



# PAYMENTS SYSTEM BOARD

Annual Report

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RESERVE BANK OF AUSTRALIA

2000



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## PAYMENTS SYSTEM BOARD

The Bank's payments system policy is directed to the greatest advantage of the people of Australia; and the powers of the Bank under the *Payment Systems (Regulation) Act 1998* and the *Payment Systems and Netting Act 1998* are exercised in a way that, in the Board's opinion, will best contribute to:

- controlling risk in the financial system;
  - promoting the efficiency of the payments system; and
  - promoting competition in the market for payment services, consistent with the overall stability of the financial system.
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## OVERVIEW

The Payments System Board of the Reserve Bank is responsible for promoting the safety and efficiency of the payments system in Australia. It has the backing of strong regulatory powers, which are intended as "reserve powers" to be exercised when co-operative efforts for change prove ineffective. The Board has now completed its second year of activity.

The Board's direction has been largely set by its initial stocktake of the Australian payments system, detailed in its inaugural Report. This confirmed that Australia scored highly on safety matters but was short of international best practice on efficiency, particularly in the retail payments system. Established retail systems have also come under closer official and judicial review in other industrial countries.

In the retail payments area, the Board's approach to its mandate to promote efficiency has focussed on examining arrangements where there is reason to believe that prices charged for payment services are diverging substantially from their cost. When relative prices accurately reflect relative costs and are transparent, consumers can make well-informed choices and the market will allocate resources efficiently to meet the demand for various payment services. With these objectives in mind, the Board embarked on a major study of interchange fees and conditions of entry in debit and credit card networks, in conjunction with the Australian Competition and Consumer Commission. Interchange fees are wholesale fees that underpin the prices paid for card services by cardholders and merchants. These fee structures have important implications for the efficiency of the retail payments system in Australia, but they have hitherto been subject to very little public scrutiny.

The study concluded that in card networks competition is not working as it should. Interchange fees in ATM and credit card networks are higher than can be explained by costs while in debit card payment networks the case for the existence of interchange fees is not convincing. Cardholders and merchants do not have a direct influence on the setting of interchange fees and there are restrictions on entry to the card networks, both explicit and informal. The normal market mechanisms that could be expected to bring interchange fees into line with costs have therefore lacked potency, with the result that Australia has a higher cost retail payments system than necessary.

The findings of the study have now been published for community discussion. The Board's view is that, once the issues have been fully aired, the onus will be on the financial institutions involved in setting interchange fees and conditions of entry to move quickly to introduce more efficient arrangements.

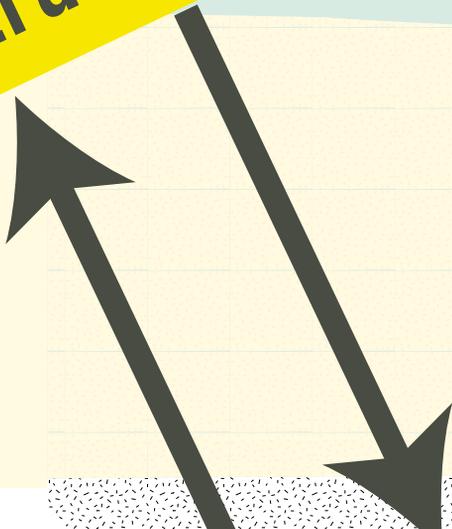
Not all impediments to efficiency have their origins in price and cost signals. Consumer reluctance to use the direct debit system to pay routine bills, for example, has more to do with issues of control and confidence. The Board has been working with billing organisations to develop consumer safeguards — in the form of a Charter for Direct Debit Customers — that would encourage greater acceptance of this very efficient payment instrument. The Board has also been monitoring the extent to which financial institutions have taken advantage of more efficient cheque-clearing technology and procedures to make cheque funds available to their customers more quickly. It welcomes what has now become industry best practice of a three-day cycle. The demands of electronic commerce will, of course, place existing retail and commercial payments systems under inexorable pressure to become more efficient.

In the safety and stability area, there is now a clear international consensus about the features that payment systems carrying large-value transactions should have. Reforms over recent years, in particular the introduction of a real-time gross settlement (RTGS) system, mean that Australia's domestic high-value payment systems now rate highly against international standards. The Board's detailed assessment of Australia's systems is in this Report. The unfinished agenda under this part of the Board's mandate is foreign exchange settlement risk. The Board has supported a global initiative to address this risk through the establishment of a special-purpose bank — CLS Bank — that will include the Australian dollar as an eligible currency. One agenda item from last year which was successfully concluded was the transition of the Australian payments system through the year 2000 date change.

In 2001, the Board is expected to gain new responsibilities for the regulation of securities clearing and settlement systems of systemic importance. In anticipation, the Board has supported early efforts to encourage rationalisation of securities clearing and settlement systems in Australia.



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## THE ROLE OF THE BOARD

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### THE BOARD'S RESPONSIBILITIES AND POWERS

The establishment of the Payments System Board on 1 July 1998 was one of the major changes to Australia's financial regulatory structure flowing from the Financial System Inquiry (the Wallis Committee). The Reserve Bank's previous informal oversight of the Australian payments system was substantially upgraded, with the granting of a formal mandate to the Board to promote safety and efficiency and strong regulatory powers in support.

These new arrangements arose out of the Inquiry's conviction that Australia had work to do to bring its payments system up to international best practice, certainly as far as efficiency was concerned. In the Inquiry's view, a payments system steered only by co-operative arrangements between participants, as had been the case in Australia, could not be guaranteed to deliver on the objectives of public policy, particularly the goal of improving efficiency. The Inquiry also acknowledged that the safety of the payments system was integral to overall financial stability, which was a long-standing Reserve Bank responsibility.

The Board's mandate is set out in the amended *Reserve Bank Act 1959*. The Board is responsible for determining the Reserve Bank's payments system policy and must exercise this responsibility in a way that will best contribute to:

- controlling risk in the financial system;
  - promoting the efficiency of the payments system; and
  - promoting competition in the market for payment services, consistent with the overall stability of the financial system.
- The relationship between the Board and the Bank is that the Board determines policies with respect to the payments system and the powers to carry out those policies are vested in the Bank. These powers, which are wide-ranging, are set out in three separate Acts. The centre-piece is the *Payment Systems (Regulation) Act 1998*, under which the Bank may:
- "designate" a particular payment system as being subject to its regulation. Designation is simply the first of a number of steps the Bank must take to exercise its powers;
  - determine rules for participation in a designated system, including rules on access for new participants. The Reserve Bank now has the capacity to decide on questions of access to the payments system, since access is an important determinant of efficiency;
  - set standards for safety and efficiency for that system. These may deal with issues such as technical requirements, procedures, performance benchmarks and pricing; and
  - arbitrate on disputes in that system over matters relating to access, financial safety, competitiveness and systemic risk, if the parties concerned wish.



The *Payment Systems (Regulation) Act 1998* also gives the Reserve Bank extensive powers to gather information from a payment system or from individual participants.

The Government's intent was that the Bank would treat these powers as "reserve powers", to be exercised if other means of promoting efficiency and competition proved ineffective. Accordingly, the Government built considerable flexibility into the new regulatory regime. Under this co-regulatory approach, the private sector will continue to operate its payment systems and may enter into co-operative arrangements, which may be authorised by the Australian Competition and Consumer Commission (ACCC) under the *Trade Practices Act 1974*. However, if the Bank is not satisfied with the performance of a payment system in improving access, efficiency and safety, it may invoke its powers. It may then decide, in the public interest, to set access conditions or impose standards for that system. In doing so, it is required to take into account the interests of all those potentially affected, including existing operators and participants. Full public consultation is required and the Bank's decisions can be subject to judicial review.

The Reserve Bank also has specific powers under the *Payment Systems and Netting Act 1998* and the *Cheques Act 1986*, which are designed to strengthen the legal underpinning of the Australian payments system by clarifying the rights of participants. These powers were explained in the Board's first Report.

Looking ahead, the Board will acquire additional responsibilities as part of the Government's ongoing Corporate Law Economic Reform Program (CLERP). The draft *Financial Services Reform Bill* proposes, inter alia, a single statutory regime for the licensing and regulation of clearing and settlement facilities. Licensing would be by "the Minister" (ie the Treasurer or a Minister in his portfolio) while regulation would be the responsibility of the Australian Securities and Investments Commission (ASIC), with a significant role for self-regulation. However, in consultation with the Reserve Bank and ASIC, the Minister may declare that a particular clearing and settlement facility is of sufficient significance to the stability and integrity of the payments system that it should be regulated by the Payments System Board. Such a declaration would remove that facility from the coverage of the (amended) Corporations Law and place it under a comparable regulatory regime in the *Payment Systems (Regulation) Act 1998*. This would involve gathering and assessing relevant information, ensuring that the facility operates safely by, for example, vetting its rules and procedures, and imposing any conditions necessary on the operator's licence.

The Government's intention is that the legislation would come into effect by mid 2001. Once it does, the Reserve Bank and ASIC will enter into a Memorandum of Understanding setting out areas of common interest as well as information-sharing and co-ordination arrangements.

## THE BOARD'S APPROACH

The Board's priorities over its first two years have been shaped by the preliminary stocktake which it undertook, early in the piece, of the efficiency and safety of the Australian payments system. The findings were summarised in the Board's first Report. Broadly speaking, the stocktake confirmed the conclusion of the Financial System Inquiry that there was scope to reap significant gains in efficiency in the retail payments system. At the retail level, Australians have enthusiastically embraced electronic means of payment, particularly debit and credit cards. However, the payment instrument that is most costly to provide – the cheque – remains the most frequently used non-cash instrument, while the most efficient way of paying regular bills – direct debits – has found limited customer acceptance. The pricing of some payment services also lacks a compelling rationale and is distorting the payment choices facing consumers. From the safety perspective, in contrast, the stocktake found that Australia had a very robust payments system by international standards.

Against this background, the Board's main focus over 1999/2000 has been the pursuit of greater competition and efficiency in the retail payments system.

Retail payments arrangements are coming under increasing scrutiny in other countries as well. In the United Kingdom, a report for the UK Government, *Competition in UK Banking* (the "Cruickshank Report"), concluded that the UK payments system needed major reform and recommended the

establishment of an independent payments system commission to help secure price transparency and efficient wholesale pricing. In the United States, major court action asserting anti-competitive behaviour by credit card associations is under way, on two fronts. Existing retail and commercial payments systems are also facing challenges in many countries from the rapid growth of electronic commerce.

The evolution of the retail payments system is determined, fundamentally, by consumer demand, technology and competition in the market place. The Board does not have a blueprint to guide this evolution, and it would be presumptuous of it to direct resources or seek to "pick winners" amongst competing technologies. That is the role of the market. For the market to work efficiently, however, users of payment services should pay for those services and the prices they pay should broadly reflect the costs of production. Retail payments systems may fail one or both of these tests. In some cases, this is simply a legacy of the era in which there was considerable cross-subsidisation in banking, resulting in payment services often being provided free or well below cost. Even now, however, some providers do not have a good grasp of the costs of producing payment services and, where they do, it has not been easy to move to cost-based pricing in the face of customer opposition. In other cases, such as credit card schemes, fees and charges to customers are based on wholesale fees which are determined by financial institutions at one step removed from end-users. Credit cardholders



themselves do not face any costs at the time of a transaction because there are no transaction fees and card scheme rules prevent the passing on of costs to cardholders. The normal requirement that an efficient market should signal to the consumer the resource cost of the service is missing.

Hence, the encouragement of transparent pricing for payment services, broadly reflective of costs, has become a major policy objective of the Board. If this can be achieved, consumers will be well placed to make decisions that lead to a more efficient retail payments system. That system will almost certainly involve greater use of electronic payment mechanisms and reduced, though still continued, use of cheques. The durability of the cheque should not surprise. Provided charges for cheques reflect the relative costs involved, cheques have a place as a convenient and flexible payment instrument for many Australians. In the same way, there is nothing inherently inefficient in using a full-service, rather than a self-service, petrol station provided the buyer faces the correct relative prices.

The Board's approach to meeting this policy objective, within a co-regulatory regime, can be illustrated by two of its initiatives during 1999/2000. The first is the study of interchange fees and conditions of entry in debit and credit card schemes, which has been undertaken jointly with the ACCC. The study has now been published and its conclusions are summarised in the next part of this Report. In the information-gathering phase, the Board deliberately eschewed the use of its statutory powers in favour of an

approach based on co-operation, and it was pleased that most participants in card schemes responded in that spirit. Participants were also given every opportunity to explain their understanding of the rationale for interchange fees and access arrangements. In a small number of instances, however, the Board found it necessary to use its formal powers under the *Payment Systems (Regulation) Act 1998* to obtain information.

The study explains the workings of debit and credit card schemes, the role and level of interchange fees and, where relevant, the methodologies used by financial institutions responsible for negotiating or setting fees. Card schemes are complex and the rationale for interchange fee arrangements is often not well understood, even by some of their participants. Publication of the study is intended to fill a clear gap in the information available to the community about the operation of card schemes. The Board regards this as an important part of its role. At the same time, the study has identified shortcomings in competition in the provision of card services, which have raised the cost to the community of the retail payments system. These shortcomings need to be addressed, in the first instance by the financial institutions involved, if Australia is to benefit from improved competition and efficiency in debit and credit card schemes.

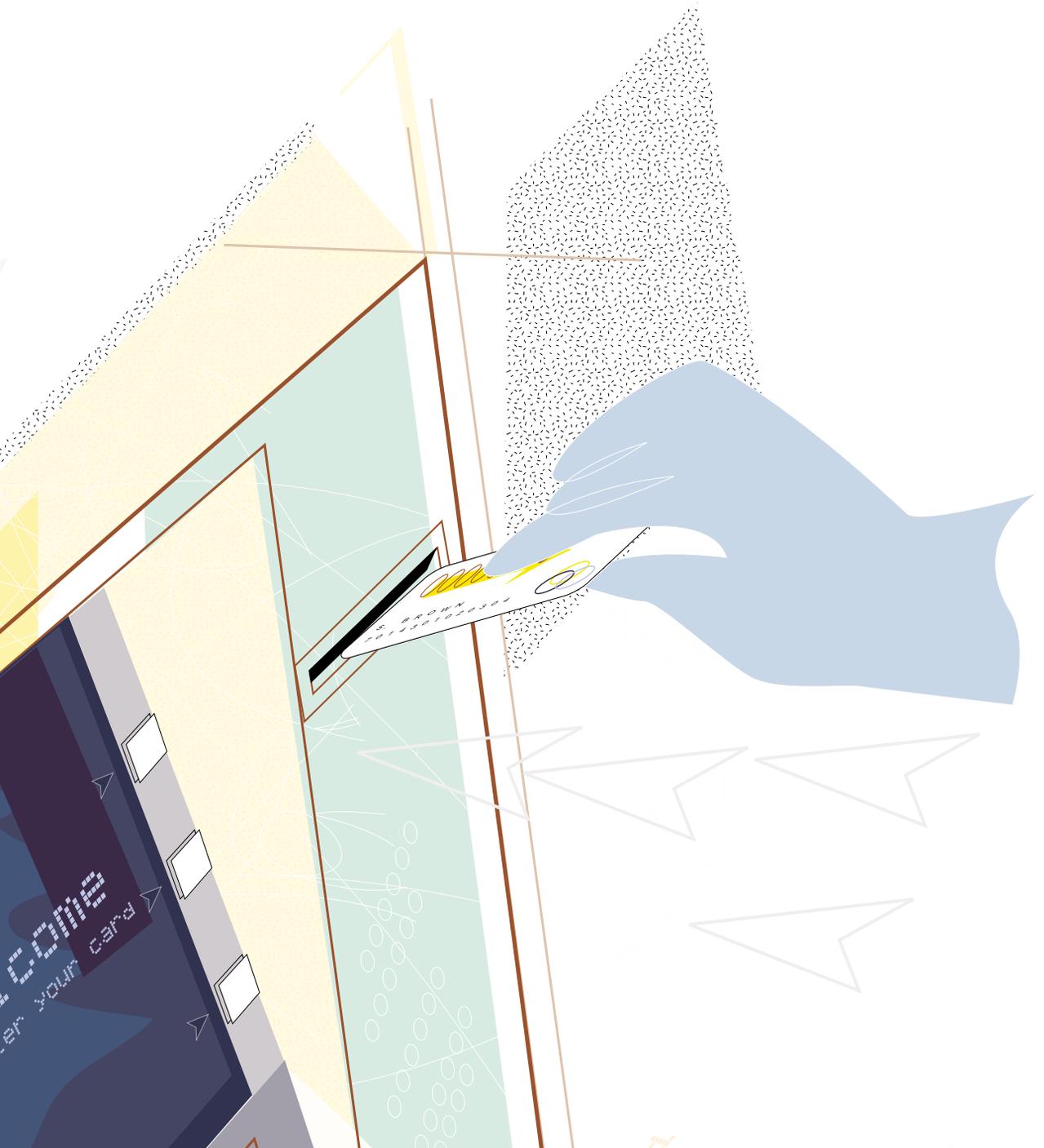
A second Board initiative has been the promotion of direct debits. Once established, direct debits are probably the most efficient means of paying regular bills or recurring obligations, but this instrument has not

found ready acceptance in Australia. The infrastructure for direct debits is well established, in the form of systems and procedures co-ordinated by the Australian Payments Clearing Association (APCA). Recent changes have made the procedures more flexible for the institutions involved, but were not directed specifically at winning over consumers to direct debits. The Board reached the view that greater take-up would require the introduction of consumer safeguards of the kind that had proven successful abroad, but had not been tried in Australia. It has been working with billing organisations to develop such safeguards. The outcome is a new Charter for Direct Debit Customers, described in the next part of this Report, which gives consumers clear control over their bill payments. Billing organisations are free to commit to this Charter (a number have already done so) and use it as the basis for promoting direct debits to the Australian community. The Board saw its role as a catalyst for change in this area and, with the Charter now agreed, it can step back from this involvement.

In contrast to these specific initiatives, the Board's involvement in the development of electronic commerce is at a more embryonic stage. Australian businesses have been quick to harness the speed and flexibility of the Internet to improve the efficiency with which they communicate and do business with one another. However, the payments side has been lagging, in Australia and other major countries, and considerable gaps have opened up between the payment demands of e-commerce and what established payments

systems can deliver. One reason has been the inherent need for higher standards of security and reliability for payments systems than for less critical communications, which can make them more inflexible and harder to change. Another reason is that traditional providers of payment services have tended to be less fleet-footed than the dot.com companies leading the e-commerce charge. Magnifying the problem is the fact that a single payment provider cannot reform a payments system; it must convince other providers of the need for change and to make the investment that would bring it about. The result, too often, is movement at the pace of the slowest.

In following developments in this area, the Board has been mindful to distinguish issues that are clearly proprietary, between payment providers and their customers, and those that have a broader industry dimension. As the Financial System Inquiry highlighted, it is in this latter area that markets for payments services and co-operative governance arrangements can work imperfectly and give rise to public policy concerns. For the moment, the Board's priority is to monitor the payments solutions which emerge in the e-commerce area, to satisfy itself that they meet users' expectations of flexibility and efficiency but without compromising safety and security.





## COMPETITION AND EFFICIENCY

During 1999/2000, the main endeavour of the Payments System Board, under its mandate to promote competition and efficiency, has been the study of interchange fees and conditions of entry in debit and credit card schemes, undertaken jointly with the ACCC. The study has been a comprehensive one, involving a number of staff from both organisations. In addition, the Board has been following developments in electronic commerce and, within that emerging area, has worked with billing organisations to improve consumer incentives to take up direct debits. The first Exchange Settlement account under the Board's liberalised access regime was opened during the year. The Board has continued to encourage financial institutions to speed the availability of cheque funds to what has become industry "best practice" of three days, and has endorsed a rationalisation of supervisory responsibilities for purchased payment instruments such as stored-value cards.

### STUDY ON INTERCHANGE FEES AND ACCESS

Interchange fees are fees which flow between financial institutions whenever customers of one institution are provided with card services by another financial institution. For instance, a financial institution whose customer withdraws cash through an automated teller machine (ATM) owned by another institution will pay an interchange fee to that institution. Interchange fees are wholesale prices, which are reflected in the fees and charges paid by retail customers who use debit and credit cards, and in the charges generally paid by merchants to their financial institutions when they accept cards for payment.

Interchange fees are not published as "carded rates" for all to see and compare. In Australia, interchange fees for ATM and debit card payments are set in bilateral negotiations between financial institutions and the rates are closely held. Interchange fees for credit card transactions are set jointly by the financial institutions which are members of the credit card schemes. Likewise, the fees are not made public.



As a consequence, little has been known – outside the institutions directly involved – about the rationale for and the process of setting interchange fees. Most importantly, it has not been possible to determine whether these fees have been encouraging the efficient provision of debit and credit card services or of other services, such as direct debits, with which they compete. Australian authorities have raised concerns about this lack of transparency, and the apparent stickiness of interchange fees, on a number of occasions over the past decade. More recently, the Financial System Inquiry recommended that debit and credit card arrangements be reviewed by the Payments System Board and the ACCC and that the rules and membership arrangements of the credit card associations be watched closely by the ACCC. The study was a response to this recommendation and to other developments that had come to the Board's notice.

The study analysed interchange fee arrangements for ATM, credit cards and debit card payment networks separately. For each of the networks, it drew on detailed cost and revenue data provided by the main participants.

## ATM NETWORKS

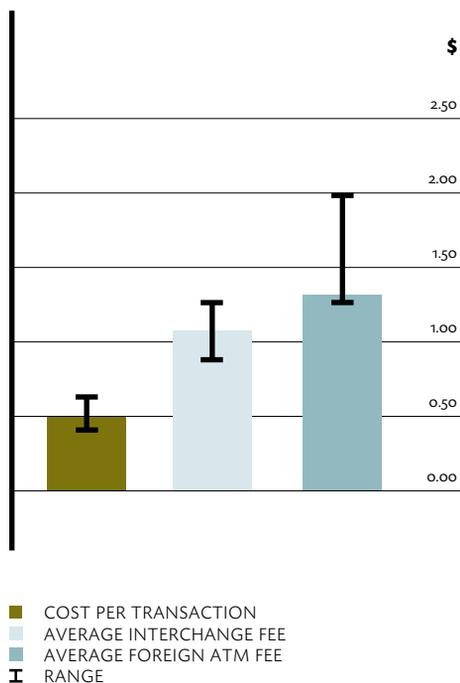
Interchange fees for ATM transactions are paid by the card issuer to the financial institution which owns the ATM. They are designed to reimburse the ATM owner for costs incurred in providing a cash dispensing service to the issuer's customers. The fees were determined by bilateral negotiation mostly in the late 1980s, by which stage several separate networks had been established. These networks have now been effectively linked but interchange fees have remained largely unchanged.

On the detailed information provided, interchange fees for cash withdrawals average \$1.03 per transaction. This is double the cost of providing cash withdrawal services, which averages around \$0.49. Card issuers normally pass these fees onto their cardholders whenever they use another institution's ATM, through "foreign ATM fees" which average \$1.35 per transaction.

If the market were working effectively, competition between established players and the threat of new entrants would be expected to bring ATM interchange fees more into line with costs. This has not been happening in Australia. Financial institutions as a whole receive a flow of net revenue from foreign ATM fees and, as a consequence, have little incentive to negotiate lower interchange fees. Large financial institutions also possess greater bargaining power over smaller new entrants in interchange fee negotiations.

| <b>ATM cash withdrawal costs per transaction</b> |             |
|--|-------------|
| (Weighted average, \$A)                          |             |
| <b>Operating expenses</b>                        | <b>0.26</b> |
| Of which   |             |
| <b>Cash</b>                                      | <b>0.13</b> |
| Cash handling                                    | 0.10        |
| ATM cash float                                   | 0.05        |
| <b>Other</b>                                     | <b>0.13</b> |
| Processing                                       | 0.04        |
| Switch costs                                     | 0.02        |
| Installation and maintenance                     | 0.08        |
| <b>Overheads</b>                                 | <b>0.24</b> |
| Of which   |             |
| Support staff                                    | 0.04        |
| Site rental (off premise)                        | 0.03        |
| Depreciation/leasing                             | 0.08        |
| Telecommunications                               | 0.04        |
| <b>Cost per transaction</b>                      | <b>0.49</b> |
| <b>Interchange fee revenue</b>                   | <b>1.03</b> |

**ATM COSTS AND FEES - CASH WITHDRAWALS**



SOURCE : CANNEX AUSTRALIA & RESERVE BANK OF AUSTRALIA

The study considered an alternative pricing regime – that of "direct charging" – which would encourage competition and greater transparency in the pricing of ATM services. Under this regime, there would be a direct relationship between the ATM owner and cardholders wishing to withdraw cash. The ATM owner would charge customers of other financial institutions a transaction fee which would be clearly posted at each ATM. That fee would be debited to the cardholder's account along with the cash withdrawal, and the resulting amounts

settled between card issuers and ATM owners as at present. ATM owners which sought to recover their costs in this way should not also receive interchange fees.

Whatever approach to cost recovery is adopted by ATM owners, the study has shown that the industry's current cost structure provides ample scope to reduce fees for cardholders who use the ATMs of other financial institutions. The Board will closely monitor public discussion and industry responses on these issues over coming months.



### CREDIT CARD NETWORKS

In credit card networks, interchange fees are paid to the card issuer by the merchant's financial institution (known as the acquirer since it is said to "acquire" the transaction from the merchant). In Australia, the interchange fees for domestic transactions are agreed jointly by the financial institutions which are members of each of the card schemes. In the international schemes (MasterCard and Visa), the interchange fees are 1.2 per cent of the value of the transaction for paper-based transactions and 0.8 per cent for electronic transactions when the card is swiped and the customer

authorises the transaction by signature. The interchange fee for Bankcard is 1.2 per cent for all transactions. Taking into account the mix of paper-based and electronic transactions, the average interchange fee per transaction received by card issuers is 0.95 per cent.

The study showed that credit card issuers earn about one-third of their revenues from interchange fees and around one-half from the interest margin on credit card lending. For an average credit card transaction of \$100, total revenues from credit card issuing average \$2.69 per transaction compared with costs of \$1.93 per transaction — a mark-up over costs of 39 per cent. Credit card



acquirers incur costs of \$0.43 per transaction and have revenues, after paying interchange fees to issuers, of \$0.72 per transaction – a mark-up over costs of around 67 per cent.

The economic rationale for interchange fees is that they encourage the growth of payment networks by redistributing revenues between participants to induce them to join. This can help to maximise the benefits of the payments network. In credit

card networks, interchange fees are typically used to redistribute revenues from merchants to issuers. The argument is that issuers incur costs to provide the benefits of credit card services to merchants, but do not have a direct relationship with them; hence, issuers can only recoup these costs through an interchange fee paid by the acquirer, and passed on to the merchant through a "merchant service fee".

### Credit card costs and revenues per transaction

(Weighted average, \$A)

| ACQUIRING                    |             | ISSUING                         |             |
|------------------------------|-------------|---------------------------------|-------------|
| COSTS                        |             |                                 |             |
| <b>Operating expenses</b>    | <b>0.19</b> | Card production/distribution    | 0.06        |
| Of which                     |             | Authorisation                   | 0.04        |
| Staff                        | 0.07        | Processing                      | 0.17        |
| Authorisation                | 0.04        | Staff                           | 0.39        |
| Processing                   | 0.04        | Interest free period            | 0.26        |
| Switching services           | 0.03        | Fraud                           | 0.07        |
|                              |             | Credit losses                   | 0.35        |
|                              |             | Other                           | 0.68        |
| <b>Overheads</b>             | <b>0.24</b> | <b>Cost per transaction</b>     | <b>1.93</b> |
| Of which                     |             |                                 |             |
| Depreciation                 | 0.07        |                                 |             |
| Telecommunications           | 0.05        |                                 |             |
| Fraud                        | 0.01        |                                 |             |
| Other                        | 0.11        |                                 |             |
| <b>Cost per transaction</b>  | <b>0.43</b> |                                 |             |
| Interchange fees paid        | 1.06        |                                 |             |
| REVENUES                     |             |                                 |             |
| <b>Merchant service fees</b> | <b>1.78</b> | Interest margin                 | 1.36        |
|                              |             | Annual fees                     | 0.33        |
|                              |             | Other                           | 0.05        |
|                              |             | <b>Revenue from cardholders</b> | <b>1.74</b> |
|                              |             | Interchange fees received       | 0.95        |
|                              |             | <b>Revenue per transaction</b>  | <b>2.69</b> |



Credit card interchange fees in Australia are not reviewed regularly by scheme members on the basis of any formal methodology. The study reviewed those costs incurred by issuers which might, if a formal methodology were applied, be eligible for inclusion in an interchange fee and be passed on to merchants. Usually cited are the costs of funding the interest-free period between when the merchant is paid by the card issuer and when the cardholder settles his account; costs related to the guarantee of payment to the merchant (which include credit losses and the cost of fraud); and processing and overhead costs associated with maintaining the credit card system. The study argued that cardholders also benefit from the interest-free period and should bear some or all of the associated cost; it also found that financial institutions are fully recovering their credit losses from cardholders through the premium consistently built into credit card interest rates. Allowing for these two factors, the study could not see any justification, on cost grounds, for an interchange fee of more than half the current average level.

In "card not present" transactions, such as telephone and Internet purchases, merchants are unable to verify signatures and do not usually benefit from a payment guarantee by the card issuer. In many countries, a lower interchange fee is charged for such transactions to reflect the absence of a guarantee, but in Australia they attract the highest interchange fee. The study could see no logical basis for this practice. The Board believes that lower interchange fees for

"card not present" transactions could be an important stimulus to the growth of business-to-consumer e-commerce in Australia.

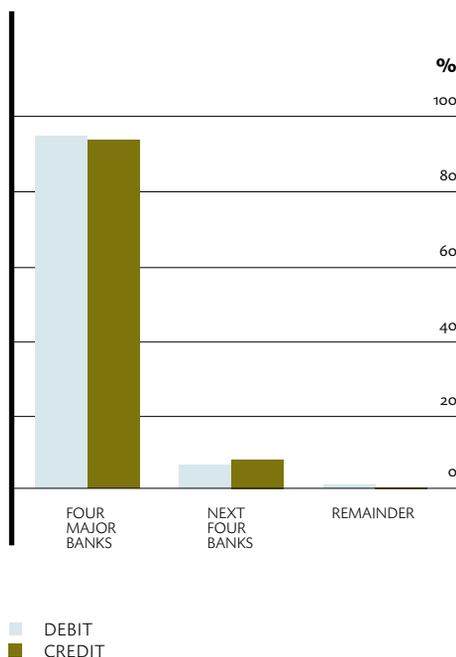
Under the current structure of interchange fees in Australia, cardholders who use the credit card purely as a payment instrument (ie who do not make use of the credit facility) contribute least to the recovery of issuers' costs. This structure is underpinned by "no surcharge" rules in credit card agreements, which forbid merchants charging a customer more than the quoted price for using a credit card. Merchants cannot pass on the merchant service fee, and thus the interchange fee, to credit card users but instead pass these fees on to all customers — not just those using credit cards — in the form of higher prices of goods and services. In this way, credit card users are being subsidised by other customers.

"No surcharge" rules have been criticised by official inquiries in Australia and overseas. The study endorsed these criticisms. "No surcharge" rules suppress important signals to end-users about the cost of the credit card network and give consumers choosing between payment instruments the impression that the cost of a credit card transaction is zero; indeed, loyalty points make the apparent cost to the consumer negative. A rule that prevents appropriate price signals to consumers limits competition, distorts consumer choices and leads to a misallocation of resources. In particular, it leads to overuse of credit cards relative to more efficient and less costly alternatives such as debit cards. The study could see no convincing reasons for the continued application of "no surcharge" rules in credit card schemes.

Conditions of entry to credit card schemes were also a critical focus of the study. Credit card schemes restrict participation to authorised deposit-taking institutions (ADIs), which are subject to prudential supervision, on the argument that this ensures the security and integrity of the card schemes. As far as credit card *issuing* was concerned, the study acknowledged that this restriction has been a long-established, simple and effective screening device for new members. Nonetheless, it concluded that there are other organisations of sound financial standing which might wish to issue credit cards and that there are no logical grounds for excluding them simply because they are not ADIs.

In the study's view, however, restrictions on access to credit card *acquiring* were harder to defend. Credit and debit card acquiring is highly concentrated in Australia, with the four major banks accounting for well over 90 per cent of both markets; other countries have the same experience. One reason for this concentration is that acquiring is predominantly a processing business with the potential for significant economies of scale. Another reason is the restriction in credit card schemes that acquirers must be ADIs, preventing other institutions from competing for acquiring business. (While the restriction does not apply formally to debit card transactions, it has that same effect since only institutions which can offer to acquire both credit and debit card transactions can offer a full service to merchants.)

MARKET SHARE OF DEBIT AND CREDIT CARD ACQUIRING



The study saw no justification for this restriction. As receivers of funds from issuers, acquirers do not introduce settlement risk to the scheme. They need to be able to process transactions for their merchants in an efficient, reliable manner; since they bear the costs of merchant fraud and failure, they also need sufficient financial substance to cover such costs and the acumen to assess these risks when signing up merchants. These functions do not require the acquirer to be an ADI.

The study concluded that restrictions by credit card schemes on which institutions can enter the acquiring business were unjustified and that restrictions on access to card issuing needed to be reviewed. These restrictions reduce competition in the credit card market and hence protect card scheme members from pressure to lower margins and interchange fees.

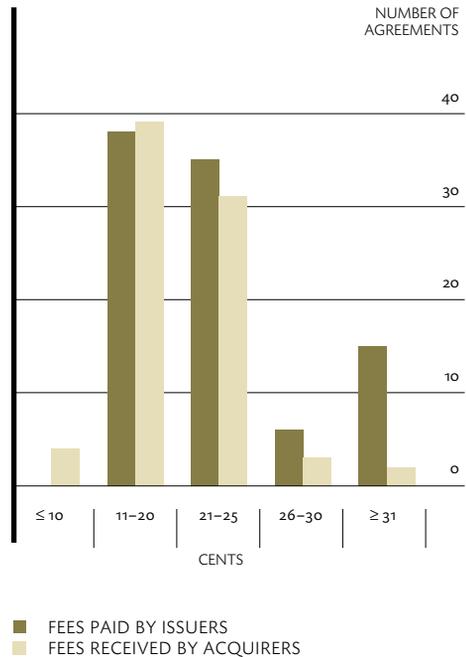
While interchange fee arrangements may have played an important role in encouraging the development of credit card networks in Australia, the Board believes that the arrangements in their current form — embracing joint fee setting, "no surcharge" rules and restrictions on access — need to be reformed. From an economic perspective, interchange fee arrangements put into abeyance the normal market incentives and disciplines which determine consumer choice and resource allocation, and this is now proving costly to the Australian community. From a legal perspective, the ACCC in a separate action has reached the view that the joint setting of credit card interchange fees is a breach of the *Trade Practices Act 1974*, and it has encouraged the credit card schemes to seek formal authorisation of their rules. The Board acknowledges that a case could be made for interchange fees in credit card networks provided the public interest is taken fully into account; in the Board's view, this would require that financial institutions which are members of the credit card schemes set and regularly review interchange fees using an acceptable cost-based methodology and make their analysis and results public. The

authorisation process under the *Trade Practices Act 1974* is the obvious mechanism for reflecting the public interest and the Board strongly endorses the approach being taken by the ACCC.

### DEBIT CARD PAYMENT NETWORKS

Interchange fees for debit card payments are negotiated bilaterally and are paid by the card issuer to the merchant's financial institution (the acquirer). Major banks negotiated their interchange fees about a

INTERCHANGE FEES FOR DEBIT CARD PAYMENTS



decade ago and have left the fees largely unchanged; most other fees negotiated since that time have been of the same order. The interchange fees are flat fees which average around \$0.20 per transaction. In some cases, issuers also have to pay a "gateway" fee to a third party to gain access to the networks of acquirers, and a small number of acquirers pay gateway fees to gain access to issuers. Gateway arrangements mean that some acquirers receive less than \$0.10 per transaction and some issuers pay more than \$0.30.

Merchants negotiate fees for accepting debit card transactions directly with their financial institution. The debit card market

has two distinct merchant segments:

- smaller merchants purchase the whole suite of acquiring services from their acquirer, for which they pay a flat merchant service fee averaging around \$0.80 a transaction (though some merchants pay percentage fees); and
- most large merchants undertake many of the acquiring functions themselves, having invested heavily in processing infrastructure, and have negotiated arrangements to share interchange fees with their financial institution.

**Debit card costs and revenues per transaction**

(Weighted average, \$A)

| <b>ACQUIRING</b>                 |             | <b>ISSUING</b>                   |             |
|----------------------------------|-------------|----------------------------------|-------------|
| <b>COSTS</b>                     |             |                                  |             |
| <b>Operating expenses</b>        | <b>0.08</b> | Card production and distribution | 0.03        |
| Of which                         |             | Authorisation                    | 0.06        |
| Staff                            | 0.04        | Processing                       | 0.03        |
| Data processing                  | 0.01        | Staff                            | 0.01        |
| Switching services               | 0.03        | Fraud                            | 0.01        |
|                                  |             | Other                            | 0.02        |
| <b>Overheads</b>                 | <b>0.18</b> | <b>Cost per transaction</b>      | <b>0.15</b> |
| Of which                         |             | <b>Interchange fees paid</b>     | <b>0.21</b> |
| Depreciation                     | 0.06        |                                  |             |
| Telecommunications               | 0.05        |                                  |             |
| Other                            | 0.07        |                                  |             |
| <b>Cost per transaction</b>      | <b>0.26</b> |                                  |             |
| <b>REVENUES</b>                  |             |                                  |             |
| <b>Merchant service fees</b>     | <b>0.12</b> | <b>Transaction fees</b>          | <b>0.20</b> |
| <b>Interchange fees received</b> | <b>0.20</b> |                                  |             |



The outcome of these opposing flows is that acquirers earn revenues from merchants of around \$0.12 per transaction. Taken together with revenues from interchange fees, acquirers earn total revenues of \$0.32 per transaction and incur costs of around \$0.26 per transaction. The mark-up over costs is 23 per cent, much lower than in credit card acquiring though infrastructure and procedures are very similar.

The direction of debit card interchange flows in Australia is unique. In other countries the flow is to the card issuer, or there are no interchange fees at all. The study heard arguments from acquirers that the current regime was necessary to recompense them for the infrastructure and other costs associated with providing cardholders with access at the checkout to their transaction account. In turn, issuers argued that fees should flow the other way so that they can recover the cost of processing and the funds guarantee from merchants. However, no formal methodology or empirical evidence was provided to the study to support either the existing pattern of fee flows or a change. The study applied interchange methodologies to the debit card payment network and concluded that, on the basis of the current cost structure, there was no convincing case for an interchange fee, in either direction.

Two countries with the most heavily used debit card payment systems – Canada and the Netherlands – do not have interchange fees. The study found no reason why Australia’s debit card payment networks could not operate on the same basis. As with other means of accessing a transaction

account, such as cheques, direct debits and direct credits, financial institutions offering debit card payment services could seek to recover their costs directly from their own customers.

The Board acknowledges that interchange fee arrangements in debit card payment networks have been in place for a decade and are under no strong competitive pressure to change. Because the fees are bilaterally negotiated, the industry also lacks a decision-making body with authority on questions of fees. The Board is willing to work with industry participants to bring about more efficient pricing arrangements for debit card payments.

#### IMPLICATIONS OF CURRENT INTERCHANGE FEE ARRANGEMENTS

In summing up, the study found that interchange fees in all three card networks in Australia are higher than are needed to cover the relevant costs of financial institutions – and particularly so in the ATM and credit card networks – and these fees are not regularly reviewed. A major reason for this stickiness is that financial institutions lack clear incentives to bring interchange fees into line with costs. Large financial institutions in particular are both card issuers and acquirers and benefit from the revenue generated; they are also in a strong bargaining position in bilateral negotiations with potential new entrants. In the face of such informal barriers to entry, and explicit barriers in credit card schemes, new entrants into the networks have not been effective in putting pressure on interchange fees. In

some networks, interchange fees can also be readily passed onto customers.

The weakness of normal market disciplines in card networks in Australia is producing a distorted form of competition, in which credit card usage has been encouraged to grow at the expense of other payment instruments, particularly debit cards and direct debits, that consume fewer resources. Cardholders are effectively being paid by card issuers to use a credit card as a payment instrument, but face a transaction fee for using a debit card (after a number of fee-free transactions). Since an average credit card transaction consumes around five times more resources than a debit card transaction for the same amount, the current pricing of card payment services, in which interchange fees play an integral role, is giving Australia a higher cost retail payments system than is necessary. The cost is largely hidden, however, but is borne by the community as a whole.

The Board is mindful that interchange fees are a complex subject and that an overhaul of long-standing arrangements will not be easy to achieve. Nonetheless, it is obvious to the Board that financial institutions will need to revisit the setting of interchange fees in each of the networks. They will need to reassess:

- whether interchange fees are still relevant to these now mature and widely-accepted networks. As the study shows, there are alternative pricing arrangements which could be used in ATM and debit card payment networks; and
- if there is a case for an interchange fee, they will need to consider how the

interests of end-users — that is, the cardholders and merchants — can be more effectively taken into account in the setting of these fees. As far as the credit card network is concerned, the *Trade Practices Act 1974* provides a well-established authorisation process for ensuring that the public interest is taken into account, and the Board strongly encourages financial institutions which are members of the card schemes to pursue this course.

## ELECTRONIC COMMERCE AND THE PAYMENTS SYSTEM

Electronic commerce and its interaction with the payments system have become of increasing interest to the Board. It is well aware of concerns that the failure of payments arrangements to adapt sufficiently quickly to the demands of e-commerce may inhibit the spread and power of this emerging technology. An outcome in which firms negotiate and order on-line but continue to complete the payment by writing and posting a cheque would obviously disappoint. Financial institutions globally are conscious that if payments arrangements fail to keep pace, the institutions themselves run the risk of being by-passed in the payments chain.

Business-to-business e-commerce in Australia is already substantial, with estimates of turnover at around \$25 billion a year. If it is to realise its potential, the associated payments process needs to be efficient for both payers and payees:

- the paying business needs to be able to use its accounting and messaging systems



to instruct its financial institution, electronically, to debit its account and credit the payee's account; and

- the payee requires electronic confirmation from its financial institution that the payment has been made, along with a message allowing it to reconcile the payment with the invoice.

Overseas experience is that financial institutions and businesses have had difficulty in automating payment and reconciliation processes. Replicating the flexibility of checking and confirming hard-copy accounts by hand and attaching a cheque is a challenging task. Even if a single bank develops highly sophisticated and flexible business-to-business payment facilities for its customers, businesses involved in a transaction can only benefit fully where both use the same bank. Until information can be sent between banks, fully automated payment and reconciliation cannot be achieved. Change has proven difficult to achieve even where the driving force is the domestic rule-setting body for the payments system or a major user of payment services such as the government.

Australian banks have, to date, focussed on strengthening links with their customers using the existing payments infrastructure, rather than establishing the industry standards and systems that would allow the exchange of invoice data along with payment instructions. While interfaces and software have been developed to assist the customer, these are proprietary. Some banks, for instance, offer their customers a software package which accepts payment information

from, and reconciles to, most accounting packages. However, none of these proprietary solutions is linked to electronic payment systems which can include remittance information together with a payment.

Links to existing systems are one way ahead. For both payers and payees, the direct entry system has many advantages. It is inexpensive (around \$15 a file no matter how many transactions, or \$0.10 to \$0.50 an individual transaction) and, as a long-standing system, is well understood. Equally well known, however, are the restrictions on the size and format of the messaging that it can support. APCA is currently reviewing the direct entry system with these issues in mind. This is an encouraging development, but decisions will be needed quickly on whether the current direct entry system is the appropriate platform or whether a fresh start is needed.

Business-to-consumer e-commerce faces a different set of challenges. Some of the purchases made on-line are paid for on delivery, using cash, mobile EFTPOS or credit cards. Some are also paid for on-line, usually with a credit card. Customers simply authorise payment as they make the purchase by entering their card details, just as they would for a mail-order or over-the-telephone purchase. Such transactions are potentially open to later dispute by the cardholder because there is no signed authorisation. Where the credit card is not present, the standard merchant agreement stipulates that the merchant takes the financial risk if the customer disputes a transaction.

Credit card details sent over the Internet might also be obtained by a third party and used fraudulently. Credit card companies have developed encryption technology to reduce these risks but are yet to implement it because of costs and the slowing in transaction speed that results. An alternative technology with a lower level of security provides a secure connection during transmission but does not authenticate the parties at either end of the transaction, and allows the merchant to see the purchaser's credit card details.

Although there is more work to be done in this area, security issues do not appear to be slowing the growth of business-to-consumer e-commerce. Consumers seem increasingly prepared to pay over the Internet by credit card, no doubt driven by the same incentives — such as loyalty programs and the availability of credit — which apply to other types of transactions. While this mechanism works, it may not be the least cost or most efficient solution. No real attempt has been made to incorporate other payment mechanisms such as debit cards or direct entry (under which a trusted third party could hold, and then act on, a consumer's authorisation to debit a bank account).

The development of appropriate payment mechanisms might also spur completely new forms of e-commerce. For example, people may be prepared to pay over the Internet for music selections or for information such as articles from particular foreign newspapers. There is currently no economic way to collect the small (micro) amounts involved. Making small value transactions over the

Internet requires a new payments solution with a low cost base. One possibility is the "electronic purse", either in the form of a stored-value card or digital cash which resides on a computer. At present, however, neither of these options has gained the acceptance necessary to allow e-commerce involving micro payments to prosper.

### BILL PAYMENTS AND DIRECT DEBITS

The sending ("presentment") and payment of bills are time-consuming tasks for businesses and households, and have become an important focus of e-commerce. Each year, Australian households pay around 650 million routine bills for utilities, insurance, telephone and other recurring expenses. Businesses make a similar range of payments.

The traditional means of presenting bills has been by post. Over the past year, however, developments both abroad and in Australia promise substantial efficiencies in this general area. Electronic presentment — the simplest form being a bill to the customer by e-mail — is emerging as a replacement to the letter-box. Until recently, the scope for this technology was limited because few bill payers had Internet access. That situation is changing quickly. In 1999, some 22 per cent of Australian households had Internet access and coverage is growing rapidly. On its own, e-mail presentment might provide some savings in presentment costs, but it does not reduce payment costs to the customer or reconciliation and processing costs for the biller. More commonly, the e-mail will include a link to the web site of the biller or



of a "consolidator", which provides the facility for a customer to view and pay a number of bills together. Such links offer customers a convenient means of authorising payments and have the potential to deliver considerable cost savings to billers.

None of these recent developments involves any changes in underlying payment instruments and processes, which vary considerably in their efficiency. If the bill payment still involves the customer posting a cheque to the biller, or having their financial institution do so on their behalf, there is no efficiency dividend on the payments side. If the bill is paid by a charge to a credit card account, the potential cost savings to billers will be offset by the merchant service fee they must pay. Bill collection costs would be minimised if customers used direct debits. These cost billers no more than \$0.15 a transaction, compared to around 2 per cent of the transaction value when a credit card is used.

The gains from electronic bill presentment and payment could be substantial, but remain to be exploited. In the meantime, the Board has been working closely with billing organisations to encourage the take-up of direct debits using existing technology.

Though popular abroad, Australians have been reluctant to adopt this means of payment. Obviously, the current incentives to use credit cards for bill payments are strong; at the same time, Australian consumers may not have had full confidence that they will be able to stop any incorrect payments under direct debit arrangements. Consumer safeguards have been effective in promoting direct debits in countries such as the United Kingdom and France, which are also high-cheque-use countries.

The work with billers, which include telephone companies, electricity suppliers, local councils and health funds, has culminated in the Charter for Direct Debit Customers, which guarantees service levels for retail customers. The Charter confirms, most importantly, that customers will be given adequate notice of debits to be made to their accounts and will be able to stop the debit if they believe that they have been incorrectly billed. A number of billing organisations have already adopted the Charter. The Board commends the Charter as a valuable set of safeguards for consumers and a basis for promoting a highly efficient method of bill payment to the Australian community.

## CHARTER FOR DIRECT DEBIT CUSTOMERS

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### 1. **Notification that payment is due**

Where the amount of payment due varies from bill to bill (eg phone and electricity), we will always provide you with a bill at least 10 business days (or such time as agreed with you) before payment is due. On the due date, the amount will be debited from the account you have nominated at your financial institution.

Where the amount of payment due is "fixed" according to a pre-agreed arrangement (eg health insurance), we will always notify you at least 10 business days (or such time as agreed with you) before the due date if there is a change in the amount to be paid.

### 2. **Direct debit guarantee**

If you dispute any amount on a bill, or on a notification of payments due under a pre-agreed arrangement, and let us know at least 2 business days before payment is due, we guarantee we will not debit your

account for the amount in dispute until the dispute is resolved. This notice will allow us enough time to resolve the problem or to halt processing of the payment.

### 3. **Change in payment method or cancellation**

You may cancel the direct debit or change your nominated account by simply letting us know at least 2 business days (or such time as agreed with you) before payment is due.

### 4. **Privacy**

We will maintain strict control over the information you provide to us. We will act only on your instructions or those of your authorised representative.

### 5. **Complaints**

We will provide you with contact details for lodging complaints when the direct debit is established, and these details will be repeated on regular bills. We will respond to any complaint promptly.

**BILLERS COMMITTED TO CHARTER**

(AS AT OCTOBER 2000)

|   |                            |
|---|----------------------------|
| ActewAGL  | North Sydney Council       |
| AGL   | Orange City Council        |
| Ballina Shire Council                           | Origin Energy              |
| Citipower                                       | Parramatta City Council    |
| Dubbo City Council                              | Pittwater Council          |
| Energex   | Powercor Australia Ltd     |
| Fairfield City Council                          | Rylstone Shire Council     |
| Great Lakes Council                             | Shoalhaven City Council    |
| Great Southern Energy                           | Sutherland Shire Council   |
| Greater Taree City Council                      | Sydney Water Corporation   |
| Holroyd City Council                            | Tamworth City Council      |
| Hospitals Contribution<br>Fund of Australia Ltd | Telstra Limited            |
| Inverell Shire Council                          | TXU Pty Ltd                |
| Maitland Council                                | Vodafone Australia Pty Ltd |
| Medibank Private Limited                        | Water Corporation          |
| Motorcharge Limited                             | Wollongong City Council    |
|   | Yarra Valley Water Ltd     |

The bill payments of businesses can be large and variable and their needs are therefore different to those of retail customers. Nevertheless, businesses issuing and paying bills could both achieve lower

costs and greater efficiencies by making more use of direct debits. The Board is supporting the efforts of billers which are developing a separate charter tailored to the needs of business customers.

## EXCHANGE SETTLEMENT ACCOUNTS

Exchange Settlement (ES) accounts at the Reserve Bank are the means by which providers of payment services settle obligations they have accrued in the clearing process. For example, a financial institution on which a cheque is drawn settles its obligations with the financial institution at which the cheque is deposited through an entry to each of their ES accounts.

Last year, the Board announced more liberal access arrangements that would allow institutions other than banks, and the Special Service Providers for building societies and credit unions, to apply for ES accounts. The new arrangements are intended to promote competition and efficiency — albeit probably at the margin — by allowing eligible institutions to settle their own payments without reliance on another institution which may otherwise be a competitor. All providers of third-party (customer) payments services which have a need to settle clearing obligations with other providers are eligible to apply for an ES account. Applicants need to demonstrate that they have the liquidity necessary to meet their settlement obligations under routine, seasonal peak and stress conditions. Institutions authorised and supervised by the Australian Prudential Regulation Authority (APRA), and applicants proposing to operate exclusively on a real-time gross settlement (RTGS) basis, will not be required to lodge collateral. Institutions not supervised by APRA operating in deferred net settlement systems may be required to lodge collateral on an ongoing basis.

In November 1999, the Sydney Futures

Exchange Clearing House (SFECH) was the first organisation to be granted an ES account under the new arrangements. The SFECH acts as a central counterparty to its members' trades and receives and makes payments related to initial and variation margins, and the management of funds which it holds as a clearing house. It operates its ES account exclusively on an RTGS basis.

ES accounts are normally used to settle transactions between issuers and acquirers in card schemes, whether through accounts held in their own name as ADIs or through the account of a Special Service Provider. However, settlement between issuers and acquirers does not require an ES account, and the Board can see no reason why an institution should be precluded from entering the acquiring business because it does not have one. The ACCC made similar observations in its recent determination on APCA's rules for the Consumer Electronic Clearing System. More generally, the study on interchange fees and access found no justification for restrictions which prevent organisations other than ADIs from undertaking acquiring functions for credit or debit cards.

## CHEQUE-CLEARING TIMES

Although their relative importance is giving way to electronic alternatives, cheques remain the most frequently used non-cash payment instrument in Australia. For small to medium-sized businesses, in particular, cheque funds are critical to cash flows. The Board believes that cheque processing should meet world standards and it has supported industry initiatives to achieve this.



In April last year, APCA introduced arrangements for electronic clearing and dishonour of cheques, which allow a "three-day" cheque-clearing cycle. That is, if a cheque is deposited at an institution on a Monday and cleared electronically, that institution could make the funds available to its customer on a Wednesday. Around 95 per cent of cheques are now cleared electronically. In its first Report, the Board was pleased to note that 17 banks, including two major banks and three retail banks, had taken advantage of these more efficient arrangements and were making funds for cheques cleared electronically available on a three-day cycle. (Many banks also have special arrangements with some customers to make funds available more quickly.) Some building societies and credit unions also met this standard. A retail bank subsequently advised that it had also moved to what had clearly become industry "best practice".

Recently, the Chairman of the Board wrote to the chief executives of institutions which had not originally met the standard to follow up on their progress in cheque clearing. Eight additional banks have now moved to a three-day cycle, bringing the total to 26 banks. However, a number of banks still have a four-day cycle or longer, although some have indicated that they will move to "best practice" during the course of 2000/2001. The Board encourages institutions to commit to the necessary changes in internal systems and procedures to ensure that all their customers gain more prompt access to cheque deposits as a matter of course.

**BANKS WITH THREE-DAY  
AVAILABILITY OF FUNDS\***  
(AS AT OCTOBER 2000)

Adelaide Bank  
Asahi Bank  
Australia and New Zealand  
Banking Group  
Bank of America  
Bank of Queensland  
Bank of Western Australia  
Bank One, NA  
Banque Nationale de Paris  
Chase Manhattan Bank  
Colonial State Bank  
Dai-Ichi Kangyo Bank  
Deutsche Bank  
Dresdner Bank  
IBJ Australia Bank  
International Commercial  
Bank of China  
Macquarie Bank  
National Australia Bank  
Oversea-Chinese  
Banking Corporation  
Overseas Union Bank  
Primary Industry Bank  
of Australia  
Rabobank Nederland  
Reserve Bank of Australia  
Standard Chartered  
Bank Australia  
State Street Bank and  
Trust Company  
Toronto Dominion Bank  
United Overseas Bank

\* Funds availability for cheques deposited at the bank and cleared electronically; cheques deposited at an agency or not cleared electronically may be subject to longer schedules.

## PURCHASED PAYMENT FACILITIES

Purchased payment facilities, such as smart cards and electronic cash, are facilities which consumers pay for in advance and use to make various types of payments. Several such schemes are in use in Australia for specific "closed" applications such as telephones, public transport and tollways; some broader applications, such as using telephone cards in vending machines, have also been tested. Australian banks have conducted limited trials of general purpose smart cards but, despite high expectations over recent years, no schemes have progressed beyond the trial stage.

The *Payment Systems (Regulation) Act 1998* anticipated the need to protect consumers using purchased payment facilities. The particular provisions are directed at the "holder of the stored value" backing such a facility — that is, the entity receiving the proceeds from the sale of the facility —

because consumers rely on the holder to subsequently redeem that value on demand. The Act requires a holder of stored value to be an ADI subject to regulation by APRA, or have an authority or exemption issued by the Reserve Bank.

The stored value backing a purchased payment facility represents a promise by the holder to repay in full. Where the customer is entitled to demand repayment, in Australian currency, of part or all of the balance of the stored value, the facility is akin to a deposit. For this reason, the Reserve Bank and APRA have agreed that it would make sense to have all such purchased payment facilities regulated by APRA as "banking business", under a common regime. This will ensure consistency in regulatory treatment of these emerging payment instruments and is in line with the approach taken in a number of other countries. A regulation has been enacted under the *Banking Act 1959* to give effect to these new arrangements.

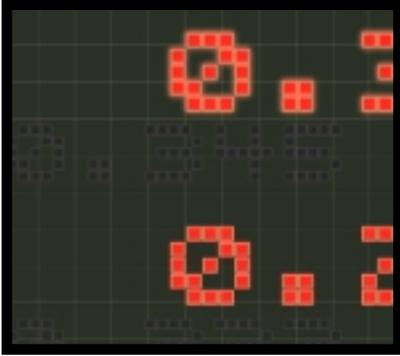


## INVENTORY PAYMENTS

PRODUCT

PRICE

|        |      |
|--------|------|
| AMAREX | 0.26 |
| BUNDAR | 0.34 |
| BINHEZ | 0.22 |
| BYCOR  | 0.04 |
| CYCLO  | 0.88 |



## SAFETY AND STABILITY

Because it provides the infrastructure for the final settlement of transactions between financial institutions, the payments system is one of the channels through which disturbances may spread throughout the financial system. The safety and stability of the payments system is therefore fundamental to overall financial stability. With the introduction of a real-time gross settlement (RTGS) system for high-value payments, Australia now has a very robust payments system, but some safety and stability issues remain on the agenda of the Payments System Board. During 1999/2000, the Board undertook an assessment of Australia's

compliance with emerging international norms in this area, monitored progress in reducing foreign exchange settlement risk and oversaw the Year 2000 preparations of payments system participants. Looking ahead to its new regulatory responsibilities, the Board also began to explore the potential for rationalisation of Australia's securities clearing and settlement systems.

### COMPLIANCE WITH THE CORE PRINCIPLES

In its initial stocktake of safety and stability, the Board noted work being carried out by the Committee on Payment and Settlement Systems (CPSS) at the Bank for International Settlements to develop a set of guiding principles and practices for payment systems of systemic importance. The Reserve Bank has been fully involved from the outset.



That work culminated in the release, in July 2000, of the *Core Principles for Systemically Important Payment Systems*, along with a draft set of guidelines on implementation and four specific "responsibilities" for overseers of payment systems.

The Board has completed a detailed review of Australia's compliance with these *Core Principles*. Although subjective judgments are required in some cases, the Board's overall assessment is that Australia rates highly. Several of the decisions taken by the Board over the past two years, under the new powers available to it, have contributed to this rating.

The *Core Principles* are directed at operators of, and participants in, individual payment systems. In Australia, there are three systems which generate large-value payments and would qualify as systemically important, in the sense that disruptions to their operations could have far-reaching implications for the stability of other payment systems and their users, and for overall financial stability.

These systems, which mainly serve the wholesale financial markets, are:

- the High-Value Clearing System (HVCS) operated by APCA. This is a general purpose payment system which carries the bulk of Australian dollar foreign exchange settlements and high-value corporate payments;
- the Austraclear System, which generates payments to settle transactions in a range of state, semi-government and private sector debt; and

- the Reserve Bank Information and Transfer System (RITS), which generates payments to settle transactions in Commonwealth Government securities.

Transactions in all of these systems are settled in Australia's RTGS system, which operates on the RITS platform.

| <b>Systemically Important Systems</b> |                     |
|---------------------------------------|---------------------|
| Average Daily Turnover 1999/2000      |                     |
|                                       | <b>(\$ billion)</b> |
| HVCS                                  | 70                  |
| Austraclear                           | 20                  |
| RITS                                  | 13                  |
|                                       | <b>103</b>          |

Australia is one of the first countries to assess its compliance with the *Core Principles* and there are no precedents to guide judgments. The Board found it helpful to group the *Core Principles* into three main classes:

- those that are completely objective and lend themselves to a clear "pass/fail" grade. They include two which set quantifiable minimum standards (IV and V) and those dealing principally with risk and risk controls (II, III and VI);
- those for which assessment, despite a degree of subjectivity, is easily supportable by reference to the facts (I, VII, IX); and
- those which require a considerable degree of subjective assessment with few well-recognised benchmarks (VIII and X).

## THE CORE PRINCIPLES AND CENTRAL BANK RESPONSIBILITIES

### PUBLIC POLICY OBJECTIVES: SAFETY AND EFFICIENCY IN SYSTEMICALLY IMPORTANT PAYMENT SYSTEMS

#### Core Principles for systemically important payment systems

- i. The system should have a well-founded legal basis under all relevant jurisdictions.
- ii. The system's rules and procedures should enable participants to have a clear understanding of the system's impact on each of the financial risks they incur through participation in it.
- iii. The system should have clearly defined procedures for the management of credit risks and liquidity risks, which specify the respective responsibilities of the system operator and the participants and which provide appropriate incentives to manage and contain those risks.
- iv.\* The system should provide prompt final settlement on the day of value, preferably during the day and at a minimum at the end of the day.
- v.\* A system in which multilateral netting takes place should, at a minimum, be capable of ensuring the timely completion of daily settlements in the event of an inability to settle by the participant with the largest single settlement obligation.
- vi. Assets used for settlement should preferably be a claim on the central bank; where other assets are used, they should carry little or no credit risk and little or no liquidity risk.
- vii. The system should ensure a high degree of security and operational reliability and

should have contingency arrangements for timely completion of daily processing.

- viii. The system should provide a means of making payments which is practical for its users and efficient for the economy.
- ix. The system should have objective and publicly disclosed criteria for participation, which permit fair and open access.
- x. The system's governance arrangements should be effective, accountable and transparent.

\* Systems should seek to exceed the minima included in these two Core Principles.

#### Responsibilities of the central bank in applying the Core Principles

- A. The central bank should define clearly its payment system objectives and should disclose publicly its role and major policies with respect to systemically important payment systems.
- B. The central bank should ensure that the systems it operates comply with the Core Principles.
- c. The central bank should oversee compliance with the Core Principles by systems it does not operate and it should have the ability to carry out this oversight.
- D. The central bank, in promoting payment system safety and efficiency through the Core Principles, should cooperate with other central banks and with any other relevant domestic or foreign authorities.



## PRINCIPLES WITH OBJECTIVE CRITERIA

The first minimum standard (IV) deals with the timing of final settlement. Until recently, Australia would not have met this standard because all transactions were settled on a net deferred (next day) basis. However, with the introduction of the RTGS system in June 1998, the processing and final settlement of funds transfers now takes place continuously (ie in real time) throughout each business day, and these settlements are irrevocable. The second minimum standard (V) is designed to ensure that multilateral netting systems can withstand the failure of the largest participant. Again, prior to the RTGS system, Australia would not have met this standard because there were no arrangements to limit exposures or to ensure that the system could withstand the failure of a participant. Since Australia's systemically important systems now settle on an RTGS basis, this standard does not apply.

Two principles aim to ensure that the financial risks to participants and system operators are clearly understood (II) and that there are appropriate incentives and means to manage these risks (III). To meet these principles, the rules and procedures of a system must clearly define each party's obligations. In all three of Australia's systems, the rules define precisely the rights and obligations of participants. The rules cover such matters as the powers of the operator to amend the system, the management of financial institutions' credit exposures to customers which are members of

RITS and Austraclear, liquidity management and the nature of the settlement process.

As far as risk management is concerned, the RTGS system represents a substantial improvement over the previous deferred net settlement system, in which participants did not even know the size of their settlement exposures throughout the day. That left open the possibility that settling institutions might not be able to meet large settlement obligations as they fell due. The RTGS system has eliminated this settlement risk by ensuring that interbank settlement obligations arising from high-value transactions do not build up over the day, but are extinguished at the same time as the transactions are completed. Settlement occurs through the transfer of credit funds in ES accounts held at the Reserve Bank. However, not all participants settling securities transactions in RITS and Austraclear maintain such accounts; those which do not must nominate a "participating banker" which undertakes to settle unconditionally interbank obligations arising from its customer's transactions. Banks can manage the risks they bear from this relationship by establishing limits on their exposures to participants, which are enforced by the RITS and Austraclear systems, or by making use of a special risk management facility.

The RTGS system is also designed to economise on system liquidity, particularly through use of a queuing mechanism that avoids blockages caused by larger payments, and an offsetting mechanism that avoids

gridlock. It also offers participants a number of means by which to manage liquidity. Transactions can be given priorities that govern the way in which liquidity will be called upon; participants can also initiate intra-day repurchase agreements in eligible collateral with the Reserve Bank to acquire liquidity for the day's transactions.

Principle VI states that assets used for settlement should preferably be a claim on the central bank. Such claims do not carry any credit or liquidity risks and are acceptable to all participants; as such, they are the most satisfactory asset for settlement. Australia's three systems all settle across ES accounts at the Reserve Bank.

### PRINCIPLES REQUIRING SOME SUBJECTIVE ASSESSMENT

Principles in this group deal with a system's legal foundations (I), its security, operational reliability and contingency arrangements (VII) and access (IX).

A well-founded legal basis ensures that the rules and procedures of a payment system are enforceable with clear and predictable consequences, particularly in the event of the insolvency of a participant. Until recently, Australia would not have met this principle. Legal uncertainty attached to whether RTGS transactions might be declared void under a so-called "zero hour" ruling, in which a court may date the bankruptcy of an institution from the midnight before the bankruptcy order was made; there was also uncertainty about whether a multilateral netting arrangement

would be enforceable in times of stress. Both uncertainties were addressed by the passage of the *Payment Systems and Netting Act 1998*. Approvals granted by the Board under this Act in 1998 have ensured the finality of all RTGS transactions by precluding a possible "zero hour" ruling. Approvals granted in 1999, and discussed later, provide legal certainty for APCA's and Austraclear's RTGS systems in fall-back mode, where they would operate as netting systems.

Principle VII deals with operational standards. Australia's three key systems all have commercially reasonable security standards, back-up systems and internal contingency arrangements. All maintain a high degree of availability. Industry contingency procedures have been developed in consultation with participants and are administered by the Reserve Bank. The procedures are regularly tested and clearly set out the responsibilities of the system operators and system members. Back-up and contingency arrangements were strengthened considerably for the introduction of the RTGS system and were further refined in preparation for the Year 2000.

Principle IX outlines basic criteria for access to a payment system by participants, rather than by their customers. In each of Australia's three systems, participation requirements are disclosed in operating rules and procedures and in information packages for prospective members. These specify admission criteria and procedures for applying for membership, as well as the procedures for withdrawal, suspension and termination of membership.



## PRINCIPLES REQUIRING CONSIDERABLE SUBJECTIVE ASSESSMENT

Principles dealing with efficiency (VIII) and governance (X) fall into this group.

In broad terms, efficiency means the achievement of a given output with a minimum use of resources. In the case of a payment system, "output" can have a number of dimensions, including the speed and reliability of service and specific features demanded by users. Typically, there is a trade-off between minimising the use of resources and the achievement of objectives such as maximising safety. A system that meets the demands of users is likely to be more heavily used; if it also satisfies the *Core Principles*, its risk-reducing benefits are also likely to be widely spread. Australia's three systemically important systems account for over 90 per cent of the value of payments exchanged, suggesting that the demands of users are well met. In international comparisons, Australia ranks highly on this score because payments generated by high-value securities settlement systems are included within the RTGS framework.

Effective governance of a payment system does not depend on the detailed form of the arrangements but on the quality of the results they deliver. Such judgements may be difficult and can change markedly depending on the issues under consideration. Nevertheless, effective governance structures provide a sound starting point. Australia's three systems have transparent arrangements and decision-making processes and report fully to users and the public. APCA, which operates HVCS, is a limited liability company,

with an independent chairman and a board of directors representing shareholders including banks, building societies, credit unions and the Reserve Bank. HVCS is controlled by a set of regulations and procedures which are publicly available and have been approved by the ACCC. APCA issues an annual report covering all of its operations. Austraclear is owned by its users and governed by a board appointed by its shareholders; members must conform with the company's regulations. Austraclear publishes an annual report. RITS is managed by the Reserve Bank's Payments Settlements Department and is the responsibility of the Assistant Governor (Business Services). Its regulations and conditions of operation are publicly available and operating results, including separate financial accounts, are published in the Reserve Bank's Annual Report.

In sum, the Board judges that Australia's three systemically important payment systems meet the *Core Principles* in all areas which can be assessed on clear objective criteria or by recourse to the facts. While there will always be room for improvement on the more intangible issues of efficiency and governance, and international standards will continue to rise, the Board's assessment is that Australia's systems also rate highly in these areas.

## CENTRAL BANK RESPONSIBILITIES

The *Core Principles* are accompanied by four specific "responsibilities" for central banks. One is straight-forward. If it is itself an operator of a payment system, the central bank should ensure that the system conforms

with the *Core Principles*. On the Board's best judgment, RITS would meet this test. The other responsibilities apply to central banks as overseers of payment systems. They recommend that the central bank clearly state its policies, which should include requiring compliance with the *Core Principles*, and that it should have the authority to carry out its role. Australia's new arrangements for oversight of the payments system, centred on the Payments System Board with its extensive regulatory powers, are amongst the clearest and most transparent in the world. The Board's mandate and powers are set out in legislation and, through its Annual Report and other publications, the Board provides regular updates on its priorities and how it intends to achieve them. The Bank's Payments Policy Department, which reports to the Assistant Governor (Financial System), carries out the Board's policies; this function is quite separate to the management of RITS.

The responsibilities also encourage central banks to work closely with relevant domestic and international authorities to promote payments system safety and efficiency through the *Core Principles*. In Australia, a number of authorities also have an interest in these matters, including those responsible for supervision of financial institutions (APRA), competition and access arrangements in the financial system (ACCC) and surveillance of markets (ASIC). The Reserve Bank has established a number of formal and informal channels for cooperation with these authorities, and with the Commonwealth Treasury. The Bank also maintains regular contact with overseas regulators which have

responsibility for payments system issues, particularly through its involvement with the CPSS and its participation in EMEAP (Executives' Meeting of East-Asia and Pacific central banks).

## FOREIGN EXCHANGE SETTLEMENT RISK

Although Australia's domestic high-value payment systems have been considerably strengthened in recent years, the Board is conscious that further progress needs to be made in reducing risks associated with the settlement of foreign exchange transactions. These risks can be substantial, because the two legs of foreign exchange transactions are settled in separate payment systems in different countries, often in different time zones and commonly using correspondent banks. The processes are complex and not usually co-ordinated and the amounts involved can be large. Australian banks can be particularly exposed to foreign exchange settlement risks: over 90 per cent of Australian dollar trades are against the US dollar, which is settled in New York, up to 16 hours behind Sydney.

The Board has strongly supported a global initiative, which got underway in mid 1997, to reduce foreign exchange settlement risk through the establishment of a "continuous linked settlement" or CLS Bank. The background to this initiative was explained in the Board's first Report. CLS Bank will be a settlement intermediary providing a simultaneous "payment-versus-payment" mechanism for foreign exchange transactions in eligible currencies. Individual



transactions will be settled gross across the books of CLS Bank but banks will pay in, through the relevant domestic RTGS system, only their net short positions and in turn receive from CLS Bank their net long positions. The balance of the multicurrency account held by each member will return to zero at the end of the settlement day. CLS Bank is being developed by around 60 shareholder banks active in foreign exchange markets, including the four major Australian banks.

CLS Bank was initially expected to begin operations during the fourth quarter of 2000, settling transactions in US dollars, the euro, pound sterling, Swiss francs and Canadian dollars. Settlement of transactions in yen and Australian dollars was to follow by the end of March 2001. However, progress has been slower than the Board would have preferred. Early in 2000, CLS Services, the holding company for CLS Bank, announced that technical problems would delay start-up and would require additional capital from shareholders. That capital has been committed. CLS Bank is now expected to become operational towards the end of 2001 and the Australian dollar will be settled from day one.

The CLS project is being overseen by central banks from countries whose currencies and banks are involved; CLS Bank itself will be supervised by the Federal Reserve Bank of New York. In preparation for the inclusion of the Australian dollar, the Reserve Bank has been working closely with CLS Services, with banks active in the Australian market and with other central banks, including through its participation in a sub-group of the CPSS. Some of the issues

that are being dealt with include establishing an ES account for CLS Bank, varying the opening hours for Australian payment and securities settlement systems to overlap with the core hours of the CLS Bank (7.00 am to midday Central European Time), and the management of payment system liquidity during the extended hours.

### **YEAR 2000 PREPARATIONS IN THE PAYMENTS SYSTEM**

As part of its mandate for safety and stability, the Board oversaw the Year 2000 preparations of the Australian payments system. A comprehensive program to test the readiness of retail and wholesale systems was completed by June 1999 and attention then shifted to contingency planning, to ensure that the payments system was well prepared for any unexpected disruptions. Reassurances to the community that their normal payment mechanisms would operate as usual, and that deposits in financial institutions were safe from the Year 2000 problem, also took a more prominent part in Year 2000 preparations over the final months.

The Reserve Bank participated in industry contingency planning for low-value retail payment systems — including cheques, direct entry, ATMs and EFTPOS — organised by APCA. The Bank convened an industry group to review contingency procedures for systems which settle on an RTGS basis, and also issued specific Year 2000 contingency procedures for the deferred net settlement arrangements. In November, the Bank and APRA co-sponsored seminars in Sydney and Melbourne to ensure that financial insti-

tutions had a clear understanding of industry contingency procedures and requirements for reporting on payments system operations, and other matters, to the joint RBA/APRA Communications Centre.

The arrival of the year 2000 was trouble-free in Australia, and elsewhere. Initial reports to the Communications Centre concentrated on retail electronic systems that were in use over the New Year weekend; during the first business week, the focus was on high-value systems and the associated settlement arrangements. In all cases it was "business as usual" in the payments system. One enduring benefit of the Year 2000 preparations, particularly the review of contingency arrangements, is that the Australian payments system is now better prepared to deal with disruptions affecting payments clearing and settlement.

## SECURITIES CLEARING AND SETTLEMENT

As mentioned earlier in this Report, the Board is expected to assume responsibility early in 2001 for the regulation of securities clearing and settlement systems which are deemed to be of systemic importance. The Board's approach will depend on the specific systems which come under its purview.

Securities clearing and settlement systems which act as score-keepers and recorders of transactions, but not as central counterparties to any transactions they settle, are not subject to daily balance sheet volatility as a result of their operations. Their regulation would be quite a different proposition to prudential regulation of

financial institutions, whose day-to-day activities can have an immediate and significant impact on their risk profiles and balance sheets. The Board's approach to regulation of these systems would focus on legal foundations, how the rules and procedures allow participants to control risks and on a range of operational issues.

Where a securities clearing and settlement system does take on a central counterparty role, significant financial risks can arise. However, because this role is a very specialised one, the potential variation in the system's risk profile can be tightly controlled by pre-agreed risk management practices such as minimum capital standards for members, margining and settlement guarantee funds. While there would be issues of a prudential nature, they would be much more narrowly defined than for a financial institution such as a bank, which carries out a much wider range of business.

An international committee of central bankers and securities market regulators is currently preparing a set of "recommendations" for clearing and settlement systems, along the lines of the *Core Principles* discussed above. These recommendations are expected to be completed in early 2001 and will define international best practice standards in this area. The Board's approach will be developed in parallel with these recommendations and will be publicly available.

In anticipation of its new regulatory responsibilities, the Board has taken a close interest in developments in Australia's clearing and settlement systems for securities and derivatives. Australia has five



such systems; three involve transfer of title to debt and equity securities while two settle margin payments for futures and options. The systems are:

- the Reserve Bank Information and Transfer System (RITS) for Commonwealth Government securities;
- the Austraclear System for state, semi-government and private sector debt;
- the Clearing House Electronic Subregister System (CHES) for equities;
- the Sydney Futures Exchange Clearing House (SFECH) for futures transactions; and
- the Options Clearing House (OCH) for options transactions.

Clearing and settlement arrangements are currently organised as five "segmented silos". In the case of equities and options, the trading system and the clearing and settlement system have the same owner. Australian Stock Exchange Ltd (ASX) owns the trading system for equities and a subsidiary owns the CHES system in which they are cleared and settled; CHES in turn has links to company registries. ASX also operates the trading system for options and owns the OCH. Similarly for futures, the Sydney Futures Exchange (SFE) owns the trading facilities and the SFECH. The silos are not as clear for Commonwealth Government securities and other fixed interest markets since trading is over-the-counter rather than through an exchange. However, the clearing and settlement facilities in RITS and Austraclear are separate, as are the registry facilities owned by the Reserve Bank and Austraclear.

Each clearing and settlement system deals with a separate range of instruments. No direct competition takes place between them to clear and settle trades that arise in any one market. Once the trades are matched in the trading system, they follow automatically to the clearing and settlement system associated with that trading.

Arrangements for the clearing and settlement of securities and derivatives are being reviewed and modernised in many countries. Two trends are becoming evident. The traditional silos whereby clearing and settlement systems are linked to a single trading system are disappearing as new trading systems, many of them Internet-based, establish links to clearing and settlement systems. An increasingly common model is one in which a number of trading arrangements — including perhaps traditional exchanges, over-the-counter markets and electronic communication networks (ECNs) — link to a single clearing and settlement system. At the same time, economies of scale and a desire by participants to economise on liquidity and simplify interfaces are leading to a rationalisation of the number of clearing and settlement systems.

Against this background, the Reserve Bank convened a meeting in December 1999 of the owners of the five existing systems to discuss how Australian arrangements might evolve. Opening the meeting, the Governor emphasised that all those involved in these activities — whether owners or users — should focus on the need for infrastructure that would support the development of Australia's financial markets into the new

century. No particular models were proposed, but the Reserve Bank tabled six characteristics that it believed any new clearing and settlement arrangements should have. They should:

- reduce users' costs by achieving economies of scale and pricing services to reflect costs;
- allow users settling transactions in a range of instruments to economise on liquidity;
- allow the Reserve Bank to carry out its domestic market operations efficiently and effectively;
- provide for links to the rest of the world;
- require "delivery-versus-payment" for all settlements and real-time gross settlement for all large-value trades; and
- have ownership and governance arrangements that reflect the interests of users and recognise the public interest.

A working group of representatives of the five systems subsequently reviewed the nature of these systems, the issues they faced in improving their own efficiency and the options for improving efficiency in the industry as a whole. The group's report, *The Future of Clearing and Settlement in Australia: A Discussion Paper*, was released in March 2000. The report drew out that the systems transferring title to debt and equities have largely common business processes, as do those settling margin payments for futures and options. Hence, there was considerable potential for processing economies from a single system for transferring title (debt and equities) and a single system for margin settlements (futures and options). The report also noted the risks from persevering with the status quo. One

was the possibility that market forces might lead to a single domestic system, but with an ownership and control structure that left important groups of users disenfranchised. Another was that even with some consolidation, Australian systems would struggle to achieve the economies of scale available to larger overseas operators, leaving them in danger of being taken over or simply bypassed. Such an outcome could threaten Australia's future as a centre for global financial services in the Asia-Pacific region.

The conclusion that the Board draws from the working group's analysis is that bold steps will be needed if Australia is to build arrangements that will see it into this decade. The Board acknowledges the potential savings in liquidity, back office systems and transactions charges from rationalising the five existing systems. The life-cycle of investment in Australia's clearing and settlement infrastructure makes this an opportune time to be considering larger rather than smaller changes.

In a recent initiative, the SFE and Austraclear have announced their agreement to merge, forming an integrated clearing and settlement arrangement for debt securities and debt futures contracts traded on the SFE. The merged entity would also include an exchange and a central counterparty facility, which currently deal only in futures and options on futures but which could be extended to the debt market. The parties expect the integrated arrangements to result in savings in participants' back office systems and in their demands on liquidity needed to settle debt transactions.



This initiative, if successful, would see a rationalisation of Australia's securities clearing and settlement arrangements into two reasonably distinct silos – one for debt securities and futures owned by the SFE/Austraclear merged entity and the other for equities and exchange traded options owned by the ASX.

Looking further ahead, the scope for additional savings in transactions costs by rationalising clearing and settlement arrangements for debt and equities transactions is a matter for careful weighing. Achieving such gains would require balancing the needs of users with the interests of existing owners. Other countries have seen a way ahead and are making significant changes in bringing debt and equities clearing and settlements closer together. The Board supports a continuing dialogue between interested parties to assess whether Australia is also capable of taking further constructive steps in this area.

## **APPROVALS UNDER THE PAYMENT SYSTEMS AND NETTING ACT 1998**

Under the *Payment Systems and Netting Act 1998*, the Reserve Bank has the power to approve a multilateral payments netting arrangement, in order to remove legal uncertainties that may arise in the event that a participant in the system were placed under external administration. Without the protections of the Act, there is a risk that if a participant were to default, its liquidator could attempt to "cherry pick" by forcing surviving participants to pay the gross amounts they owed the failed participant, while defaulting on the gross amounts it owed. Surviving participants could be in a much worse position than they anticipated.

In November 1999, the Board declared the Austraclear System and APCA's High-Value Clearing System to be "approved multilateral netting arrangements" under the Act. Transactions in these two systems are normally settled on an RTGS basis, but there may be situations where one or both systems are required to revert to deferred net settlement. The Board's declaration protects participants in those circumstances.

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## GLOSSARY OF TERMS AND ABBREVIATIONS

*ACCC – Australian Competition and Consumer Commission*

*Acquirer – an institution that provides a merchant with facilities to accept card payments, accounts to the merchant for the proceeds and clears and settles the resulting obligations with card issuers*

*ADI – authorised deposit-taking institution*

*APCA – Australian Payments Clearing Association Limited*

*APRA – Australian Prudential Regulation Authority*

*ASIC – Australian Securities and Investments Commission*

*ASX – Australian Stock Exchange*

*ATM – Automated Teller Machine*

*AUSTRACLEAR – a securities clearing and settlement company*

*BIS – Bank for International Settlements*

*CARD ISSUER – an institution that provides its customers with debit or credit cards*

*CLEARING – the process of transmitting, reconciling and in some cases confirming payment instructions prior to settlement; it may include netting of instructions and the calculation of final positions for settlement*

*CLERP – Corporate Law Economic Reform Program*

*CLS BANK – Continuous Linked Settlement Bank*

*CPSS – Committee on Payment and Settlement Systems*

**DIRECT DEBIT** – a pre-authorized debit on the payer’s bank account initiated by the recipient

**EMEAP** – Executives’ Meeting of East Asia and Pacific central banks

**EXCHANGE SETTLEMENT (ES) ACCOUNT** – an account held at the Reserve Bank of Australia to settle obligations arising from the clearing of payments

**G10** – Group of Ten Countries: Belgium, Canada, France, Germany, Italy, Japan, Netherlands, Sweden, Switzerland, United Kingdom, United States

**HVCS** – High-Value Clearing System operated by APCA

**INTERCHANGE FEE** – a fee paid between card issuers and acquirers when cardholders make transactions

**DEFERRED NET SETTLEMENT SYSTEM** – a settlement system in which each settling participant settles (typically by means of a single payment or receipt) its net settlement position which results from the payments made and received by it at some defined time after payments have been made

**OCH** – Options Clearing House

**RTGS (REAL-TIME GROSS SETTLEMENT)** – a payment system in which processing and settlement take place in real time (continuously)

**RITS** – Reserve Bank Information and Transfer System

**SETTLEMENT** – the discharge of obligations arising from fund transfers between two or more parties

**SFECH** – Sydney Futures Exchange Clearing House

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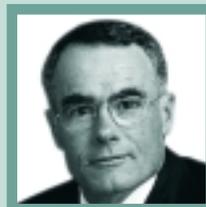
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