



Australian Bankers' Association

Submission to the
Reserve Bank of Australia

Inquiry into Credit Card Systems

ABA Supplementary Submission on Network Effects and the Setting of Interchange Fees

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*Reserve Bank of Australia
Inquiry into Credit Card Systems*

ABA Supplementary Submission on Network Effects and the Setting of Interchange Fees

Introduction

This supplementary submission responds to the questions put by Dr John Veale, Head of the Payments Policy Department, Reserve Bank of Australia (RBA), in his letter of 8 August 2001 to David Bell, CEO of the Australian Bankers' Association (ABA). This submission is intended to clarify issues raised in the meeting on 7 August 2001 between the RBA and the ABA and in Dr Veale's letter. It is supplementary to the ABA's main submission to the RBA in respect of the current inquiry into credit card networks in Australia, lodged in July 2001.

The bulk of this supplementary submission covers issues related to network effects and network externalities and their implications for the setting of interchange fees.

1. Network Effects and Network Externalities

In his letter Dr Veale asked the ABA to distinguish between network effects and network externalities. Suitable definitions (taken from the economics literature) are as follows.

A **network effect** arises when one user's benefit from joining or using a network depends on the number of other users belonging to or using the network, and on their actual and prospective usage. A network effect is *direct* if existing users of a network benefit directly when an additional customer joins and uses the network. An example is an electronic mail network. The addition of another person with e-mail access is of benefit to all people with e-mail because they can now communicate directly with that person. The level of their benefit depends on the potential for such communication with the new person. That is, if the person is not in their area of acquaintance and/or there are limited areas of mutual interest, the benefit is small c.f. that generated by a person joining with whom fuller interaction is of mutual interest. But in principle each new user benefits existing users.

An *indirect* network effect arises when an additional user leads to a lower cost or higher quality supply of services to existing users. For example, users of DVD players do not communicate with each other, so there are no direct network effects. However, as the number of users of DVD players rises, so does the number of movies distributed in the DVD format. This is an indirect network effect.

A commonly used definition of **externality** was given by Laffont (1987),¹ according to whom an externality arises when the outcomes from one agent's activities affect the well-being of another agent directly, without being mediated by the market mechanism. A well known example of a (negative) externality is a polluting factory. Because its pollution has a negative effect on others, but there is no market mechanism to take this effect into account, the social cost of the factory's production exceeds the private cost. This is a market failure, reflected in the outcome that the factory is producing more than it would if it took into account the social (not private) costs of its production. Externalities can also be positive, in which case the competitive market mechanism leads to too little production (and consumption) of the good or service in question.

Laffont distinguished between *technological externalities* (such as the example above of the polluting factory) and *pecuniary externalities* (which are transfers of income arising from market mechanisms). Pecuniary externalities do not necessarily result in market failures.²

A *network externality* arises when a network effect (direct or indirect) is not internalised through a competitive market mechanism. Existing users of an e-mail system do not typically pay for the benefit they receive when an additional user of relevance to them joins the system. The same is true of owners of DVD players when more consumers choose DVD, to the extent that this leads to unpriced benefits (e.g. more titles in the DVD format). However some indirect effects such as lower unit costs of DVD equipment or software are likely to be priced. It is difficult to generalise; rather it is necessary to look at the particular network. When network externalities are positive (which typically they are, unless new users create significant congestion costs), this absence of pricing of some network effects leads to a network that is smaller than socially optimal.

2. Network Effects in Credit Card Systems

This section describes network effects in card systems. The origins of these effects are decisions by cardholders to join networks and use their cards, and decisions by merchants to accept cards. Some of these effects are direct, and some indirect. None of these effects depends for its existence on interchange fees being paid. Rather, as argued below, interchange is an efficient means of dealing with the direct effect on merchants from additional cardholder membership and use, which are unpriced, hence an externality.

Network Effects from Cardholders

Suppose (1) that additional *cardholders* join a credit card network and/or cardholders use their cards more intensively.

- (a) **Merchants** accepting the card in question will benefit *directly* in the following ways, depending on the relevance of the cardholders to them (i.e. their propensity to spend in the market areas served by the merchants) and the dependence of their spending on having a 'buy now, pay later' option:

¹ J-J Laffont (1987), "Externalities", in *The New Palgrave Dictionary of Economics*, Vol II, J Eatwell, M Milgate and P Newman (eds), Macmillan (London).

² For example, Business A and Business B are competitors in a market. Suppose B undertakes an advertising campaign and consequently A loses market share to B. The actions by B will have led to a pecuniary externality (losses by A) but no market failure is necessarily present.

- more sales, as the new cardholders are able to overcome any immediate liquidity constraint by using the card. Cardholders typically do not hold all cards, so at least some such new cardholders will have no other ‘buy now, pay later’ option;
- reduced costs of making sales on credit where new cardholders previously used expensive-to-provide store credit;
- reduced cash handling costs; and
- reduced cheque fraud costs.

The merchant benefits *contingently*, but in a real sense which is (in principle) able to be valued, from the very joining of a new cardholder, in proportion to their propensity to spend (prospectively) in the merchant’s market area and the dependence of their spending on the availability of ‘buy now, pay later’. The benefits to the merchant *crystallise* when such cardholders actually use the card to purchase from them.

- (b) **Issuers** will benefit directly from greater *membership* (through more annual fees and from greater *usage* (more interchange fees received), allowing them to recover their fixed costs over a wider base of business and to expand the network faster.
- (c) **Acquirers** will benefit directly from greater usage (more merchant service fees, net of interchange fees paid), allowing them also to spread their fixed costs wider. They also can then expand the network faster.
- (d) **Merchants** will also benefit *indirectly*, if greater card use (either through more cardholders or increased intensity of card use per cardholder) leads to lower per unit costs of acquiring, via economies of scale (to the extent passed on — through competition — to merchants).
- (e) **Existing cardholders** will also benefit indirectly, because the more cardholders there are, and the more intensively cards are used, the more likely it is that merchants will choose to accept cards (since there are fixed costs to merchants of joining the network, and the greater the number of cardholders, the greater the ability to defray those costs). Cardholders will also benefit indirectly to the extent that there are economies of scale in issuing, as (given that there are some significant fixed costs) there do appear to be, and that these are passed onto cardholders in some form.

Network Effects from Merchants

Now suppose (2) that additional *merchants* join a credit card network.

- (a) **Cardholders** will benefit incrementally and *directly* in the following ways:
- the ability to make a greater range of purchases on a ‘buy now, pay later’ basis i.e. the ability to smooth more of their consumption expenditure. This depends on the relevance of the additional merchants to them c.f. their own consumption basket and the importance to them in the market segments concerned, of a ‘buy now, pay later’ option;
 - better information for managing consumption (purchases itemised in credit card statements);

- less need to hold idle funds in transaction accounts and greater ability thereby to manage household finances;
 - insurance against non-delivery of goods or services paid for by credit cards with the intention of delivery after payment (e.g. Internet purchases);
 - insurance against faulty performance of goods (with some credit cards); and
 - insurance against fraudulent use of their credit card (as opposed to, say, having cash stolen).
- (b) **Acquirers** will benefit directly, as more credit card usage will lead them to receive more merchant service fees (net of interchange fees paid), and be able to spread costs wider.
- (c) **Issuers** will benefit directly, as more credit card usage arising from greater merchant acceptance will lead them to receive more interchange fees and recover costs over a wider base.
- (d) **Existing merchants** will benefit *indirectly*, because the more merchants there are who accept cards, the more likely it is that cardholders will hold cards (since there are fixed costs to cardholders of joining the network, and the greater the number of merchants and instances in which a card can be used, the greater the ability to defray those costs). Another indirect benefit will arise if (as seems to be the case) there are economies of scale in acquiring — the more merchants there are who accept cards, the lower the average costs of acquiring (to the extent passed on via competition to merchants in the form of lower merchant fees).
- (e) **Cardholders** will also benefit *indirectly* if greater card use (either through more cardholders or increased intensity of card use per cardholder) leads to lower per unit costs of issuing, via economies of scale (to the extent passed on in some form via competition to cardholders).

It can be seen from the above analysis that network effects are largely symmetric, at least in a qualitative sense. More cardholders (and more intensive use of cards) leads to direct benefits to merchants, issuers and acquirers, and indirect benefits to cardholders and merchants. An increase in the number of merchants who accept cards leads to direct benefits to cardholders, issuers and acquirers and indirect benefits to cardholders and merchants. This symmetry occurs because credit card services are jointly produced by issuers and acquirers and jointly consumed by cardholders and merchants.³

Are These Effects Externalities?

Network effects are also externalities if the effects are not internalised through prices i.e. As such, it would be expected that the *indirect* networks effects (1(d), 1(e), 2(d), 2(e)) are probably not externalities. This is because they reflect essentially a larger network leading to lower costs of issuing, acquiring, card usage and card acceptance, and via competition these savings are probably passed on.

Direct network effects might or might not be externalities.

³ One point of difference is that while cardholders can choose the intensity of their card use, merchants cannot readily choose the intensity of their card acceptance. Merchants are bound by the ‘honour all cards’ rule of the credit card associations, so have no discretion as to which cards (within a scheme) they will accept.

Assuming that merchants charge the same prices to card-paying consumers and others, the direct effect of increased numbers of cardholders on merchants and increased usage on merchants (1(a)), is an externality. The joining of new cardholders creates benefits for merchants, but this is not reflected in lower prices charged by merchants to these cardholders. Other things being equal, this non-pricing would lead to both membership and utilisation being below socially optimal levels.

On the other hand, the benefit to issuers of greater membership (1(b)) is probably priced and therefore not an externality, along with more interchange fees from greater usage. Likewise, the direct effect of increased cardholder usage on acquirers (1(c)) (more merchant service fees) is probably priced and not an externality.

It seems likely that the direct benefit to cardholders of greater merchant acceptance (2(a)) could be internalised in market-determined prices, and so it is probably not an externality. Once a merchant decides to accept cards, that merchant can raise the prices faced by all consumers to reflect the benefits that those consumers are receiving from the merchant's decision to accept credit cards. If merchants want to give discounts to non-credit card paying customers, they can do so, but few do, probably due to the high transactions costs of doing so, the fact that non-credit card paying customers impose extra costs on the merchants (such as cash handling), and the fact that non-credit card paying customers might have the option of paying by credit card (which they choose not to exercise) if they are members of a card scheme. This option has value, and is internalised by merchants by having non-credit card customers pay the same prices as credit card customers.

The direct effects of increased merchant acceptance on acquirers (2(b)) and issuers (2(c)) are also not externalities, as they are reflected in merchant service fees and interchange fees.

In summary, of the network effects identified and discussed, only one, the direct effect of increased card membership and usage on merchants, is likely to be an externality. Unremedied, this positive externality will lead to under-membership of card schemes and under-use of credit cards, relative to the social optimum.

Dr Veale's letter asks about evidence of the value of this externality or what it would look like. The evidence that it exists is obvious enough: it is the fact that the overwhelming majority of merchants voluntarily accept all of the open scheme credit cards, typically (but less often) along with one or both of the closed scheme cards.

It is obviously not easy to quantify the benefit to a typical merchant but in principle it could be done by surveying merchants, seeking their assessment of the sales they would lose by ceasing to accept (a) one of the two main open scheme cards, (b) all open scheme cards and (c) all credit cards and /or the costs they would incur by providing the cardholders with store credit or a proprietary store credit card.

Implications of this externality

The analysis above showed that while merchants can internalise the effects of their actions on cardholders, the reverse is not true. Actions by cardholders to join card schemes and use their cards create a positive externality.

Credit card services are jointly consumed by cardholders and merchants, and the fixed and common costs of running the credit card network need to be recovered from cardholders and merchants, jointly. As discussed below, an important issue is what proportion of these network costs should be recovered from cardholders (in the form of annual fees and other direct charges) and from merchants (in the form of merchant service fees). As discussed below, one way of answering this question is to apply the reasoning of Ramsey pricing, i.e. to minimise distortions to patterns of use, more should be recovered from the party with the lower price elasticity of demand. However, quite apart from this line of reasoning, the likelihood that cardholders generate positive externalities implies that cardholders should pay less than that implied from the Ramsey argument. (I.e. they should receive a Pigouvian subsidy.)

The externality implies that card membership and usage, at uncorrected market prices, is less than socially optimal and thus that steps should be taken to encourage membership and use. Seen in this light, loyalty schemes and warranties, which encourage membership and use, are positive for economic efficiency. Furthermore, the suggestions in the *Joint Study* that direct charges to cardholders should be increased are thoroughly misguided, since they would take membership and use of credit cards in the *wrong* direction.

3. The Balance between Merchant Fees and Cardholder Fees

As discussed above, credit card services are jointly consumed by cardholders and merchants, and jointly produced by issuers and acquirers. The total costs of issuing and acquiring (excluding interchange fees, which are just an intra-system transfer) need to be recovered directly from cardholders (in the form of annual fees etc) and merchants (in the form of merchant service fees).

The issue is how much of the total issuer and acquirer costs (or what proportions thereof) are recovered from each party. It should be noted that this question exists independently of how the interchange fee should be determined. To see this, suppose that (for a 'buy now, pay later' functionality) revenues and costs for issuers and acquirers are as follows:

	Issuers	Acquirers
Revenues	20	80
Costs	60	40

Under the ABA's proposed Avoidable Costs methodology, interchange fees paid by acquirers to issuers would be calculated as costs⁴ less revenues received directly from cardholders i.e. $60-20=40$. Alternatively, under the Visa/Baxter methodology, interchange fees received by issuers are the difference between costs and 'pro-rata' costs, where network costs are allocated to issuers and acquirers in the same proportion as revenues received. In the above example, issuers receive 20 per cent of the revenues, therefore their pro-rata share of combined costs is also 20 per cent. Thus, with actual costs of 60, but pro rata costs of 20, issuers receive interchange fees of 40.

⁴ This example abstracts from the distinction between stand alone costs and incremental costs.

Thus (at least in this simple example), both methodologies lead to the same answer, which is an interchange fee of 40. However, the key point is that *each methodology takes the amount of revenue paid by cardholders (and merchants) as given*, i.e. these amounts are determined outside the models for determining interchange fees. The question is then how to determine these amounts, or the balance between them. This question would arise in the absence of interchange fees, as it does in the closed credit card schemes. There are no interchange fees in the closed American Express and Diners Club schemes,⁵ but these schemes still need to determine how much revenue is optimally received from cardholders and how much from merchants, whether by trial and error in the marketplace or otherwise.

The question arises in the open schemes quite independently of interchange fees. Suppose that cardholders happened to shop only at merchants who are acquired by the same bank that issued the cardholders' cards, i.e. all transactions are 'on us' (unlikely today but theoretically possible and essentially the structure of the industry 35 years ago). In this instance, no interchange fees would be paid, but the fundamental question is still there: in what proportions are the systems' costs to be recovered from merchants and cardholders?

It is important to recognise that virtually all credit card system costs are *common* costs, so that once the total of such costs is dealt with (as it is in the ABA proposal), any method of *allocating* such costs by rule, as between merchant and cardholder, is necessarily arbitrary — i.e. has no *economic* basis, whatever other merits it may have. This is true of both rules which pro-rate on some accounting basis and suggestions that particular cost elements should be arbitrarily ascribed to merchant only or cardholder only.⁶

How then, if not by some arbitrary allocation rule, should the respective amounts borne by merchants and cardholders be determined? As discussed above, one way of thinking about this problem is as a Ramsey pricing problem. That is, in order to minimise distortions to patterns of usage away from efficient patterns, revenue should be raised to cover network costs from each source in inverse proportion to that source's price elasticity of demand. This is sometimes called 'pricing according to economic capacity to pay'; it is used as a benchmark model in a variety of regulatory contexts and indeed something like it often emerges via competition in the marketplace itself (e.g. in pricing of seats on scheduled aircraft).

There are good reasons to think that the price elasticity of demand of merchants is significantly less than that of cardholders, and thus that the bulk of revenue should be recovered from merchants. (This is indeed what happens in closed schemes, where revenues received from merchants are several times larger than those received from cardholders, and in open schemes the balance is not greatly different from that.)

⁵ Other than in the exceptional cases where these schemes may work with third party issuers.

⁶ If particular marginal costs can be attributed wholly to cardholders or merchants, then those costs should be recovered directly from those sources, without any sharing. However, it is difficult to think of practical examples, since most fixed and marginal costs in a credit card network are appropriately assigned jointly to cardholders and merchants, since they are the joint consumers of the services produced. Furthermore, the existence of the positive externality from card membership and use implies that less than full costs should be recovered from cardholders.

Provided they can be confident that merchants of relevance to them will accept a wide variety of cards (and most do)⁷ cardholders need hold only one card (provided they can obtain a sufficiently high credit limit). This card will have the best combination for them of features (direct charges, loyalty programs, interest free period etc). If direct charges for MasterCard were to rise significantly relative to Visa, cardholders would be expected to change *en masse* from MasterCard to Visa, since these types of cards are very close substitutes, despite incurring a fixed cost by switching. To a lesser extent, that would true of other card combinations (e.g. involving Amex or Diners) as well.

Merchants, on the other hand, tend to accept a wide variety of cards. This is because merchants know that different types of cards are distributed throughout the cardholding population, and consequently it would be poor business practice on their part to cease accepting particular types of cards, even if the price of those cards (the MSF) rose somewhat relative to others. This is because by ceasing to accept a particular card they stand to lose the custom of all consumers whose spending in the merchants' market depends on the 'buy now, pay later' feature and who only have that particular card.

Moreover the incremental costs to a merchant of accepting an additional card brand are not very high if the merchant already takes some card(s) and has an acquirer, terminals etc; and moreover, merchant fees are only paid when cardholders (with the given card) actually spend with the merchant. This contrasts with the cardholder's situation: the cardholder faces a significant fixed cost by taking an additional card, whether or not it is used at all. Thus merchants are probably less sensitive to price changes than cardholders because they incur the costs only when the card is used, and are especially less sensitive if they can pass on small changes in MSFs in goods and services prices (taking relative price sensitivity of customers into account), just as they can do with changes in costs of handling cash and cheques.^{8 9} (Cardholders, by contrast, cannot pass on changes in card charges to anyone.)

Thus, there are probably sound reasons for believing that the balance of recovery as between merchant and cardholder that has been observed over many years in competitive marketplaces around the world (i.e. the greater part of card system costs recovered via merchants) is economically efficient, or close to that. Reinforcing this point is the positive externality from cardholder use, which is further reason to place a relatively light proportion of issuer costs on cardholders.

4. Implications for Interchange Fee Setting

Before discussing the implications of the above for the setting of interchange fees in open schemes, it is worthwhile recalling once more that in closed schemes, there are no interchange fees (except in respect of limited arrangements they may make with third party issuers). This means that in respect of the balance between merchant fees and cardholder fees, there are no implications of or for interchange fee setting i.e. the balance between merchant fees and cardholder fees is determined in the market.

⁷ Nearly all merchants in Australia (with a few exceptions e.g. taxi companies which do not accept Visa) who accept open scheme cards accept all three cards.

⁸ This is true, but only up to a point. Some merchants do not accept the closed scheme cards, because the MSFs are too high, some (e.g. taxi companies) may not take particular open scheme cards, and some may not take any credit cards. Thus, while merchants are less sensitive to price changes than cardholders, this does not mean they are completely insensitive.

⁹ While merchants are likely to be relatively insensitive to differences in MSFs for different cards, they are likely to be sensitive to differences in MSFs for a given card. Merchants can switch acquirers quite easily, and this ease has been reflected in falling average MSFs in recent years.

Competition among Schemes

The relevance of competition to the setting of interchange fees in open schemes is that there is competition between closed schemes, on the one hand, and open schemes, on the other, in the market. Competition can consist of closed schemes offering e.g. more generous loyalty programs, and also straightforward price competition in annual membership fees for cardholders, amongst other competitive initiatives. Over time, the process of competition between closed schemes and open schemes has led to a set of closed scheme fees to cardholders and merchants — i.e. a balance of revenues raised from cardholders and merchants — which has allowed the closed schemes to compete with open schemes and each other and vice versa.

This competitive process is entirely consistent with the driving forces described in Section 3 — the greater responsiveness of cardholders (in both open and closed schemes) to price changes relating to their membership, and the positive externality from cardholder membership and use (present in both open and closed schemes), have led to the observed outcome, with about three quarters of schemes revenues collected from merchants, and one quarter from cardholders.

It cannot have been the case that the relative amount collected from merchants and cardholders in closed schemes has been distorted by interchange fees, because, by definition, there are no explicit interchange fees in closed schemes (except to the limited extent that they use third party issuers). Furthermore, there is no evidence the process of competition between open and closed schemes has taken the form whereby the open schemes are price leaders and the closed schemes followers. Hence, there is no evidence that the way that interchange fees are set in open schemes has a significant influence on the balance between merchant fees and cardholder fees in closed schemes. On the contrary, the closed schemes tend to have significantly higher MSFs and somewhat higher cardholder fees — although also competing on cardholder benefits.

The focus of closed schemes on specific consumer market segments (e.g. business travellers vs domestic households) is not the same as that of the open schemes, and of course the functionality is different (closed schemes offer no option to revolve), allowing pricing differences to persist. To any one open scheme, therefore, the closed schemes make up a significant part of the competitive environment that constrain a particular open scheme from setting interchange in a way which is inconsistent with a market competitive balance between merchant fees and cardholder fees.

Implications for Interchange Fees

Open card systems involve distinct parties and are likely to involve distinct business units within some parties. The interchange fee is a key determinant of the profitability of individual businesses and business units, and hence changes in the fee within a particular scheme will produce reactions from both issuers and acquirers for that scheme — e.g. in their pricing, in their service levels, in their cost management, and even in respect of their level of involvement in the scheme in question c.f. others.

From the scheme's perspective, in seeking to compete and grow, the primary focus is on the issuer. Interchange fees need to be consistent with the issuer deriving an acceptable return with cardholder fees set competitively, if a strong cardholder base is to be retained — the source of network externalities in the scheme.

In summary, the competitive process by which interchange fees have been determined is as follows. The division of revenues from cardholders and merchants is determined by the interaction of (i) the relative price elasticity of demand of cardholders and merchants (ii) the positive externality arising from cardholder membership and use and (iii) competition between open and closed schemes.

The ABA Proposal

ABA is not proposing, however, that interchange fees should be set just by the competitive process. ABA recognises and accepts the RBA's argument that interchange fees should be efficient, cost-reflective and set in a transparent way. This recognition is reflected in ABA's submission to the RBA of July 2001 and discussed in Section 5 of this submission. The ABA proposal does not propose how interchange fees should be set by each scheme in competition with others, only how to create an envelope within which an interchange fee meets efficient pricing principles. The *net* upper bound (aggregate issuer stand alone costs less cardholder revenues) represents the maximum efficient interchange fee (i.e. equal to the upper bound).

An Alternative to Interchange Fees?

It has been suggested by some¹⁰ that, if merchants offering credit card facilities could vary their prices according to whether customers used their card, the case for interchange fees as a solution to the externality problem would disappear i.e. cardholders could be induced to use their cards (in an optimal fashion). In terms of the numerical example given in Section 3 above, the argument is as follows. (Recall that, given the revenues and costs depicted in the table, interchange fees must be 40 to induce participation by all four parties.) Suppose cardholders received a discount of 40 on their purchases. Merchants would then be worse off by 40, so to compensate would require a cut in their MSF of 40. This would leave acquirers worse off by 40, so interchange fees are cut by 40 (i.e. interchange fees become zero). This leaves issuers worse off by 40, so they raise fees charged direct to cardholders by 40. But cardholders have already received a discount of 40, so — it is argued — they shouldn't mind the extra charge.

In this example, interchange fees are zero, but everybody (cardholders, merchants, issuers, acquirers) still apparently has an incentive to participate in the system.¹¹

The problem with this solution to the externality is that it assumes that holders of the particular card will be equally happy paying more up-front (a higher annual fee) in exchange for future discounts, of uncertain value, at card-accepting merchants — this when other open and/or closed scheme cards which are close substitutes do not pose this proposition.

¹⁰ Such as Joshua S Gans and Stephen P King, "The Role of Interchange Fees in Credit Card Associations: Competitive Analysis and Regulatory Issues", *Australian Business Law Review*, vol 20, 2001.

¹¹ It should be emphasised that this solution involves cardholders paying *less* for purchases than consumers who pay by other means, the opposite of the Joint Study's preferred outcome, which is to abolish the "no surcharge" rule and have cardholders pay more than others.

The value of the discounts is uncertain because there is no assurance that the consumers will actually make the necessary purchases in the future with the relevant merchants. If cardholders are in any way risk averse, they will reject a deal which offers them a certain loss (higher annual charges) in exchange for future gains of equal expected value. If this happens, then far from solving the externality problem, the solution with no interchange fees will shrink the card system in question, or all card systems which are forced to change this way, as cardholders move to alternatives (such as the closed system cards). The solution cannot be saved by offering cardholders larger discounts, because then either merchants, acquirers or issuers will not cover their costs.

A different alternative, which would also obviate the need for an interchange fee, might be for merchants to pay cardholders an upfront fee on the assumption that these cardholders would make purchases from these merchants in the future. Merchants would then pay lower merchant service fees, if and when these sales occurred. Interchange fees would be correspondingly reduced (to zero) and issuers would make up the shortfall by charging a higher annual fee to cardholders. In this case, cardholders would be indifferent, since they gain as much (with certainty) from the merchants as they would lose from higher annual charges.¹² But on this occasion, risk-averse merchants would lose, as they would be exchanging a certain loss (the payment to cardholders) in exchange for an uncertain gain later on (a cut in MSFs payable *if* the cardholders to whom they have made an up-front payment shop at their stores).

Introducing uncertainty to the argument — and keeping in view the fact of a competitive environment — shows the efficiency of interchange fees as a means of optimally aligning incentives in a credit card system, and as a solution to the externality problem. The textbook case of a polluting factory which creates an externality has an easy solution, in large part because the pollution occurs with certainty. The externality created by card membership, in contrast, is contingent on that card actually been used. While merchants are the *potential* beneficiaries of the externality, that benefit is only crystallised if cardholders make purchases from merchants. If that happens, then merchants pay for the benefit they receive via the MSF. If cardholders choose not use their card then merchants don't benefit, but don't pay anything either.

This doesn't mean that cardholder fees should be zero. Cardholders benefit from membership even if they don't use their card, because membership gives them the option of using it, and the option has some value. Indeed, individual issuers try to gain as much revenue as they can from cardholders, although this is restrained by competition and the cardholder elasticity to the price of membership. On the other hand, merchants' price elasticity is low, partly because of the need to accept all (or most) cards, and partly because merchants only pay if they make a sale: their fixed costs of membership are low.

¹² Assuming that the up-front payment from merchants could be effected in practice.

5. The ABA Proposal

This section discusses the ABA proposal for setting interchange fees in the light of the foregoing discussion. Noting that the RBA has announced that it will not regulate merchant fees or cardholder fees (or interest rates on revolving credit), the ABA proposal, in essence, is to require schemes to set interchange fees so as to recover *from all sources combined* no more than the benchmark stand alone cost of issuing *less* actual (average) cardholder fees received. This is analogous to price cap regulation used by other regulators and is consistent with efficient pricing principles.¹³

With reference to Dr Veale’s letter, it was not intended in the recent discussions to leave the impression that “externalities do not matter”. What was meant is that seeking to value them, which does not in any case appear to be possible with any precision, will not lead a price regulator to a *lower* range or ‘envelope’ within which interchange fees must be set to be consistent with efficiency. Rather, the undoubted existence of the externalities confirms the *direction* of interchange that has long and widely prevailed in the credit card services marketplace, and gives assurance that a purely cost-based interchange setting approach will produce interchange fees that are *conservative* — i.e. if anything on the low side.

The logic is:

- Interchange should exist and flow from Acquirer to Issuer.
- Externalities are one basis for this flow of interchange but not the only reason.
- The envelope provides a range for efficient pricing.
- Any actual interchange fee within the envelope is efficient.
- Any interchange fee set within the envelope, regardless of how it is determined, will be conservative if it does not include quantitative consideration of the externality.
- Quantification of the externality is not possible.

So we are left with efficient interchange fees that are conservative.

How it works under the ABA proposal is as follows. If issuers collectively are initially recovering (from all sources) more than benchmark stand alone cost, interchange will be reduced at scheme level under the ABA model. This will lead to some further reduction in merchant fees (depending on the competitive environment among individual acquirers and schemes). It will also encourage individual issuers to increase recoveries from cardholders (again, how much depending on the competitive environment). As noted in discussion between ABA and RBA representatives, the individual issuer has an undiluted incentive to recover more from the cardholder. If competition allows him to do so, the issuer keeps every dollar — with only a minor and delayed effect on the scheme average cardholder fee (and its interchange fee) at next reset.

If issuers collectively are initially recovering *less* than stand alone cost, the reverse consequences would be likely to occur. Even if issuers in aggregate are initially recovering no more than stand alone cost, they individually still have an incentive to recover as much as possible (in the competitive environment) from cardholders.

¹³ Strictly, the regulator should also seek prices for each service above incremental cost, but usually emphasis is on the upper limit.

There is no need to refer to acquirers' costs in this methodology, but this does not mean that a methodology which did consider acquirers' costs would be wrong. In theory, a methodology could focus on acquirers, with interchange paid by issuers, i.e. require interchange to be set so that average merchant fees plus interchange fees received recovered no more than stand alone cost of acquiring. In the numerical example given above, this would lead to interchange fees paid to acquirers by issuers of minus 40 i.e. the same result as when the focus is on issuers' costs.

However several practical matters point to interchange running from acquirers to issuers, based on issuers' costs. These are, first, that issuers' costs are typically larger than acquirers' costs; and second, the evidence of falling merchant fees, implying that acquiring is certainly very competitive and not the place in the chain where costs are presently being over-recovered (if anywhere in the credit card systems). Further, a mechanism that involves only measuring half the scheme's business (i.e. the issuing function) is more cost effective, and therefore likely to be more technically efficient, than a mechanism which imposes the 'double' compliance burden of measuring both issuing and acquiring. In the circumstances, it is appropriate to base regulation on issuers' costs and for those costs to form the basis of the interchange fee received by issuers.