different types of customers. If merchants accept cards they will pay a merchant service fee in return for the transactional convenience of being able to accept the card. If this purely transactional benefit is less than the fee paid, merchants will only accept cards where doing so enables them to gain offsetting benefits. For example, accepting a card may help a merchant to attract customers from rivals, avoid having customers delay a purchase (and thus avoid the risk that the purchase will be made elsewhere or not at all), or increase the size of their customers' purchases.[24] In accepting cards for these purposes, merchants will inevitably make sales through cards to consumers who would have otherwise paid through some other form of payment (say cash) that may have cost the merchant less to accept.

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[24] According to interviews with a representative sample of 150 American Express credit and charge card holders, 52% of card members would switch from an establishment that does not accept American Express to a similar establishment that does. Card Usage & Attitude Study Q2 2000. Conducted by Research International on behalf of American Express. (See http://home3.americanexpress.com/australia/merchant/learn/learn_default.asp?learn_body=valuestory_body).

A Nilson Report (#674, 8/98; see http://home5.americanexpress.com/merchant) shows that "Cardmembers spend, on average, over four times more per American Express Card than bankcard holders" and that "21% of American Express card customers who shop at retail stores only carry our cards with them and no other bank cards."

In deciding whether to accept a particular card, each merchant has to keep in mind that, if the card is not accepted, they will:

- save a small percentage (the merchant service fee) on each sale to customers who would still purchase with another form of payment that was cheaper for the merchant to accept; and
- lose a much bigger percentage (their profit margin less the merchant service fee) on those customers that choose to purchase from their rival which does accept their card, as well as those customers who do not have any other acceptable form of payment, and those customers who have to reduce the size of their purchase due to constraints on their availability of funds at the time of purchase.

Weighing up these factors, merchants will often accept cards even where transactions using these cards are more expensive than some other form of payment that consumers have access to.[25] Thus, although more customers have access to cash and EFTPOS, and although cash and EFTPOS are often cheaper for merchants to accept, many merchants still accept charge, credit and store cards. Similarly, although most customers have access to a Bankcard, MasterCard or Visa card, many merchants still accept American Express even though it involves higher merchant service fees and is not as widely held by consumers.[26]

To further understand the trade-off a merchant faces, consider a retailer that, in order to cover operating costs, has a margin of 25% over unit-cost on each item for sale. Suppose it costs an additional 1% to accept American Express over MasterCard or Visa. Such a merchant will only have to lose one in every twenty-five customers that prefers to use American Express for it to be worse off as a result of not accepting American Express cards. If American Express offers customers higher rewards for card usage than either MasterCard or Visa, it will be the preferred means of payment for many customers. Thus, even if most American Express cardholders also carry a rival card, they will generally prefer to shop at

[25] It is worth noting that the initial purchase with a Buyer's Edge card requires a lengthy in-store application process, yet merchants still find it worthwhile to go through this in order to get the resulting sales.

[26] According to the RBA / ACCC Joint Study, the average merchant service fee for open schemes was 1.78% in 1999. For closed schemes figures are not readily available for Australia, but according to the American Express 2000 annual report the average American Express merchant service fee (worldwide) was approximately 2.7% in 1999.

the retailer that accepts American Express cards. And because consumers prefer to purchase using American Express in this example, so too will merchants want to accept it.[27]

3.5.3 Fee structures implied by inter-system competition

Because of the network features of card systems described above, competition between rival systems is best viewed as competition for the joint service offered to cardholders and merchants, rather than the competition for issuing or acquiring separately.[28] If one system lowers its overall level of fees to cardholders and merchants it will gain customers from its rivals and its market share will rise. Given a reduction in the overall level of fees by one card system, rival card systems will also lower their fees to match the decrease. In the language of Section 2, the overall *levels* of fees set by competing card systems are strategic complements.

If one type of system (system A) is forced to change its *structure* of fees so as to increase cardholder fees and decrease merchant service fees, the result will be too few cardholders and too many merchants relative to the fees that maximise the total number of card transactions for the system. The card system will face reduced card usage and a smaller market share of total payment transactions. Given a forced change in the structure of fees by system A, a rival card system (system B) will have little reason to match these changes.

After the forced change in structure of fees by system A, merchants will face lower merchant service fees, while cardholders face lower rebates and other benefits. This will cause fewer consumers to want to use card A, with some consumers no longer subscribing to card A. Merchants will face two opposing effects. On the one hand consumers will now derive smaller benefits from using card A, and relatively greater benefits from using card B. This means that by not accepting card B, relative to before, merchants stand to lose more customers to their rivals (many consumers will prefer to shop from a merchant that accepts card B), as well as facing a greater reduction in the size and number of sales. On the other hand by accepting card B, relative to before, merchants face higher merchant service fees for all their customers who pay using card B. If these two effects offset, card system B will face no change in merchant demand but an increase in cardholder demand. By leaving its fee

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[27] Chakravorti and Shah (2001, p.16) reach a similar conclusion. In fact they note "When we asked a large retailer why it recently started to accept American Express cards, it responded that its increase in sales volume and profits more than offset the additional cost of accepting them."

[28] In contrast, for open schemes, intra-system competition can be understood in terms of the separate competition by issuers and acquirers since each issuer has equal access to all merchants belonging to the system and each acquirer has equal access to all cardholders belonging to the system.

structure unchanged, card system B will enjoy an increase in card transactions and market share. Unambiguously, card system B will increase its profitability.

If the effect of higher consumer demand for using cards offered by system B on merchants' incremental sales exceeds the effect of the lower merchant service fees for system A, there will be an increase in both cardholder and merchant demand for system B's cards. In this case, in order to strike the right balance between cardholder and merchant demand, system B will have little reason to change the structure of fees it offers.

Alternatively, if the effect of system A having lower merchant service fees on merchant demand exceeds the effect of the higher cardholder demand to use system B, there will be an increase in cardholder demand and a decrease in merchant demand for system B's cards. In this case, in order to strike the right balance between cardholder and merchant demand, system B will want to change its structure of fees in the same direction as system A, increasing fees to cardholders and decreasing fees to merchants. However, unless the reduction in merchant demand exactly offsets the increase in cardholder demand, system B will not want to exactly match the change in fee structure imposed on open schemes.

There are two reasons why any reduction in merchant demand for system B's cards will not offset the increase in consumer demand for using system B's cards. First, as argued above, any increase in consumer demand will in itself create more merchant demand. However, any decrease in merchant demand will not reduce the demand by consumers to *use* the closed card schemes' cards by an offsetting amount. Consumers will still want to use cards wherever possible if they generate greater reward benefits, regardless of how many merchants accept them. Second, if merchant demand is less elastic and consumer demand more elastic, a relative increase in merchant service fees and increase in cardholder rewards will cause a smaller decrease in merchant acceptance than the increase in cardholder demand.[29]

[29] If the structure of fees is set to maximise the total number of card transactions, the elasticity of consumer demand should equal the elasticity of merchant demand. If merchant fees are set lower and cardholder fees set higher than the optimal structure of fees, then by construction, merchant demand will be less elastic and consumer demand more elastic.

To provide another perspective for why this result holds, consider what is wrong with the following possible counter argument:

> If in response to a cut in merchant service fees by open schemes, closed schemes do not match the decrease in merchant fees, they will face reduced merchant demand, and thus reduced cardholder demand (as consumers will not want to hold cards that are not widely accepted).

The problem with this argument is that it ignores the primary reason merchants accept cards. The decision by merchants to accept a particular type of card depends not so much on the number of cardholders that the system has, but rather on the additional cost of accepting the cards versus the margin they earn on additional customers attracted by accepting the card (as well as other benefits obtained through card acceptance).[30] It may be profitable to accept cards that are more expensive per-transaction to accept than rival cards, even if a smaller percentage of consumers use them, provided a sufficient percentage of those that want to use them will switch merchants in order to use their cards. This will be the case when cardholders receive greater reward benefits from closed schemes. Thus, it is the increase in demand for *using* closed cards, through a relative increase in cardholder benefits, which is likely to drive an increase in merchant acceptance.[31] Facing this effect, closed card schemes will not want to reduce the benefits they offer cardholders so they can afford to match the lower merchant service fees of open schemes.

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[30] Where merchants face a fixed fee for accepting cards from a particular scheme, then they will care about how many cardholders the scheme has. However, typically merchants will incur the cost of renting equipment regardless of how many different types of cards they accept. With small fixed costs of accepting a particular system's card, and given a large number of cardholders on each system, any effect arising from a marginal change in the *number* of cardholders on merchant acceptance is likely to be small. This is not inconsistent with the fact the total benefits merchants obtain from card acceptance depends on the number of cardholders (or the amount of card usage more generally).

[31] In addition, higher cardholder rewards may drive higher cardholder spending levels, thus further encouraging merchant acceptance despite higher merchant service fees. According to Diners Club Australia's managing director, "members were spending 'two to three times' more on their cards than amounts being spent on other cards because Diners Club cards linked to Ansett Australia Global Rewards earn 1.5 points per AUD$1 spent compared to other programmes that offer only one point." Media Release, Mr Byran Ericson, 4th May 2000. According to American Express, its card members spend, on average, over four times more per American Express card than other bank cards. See http://home5.americanexpress.com/merchant/

In general, competition will not lead one card system to match another system that is forced to set a structure of fees that leads to an overall lower level of benefits to cardholders and merchants. Thus, if one system is restricted to using a structure of pricing that leads to less card transactions, the rival system will not want to adopt a similar structure of pricing, even though inter-system competition may be strong, keeping the overall level of fees constrained. In fact, where network effects are strong and product differentiation weak, a system that is free to set any structure of fees it wants may choose to compete with a constrained system by using a 'divide-and-conquer' strategy, taking all of one type of user (say cardholders), and in so doing capturing all of the other type (merchants).[32]

3.6 Evaluating different card systems

Open card systems and the various types of closed card systems vary in their approach to pricing, as discussed in the sections above. These differences, along with other features of the different card systems, imply they each have certain advantages and disadvantages from a welfare perspective. These advantages and disadvantages are detailed here.

3.6.1 Advantages of open card systems

An open scheme builds on existing banking relationships and facilities, so as to create an almost ubiquitous international network with minimal cost. With a very large network, consumers will not generally need to hold multiple cards to be assured they can use their cards when needed and merchants do not have to accept all types of cards to be sure they do not miss sales from customers who find themselves without the right card.

Open schemes provide social benefits by encouraging competition between issuers and between acquirers, so as to deliver greater benefits to cardholders and merchants. In fact, an open scheme facilitates competition between all its members. Even small members, such as credit unions, are able to offer a full credit card service to their customers. Any individual issuer, no matter how small, can offer its customers access to all merchants belonging to the system. Likewise, any individual acquirer, no matter how small, can offer its merchant base access to all cardholders in the system. In contrast, a small credit union will find it more difficult to compete as a stand-alone credit card network. Since its cards will not be widely

[32] Caillaud and Jullien (2001) use the terminology 'divide and conquer' as a strategy that arises for competing intermediaries in which one of the networks sets a sufficiently low (below cost) fee in order to attract all of one type of user, so as to then more easily attract all of the other type of user. Without large fixed fees, these network effects are not likely to drive the pricing behaviour of open and closed payment systems.

accepted, few customers will want to subscribe. By joining an open scheme, the credit union can compete with larger banks in the provision of a full array of banking services since it obtains the full benefits of the network developed by past and present members of the open scheme.

In an open scheme, individual members can take issuing- or acquiring-level initiatives in order to try to capture additional customers or reduce costs. These innovations, such as the introduction of a photo-ID on cards by an individual issuer, will eventually be observed by rivals, and adopted if successful. Thus, in an open scheme innovation occurs through a natural competitive process. Only successful innovations will be adopted at the system level, and failures need not impede the growth of the entire card system.

As was shown in Section 3.2, open schemes cannot set fees to cardholders and merchants directly. Where such systems (as a whole) have market power, their inability to set cardholder and merchant fees directly is a desirable feature. Since they can only set the relative level of fees between cardholders and merchants (through the interchange fee), they will not be able to exploit any market power at the system level to raise the overall level of fees charged to cardholders and merchants. The existence of intra-system competition will generally mean open schemes will provide an overall level of fees that is closer to underlying costs than closed schemes.[33]

3.6.2 Disadvantages of open card systems

Open schemes rely on a joint venture structure. For the joint venture to be successful it requires that the members, though competing with each other in one dimension, also put aside their differences and cooperate in other dimensions so as to make the joint venture work. In all joint ventures, conflicts can arise between the interests of one of the parties and the interests of the venture as a whole.

For example, member banks that mainly acquire merchants may prefer to let merchants only accept 'Gold' cards, although doing so could dramatically lower the value of the network to issuing banks. Similarly, without suitable membership requirements, an individual acquiring institution may be able to exploit the reputation of the existing system by acquiring merchant debt even if its ability to meet the short term obligations associated with merchant debt is in doubt.

[33] Moreover, open system members have no incentive to inflate a system level fee – a fee or levy set by the association to its members to cover costs of running the collective.

More generally, the interests of any individual issuer will conflict to some degree with those of the system as a whole. Other things being equal, any individual issuer would like to raise the interchange fee it obtains above that set by the system, even though issuers and acquirers collectively would be worse off as a result. Similarly, any individual acquirer would like to lower the interchange fee it pays below that set by the system, even though issuers and acquirers collectively would be worse off as a result.

Due to these divergent objectives, the joint venture structure will be inherently vulnerable to its members taking actions that hurt the network as a whole. To guard against such actions, a joint venture will require a number of rules, such as rules about membership, or how the interchange fee is to be set. These rules (and the centralised decision making process by which they are set) reduce the flexibility with which joint ventures can respond to market developments.[34] This lack of flexibility represents a social cost associated with the open form of card system. However, without such rules, the social benefits of open schemes would be unrealised as the networks would not have developed in the first place.

3.6.3 Advantages of unitary closed card systems

A unitary closed card system that does not have third-party arrangements can internalise all coordination, incentive, agency, and informational problems. It has no need for explicit externally observable rules since all decisions are made from the perspective of the card system as a whole. Because of this, it is more flexible in its pricing and decision making processes. Thus, a closed card system can react quickly where opportunities arise.

In a unitary closed card system all transactions are 'on-us', so that all transactions can be handled internally. Where the costs of authorisation, clearing and settlement are higher for open-networks, unitary closed card systems would benefit from a cost advantage.

3.6.4 Disadvantages of unitary closed card systems

To achieve the same intensity of competition between closed schemes as currently exists within open schemes would require many competing closed schemes. However, because these closed schemes would not be interconnected, there would be a loss of network benefits, a loss that would increase as the number of competing schemes increases. To obtain equivalent levels of ubiquity would require either customers having to carry all of the

[34] It is important to bear in mind that open network membership is voluntary. In order to retain broad support, the rules must respect the alternative options available to members. Open networks are always susceptible to their members leaving.

different cards offered by closed schemes or merchants having to accept all of the different cards (or both). The result would be an increase in the number of separate relationships consumers and/or merchants have to have with card providers. Since the costs of setting up and maintaining such relationships are significant, there would be sizeable one-off and ongoing efficiency losses.[35] Further losses would arise from the duplication of computing facilities, marketing efforts, branches and customer service required.

An alternative way to achieve near ubiquity within closed schemes would be to have only one closed scheme that was widely accepted and used. Such a network would be able to capture the network benefits of an interconnected open scheme, while retaining the advantages of vertical integration. However, such a dominant scheme would likely raise serious market power concerns.

As was shown in Section 3.3.1, unitary closed card systems set fees to cardholders and merchants directly, and in so doing will generally set a higher overall level of fees than that which arises in open schemes. Closed schemes have the ability to exploit any market power they enjoy.

3.6.5 Advantages of non-unitary closed card systems

Non-unitary closed card systems that make use of existing financial institutions to expand their customer base have many of the advantages associated with open schemes. In addition, because they can potentially set fees (and rules) to both issuers and acquirers they, like unitary closed card systems, retain more flexibility than an open scheme.

3.6.6 Disadvantages of non-unitary closed card systems

Non-unitary closed card systems share similar disadvantages to those faced by open schemes in that their issuing and acquiring agents will have generally divergent interests.

In addition, because in a non-unitary closed card system the issuing and acquiring agents do not have any power vested in them to determine the system level fees or rules, they will face the risk that the card system will expropriate the value they have helped create. This risk of expropriation can be partially mitigated through long-term contracts between issuing and acquiring agents and the card system, but such contracts are no panacea. Long-term contracts are typically costly to write, and cannot cover all possible contingencies. Where

[35] According to Evans and Schmalensee (1999, p. 218), in 1995 it cost US$53 to successfully sign up a new cardholder, based on US$21 to process each application.

they are possible, they will reduce the flexibility that would otherwise be obtained by a proprietary card system. Where they are not possible, they will leave issuing and acquiring agents vulnerable to the risk of expropriation by the card system. Having invested in building up the system, the issuing and acquiring agents could be subjected to competition from new entrants that pay the system proprietor for the rights to compete with existing agents on more favourable terms. Such agency problems are likely to be most severe in the non-unitary organisational design. In a unitary closed card system, these agency problems are fully internalised. In an open card system, by vesting some of the decision making power in the issuing and acquiring members, the incentives facing individual members can be better aligned with the system as a whole.

As shown in Section 3.3.2, non-unitary closed card systems are likely to lead to the highest overall level of fees and the greatest reduction in output in order to maximise system profits. Double marginalisation, in which the card system sets fees with mark-ups over cost, and the issuing and acquiring agents put their own retail mark-ups on top of these fees, characterises pricing in non-unitary closed card systems.

3.6.7 Advantages of store card systems

Because store cards are issued for a particular merchant or group of associated merchants, they can be specifically tailored to the needs of a certain type of customer or a certain type of merchant. Store cards may allow merchants to target customers who will not be eligible for credit through a traditional credit card scheme, as well as to better track consumer purchasing behaviour.

Store cards allow merchants to exercise a limited amount of price discrimination if customers that obtain and use a store card are those who are relatively more price-sensitive. This allows merchants to provide discounts (and other benefits) to those that are relatively more price-sensitive, thereby expanding sales, and profits, although not necessarily consumer surplus.[36]

[36] A similar argument may apply to the use of reward schemes by other card payment schemes, assuming consumers have to go to some effort to apply for and redeem the rewards offered by these schemes. Also if consumers go to some effort to find the shop that accepts their credit or charge card so as to earn reward points, then by accepting cards merchants may be effectively offering a lower price for the more "reward" driven consumers. Although such consumers may belong to households with above average income, this is not necessarily inconsistent with the possibility they will spend more effort to get the best deal.

3.6.8 Disadvantages of store card systems

Store cards are, by definition, not widely accepted. Thus, cardholders have the inconvenience of having to carry an additional card that they can only use at a limited number of outlets. Compared to general-purpose cards, store cards require that consumers incur not only the inconvenience of holding many different cards, but also the transaction costs of a large number of separate card agreements.

Because the economies of scale in card processing, credit checking, and financing for a store card may be limited, they will generally be more expensive to operate on a per-transaction basis than either open or closed schemes. In this sense, they suffer from productive inefficiency.

One of the primary motivations for offering store cards is to promote purchases from a particular store (or chain of stores), thereby growing customer loyalty. Thus, unlike other card systems, store card systems tend to favour purchases from larger merchants, who can afford to offer such schemes, at the expense of smaller merchants, who cannot.

3.7 Summary

Unitary closed payment systems do not need to use an interchange fee, as cardholder and merchant fees for their issuing and acquiring divisions are set centrally. By contrast, interchange fees are important to the management of open payment systems, which involve many different competing issuers and acquirers, each setting retail fees in a decentralised way. The interchange fee is crucial to an open payment system's attempt to maximise the number of card transactions within the system. Non-unitary closed card schemes make use of payments to issuing agents, which can be interpreted in a similar way to an interchange fee.

Closed schemes will not match the change in fee structure forced on open schemes by regulation if this change is suboptimal, as it is likely to be if it results in a lessening of the number of card transactions.

The full economic consequences of a shift from open to closed card schemes will depend on the advantages and disadvantages of these schemes. Open schemes make use of competition between issuers and between acquirers in providing a credit card service, thus delivering lower levels of fees and greater customer service to its users. Unitary closed card systems have the advantages of flexibility compared to open systems and the disadvantages of horizontal integration and lower network benefits. Non-unitary closed card systems share some of the network benefits of open systems. However, they suffer from double marginalisation problems and are thus likely to set the highest fees. Agency problems are

also likely to be most severe in the non-unitary organisational design. Store cards have similar properties to unitary closed card systems, where they are offered through a third-party. Where they are not provided through a third-party, economies of scale imply they can only be afforded by the largest of merchants. In either case, they have the least network benefits of all the schemes, but can be used to build merchant loyalty, especially towards those merchants large enough to offer their own store card scheme.

4 Designating only open card systems

The designation of open schemes (Bankcard, MasterCard, and Visa) potentially puts under regulatory control the key instruments and rules open schemes can use to remain competitive and viable. This section focuses on the regulation of one particular aspect of open schemes, the interchange fee. The effects of designation and subsequent regulation of other rules will be briefly discussed in Section 6.

Suppose as a result of the designation of open schemes, the interchange fee is set by regulators below its current level. At the same time, suppose that other charge and credit card schemes (such as those offered by American Express, Diners Club, and GE Capital) remain free to set merchant service fees, cardholder fees, and cardholder rewards at whatever level they desire. This section explores the implications of such asymmetric regulation, focusing on the implications for pricing, market shares, profits, entry and exit, competitive neutrality and overall efficiency.

Section 2 explained that in a regular product market, where two firms compete in prices, if one firm's price is reduced through regulation, the rival firm would typically match this price reduction. The analysis of Section 3 suggests the effect of asymmetric regulation in payment systems is likely to be quite different.[37] This analysis is first reviewed here, and the resulting implications of asymmetric regulation are mapped out.

In Section 3 we showed that a reduction in the interchange fee that open schemes are permitted to set will reduce the costs facing acquirers per transaction and will raise the net costs facing issuers per transaction (equivalently, it will reduce the revenue issuers receive per transaction). The effects of this will be to reduce the merchant service fee and to raise cardholder fees (or lower cardholder rebates) by an equivalent amount, and thereby reduce the number of card transactions assuming the interchange fee is initially set to maximise the number of card transactions.

[37] In fact, the effect of asymmetric regulation in payment systems is closer to the effects of asymmetric regulation in markets where firms compete by adjusting quantity.

4.1 Effects of asymmetric regulation on fee structures

If open schemes are forced to lower their interchange fee so that merchant service fees decrease and fees (net of rebates) faced by cardholders increase, the analysis of Section 3 implies the following consequences:

- Consumers (on average) will prefer to *use* rival cards which provide greater rebates
  - Some consumers will no longer hold cards offered by open schemes
  - Some consumers will hold both types of cards, but use cards offered by closed schemes wherever they are accepted, since these give consumers greater rebates
  - Some consumers will continue to use only cards offered by open schemes
- Facing a choice, consumers who value using cards to obtain rebates will choose merchants who accept the cards offered by closed schemes.
- Merchants trade off the additional customers they can attract by accepting cards offered by closed schemes with the additional cost of relatively higher merchant service fees.
- If merchant demand for the substitute closed network service increases sufficiently, closed schemes will not rebalance their fees. In fact, where these effects are sufficiently strong, they may even increase merchant fees and decrease cardholder fees.
- If closed schemes perceive a decrease in merchant demand and an increase in cardholder demand, they will want to reduce fees to merchants and raise fees to cardholders to some extent, but, as shown in Section 3, this adjustment will only partially reflect the change in fee structure imposed on open schemes by the regulator.

The fact competition does not lead one system to match its rival's fee structure, even where inter-system competition is intense, may be somewhat surprising. Section 2 showed that in normal industries, where firms compete in prices, if a firm is forced to lower one of its prices and raise another, other firms in the industry would normally respond by changing the structure of their prices in the same direction. Thus, if one chain of petrol stations is required to lower its price of petrol and raise its price of diesel, then where petrol stations compete in prices, rival petrol stations will also lower their price of petrol and raise their price of diesel (although to a smaller extent unless competition is perfect).

The situation for card systems is quite different. The analysis of Section 3 showed even vigorous competition between card systems will not cause closed schemes to match the fee structure imposed on open schemes through the regulation of their interchange fee.[38] Because a restriction on the interchange fee lowers the output of open schemes, rival systems will respond by picking up some of this decline in output. With card systems subject to these effects, a forced decrease in merchant fees and increase in cardholder fees by one system will not necessarily lead to any reduction in merchant demand for the rival systems. In fact, by promoting greater card usage for cards offered by rival systems, it is quite possible that merchants will find it even more vital to accept these cards. In general, if one system is restricted to using a sub-optimal structure of fees, the rival system will not want to adopt a similar structure of pricing, even though there may be strong competition keeping the overall level of fees constrained.

This result applies in other settings where intermediaries or matching services compete. If one auction website is forced to charge buyers and sellers the same fee, this does not imply rival auction websites will want to follow suit if they find by charging sellers and not buyers they can maximise the usage of the auction service. Similarly, a shopping mall (mall A) that finds it is better to charge merchants rather than customers for the cost of providing car parking facilities is unlikely to match a rival shopping mall (mall B) that is required by law to recover costs of car parking from customers directly. While retailers would have lower costs at mall B than mall A, if offering free car parking is an effective way to attract additional custom, merchants may well prefer to locate at mall A (or pay more to mall A in rentals).

4.2 Competitive responses of designating open but not closed schemes

There are several consequences of closed schemes not matching any rebalancing of fees forced upon open schemes. First, closed schemes will gain market share relative to open schemes.[39] This is because closed schemes will be free to set fees that reflect the inelastic nature of merchant demand and the elastic nature of cardholder demand. By maintaining their profit maximizing structure of charges, while rival open schemes are prevented from

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[38] Of course if intersystem competition is not vigorous, or if closed card schemes face competition from other means of payment, then they would not want to match the change in the open schemes' fee structure, even if the effects described here did not hold. It is for this reason that any shift to debit cards, cash or cheques, as a result of a decrease in the number of card transactions in open schemes, will only reinforce closed schemes' incentives to leave their fee structure unchanged.

[39] This, and the other consequences discussed below, would still follow if closed schemes partially rebalanced their fees, as long as they did so less than the rebalancing forced upon open schemes.

doing so, closed schemes will achieve greater usage and an increase in market share. Similarly, store cards, which will match other closed card systems by continuing to offer high cardholder rebates, will also gain some of the market share lost by open schemes. In fact, the different closed card schemes are the most likely to benefit from the inability of open schemes to provide existing levels of cardholder benefits. These cards are the most like those currently offered by open schemes (they all offer deferred payment, interest free benefits, and reward schemes).[40]

Second, with an increase in market share, and no reason to lower their overall level of fees, the profits of closed schemes will unambiguously increase (as will the returns from merchants running their own store card schemes).[41]

Over time, with the increase in market shares and profitability of closed schemes versus open schemes, banks and other financial institutions will prefer to issue and acquire for existing closed schemes under non-unitary type arrangements. As discussed in Section 3.3.2, such arrangements will result in an even higher level of fees than currently exists for closed schemes.

Aside from closed schemes attracting the existing members of open schemes, the other likely reaction of decreased profitability for open ventures is some existing banks either going alone, setting up their own closed scheme, or making use of a different organisational structure to avoid the regulations imposed on the joint venture. The largest Australian banks have significant market shares. To bypass regulations on interchange fees, they could set up their own closed card scheme, having only 'on-us' transactions, and thereby avoid the need for an interchange fee.[42] Another possibility is the mutualisation of the existing card associations, with existing members of open schemes becoming shareholders[43] and with the parent company set up along the lines of a non-unitary closed card system.

A more subtle implication of regulating the interchange fee for open schemes is that the larger banks within such schemes will be less disadvantaged by this regulation than the

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[40] See Section 5.1 for a further discussion of this point.

[41] There will be an increase in the overall level of fees to the extent closed systems set higher fees and there is a shift towards closed systems.

[42] Indeed, in a slight variation to such a model, Coles Myer Limited announced on April 19 2001 that it had entered into an arrangement with ANZ Bank where all Visa credit card transactions involving cards issued by ANZ Bank will be processed directly through the ANZ, rather than via an intermediary financial institution.

[43] MasterCard announced just such a change in structure recently.

smaller members. This follows for two reasons. First, the larger banks will be better placed to set up their own card scheme, or be part of any new payment scheme that is set up to avoid the regulation of existing open systems. Second, larger banks are already less reliant on the interchange fee, because of their greater proportion of on-us transactions. With more on-us transactions, large banks have some limited scope to maintain merchant service fees and cardholder rebates if the interchange fee were regulated below current levels. This follows to the extent large banks, with a sizeable share of on-us transactions, are like closed schemes. Moreover, small issuers are not acquirers and so will be affected more by any lowering of the interchange fee.

4.3 Consequences of designating open but not closed schemes

Designating only open schemes not only fails to satisfy competitively neutrality, it also has negative efficiency and equity consequences. These include:

Allocative inefficiency

Open card schemes will have their fees set too low for merchants and too high for cardholders, from the point of view of providing the greatest network benefits. There will be a corresponding allocative inefficiency loss.

- Open schemes will be unable to properly balance demand on their network, so they will be unable to offer the same benefits to consumers and merchants as closed schemes. Consumers will be artificially encouraged (by way of regulation) to use cards offered by closed schemes and merchants over those offered by open schemes. Consumers will face distorted price signals, encouraging too much usage of closed card schemes and too little usage of open card schemes, relative to the efficient usage levels.

- If closed schemes enjoy market power, they will likely have higher overall levels of cardholder and merchant fees than open schemes, implying any shift towards closed schemes will be associated with further allocative efficiency losses.[44]

[44] If there were a sufficient number of competing closed schemes, then inter-system competition would reduce any market power concerns. However, with several non-interconnected competing closed schemes there would be a loss in network benefits associated with lower levels of ubiquity for users.

- Non-unitary closed card schemes are the most likely candidates to replace open schemes. Since these schemes suffer from a double-marginalisation problem, there will be an increase in the overall level of fees and a reduction in allocative efficiency.

Productive inefficiency

- As customers are induced by regulation to switch to rival systems, unnecessary one-off costs of switching are incurred.

- To the extent the open card systems are replaced over time by many competing closed card systems, the costs of duplication in facilities and additional customer relationships will result in productive inefficiencies. The costs of obtaining a very large network under separate competing closed card systems are higher than under a joint-venture open design.

- To the extent closed card schemes are more expensive to run, productive efficiency will also be compromised.

- These effects are partially offset by the fact that closed card systems can do all transactions 'on-us'. To the extent 'on-us' transactions are cheaper, the overall cost of providing card transactions will decrease.

Dynamic inefficiency

- The advantages and disadvantages of each organisational form (open, unitary closed, non-unitary closed, and store card systems) are subtle and complex (many of these were explained in Section 3). *A priori*, it is not clear which organisational form is superior. The simultaneous co-existence of different organisational forms suggests that each has its place. Over time, competition between systems helps test which form provides the greatest benefits to end-users. However, if regulation provides a bias against one organisational form, the nature of this competition will be distorted, and it is less likely that the most efficient organisational form will be selected.

- If open schemes are superior because they take advantage of economies of scale by sharing facilities and because they promote internal competition and innovation while solving divergent objectives through system rules, then preventing open schemes from competing effectively, will inappropriately direct resources to less efficient schemes.

Equity

- Designating open but not closed schemes will disadvantage small banks relative to large banks since small banks have few, if any, on-us transactions and thus even less ability to internalise the benefits of promoting cardholder demand versus merchant demand, as well as less ability to set up their own card system.

- Designating open but not closed schemes will disadvantage small merchants relative to large merchants to the extent store card schemes are cheaper to run for large merchants. Such merchants will gain customers relative to small merchants if customers make greater use of such store cards.

- Where the members of open schemes are domestic banks while multinational corporations run closed schemes, there are 'national interest' grounds for promoting open schemes versus closed schemes. While these grounds are not justification for preferring a regulatory approach that discriminates against closed schemes, they do suggest an additional reason why discrimination against open schemes is troubling, especially if the economic implications of the financial health of Australian banks and credit unions are taken into account.

4.4 Summary

Following a forced reduction in the interchange fee set by open schemes there will be a shift in card transactions away from open schemes and towards closed card schemes, including store card schemes. Closed schemes will enjoy an increase in market share and profits from the designation of open schemes.

Some members of open schemes will either join closed schemes as issuing and/or acquiring agents, or set up their own schemes that circumvent the regulation of interchange fees.

The overall level of fees (cardholder plus merchants) may rise as more transactions are done through closed card schemes, particularly if these schemes enjoy market power. There will be inefficient switching of customers, inefficient duplication of resources, a reduction in network benefits, and possibly a higher cost structure. There will also be a number of negative equity consequences.

5 Implications in the Australian marketplace

Section 4 showed that the regulation of the interchange fee in open schemes would not be competitively neutral. Closed schemes would gain market share, profits, and members from open schemes. Economic efficiency would decrease as a result. In practice, a number of factors will influence how quickly these results are realised. These include:

- Whether closed schemes offer services that substitute well for those currently offered by open schemes.
- The size of closed schemes' current cardholder base.
- Whether closed schemes have sufficient resources and dynamism to take advantage of asymmetric regulation.

This section provides evidence on these factors, showing that in Australia closed schemes are in fact well placed to rapidly take advantage of any asymmetric regulation.[45] To do this, it first compares existing open and closed schemes in Australia, noting that their product offerings have similar features, that closed schemes have recently been positioning themselves to more aggressively take market share, and that closed schemes have access to far more resources than the members of open schemes. Based on these facts, it then quantifies the likely effects on fees of designating open but not closed schemes in the Australian context. Finally, issues of equity are discussed.

5.1 Similar products

The importance of competitive neutrality depends on the similarity of the products offered by open and closed schemes. If open and closed schemes offer entirely different products and services then closed schemes will not be affected by any change in the pricing that open schemes are permitted to offer.[46] If instead the schemes offer similar products then closed

[45] Even if existing closed schemes were not well placed to take market share, the fact that profitable opportunities exist for rival systems that have a closed structure implies banks themselves are likely to set up their own closed schemes. Banks in Australia are particularly well placed to set up their own closed schemes because of their relatively high levels of on-us transactions.

[46] This is not to say that in the face of asymmetric regulation members of open schemes will not want to offer a similar product under a closed scheme structure, nor that closed schemes will not want to change their product offerings to match those currently offered by open schemes, but rather that

schemes will more readily win custom from open schemes as a result of asymmetric regulation.

In Australia there are three major open card systems (Bankcard, MasterCard, and Visa) and three major closed card systems (American Express, Diners Club, and GE Capital). The open schemes all offer credit cards, as does American Express (the American Express Blue credit card). In addition, Diners Club and American Express both offer charge cards, while GE Capital offers a variety of credit cards and store cards (Shell MasterCard and OneLink MasterCard, MyerCard, Grace Bros Card, store cards for Kmart and Target, and the Buyer's Edge card which provides a common store card for over 2,000 stores across Australia). As well as the cards offered through these schemes, there are also numerous store cards offered by individual merchants (for example, the David Jones card) and cards that solely provide rewards for purchases, the most popular of which is the Fly Buys card.

Two of the main distinguishing features of credit cards as a means of payment are that they offer a line of credit and that they may provide rewards or rebates for cardholder purchases. These two functions of payment systems are shared by all rival closed card schemes (including store card schemes) but not other payment means such as cash, cheques, or debit cards. The closest competitors to open schemes are therefore the credit, charge, and store cards offered by closed card schemes. Open and closed schemes compete for business, corporate, and purchasing cards of major corporations and government departments. Consumers and merchants do not make a distinction between cards based on whether one organisational form requires an interchange fee (or other internal rules and conditions) to compete effectively.

Traditionally, American Express has targeted high-income households making purchases in the travel sector, pitching itself as a card where 'membership has its privileges'. More recently it has broadened its target to include middle-income consumers, partly through the promotion of its Blue credit card, and by targeting a wide array of spending areas. This shift is evidenced by a recent American Express press release:

> "Over the last few years, we broadened the mix of spending in our card portfolios. Throughout the world, we executed a series of 'everyday spending' promotions that incented card members to use their cards at supermarkets, drug stores, gas stations and other 'everyday' categories. We

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there will not be direct competition between the products offered by existing closed schemes and existing open schemes.

> refocused our advertising and marketing material to reflect this shift, vs. our traditional emphasis on travel."[47]

In Australia, American Express promotes itself directly to open scheme cardholders, through extensive advertising and direct solicitation campaigns.[48] The high level of brand awareness this promotion creates tends to reduce the barriers to customer switching. Barriers to switching are also reduced by the fact consumers can easily transfer credit balances from existing accounts, and can obtain a new card without any additional fee. For instance, the AMP credit card, offered in association with American Express, allows consumers to transfer their balances to their AMP credit card and earn two AMP reward points for every dollar transferred. Both the AMP credit card and the standard credit card offered by American Express have no joining fee (and no subsequent annual fee if annual spending exceeds $5,000), making it particularly easy for consumers to hold an American Express credit card, possibly in addition to their existing cards.

5.2 Issued cards

The number of cards issued by closed card schemes is also relevant to the likely effects of asymmetric regulation. First, the more closed cards already on issue, the easier it will be for consumers to substitute away from open schemes. Consumers who currently hold both types of cards will simply start using their American Express, Diners, or GE Capital cards wherever they are accepted and stop using those offered by open schemes. Second, the proportion of open versus closed cards on issue says something about how users currently value open versus closed schemes, as well as the costs of consumers switching to closed cards.

According to the recent RBA / ACCC Joint Study on payment systems (p.15) there were about 13 million charge and credit cards on issue in Australia in 1999 / 2000. Of these cards, the Joint Study's figures (Table 2.3) suggest 6.68 million are Visa, 2.95 million are MasterCard, 2.50 million are Bankcard, 0.65 million are American Express, and 0.22 million are Diners Club (based on a market survey by Roy Morgan Research).[49] These figures ignore cards

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[47] American Express Chief Executive Officer and President, Ken Chenault and American Express Group President, U.S. Consumer and Small Business Services, Al Kelly, 7th February 2001.

[48] The level of advertising by American Express in 2000 exceeded that of Visa by 25% (OMD Australia Competitive Advertising Analysis, January – December 2000).

[49] In comparison, there are over 60 open scheme card issuers competing to offer Bankcard, MasterCard and Visa credit cards in Australia, with ANZ and Commonwealth Bank issuing

issued by GE Capital, which according to its website has issued over 2 million credit and store cards in Australia, and other store cards (such as the David Jones card).[50]

These figures appear to substantially underestimate the current strength of closed schemes in several dimensions. For a start, the Joint Study's report underestimates the actual number of cards issued by American Express and Diners Club. According to Flint (1999), American Express had more than 1 million cards on issue in 1999, which is over 50% more than the number implied by the RBA/ACCC Joint Study. Similarly, Diners Club claims it has about 400,000 cards on issue, which is over 80% higher than the number implied by the RBA/ACCC report.[51] According to Merrill Lynch (2000), the estimated number of cards issued by the end of 1999 was 1 million cards for American Express and 600,000 cards for Citibank/Diners.

The market shares of American Express and Diners Club will tend to be understated when measured only on a cardholder basis, since closed schemes tend to attract customers who make higher levels of expenditure. A major selling point of American Express to its merchant customers is that cardholders make on average larger purchases. According to American Express, its card members spend, on average, over four times more per American Express card than other bank cards.[52] Similarly, Diners Club claims its members spend two to three times more on their cards than amounts being spent on other cards.[53] According to Merrill Lynch (2000), the estimated share of Australian credit and charge card spending through American Express and Citibank/Diners cards was 13% at the end of 1999. Allowing for store cards offered through GE Capital, David Jones and others, but deducting the Citibank Visa and Citibank MasterCard contribution to this share suggests a plausible estimate of spending

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around 3 million cards each, and National Australia Bank and Westpac Bank issuing just under 2 million cards each (Merrill Lynch, 2000, p.5).

[50] It is worth noting that Fly Buys, which is a reward driven card scheme with a number of similar properties to store card schemes, is also a very significant player. According to the Fly Buys' website, over 5 million cards have been issued to members in Australia, with over 2 million households actively collecting Fly Buys' points; see www.flybuys.com.au.

[51] According to managing director of Diners Club Australia, Bryan Ericson, "The company has about 400,000 charge cards on issue in Australia". (See *Australian Financial Review*, 20th November 2000).

[52] See http://home5.americanexpress.com/merchant/

[53] Media Release, Managing Director of Diners Club Australia, Byran Ericson, 4th May 2000.

on credit and charge cards that are not part of the Bankcard, MasterCard or Visa systems is around 15% at the present time.[54]

5.3 Current trends

Closed schemes, particularly American Express, are experiencing rapid growth at present, driven by extensive advertising campaigns, reward programmes, and new partnerships. According to the *Australian Financial Review*, 12th July 1999, American Express experienced growth of 50% in Australia in its card issuing over the two years to 1999. On a worldwide basis, in the year to April 2001, American Express experienced growth of 11%. In the United States, of the four major networks, American Express had the greatest increase in its market share.[55] These increases do not appear to be arising because of a decline in merchant service fees. In fact, American Express' worldwide average merchant service fee has barely changed in the last five years.[56] Instead, they reflect the broadened mix of spending in American Express' card portfolios, heavy promotion of the brand, and perhaps most importantly, the use of partnerships to grow the business.[57]

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[54] Deducting Citibank MasterCard and Visa spending from the Diners/Citibank share, accounting for the fact GE Capital has 2 million cards issued at the moment, assuming that other store card schemes (including David Jones) account for a further 1 million cards, and assuming that spending on store card schemes is 20% of the card spend on general credit and charge cards, the market share of closed and store card schemes is estimated to be 14.8%. Allowing for the recent growth in closed schemes is likely to increase this estimate above 15%. If store cards are ignored, the market share of closed schemes out of all open and closed schemes is estimated to be around 12%.

[55] "In the United States, through the second quarter, Nilson reported that our share gain was the largest across the four major networks. We increased share by 80 basis points to 21.0%, with our share gain coming entirely at the expense of Visa." American Express Chief Executive Officer and President Ken Chenault, 7th February 2001

(see http://home3.americanexpress.com/corp/latestnews/)

[56] "Our new signings helped continue the improvement in our spending coverage, now up to 95 percent in the U.S. and 86 percent internationally. This increased coverage has been achieved while also generally maintaining our discount rates, which were down only 1 basis point vs. 1998." American Express Chairman and Chief Executive Officer Harvey Golub, 2nd February 2000.

(see http://home3.americanexpress.com/corp/corpinfo/fcm-hg-000202-2.asp).

[57] "The past three years have been good to American Express. In no small measure, this has been the result of both the number and the quality of the partnerships we have put together with banks and

An analysis of credit card advertising in 2000 by American Express, Diners Club, MasterCard and Visa shows that American Express and Diners Club had substantial advertising campaigns in Australia, with American Express and Diners Club advertising accounting for 46% of total expenditure by the four brands.[58] Closed schemes are already aggressively building market share in Australia.

An important part of the closed schemes' expansion strategy involves enlisting institutions to issue and promote their cards. Closed cards schemes, particularly American Express, have been repositioning themselves, based on a non-unitary approach. In the United States, American Express has actively sought to expand its network of affiliates by signing up banks to issue its cards. In May of 1996, Harvey Golub, then Chairman and CEO of American Express, announced that the company would open its global network to banks and other institutions. In February of 1997, the company announced the formation of the American Express Global Network Services Group. Under this group there are three types of network partnerships that American Express is promoting[59]

- Independent Operator license: Partners both issue American Express card products and serve as merchant acquirers and processors. These arrangements generally grant exclusivity within a specified geography for a limited time for all products, and are developed in markets where American Express has only a U.S. dollar denominated card business but no proprietary local-currency issuing business. In these markets, Independent Operator agreements offer American Express a rapid and low-cost way to compete in a country.

- Non-Proprietary (or Network) Card-Issuing License: Partners are granted a license to issue cards on the American Express merchant network. They also make credit decisions regarding which customers will be issued the cards, manage the associated risks, and hold the receivables from the cards. In some markets, banks design and issue innovative products that, after meeting the quality and operating

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other financial institutions around the world." American Express Chairman and Chief Executive Officer Harvey Golub, press release, 12th April 1999. In Australia, according to American Express head of new business Mr Mark Rayner "…30% of the company's growth in the local credit card market was being driven by distribution alliances with financial institutions and affinity groups. The company has negotiated distribution deals with AMP, Macquarie Bank, Suncorp-Metway and Aussie Home Loans." Australian Financial Review, 5th November 2000.

[58] OMD Australia Competitive Advertising Analysis, January – December 2000.

[59] See http://www10.americanexpress.com/sif/cda/page/0,1641,2553,00.asp. According to the website, among other things issuers are paid by American Express an issuer's rate that is a percentage of the transaction volume generated by the cards.

standards specified by American Express, can be targeted to their own defined customer segments. Network partnerships are generally pursued in markets where American Express may have an established proprietary business but where there is an opportunity, with a strong local partner, to extend the reach of the brand.[60]

- Joint Venture: This arrangement allows an established local institution to join forces with American Express to set up a separate business for acquiring merchants and/or issuing cards. Each partner has an equity interest in the joint venture entity. Management and profit and loss responsibility for the business is shared.

In Australia, American Express currently has third party agreements with AMP Bank, HSBC, Illawarra Credit Union, Macquarie Bank, Suncorp-Metway, and Westpac.[61] While these agreements appear to be mainly focused on signing up customers and providing added customer service, American Express is clearly well placed to out-source its issuing and acquiring services to banks that already offer these services. In fact, Visa understands that American Express already has agreements in place in Australia that involve paying issuing institutions for signing up cardholders, as well as based on the value of card transactions. Along similar lines, Diners Club has recently moved into partnership agreements with credit unions to promote its cards further.[62]

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[60] The criteria of "a strong local partner" suggests a bias towards large and profitable issuing institutions, a membership criteria which clearly discriminates based on the type of institution that might wish to access American Express' network. Further evidence for unequal access conditions is the claim by American Express that "We choose our Partners very carefully and we pay the greatest attention to the service levels our Partners provide. One of the major considerations in choosing a Partner is its ongoing commitment to quality customer service. Furthermore, our agreements with Partners require compliance with our standards to ensure a consistently high level of global customer service."

(see http://www10.americanexpress.com/sif/cda/page/0,1641,2553,00.asp#global_nav_6).

[61] On 23 April 2001, Westpac started issuing the BusinessChoice Charge Card in association with American Express, which provides business customers higher levels of rewards than existing MasterCard and Visa cards. John Steward, Senior Vice President and Country Manager, American Express stated "This is a significant advance in American Express' strategy of expanding the distribution of our products through strategic business partners. The alliance with Westpac allows us to access a strong business customer base, and deliver to them a card with benefits that are unequalled by other products in the market."

[62] Citibank Australia has linked with three of the country's biggest building societies as part of a strategic move to triple the size of its local cards business over the next three years. The bank has

This raises a further reason why closed schemes are well placed to take advantage of asymmetric regulation. When members of open schemes face a choice between offering a regulated product and an unregulated product, it would be surprising if a number of these members did not choose the latter. Financial institutions are unlikely to prefer a product in which they cannot offer a rewards program (because of regulation) over one in which they can.[63] They are also unlikely to prefer to have to disclose commercial information and devote resources and time to regulatory compliance. Rather, financial institutions would prefer the commercial freedom of belonging to an unregulated network. With a rapid realignment of member affiliations, the existing market shares of closed schemes understates the scale and speed with which closed schemes are likely to take advantage of any bias in regulation.

5.4 Size of organisations

Another aspect that can affect the ability of closed schemes to compete with open schemes is their access to resources. In this dimension, closed schemes have a clear advantage. Large U.S. corporations control all three major closed schemes operating in Australia. American Express was founded in 1850 and is listed on the New York Stock Exchange. It had a market capitalisation on June 14th, 2001 of 55 billion U.S. dollars, with a return on equity (for the first quarter of 2001) of 23.5 percent. With around 50 million cards issued worldwide, it is the single biggest issuer of cards in the world on a volume basis.[64]

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sealed distribution agreements with Queensland's Bay Capricorn Building Society and the NSW-based institutions, Illawarra Mutual and Maitland Mutual. The deals give Citibank's cards division exclusive coverage over the societies with a combined membership base of more than 300,000. The director of payment products at Citibank, Mr David Skillen, said the tie-ups were part of a new strategy to extend distribution through third parties. (See *Australian Financial Review*, 5th December 2000)

[63] In fact, a critical reason for HSBC to end its card alliance with Commonwealth Bank, in which it distributed the MasterCard product, was the better reward programs it could offer customers under the American Express label. "HSBC Australia said yesterday it was set to exit its card alliance with Commonwealth Bank, after signing a new deal to market American Express credit cards… Under the new card deal, the bank will eventually end its arrangements with CBA to distribute a MasterCard product… He cited Amex's rewards program as one of the reasons for opting out of the CBA." Australian Financial Review, 15th November 2000.

[64] According to a press release (2nd August 2000) by American Express President and Chief Operating Officer Ken Chanault, American Express is "… the number-one card issuer in the world, based on the volumes generated by our 49 million cards, which is significantly larger than the next leading issuer."

The next largest worldwide issuer is Citibank, which is also the parent company of Diners Club. Diners Club is the oldest payment card, and in Australia is 100% owned by Citibank (a subsidiary of parent company Citigroup). Citigroup had a market capitalisation (on the New York Stock Exchange) of 260 billion U.S. dollars on June 14th, 2001.

General Electric, which owns GE Capital, is the largest company in the world (based on market cap), with a market capitalisation of 475.3 billion U.S. dollars on June 14th, 2001.[65] In comparison, the market capitalisation of ANZ Banking Group, Commonwealth Bank of Australia, National Australia Bank, and Westpac Banking Corporation combined is approximately 46 billion U.S. dollars. Clearly, there is no basis for arguing closed schemes need governmental assistance in competing with the more popular open schemes. Moreover, favouring large U.S. corporations over Australian banks raises serious policy concerns.

5.5 Effects on pricing

According to the RBA/ACCC Joint Study, the current interchange fee in open systems averages 0.95%, with merchant service fees averaging 1.78% across open schemes. Assuming the 2.7% worldwide merchant service fee in 2000 for American Express also applies to closed schemes in Australia, the implications of different changes in market shares resulting from asymmetric regulation for average merchant service fees can be computed.

Assuming an initial market share of 85% for open schemes and 15% for closed schemes (see Section 5.2), the average merchant service fee in Australia is 1.918%. If, in an attempt to lower merchant service fees, the RBA were to reduce interchange fees by one-half (from 0.95% to 0.475%), and assuming this decrease in interchange fees is fully passed through to merchants by acquirers then, with no change in market shares, the average merchant service fee in Australia would fall to 1.514%.

Any fall in merchant service fees will, of course, be offset by an increase in cardholder fees (or reduction in cardholder rebates). Focusing on a reduction in merchant service fees while ignoring the implications for cardholders is no more sensible than suggesting society would be better of if retailers did not provide plastic bags at check-outs, 1-800 free calling numbers, or complementary car parking facilities, simply because the merchants' costs would be lowered. More generally, focusing only on costs and ignoring the value to consumers is not a sensible way to evaluate different outcomes. Nevertheless, since the merchant service fees

[65] According to the Forbes 500 for 2001 (33rd edition), the largest two companies in the U.S. are Citigroup and General Electric. Forbes rank companies on a composite of four measures: sales, profit, assets, and market valuation.

have been such a major focus of the RBA/ACCC investigation into interchange fees, it is interesting to evaluate how merchant service fees would change once the shift towards closed schemes is taken into account.

Table 1 Changes in Average Merchant Service Fee

Percent reduction in open schemes market share	Average merchant service fee (msf)	Change in average msf	Total reduction in fees
0	1.51425	0.4038	$258,400,000
0.1	1.65375	0.2643	$169,120,000
0.2	1.79325	0.1248	$79,840,000
0.3	1.93275	-0.0148	-$9,440,000
0.4	2.07225	-0.1543	-$98,720,000
0.5	2.21175	-0.2938	-$188,000,000
0.6	2.35125	-0.4333	-$277,280,000
0.7	2.49075	-0.5728	-$366,560,000
0.8	2.63025	-0.7123	-$455,840,000

Our analysis from Sections 3 and 4 predicts that the structure of fees in closed card schemes will not change materially as a result of lower merchant service fees and higher cardholder fees in open schemes. Assuming this is true, the average merchant service fee is calculated in Table 1 for different changes in market shares resulting from the regulation of the interchange fee in open schemes.

If, for instance, as a result of the decrease in the interchange fee to 0.475% the open scheme's market share drops by 30% from 85% to 55%, the average merchant service fee will actually increase from 1.918% before the regulation to 1.933% after the regulation. The increase in merchant service fees results from a shift towards higher fee closed schemes. The last column provides an idea of the scale of this change in fees, by scaling the change in average

merchant service fees by the value of credit card transactions (estimated by the RBA / ACCC Joint Study to be around 64 billion dollars annually). In the case of a 30% change in market share, merchants would end up paying nearly 9 million dollars more as a result.[66] The general point implied by this analysis is, once the change in market shares between open and closed schemes is taken into account, one can no longer necessarily assume that *average* merchant service fees will decrease as a result of decreasing the interchange fee.

5.6 Summary

Closed card schemes, including store card schemes, are well placed to take advantage of the regulation of open schemes in Australia.

These schemes offer the most similar services to open schemes. Unlike other payment instruments, they all offer deferred payment, interest-free payment periods, and reward programmes. Moreover, two of the three main closed schemes in Australia are owned by the two largest American corporations. The third, American Express, is the largest issuer of payment cards in the world.

Closed card schemes (including store cards schemes) already account for around 15% of spending in the credit and charge card markets, substantially more than the estimates of market share implied in the Joint Study. The number of cards on issue by the closed card schemes is substantially underestimated in the Joint Study. Closed schemes are currently aggressively enticing institutions to issue their cards in Australia, suggesting they are also rapidly increasing both the number of cards issued and their market share. Some partnership agreements already involve explicit payments between the closed schemes and issuing institutions, as well as access conditions.

As a result of cutting interchange fees in open schemes, there will be a substantial shift to closed cards schemes. If this shift is sufficiently large, it can increase the average costs to merchants of accepting cards because closed schemes will have higher merchant service fees.

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[66] In practice, the market share changes will likely occur incrementally through time. The results in Table 1 imply it would take less than three years of 10% market share reductions per year before average merchant service fees are higher as a result of the asymmetric regulation. According to the major card providers, about 10% of cardholders already switch cards each year (Australian Financial Review, 3rd February 2001).

6 Dynamic implications of designating only open systems

The previous sections focused on one aspect of the designation of open schemes – the regulation of the interchange fees in such schemes. Designation of open schemes also opens the way for other types of regulation of open schemes, including, as the Reserve Bank has signalled, the regulation of access rules. This section very briefly highlights some of the implications for competitive dynamics of regulating access in open schemes.

Because unitary closed schemes do not provide access, they have no access rules or access conditions which can be subjected to regulatory review. As was shown in footnote [60], non-unitary closed schemes do provide access to partner associations, but do so without using explicit rules, instead doing so in a discretionary way. In this context, regulating access rules for open schemes is not competitively neutral for three reasons. Most obviously, if non-unitary proprietary systems are free to set the terms of access to partners joining their networks, while open systems are not, then open systems will be at a competitive disadvantage relative to closed systems. Second, a unitary proprietary system that does not provide access to partners will benefit from any restriction on the ability of open systems to operate effectively. Regulating the terms of access in open systems is likely to make them less effective at competing with closed schemes. Finally, if open schemes have to provide access to their system to outside firms in a way that makes the existing members worse off, while closed schemes do not, then the relative returns to the two types of systems will be distorted, as will the relative investment in the two types of systems.[67]

To see why regulating the terms of access in open systems is likely to make such schemes less effective at competing with closed schemes, recall from Section 3.6 why explicit rules in credit card joint ventures are needed in the first place. These rules deal with problems common to most joint ventures, such as conflicting member objectives, member free-riding, members taking uncoordinated actions, and the need to internalise positive network externalities. Thus, even if the access rules ensure existing members are fully compensated for the entry of any new members, the relaxing of the rules on members could have destabilising effects on the system.

Unitary closed schemes do not suffer from these problems since they make all decisions in a centralised way. Thus, any regulation of the rules set by open systems, potentially biases competition towards closed schemes which do not need such rules to operate effectively.

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[67] Note that it is the scheme's members that make the investment in open schemes. Similarly, it is the scheme's members that earn the revenue in open schemes.

Moreover, if non-unitary closed schemes are free to set their terms of access and membership on a commercial basis, while open schemes have their rules determined through regulation, then open schemes will be placed at a competitive disadvantage relative to non-unitary closed schemes.

The asymmetric regulation of access has important policy implications. According to the Payment Systems (Regulation) Act 1998, the RBA may only impose access conditions on a payments system subject to a number of regulatory hurdles, including satisfaction of a public interest test – section 11(1). This is not surprising as access regimes are seen in most jurisdictions as exceptions to the general rule whereby the property rights of firms, which include the right to use and dispose of those rights as they please, are protected in the interests of maintaining sufficient incentives to invest and innovate. That is why "declaration" of access to essential facilities is subject to carefully set out processes of review and rights of appeal under Australia's current competition law regime.

The fact that systems are organised as membership-based joint ventures in no way alters the need for caution in mandating third party access. This is recognised by both the Payment Systems (Regulation) Act 1998 and Part IIIA of the Trade Practices Act which do not define one set of tests that must be met by proprietary firms, and another weaker set of tests that should apply to joint ventures. This is for the good reason that business decisions as to the choice of organisational form ought not to be distorted by legal requirements unrelated to policy objectives: and there is no clear policy rationale for forcing joint ventures to be more accommodating of third party access than their proprietary counterparts.

In contradiction to these principles, asymmetric regulation of open payment schemes prevents such schemes, which are an important form of joint venture, from setting the rules and terms they require to compete effectively with proprietary payment systems. Regulators should recognise that joint ventures face different agency problems than single proprietary firms and should allow them to adopt specific practices to deal with these problems.

More generally, the asymmetric treatment of joint ventures sets a potentially damaging precedent. Joint ventures, because they interconnect firms which otherwise act purely in their individual interests, will almost always need special rules to ensure they can compete effectively against proprietary firms. Preventing joint ventures from designing such rules sends a signal to business decision-makers to avoid the joint venture approach. It creates a bias of innovation and growth towards proprietary firms.

These dynamic effects are especially worrisome given the increasing value of joint ventures in a high tech and information based economy. These effects are well illustrated by the current development of Internet-based payments or 'digital cash'. Given the substantial network effects at work in these new payment systems, it may well be that the most efficient means to provide digital cash is through a joint venture structure. Yet, if such a structure is

discriminated against through regulatory policy, firms may not be prepared to invest the vast amounts required to build such an interconnected network, preferring instead to invest in a proprietary network.

In fact, while numerous proprietary Internet-based payments systems have been launched, to date no joint venture approach has been tried. Instead, what seems to have emerged from the competition between several competing online services (such as BillPoint, CheckFree, eCharge.com, PayMe.com, PayPro.com, and PayPlace.com) is the emergence of a dominant provider of Internet-based payment services, PayPal, a U.S. company which has a consumer base of over 8 million users in 43 countries.[68]

There does not seem to be a good basis for regulatory policy which favours the development of a dominant proprietary system over a joint venture structure in which competitors interconnect over a common platform.[69] The implications of the RBA's asymmetric approach to dealing with open and closed schemes not only goes against other regulatory policy in Australia, which, as has already been pointed out, does not discriminate between proprietary and joint venture forms of organisation in major legislation such as the Trade Practices Act, but also has potentially far reaching implications for the choice of future innovation and development in joint ventures vs. proprietary firms.

6.1 Summary

Regulating access rules for open schemes is not competitively neutral for three reasons:

- Non-unitary proprietary systems will be free to set the terms of access to partners joining their networks, where open systems will not;
- Unitary proprietary systems that do not provide access to partners will benefit from regulating the terms of access in open systems, which restricts the latter's ability to operate effectively; and

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[68] According to the PayPal website (http://www.paypal.com/cgi-bin/webscr?cmd=p/gen/about-outside), PayPal constitutes over 10% of all Internet traffic in the financial services category, more than Citibank, Wells Fargo and Bank of America combined.

[69] Katz and Shapiro (1986) show that even unregulated markets contain a bias towards new proprietary networks over old open ones, given that the users of the new network ignore the stranding costs of moving to a new technology, while the competitive suppliers of the open system are not willing to price below cost given competition will prevent recoupment.

- Open schemes may be required to provide access to their systems to outside firms in a way that makes the existing members worse off, whereas closed schemes will not.

More generally, this regulatory bias amounts to a hitherto unprecedented asymmetric regulatory treatment of joint ventures. It sends a signal to business decision-makers in all industries that rule-setting by joint ventures to ensure they compete effectively in their respective markets is more likely to be interfered with than in other organisational forms. These dynamic effects are particularly worrisome given the increasing value of joint ventures in a high tech and information based economy.

7 Conclusion

This report has shown that regulating open schemes such as Bankcard, MasterCard and Visa, but not closed card schemes such as those offered by American Express, Diners Club, and GE Capital amounts to asymmetric regulation that discriminates against open credit card schemes simply because of their particular organisational form. A review of the literature on asymmetric regulation suggests that such an approach to regulation almost always leads to economic inefficiencies and is not competitively neutral.

The analysis in this report found that similar inefficiencies will arise as a result of a move by the RBA to regulate the interchange fee set in open schemes while leaving closed card schemes, including store card schemes, free to retain their current fee structure.

Open payment systems need to set an interchange fee because they involve many different competing issuers and acquirers, each setting retail fees in a decentralised way. The interchange fee is set by the card association in an attempt to maximise the number of card transactions within the system. A limit on the interchange fee that can be set will thus impair the ability of open systems' to maximise the number of card transactions within their systems.

Given this fact, we showed that closed schemes will not match a change in the structure of fees by open schemes that is suboptimal, that is, results in less than the maximal number of card transactions in open schemes. Following a forced reduction in the interchange fee set by open schemes there will be a shift in card transactions away from open schemes. Consumers will be artificially encouraged to use closed card schemes, and these schemes will gain market share.

Closed card schemes will also enjoy an increase in profits. Members of open schemes will thus either join closed schemes as issuing and/or acquiring agents, or set up their own schemes that circumvent the regulation of interchange fees, thus accelerating the shift away from open systems.

There will be a loss of efficiency resulting from an imbalance in demand in open systems because regulated fee structures are set inefficiently. There will also be inefficient switching of customers, inefficient duplication of resources, and a reduction in network benefits. In fact, the overall level of fees (cardholder plus merchants) may rise as more transactions are done through closed card schemes that do not promote competition between issuers and acquirers, have higher cost structures, and enjoy greater market power.

The designation of open but not closed schemes also has equity implications. We showed that small banks will be disadvantaged relative to large banks, small merchants will be

disadvantaged relative to large merchants, and Australian banks will be disadvantaged relative to larger multinational corporations.

This report presents empirical data which shows that closed schemes (American Express, Diners Club, and GE Capital) have a substantially greater number of cards issued and market share than that implied by the Joint Study, and are well poised to grow this market share as a result of asymmetric regulation in Australia. Closed card schemes offer the most similar services to open schemes. Unlike other payment instruments, they all offer deferred payment, interest-free payment periods, and reward programmes. The card schemes offered by American Express, Diners Club, and GE Capital are owned by some of the largest multinationals in the world. These card schemes already have well-established brands. As a result of reduced interchange fees in open schemes, there is likely to be a substantial shift to closed cards schemes.

The possible effects of such a shift on the fees merchants pay for accepting cards were analysed. The results show that if a halving of interchange fees in open systems results in a shift of 30% or more from open to closed schemes, the average costs to merchants of accepting open and closed card schemes could actually increase.

The report noted the recent movement of closed card systems towards a non-unitary model in which the systems contract with other organisations to issue and acquire cards. This trend makes the designation of closed schemes even more imperative for two reasons. First, it strengthens the speed and size of any shift towards closed card networks. Second, such networks already set effective interchange fees and access conditions with their partners. Any regulation of interchange fees and access rules for open schemes must surely also apply to the fees and rules set by non-unitary closed schemes.

The policy implications of this analysis are clear-cut. Designating open but not closed card schemes will reduce economic efficiency, sacrifice competitive neutrality, and raise serious equity concerns. It is not in the public interest (as required by section 11(1) of the Payment Systems (Regulation) Act 1998) to introduce the distortion of competition that would result from a designation and regulation of the open schemes but not the closed schemes.

In work already carried out, NECG has argued that the first-best solution would be not to regulate either open or closed card schemes. Failing this, a second-best solution would be to designate and regulate both types of scheme – that is, to bring within the current designation the closed card schemes, including store card schemes, so as to maintain competitive neutrality. Where existing closed card systems already set effective interchange fees and grant access to partner organisations, then whatever regulations are imposed on open schemes should also be equivalently applied to such schemes. For unitary closed schemes, the regulation of the implicit interchange fee in these schemes would be necessary to achieve competitive neutrality, as would some way of correcting for any handicap imposed on open

schemes through the regulation of access rules in credit card joint ventures. The failure to regulate in this competitively neutral way will imply that the RBA's drive to reduce growth in credit card usage in Australia will instead lead to:

- The increased use of American Express, Diners Club, and GE Capital cards, at the expense of open credit cards.
- An increase in merchant service fees corresponding to the increase in use of these cards.
- The ability of proprietary systems to set what amounts to interchange fees and access conditions with respect to partners and issuing agents, without regulatory constraint.
- Higher profits accruing to large multinationals rather than Australian banks.
- A loss in allocative, productive, and dynamic efficiency.
- A regulatory bias against small merchants and small financial institutions.
- Potentially far reaching implications for the development of future joint ventures.

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