



RESERVE  
BANK  
*of*  
AUSTRALIA

PAYMENTS SYSTEM BOARD

ANNUAL REPORT 2007

*Reserve Bank*

## Payments System Board

It is the duty of the Payments System Board to ensure, within the limits of its powers, that:

- the Bank's payments system policy is directed to the greatest advantage of the people of Australia;
- the powers of the Bank which deal with the payments system, set out in 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; and
- the powers of the Bank which deal with clearing and settlement facilities, set out in Part 7.3 of the *Corporations Act 2001*, are exercised in a way that, in the Board's opinion, will best contribute to the overall stability of the financial system.

© Reserve Bank of Australia 2007. All rights reserved. The contents of this publication shall not be reproduced, sold or distributed without the prior consent of the Reserve Bank of Australia.

ISSN 1442-939X (PRINT)

ISSN 1448-523X (ONLINE)

# PAYMENTS SYSTEM BOARD

ANNUAL REPORT 2007

---

## CONTENTS

- 1 Functions and Objectives of the Payments System Board
- 2 Governance
- 4 Payments System Board
- 6 Developments in the Payments System
- 16 Review of the Payments System Reforms
- 19 Card Payment Systems
- 30 Risk in the Payments System
- 36 Ongoing Regulatory Responsibilities
- 43 Engagement with Industry
- 45 The Board's Decisions and Reserve Bank Reports

*Reserve Bank*



# Functions and Objectives of the Payments System Board

The Payments System Board's responsibilities stem from the Financial System Inquiry, whose findings and recommendations were released in 1997.<sup>1</sup> The Inquiry found that, while earlier deregulation had improved competition and efficiency in Australia's payments system, further gains were possible. To that end, it recommended the establishment of the Payments System Board at the Reserve Bank with the responsibility and powers to promote greater competition, efficiency and stability in the payments system. The Government accepted those recommendations and established the Payments System Board in 1998.

The Board's responsibilities for oversight of the Australian payments system are formally set out in the *Reserve Bank Act 1959*. The Act requires the Board to determine the Bank's payments system policy so as to 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.

In establishing the Board, the Government provided the Bank with additional powers that are set out in two Acts: the *Payment Systems (Regulation) Act 1998* and the *Payment Systems and Netting Act 1998*.

Under the *Payment Systems (Regulation) Act* the Bank has the power to designate payment systems and to set standards and access regimes in designated systems. The Act also sets out the matters that the Bank must take into account when using these powers. The *Payment Systems and Netting Act* provides the Bank with the power to give legal certainty to certain settlement arrangements so as to ensure that risks of systemic disruptions from payment systems are minimised.

In addition, the *Reserve Bank Act* gives the Board responsibility for ensuring that clearing and settlement facilities contribute to the stability of the financial system. The relevant powers are set out in the *Corporations Act 2001*, which gives the Bank the power to determine financial stability standards for licensed securities clearing and settlement facilities.

This Annual Report covers the activities of the Board over 2006/07.

---

<sup>1</sup> *Financial System Inquiry*, Final Report, March 1997.

# Governance

## Composition of the Payments System Board

The Payments System Board comprises the Governor, who is Chairman, one representative of the Bank appointed by the Governor, one representative of the Australian Prudential Regulation Authority (APRA) appointed by APRA and up to five other members appointed by the Treasurer for terms up to five years. Details of the current members are set out on page 5. Five members form a quorum at a meeting of the Board.

**Table 1: Number of Meetings Attended by Each Member in 2006/07<sup>(a)</sup>**

Ian Macfarlane <sup>(b)</sup>	1	(1)
Glenn Stevens <sup>(c)</sup>	3	(3)
Philip Lowe	4	(4)
John Laker	4	(4)
Joe Gersh	4	(4)
Susan McCarthy	4	(4)
Robert McLean <sup>(d)</sup>	2	(2)
John Poynton	3	(4)

(a) Figures in brackets show the number of meetings each member was eligible to attend.

(b) Mr Macfarlane's term as Governor ended on 17 September 2006.

(c) Mr Stevens was appointed Governor on 18 September 2006.

(d) Mr McLean was appointed to the Board on 29 November 2006.

## Meetings of the Payments System Board

The *Reserve Bank Act* does not stipulate the frequency of Board meetings. Since its inception, the Board's practice has been to meet at least four times a year, and more often as needed.

## Conduct of Payments System Board Members

On appointment to the Board, each member is required under the *Reserve Bank Act 1959* to sign a

declaration to maintain secrecy in relation to the affairs of the Board and the Bank. Further, members must by law meet the general obligations of directors of statutory authorities, as set out in the *Commonwealth Authorities and Companies Act 1997 (CAC Act)*. The *CAC Act* sets standards of conduct for directors and officers of Commonwealth authorities, with many of these requirements being modelled on comparable areas of the Corporations Law. As such, members of the Payments System Board must:

- discharge their duties with care and diligence;
- act in good faith, and in the best interests of the Bank;
- not use their position to benefit themselves or any other person, or to cause detriment to the Bank or any person;
- not use any information obtained by virtue of their position to benefit themselves or any other person, or to cause detriment to the Bank or any person; and
- declare any material personal interest where a conflict arises with the interests of the Bank.

## **Remuneration**

Fees of the non-executive members of the Payments System Board are determined by the Remuneration Tribunal.

## **Indemnities**

Under the provisions of Section 27 of the *CAC Act* and pursuant to a resolution by the Bank Board on 3 November 1998, members of the Payments System Board have been indemnified against liabilities incurred arising out of the proper discharge of their responsibilities, provided that any such liability does not arise from conduct involving a lack of good faith. This indemnity does not extend to claims by the Bank itself or any subsidiary of the Bank.

# Payments System Board | August 2007



Members of the Payments System Board attending the August 2007 Board meeting at the Bank's Head Office in Sydney. From left to right, John Poynton, Glenn Stevens (Chairman), Robert McLean, Joe Gersh, John Laker and Philip Lowe.



**Glenn Stevens (Chairman)**

Chairman since 18 September 2006  
Present term ends 17 September 2013

Governor – Reserve Bank of Australia  
Chairman – Council of Financial Regulators

**Philip Lowe (Deputy Chairman)**

Deputy Chairman since 8 March 2004

Assistant Governor (Financial System) – Reserve Bank of Australia

**John Laker**

Chairman – Australian Prudential Regulation Authority  
Member since 24 July 1998

**Joe Gersh AM**

Member since 15 July 1998  
Present term ends 14 July 2008

Managing Director – Gersh Investment Partners Ltd

**Robert McLean**

Member since 29 November 2006  
Present term ends 28 November 2011

Chairman – Elders Australia Limited  
Chairman – Imagination Entertainment Limited  
Chairman – Greenway Capital Limited

**John Poynton AM**

Member since 26 May 2000  
Present term ends 24 May 2010

Executive Chairman – Azure Capital Pty Ltd

**Susan McCarthy**

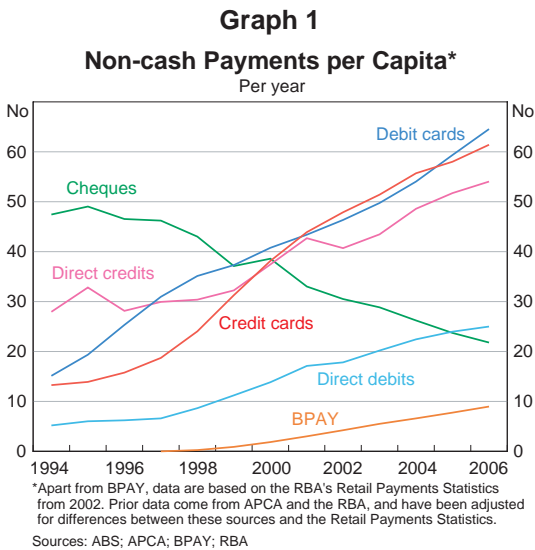
Susan McCarthy's term on the Board ended on 14 July 2007

# Developments in the Payments System

Given its broad responsibility for the Australian payments system, the Board closely monitors trends and developments in payment systems, both in Australia and internationally. The main trend globally continues to be the strong growth in the use of electronic payment methods. Australia has been part of this trend and, consistent with many other countries, there has been strong growth in card payments and electronic crediting and debiting of accounts, and a marked decline in the use of cheques.

## Trends in Retail Payment Systems

Comprehensive data for Australia are available on the use of cheques and most electronic payment methods. Much less data are available on the use of cash, although the surveys currently being conducted by the Bank as part of the 2007/08 review of the payments system reforms will provide useful information (more detail on these surveys is provided in the chapter ‘Review of the Payments System Reforms’).



The available data suggest that over the year to June 2007, the value of non-cash retail payments made in Australia increased by 13 per cent (Table 2). On average, each person made around 240 non-cash payments over the year, up from an average of 130 in 1997. Electronic channels accounted for around 91 per cent of these payments, up from 65 per cent 10 years ago. And the main electronic payment methods remain card based, with 65 debit card and 61 credit card transactions per capita in 2006 (Graph 1). In contrast, in terms of values, the main methods involve electronic crediting

and debiting of accounts using the direct entry system. Over the year to June 2007, card-based payments accounted for over half the number of all non-cash payments, but only about 2 per cent of the value of these payments.

## Card-based payments

In total, the number of card-based payments in Australia is estimated to have been 7.4 per cent higher over the year to June 2007 than in the previous year, while the value of card-based payments is estimated to have increased by 9.5 per cent; these growth rates are slightly lower

**Table 2: Australian Non-cash Retail Payments**

	Year to June 2007			Growth, year to June 2007	
	Per cent of total		Average value (\$)	Per cent	
	Number	Value		Number	Value
Cheques	8.6	14.1	4 039	-7.7	4.0
Direct debits	10.6	34.8	8 062	6.2	14.0
Direct credits	23.5	47.8	4 965	9.8	14.7
Debit cards	27.7	0.8	68	9.4	9.6
Credit cards	25.7	1.5	138	5.4	9.4
BPAY	3.9	1.1	671	15.6	19.4
<b>Total</b>	<b>100.0</b>	<b>100.0</b>	<b>2 446</b>	<b>6.6</b>	<b>12.7</b>

Sources: BPAY; RBA

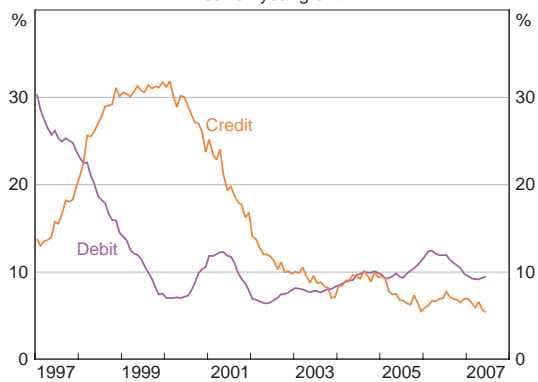
than the average of recent years. The number of debit card payments – including scheme debit and EFTPOS – grew by 9.4 per cent, somewhat faster than the 5.4 per cent growth in the number of credit card payments (Graph 2). Reflecting the stronger growth in debit card payments over recent years, the number of transactions on debit cards now exceeds the number on credit cards. The Bank currently does not collect data on a regular basis on the split of debit card payments between those made through the PIN-based EFTPOS system and the scheme-based signature debit systems. It has, however, recently held discussions with industry about the provision of such data, and expects new reporting arrangements to be in place by early 2008.

Although the number of debit card payments has grown more quickly than the number of credit card payments, the values of debit and credit card payments have grown at broadly similar rates over the past year (Graph 3). This reflects a rise in

**Graph 2**

**Number of Card Payments**

Year-on-year growth

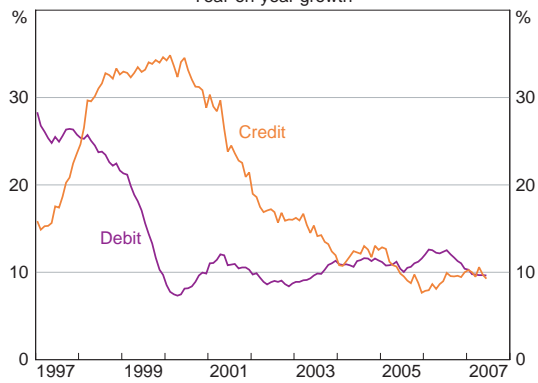


Source: RBA

**Graph 3**

**Value of Card Payments**

Year-on-year growth



Source: RBA

the average size of a credit card payment to around \$138, up from around \$125 in 2003, while the average size of a debit card payment has remained relatively constant over this period, at around \$68. Given the significantly larger average size of credit card purchases, the total value of spending on credit cards is roughly double that on debit cards.

The number of debit card accounts and the number of credit card accounts have not grown as quickly as the number of transactions, suggesting more intensive use of existing accounts for payments. Both the number of debit and credit card accounts grew by around 4 per cent through 2006/07, following a few years in which the number of credit card accounts increased more quickly than the number of debit accounts (Table 3). This combination of increases in the value of credit card transactions and the number of accounts has contributed to a rise in balances outstanding on credit cards with total balances growing by around 11 per cent over 2006/07, a little lower than in recent years. Growth in balances accruing interest, at 10 per cent through the year, was also slower than the previous year. On average over 2006/07, around 72 per cent of total balances outstanding were accruing interest charges.

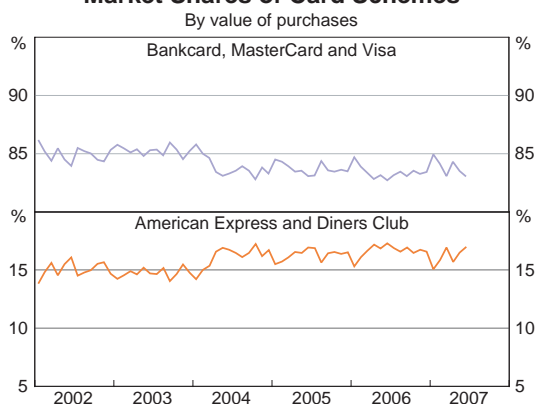
**Table 3: Credit and Debit Card Accounts**

	June 2007	Growth, per cent, year to:		
		June 2007	June 2006	June 2005
Number of accounts				
Credit (million)*	13.5	4.4	8.1	6.5
Debit (million)	27.0	4.3	2.9	1.6
Advances outstanding*				
Total (\$ billion)	40.8	11.4	16.7	13.1
Accruing interest (\$ billion)	29.1	10.1	18.6	13.2
Average total outstanding per account (\$)	3 014	4.4	8.1	6.5

\* Includes credit and charge card accounts  
Source: RBA

**Graph 4**

**Market Shares of Card Schemes**



Within the credit and charge card market, the combined share of the ‘four-party schemes’ (Bankcard, MasterCard and Visa) has remained broadly unchanged over recent years; over the year to June 2007, these schemes accounted for 83.6 per cent of the value of credit and charge card transactions (Graph 4). The domestic Bankcard credit card scheme closed in the first half of 2007 after many years of declining market share.

One notable development over the past year has been the growth of pre-paid cards. Initially, these cards were mostly issued by retailers,

replacing paper-based gift certificates. More recently, the international card schemes have introduced pre-paid cards that can be used at almost any merchant that accepts credit cards issued by these schemes. While a number of these cards have been issued as non-reloadable cards as part of a 'cash back' offer in a retail promotion, in late 2006 two of the major banks launched their own non-reloadable pre-paid gift cards under the MasterCard and Visa brands. The Bank currently does not collect data on spending on these cards on a regular basis, but industry liaison suggests that pre-paid cards account for only a very small fraction of card-based spending – although many see the possibility of considerable growth in the years ahead.

The past year has also seen an expansion in the range of 'premium' credit card products on offer. According to survey data from Roy Morgan Research, in the 12 months to March 2007, 27 per cent of credit card holders aged 18 years and over held a silver, gold or platinum card, up from 17 per cent four years earlier. These cards typically have a higher annual fee than standard cards, interest rates of around 18 per cent and are accompanied by a rewards program. The past year has also seen a continuation of a trend towards low-rate credit cards, offering interest rates in the 9 to 14 per cent range. Many of the low-rate products were launched in 2005, and over the past two years the number of products and the number of institutions offering these cards has continued to increase, with a number of the new products offering rewards programs. Many of the low-rate cards have been marketed extensively, including through offering low, or even zero, interest rates on balances transferred from existing credit card accounts.

## **Other electronic payments**

The number of direct entry payments grew slightly more quickly than the number of card-based payments over the past year; in value terms, however, they grew much more quickly than card payments. Over the year to June 2007, the number of direct debits grew by 6 per cent and the number of direct credits by 10 per cent, while the values rose by 14 and 15 per cent respectively. Direct entry payments now account for 34 per cent of non-cash retail payments by number, and 83 per cent by value. This high share by value reflects the nature of payments made through the system: direct credits are commonly used for payroll, social security and tax refund payments and, increasingly, for business payments including dividends; direct debits are often used for fortnightly or monthly mortgage repayments, as well as for paying regular personal or commercial bills.

Over recent years, the direct entry system has been used for an increasing variety of different types of payments. Most financial institutions offer 'pay anyone' facilities for customers, allowing direct credit payments over the internet. A number of non-financial institutions have also introduced online payment products in Australia that do not rely on providing the merchant with credit card details. Some of these products involve the buyer supplying payment details to a payment service provider who, in turn, pays the merchant. Another product involves facilitating a direct credit to the merchant from the buyer's normal internet banking site by populating the relevant internet banking page with the merchant's account details and the total for the transaction.

BPAY also continued its strong growth over 2006/07. In the 12 months to end June 2007, the number of BPAY payments rose by 16 per cent and the value by 19 per cent. In 2006/07, there were around 198 million BPAY payments processed for a total value of around \$133 billion. At

\$671, the average value of a BPAY payment is relatively high, reflecting the use of the system for bill payments and funds transfers.

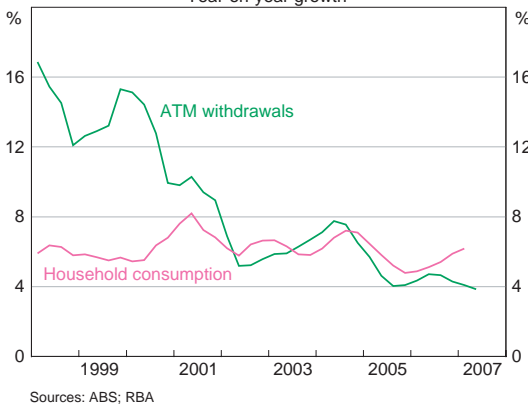
In contrast to BPAY’s strong growth, it was reported in June 2007 that POSTbillpay, Australia Post’s electronic bill payment service, will cease operations. A number of other small bill payment service providers have, however, begun operations in recent years. Bill Express provides facilities for bill payments in newsagencies and Acreis has launched ‘Once’, a bill aggregation service.

## Cheques and cash

In contrast to the continuing strong growth in the use of electronic payment methods, the use of cheques continues to decline. In 2006/07, the number of cheque payments fell by 8 per cent, with the number of cheques written per person now half that of a decade ago. There nevertheless remain a variety of transactions for which cheques are still widely used. Given that many of these, such as property settlements and business transactions, are of relatively high value, the average value of all cheques written in 2006/07 was around \$4 000, with the average value for cheques drawn on personal accounts being around \$1 800.

As noted above, information on the use of cash as a payment method is currently relatively limited. Currency outstanding continues to grow broadly in line with GDP, with the ratio of currency to GDP averaging 3.6 per cent over the year to March 2007, very close to its average

**Graph 5**  
**Value of ATM Withdrawals and Household Consumption**  
 Year-on-year growth



over the past thirty years. There is, however, some evidence of a slight slowdown in the use of cash for transaction purposes, with the value of cash withdrawals from ATMs (the main source of cash withdrawals) growing by around 4 per cent over the past year, compared with growth of around 6 per cent in nominal household consumption over the year to March 2007 (Graph 5). This is the third year in a row in which the total value of cash withdrawals via ATMs has grown more slowly than household consumption, after having grown more quickly than

consumption for many years (although the strong growth in earlier years largely reflects a shift towards ATMs and away from withdrawals over a branch counter).

The proportion of ATM transactions conducted at ‘foreign’ ATMs has remained fairly steady over the past year at just under 48 per cent, after rising for a number of years (Graph 6).<sup>2</sup> This is likely to reflect, in part, an increase in the fee that some institutions charge their customers for using another institution’s ATMs from \$1.50 to \$2.00. In June 2007, there were just under 26 000 ATMs in Australia, an increase of 26 per cent on the number four years earlier. This

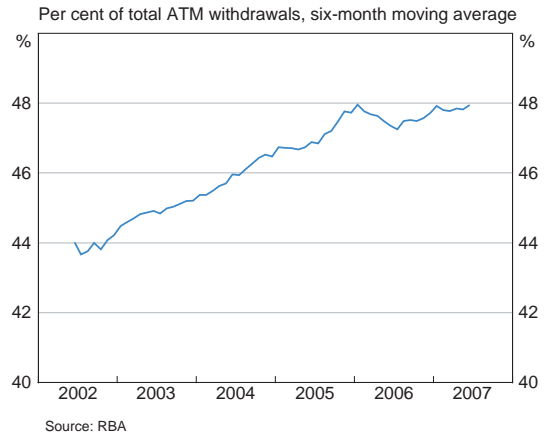
2 A ‘foreign’ ATM is an ATM owned by an institution other than the cardholder’s financial institution.

growth has been driven largely by growth in the number of ATMs owned by independent deployers; in 2006 the proportion of ATMs owned by these deployers was around 40 per cent, up from around 30 per cent in 2003.

### International comparisons

Although the pattern of payments varies across countries, many of the recent trends in Australia are similar to those seen elsewhere in the world (Table 4, Graph 7). Countries broadly fall into two groups – those with a history of cheque use and those with a history of direct credit use. Within the cheque using group, the United States stands out given its particularly high use of cheques. The United Kingdom, Canada and France, however, have payment patterns similar to Australia, with a relatively high use of cheques and lower usage of direct debits and credits. Most European countries, on the other hand, tend to have relatively high use of direct credits and debits, and very low use of cheques.

**Graph 6**  
**Foreign ATM Withdrawals**



**Table 4: Non-cash Retail Payments in Selected Countries**  
Number per capita, 2005

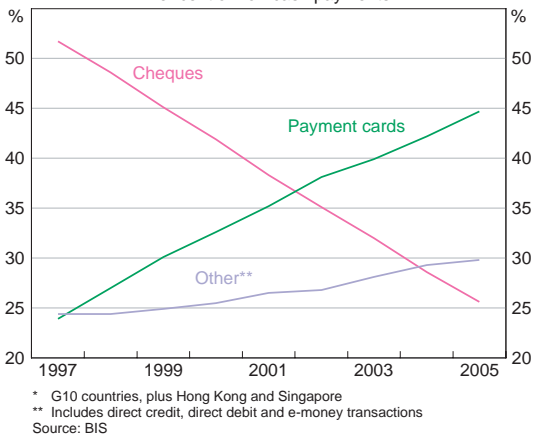
	Cheques	Direct debits	Direct credits	Debit cards	Credit cards	Total
United States	112	25	19	75	70	299
Canada	42	19	27	95	60	243
United Kingdom	32	45	50	70	35	232
France	63	40	38	84*	na	225
Netherlands	0	63	75	82	5	224
Australia	24	24	59**	59	58	224
Sweden	na	18	57	97	20	192
Germany	1	81	81	24	5	192
Switzerland	0	7	82	37	14	140
Singapore	20	12	6	32	na	69

\* Split between debit and credit cards not available

\*\* Includes BPAY transactions

Sources: Bank for International Settlements (BIS); RBA

**Graph 7**  
**Non-cash Payments - International\***  
 Per cent of non-cash payments

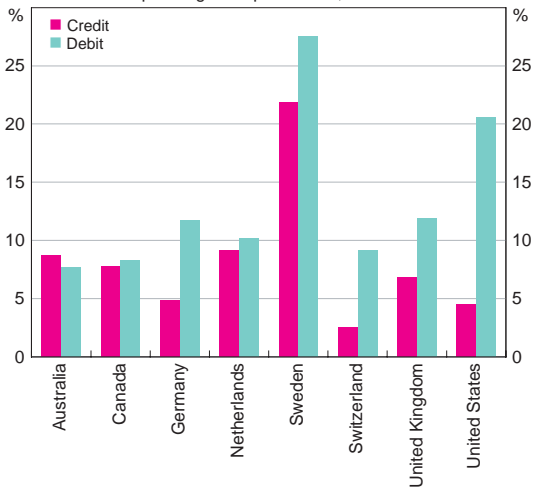


In all the major countries, the recent trends in payment use have been very similar, with cheques declining in importance and the use of payment cards rising strongly. The decline in cheque use has been most evident in countries with historically high use of cheques. Between 2001 and 2005 (the most recent year for which international data are available), the number of cheques written per capita declined by 26 per cent in the United Kingdom, 21 per cent in the United States, 18 per cent in Canada and 12 per cent in France.<sup>3</sup> This compares with a decline of 28 per cent in Australia. In the major countries, cheques made up 26 per cent of the number of non-cash payments in 2005 compared with 52 per cent in 1997.

At the same time, use of payment cards has increased, not only in countries where cheque use is declining, but more broadly. Cards accounted for around 45 per cent of the number of non-cash transactions in the major countries in 2005, up from less than 25 per cent in 1997. Use of debit cards, in particular, has grown strongly, especially in Europe and North America. Whereas in 2000 credit card transactions outnumbered debit card transactions by two to one in the United States, in 2005 there were more debit than credit card transactions. Similarly,

in Canada, the United Kingdom and other European countries, the number of debit card transactions has grown more strongly than credit card transactions (Graph 8). Of the countries for which data are available, Australia and the United States are the only countries for which the number of credit card transactions is approximately equal to the number of debit card transactions; in most other countries, the number of debit card transactions is now significantly greater than the number of credit card transactions (Table 4).

**Graph 8**  
**Credit and Debit Card Payments per Capita**  
 Compound growth per annum, 2000-2005



Like Australia, a number of countries have seen a significant increase in the number of ATMs over

3 Bank for International Settlements, Statistics on payment and settlement systems in selected countries, March 2007.



recent years, with the increase tending to be highest in those countries in which direct charging has been introduced.

In Canada, direct charges were introduced in 1996, after the Canadian Competition Bureau ruled that prohibiting such charges limited competition. While charges are now common, the Canadian Bankers Association notes that over 75 per cent of withdrawals are conducted at ATMs owned by the cardholder's bank, where direct charges and foreign fees are not levied.<sup>4</sup>

In the United Kingdom, direct charging commenced in 2000 following a change in rules in the country's major ATM network (LINK).<sup>5</sup> Direct charges have mostly been limited to ATMs owned by independent deployers; ATMs owned by banks do not generally impose direct charges (nor do banks charge their customers for using foreign ATMs). The number of ATMs that direct charge has grown from around 7 000 in 2001 to 26 000 in 2006, while the number of 'free' ATMs has grown from around 29 000 to 35 000 over the same period.<sup>6</sup> Despite constituting 42 per cent of ATMs, direct charging machines accounted for less than 5 per cent of withdrawals in 2006.<sup>7</sup>

In the United States, direct charges became widespread following the 1996 decisions of the Pulse (owned by Visa) and Cirrus (owned by MasterCard) networks to remove rules prohibiting the charges. Most banks apply direct charges to some, or all, transactions of other banks' customers through their ATMs, and they charge foreign fees to customers that use other institutions' ATMs. The US Federal Reserve estimated that by 2002 around 89 per cent of depository institutions imposed direct charges on withdrawals from their ATMs, up from 45 per cent in 1996.<sup>8</sup> Over the same period, the proportion of institutions charging foreign fees to their customers fell from 80 per cent to 69 per cent.

## Fraud and fraud control

Fraud rates on payment instruments in Australia were relatively low in 2006 compared with rates overseas.

The two types of payment instruments traditionally most prone to fraud are cheques and credit cards. While cheque fraud is not particularly common, when it does occur, it tends to be for high values. Data collated by the Australian Payments Clearing Association (APCA) indicate that over the year to December 2006, there were around 2 400 instances of cheque fraud in Australia, at an average value of around \$13 500. This amounts to slightly less than 2 cents for every \$1 000 transacted.

The rate of fraud on card-based payments is higher than that on cheques, but lower than in many countries. Over the year to December 2006, fraud on credit cards was the equivalent of 37 cents per \$1 000 transacted, while on PIN-based debit cards it was less than 8 cents per \$1 000. The much lower fraud on these debit cards primarily reflects the extra security from the

---

4 Canadian Bankers Association, Canada's ABM/IDP Network: Affordable, Accessible, Convenient and Secure, February 2007.

5 Office of Fair Trading, Decision of the Director General of Fair Trading: LINK Interchange Network Limited, October 2001.

6 LINK, 'Statistics', [http://www.link.co.uk/atm/mn\\_atmstats.html](http://www.link.co.uk/atm/mn_atmstats.html), accessed 3 September 2007.

7 APACS, The Way We Pay: UK Cash & Cash Machines 2007, May 2007.

8 Board of Governors of the Federal Reserve System, Annual Report to the Congress on Retail Fees and Services of Depository Institutions, June 2003; Hayashi F, R Sullivan and S Weiner, A Guide to the ATM and Debit Card Industry: 2006 Update, Federal Reserve Bank of Kansas City, 2006.

**Table 5: Fraud on Locally-issued Cards, 2006**

Cents per \$1 000 transacted

Category	Australia	United Kingdom
Lost/stolen	4.6	12.6
Never received	1.4	2.8
Fraudulent application	1.2	2.2
Counterfeit/skimming	7.8	18.4
Card not present	6.6	39.2
Other	2.2	3.7
<b>Total</b>	<b>23.9</b>	<b>79.0</b>

Sources: APCA; APACS

cardholder using a PIN, rather than a signature, to authorise transactions, and the fact that these cards cannot be used in circumstances where neither the cardholder nor the card are present (such as over the internet).

Taking debit and credit cards together, the weighted average fraud rate was 24 cents per \$1 000 transacted in the year to December 2006. This is less than a third that experienced in the United Kingdom

over the same period (Table 5). In part, this reflects the substantial investments the Australian banks have made in fraud detection and control. In both Australia and the United Kingdom, most fraud is perpetrated by skimming cards or by using cards fraudulently in a card-not-present environment.

Australia's comparatively low level of fraud on cards has meant that the incentive to move towards both PIN authorisation and chip technology at the point of sale has been somewhat less than in a number of other countries. Nevertheless, over the past year the industry has made significant moves towards the implementation of PIN-based security systems and chip on credit cards.

While Australia's EFTPOS system has been PIN-based since its creation in the 1980s, the credit card system has always been signature-based. In 2006, however, the industry initiated a project to introduce PINs for credit card transactions. As a result, according to the current timetable, all Australian acquirers will have systems in place to accept PINs for credit card transactions, in the same way as currently takes place for EFTPOS transactions, by early 2008. While all acquirers and merchants will need to offer the option of PINs for credit cards, cardholders will, if they wish, still be able to sign in the usual way. Consumers' familiarity with PIN use in the EFTPOS system is likely to encourage a relatively rapid take-up of PINs for credit card transactions.

The move to chip on credit cards is being undertaken independently of the move to PINs and is not being formally co-ordinated across the industry. In the past year, however, the credit card schemes have introduced incentives in their interchange fee schedules to encourage chip adoption. Under both schemes' incentive arrangements, if a chip card is used in a non-chip terminal, the acquirer pays a higher interchange fee than would otherwise be the case. Visa has also introduced a program whereby merchants who meet certain security standards can qualify for lower interchange rates. There are preliminary indications that these incentives are having an effect on the chip migration process.

## The High-value Payments System

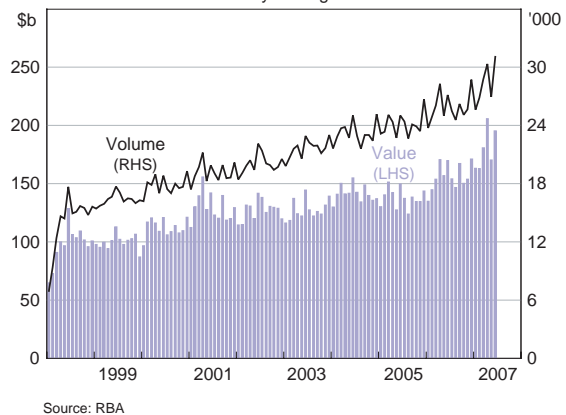
The number and value of transactions settled through the real-time gross settlement (RTGS) system in Australia continues to rise.

Over the past year, the RTGS system accounted for around three quarters of the total value of non-cash payments in Australia and over 90 per cent of the value of payments exchanged directly between banks. In 2006/07, the system processed an average of around 27 000 payments per day, with an average daily value of around \$168 billion (Graph 9). On the peak day in 2006/07, over 46 000 transactions were processed, with a total value of around \$260 billion. Around 70 per cent of RTGS payments by value arise from banks' domestic and correspondent banking customer payments and some foreign exchange related payments, with a further quarter arising from debt securities and money market transactions.

Payments relating to equities, warrants and derivatives transactions also settle across accounts at the Bank but somewhat differently to those for debt securities. Rather than gross settlement directly between participants of the relevant central counterparty or securities settlement facility, settlement occurs on a net basis across the Exchange Settlement Accounts of these facilities. The average value of payments across these accounts was about \$950 million per day in 2006/07.

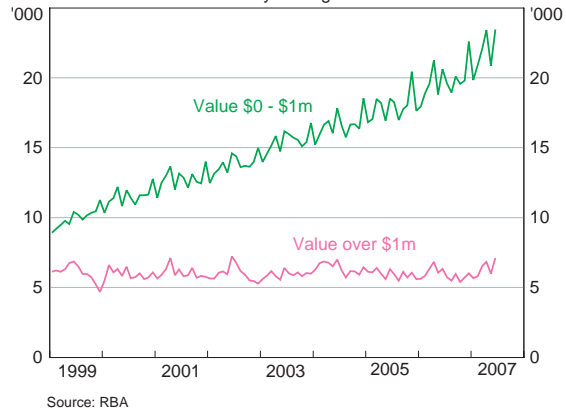
Although specifically designed as a system for the settlement of large-value transactions, the RTGS system settles a significant number of small-to-medium-sized payments. In 2006/07, transactions of \$1 million or less accounted for around 77 per cent of the number of RTGS transactions, but only 1 per cent of the value. Virtually all the growth in the number of transactions processed through the RTGS system since its establishment has been in relatively small-value transactions (Graph 10).

**Graph 9**  
RTGS Transactions  
Daily average



Source: RBA

**Graph 10**  
Number of RTGS Transactions  
Daily average



Source: RBA

# Review of the Payments System Reforms

An important part of the Board's work over the past year has been the commencement of a wide-ranging review of Australia's payments system reforms. The origin of this review is a commitment the Bank gave when it announced the reforms to the credit card system in 2002. At the time, it stated that 'The [Payments System] Board will also undertake a major review of credit and debit card schemes in Australia after five years, updating the findings of the Joint Study. On the basis of that review, it will consider whether the standards and access regime for the designated credit card schemes remain appropriate.'<sup>9</sup> The formal review process began in May this year, when the Bank released an Issues Paper providing relevant background to the reforms and setting out the issues that the review will consider.<sup>10</sup>

In determining the scope and nature of the review, the Bank has consulted widely. In September 2006, it sought written submissions from interested parties concerning how the review should be conducted and the issues it should consider. In total, eight submissions were received by the end of October, and all of these are available on the Bank's website ([www.rba.gov.au](http://www.rba.gov.au)), along with additional submissions made earlier this year. The Bank also held numerous discussions with industry participants. The majority of submissions called for the review to be broad in nature, and to cover all the reforms, not just those relating to the credit card system.

The Board discussed these submissions at its November 2006 meeting and agreed that the review should be open, transparent and wide-ranging, and that it should provide an opportunity for all interested parties to be involved. Reflecting this, the Board agreed that the review would examine all the reforms to date, and would also consider the arrangements in some other payment systems that have not been subject to regulation, such as BPAY and ATMs. Moreover, in announcing the scope of the review, the Bank indicated that the review would be forward looking and focus on the payments system as a whole. It also indicated that it was particularly interested in what has changed since the reforms were implemented, and how this might bear on the regulatory regime in future.

As part of its deliberations, the Board also considered whether the review should be undertaken by a body other than the Bank. This followed calls by some industry participants for the review to be conducted, not by the Bank, but by another entity. In considering this issue, the Board recognised that the Parliament had given it, not another body, responsibility for payments policy. It also concluded that the Bank has the necessary expertise, and the understanding of the various, often opposing, positions within the industry, to provide appropriate advice to the Board. Based on these considerations, and the open and wide-ranging nature of the process, the Board concluded that it was appropriate for the Bank to conduct the review. A similar conclusion

---

<sup>9</sup> *Reserve Bank of Australia, Reform of Credit Card Schemes in Australia: IV Final Reforms and Regulation Impact Statement, August 2002, p.40.*

<sup>10</sup> *Reserve Bank of Australia, Reform of Australia's Payments System: Issues for the 2007/08 Review, May 2007.*

was reached by the House of Representatives Standing Committee on Economics, Finance and Public Administration, following a special hearing into the payments system in May 2006.<sup>11</sup>

The Issues Paper released in May 2007 sets out the following three interrelated questions that will form the basis of the review:

- what have been the effects of the reforms to date?
- what is the case for ongoing regulation of interchange fees, access arrangements and scheme rules, and what are the practical alternatives to the current regulatory approach? and
- if the current regulatory approach is retained, what changes, if any, should be made to the standards and access regimes?

Each of these questions is discussed in considerable detail in the Issues Paper.

In conducting the review, the Board is keen to ensure that all parties have an opportunity to present their analysis and evidence, and for that analysis and evidence to be in the public domain. All submissions will be placed on the Bank's website, and the Bank will consult widely. As part of that process the Bank will co-host a conference on the reforms with the Centre for Business and Public Policy at the Melbourne Business School on 29 November 2007 in Sydney. This conference will provide an opportunity for a broad range of academics, industry participants, and policy makers to discuss the key issues confronting the review in an open forum. The Board sees it as an important part of the review process.

The Bank invited submissions on the questions raised in the Issues Paper by 31 August 2007. These submissions will be discussed with industry participants over September and October. The Board anticipates releasing its preliminary conclusions – including details of the general direction it is considering – for consultation in April 2008. If, at the end of that consultation, the Board was to propose making specific changes to the current standards or access regimes, the draft changes would be released for public comment. While there is inevitably some uncertainty as to the exact timing, it is anticipated that any changes to standards and access regimes would be finalised by the end of 2008.

## **Gathering Relevant Information**

As part of the review, the Board has endorsed the Bank undertaking two significant studies in co-operation with industry. Work on both studies commenced in late 2006, and the preliminary results will be available at the time of the November conference.

### **Payment costs study**

The first study is of the resource costs associated with different methods of payment. This study will update and extend the data collected as part of the Joint Study in 1999 and 2000. It will provide estimates not just of the costs of financial institutions in processing various types of payments, but also the costs of merchants and other participants in the payments system. The study will also cover a wider range of payment instruments than previously examined. In particular, in line with calls from a number of parties, it will provide estimates of the costs of

---

<sup>11</sup> *House of Representatives Standing Committee on Economics, Finance and Public Administration, Review of the Reserve Bank of Australia and Payments System Board Annual Reports 2005 (First Report), June 2006, p.39.*

cash payments, along with the costs of payments by credit cards, scheme debit cards, EFTPOS, cheques, direct entry and BPAY.

The Bank has consulted extensively with industry regarding the scope of this study, including seeking industry comments on the various reporting forms in March this year. A particular focus of this consultation was the appropriate balance between the need for detailed information, and the ability of respondents to reasonably provide such detail in the required time frame. The Bank developed the reporting forms with some assistance from Edgar Dunn and Company, a consulting firm with experience in payment systems. The final reporting forms were provided to participating institutions in April this year, with most institutions providing responses by end June. The Bank is currently analysing the data and, in some cases, seeking further information from participating institutions.

### **Payments use study**

The second study will provide a comprehensive picture of how consumers use different methods of payment. It has three components: a survey of individuals; a survey of small businesses; and an analysis of transaction data provided by financial institutions and large merchants.

The survey of individuals asked around 1 000 people to record, in a pocket-sized diary, the details of every payment they made over a two-week period in June 2007. Individuals were also asked to record all cash withdrawals, and how those withdrawals were made. The survey was conducted by Roy Morgan Research on the Bank's behalf and around 670 individuals completed the diary. The survey results will provide the first comprehensive study in Australia of payment methods used by individuals, especially with regard to the use of cash.

The survey of small businesses, which was conducted by the Bank in March and April this year, collected data from a range of businesses across Australia on the methods used to receive payments from customers. This information is being used to supplement information the Bank is gathering from larger organisations. The survey was conducted online with the assistance of the Office of Small Business and a number of industry associations, including the Australian Hotels Association, the Australian Retailers Association, the Council of Small Business Organisations of Australia, CPA Australia, the Franchise Council of Australia, the Motor Trades Association of Australia, the National Institute of Accountants, the Australian Newsagents' Federation, the Pharmacy Guild of Australia, and Restaurant and Catering Australia. In total, around 260 businesses participated.

Finally, the Bank has gathered detailed information from a number of financial institutions on transactions undertaken on debit and credit cards, cheques, BPAY and internet banking. A number of large merchants and billers have also provided information on the number and value of transactions conducted on the various payment methods they accept.

Both the study on payment costs and the study on payment patterns are major pieces of work and have involved a significant commitment of resources, not only by the Bank, but also by a wide range of industry participants. The Board would like to record its thanks to all those involved. It is confident that the comprehensive picture of payment costs and patterns that will emerge will not only be useful to the Bank during the review process, but to all those involved in the payments industry.

# Card Payment Systems

Over recent years, much of the Board's effort has been devoted to improving efficiency and competition in Australia's retail payments system, particularly the card-based systems. This work has focused on: establishing clearer price signals to cardholders; removing restrictions on merchants; improving access; and increasing transparency. This chapter of the Annual Report summarises the main developments in these areas over the past year.

## Interchange Fees

As part of the reform process, interchange fee differentials between the credit card, EFTPOS and scheme debit systems have been reduced. The Board's focus on these fees has reflected three interrelated factors. The first is that interchange fees can play an important role in influencing the prices that merchants and cardholders pay for payment services and, thus, they can affect the use of various payment methods. The second is that, historically, these fees have not been subject to the normal forces of competition. And the third is that the levels at which these fees had been set were not encouraging efficiency of the overall payments system; in particular, consumers were facing relatively high effective prices for using the payment systems with relatively low costs.

## Credit cards

When the regulation of interchange fees in the MasterCard and Visa systems first became effective on 31 October 2003, each scheme was required to reset its fees so that the scheme's weighted-average fee was no higher than a scheme-specific benchmark. At the time, these benchmarks – which were based on the costs of credit card issuers – were both around 0.55 per cent (excluding GST), compared with a weighted-average interchange fee of around 0.95 per cent previously. The Standard establishing these arrangements required that the benchmarks be recalculated every three years using updated cost estimates. The first such recalculation was conducted in the third quarter of 2006, with the new benchmark of 0.50 per cent becoming effective on 1 November 2006. Unlike the scheme-specific benchmarks that applied for the first three years, this benchmark applies to both the MasterCard and Visa schemes, following the modification of the Standard in November 2005 to establish a common benchmark (see the Payments System Board Annual Report 2006). The decline in the benchmark, from around 0.55 per cent three years earlier to 0.50 per cent currently, reflects lower average costs for transaction processing and authorisation, and for fraud prevention.

At the same time that the schemes reset their interchange fees on 1 November 2006, they both introduced new interchange categories (Table 6). While, under the Standard, the schemes must ensure that the weighted-average interchange fee is no higher than the benchmark on the specified dates, there are no restrictions on individual interchange fees, or on interchange categories. In 2003, both MasterCard and Visa chose to have only three separate interchange rates – electronically processed transactions, standard transactions and transactions on commercial cards. When the benchmark was recalculated both schemes introduced an interchange category

for premium consumer cards set at 0.90 per cent, substantially above that of existing consumer rates. Both schemes have also introduced a range of other categories over the past year. In particular, both schemes now provide low interchange rates for payments to government, utilities and charities. They have also both introduced higher rates for transactions where a card with a chip is used in a terminal that is not chip enabled. Visa introduced these new rates in November 2006, with MasterCard introducing its new rates in June 2007.

Both schemes have also introduced lower rates for large merchants who meet certain conditions. Both schemes have transaction thresholds that merchants must meet to become eligible for the discounts. In addition, Visa requires merchants to commit to enhanced security standards under its Merchant Alliance Program while MasterCard's 'tiered merchants' rate requires merchants to accept all of MasterCard's products (credit, debit and pre-paid). These lower rates override other categories. This means, for example, that a premium credit card used at a merchant that qualifies for these discounts will attract the lower interchange fees associated with these programs, rather than the higher premium interchange rate.

**Table 6: Credit Card Interchange Fees**

Exclusive of GST

	MasterCard		Visa	
	1 Nov 2006	26 Jun 2007	1 Nov 2006	30 Jun 2007
Consumer standard	0.30%	0.43%	0.55%	0.55%
Consumer electronic	0.46%	0.43%	0.40%	0.40%
Consumer chip	–	0.63%	0.50%	0.50%
Commercial	1.12%	1.15%	1.15%	1.15%
Commercial chip	–	1.35%	–	–
Premium	0.90%	0.95%	0.90%	0.90%
Premium chip	–	1.15%	1.00%	1.00%
VMAP*	–	–	–	0.30%
Tiered merchants	–	0.34%	–	–
Petroleum	–	0.34%	–	–
Government and utility				
– electronic	–	0.30%	30.0¢	30.0¢
– standard	–	0.30%	74.0¢	74.0¢
Micropayment	–	–	2.5¢	2.5¢
Charity	–	0%	0%	0%
Recurring payments	–	0.30%	0.40%	0.40%
Quick/express payments	–	0.30%	0.40%	0.40%
<b>Benchmark</b>	<b>0.50%</b>	<b>0.50%</b>	<b>0.50%</b>	<b>0.50%</b>

\* Visa Merchant Alliance Program

Sources: MasterCard website; RBA; Visa website



In the lead-up to the new benchmark becoming effective on 1 November 2006, a number of industry participants raised concerns that the compliance aspects of the Standard had the potential to distort competition between the card schemes. Under the Standard, the weighted-average interchange fee in each scheme must be no higher than the benchmark as at 1 November of every third year, and at any time in the intervening three years that the scheme alters its interchange fees. In calculating the weighted-average fee, each scheme is required to use weights that reflect the structure of its own business over the previous financial year. Some parties have argued that the use of backward-looking, scheme-specific weights, together with the relatively infrequent compliance timetable, was distorting the nature of competition between the schemes. In particular, a scheme could set a relatively high interchange fee on categories of transactions where it had a lower share of cards than the competing scheme and, thereby, 'catch up' to the competing scheme.

After considering the issue at its November 2006 meeting, the Board called for submissions from interested parties. In particular, it invited views on how the compliance aspects of the credit card, and possibly Visa Debit, interchange Standards might be altered to address any concerns about the effect of the Standards on competition between the schemes.

Submissions on these issues were requested by 1 February 2007, with nine submissions being received. All parties making submissions were also given the opportunity to discuss their submissions with the Bank, and seven parties opted to do so. The views put to the Bank in submissions and follow-up meetings were considered by the Board at its meeting in February 2007.

A number of the submissions argued that the current arrangements could result in significant shifts in market shares between schemes, driven by 'gaming' of the Standard rather than genuine competition, and that revisions to the Standard should therefore be considered prior to the planned 2007/08 review. Specific suggestions included: introducing more frequent compliance; the use of industry-based, rather than scheme-based, weights in determining each scheme's compliance with the Standard; and altering the Standard so that all interchange fees, rather than just their weighted average, had to be below the benchmark.

Other submissions, however, argued that the structure of the Standard should be considered only as part of the broader review, and not before. These submissions cited the increased costs associated with an early change to the Standard, as well as the regulatory uncertainty that this might create. Some also noted the advantages of considering any changes to the Standard in the context of a full review of the Bank's reforms.

After considering the various arguments, the Board was not convinced that any potential benefits from making changes to the Standard before the 2007/08 review would outweigh any potential costs. The Bank announced this decision in a Media Release on 5 March 2007, indicating that the Board will continue to monitor developments closely, and would be prepared to reconsider its decision if it received clear evidence of significant distortions to the market arising from the operation of the Standard.

## Debit cards

As part of the package of reforms to Australia's debit card systems announced in April 2006, the Bank introduced interchange standards for the EFTPOS and Visa Debit systems. These standards came into effect on 1 November 2006, the same date as the new credit card benchmark came into effect.

In the scheme debit systems, interchange fees have historically been the same as in the credit card systems. Prior to November 2003, these fees averaged around 0.95 per cent of the transaction value (excluding GST). They then fell to around 0.55 per cent when the credit card reforms were introduced. In contrast, interchange fees in the EFTPOS system are flat fees – historically averaging around 20 cents per transaction – and flow in the opposite direction to those in the credit card and scheme debit systems (that is from issuers to acquirers).

These differences in interchange fees in the two types of debit card systems meant that on a \$100 debit card transaction, an issuer was around 75 cents better off in terms of interchange revenue if its customer used a scheme debit card rather than an EFTPOS card. The Board was concerned that, if this situation persisted, the EFTPOS system would have difficulty competing simply because of the structure of interchange fees, which themselves were not subject to the normal forces of competition.

The EFTPOS interchange Standard requires that interchange fees in the EFTPOS system (which are bilaterally negotiated) be between 4 and 5 cents (excluding GST) if the transaction does not involve a 'cash out' component. Interchange fees for transactions that do include cash out are not covered by the Standard; the Bank's liaison suggests that in some cases the interchange fees on these transactions remain at around 20 cents or higher while, in other cases, the fees have fallen in line with the new rates for purchase transactions.

The Visa Debit interchange Standard operates in a similar fashion to that of the credit card interchange Standard, in that the weighted-average interchange fee must be no more than a cost-based benchmark. Based on information supplied by industry, the Bank announced on 29 September 2006 that the benchmark was 12 cents (excluding GST).

In announcing the Visa Debit interchange Standard the Bank indicated that the same arrangements would apply to the debit card schemes operated by both MasterCard and Visa. It also indicated that the schemes could provide undertakings that they would comply with the Standard rather than having it formally gazetted. In particular, in April 2006 the Board announced that 'the Visa Debit Standard on interchange fees will only be gazetted, if, by 1 July 2006, Visa has not provided the Bank with an enforceable undertaking that would deliver the same outcomes as the Standard. Similarly, the Bank will consider designating the MasterCard debit system, and then imposing a standard, if by 1 July 2006, MasterCard has not provided the Bank with an enforceable undertaking to the same effect.'<sup>12</sup> MasterCard voluntarily agreed to set interchange fees for its debit card in accordance with this benchmark. In contrast, Visa did not and, consequently, on 7 July 2006, the Bank gazetted the Visa Debit interchange Standard.

As for credit cards, both schemes have a number of different interchange categories for different types of merchants and types of payments (Table 7). MasterCard has also introduced

---

12 Reserve Bank of Australia, Media Release 2006-02 'Payments System Reforms', April 2006.

**Table 7: Scheme Debit Card Interchange Fees**

Exclusive of GST

	MasterCard		Visa
	1 Nov 2006	26 Jun 2007	1 Nov 2006
Consumer standard	24.5¢	36.4¢	0.31%
Consumer electronic	10.0¢	9.1¢	8.0¢
Consumer chip	–	13.6¢	–
Commercial	–	36.4¢	–
Commercial chip	–	40.9¢	–
Tiered merchants	–	3.6¢	–
Petroleum	–	9.1¢	–
Government and utility			
– electronic	–	29.1¢	8.0¢
– standard	–	29.1¢	37.0¢
Micropayment	–	0.50%	2.5¢
Charity	–	0%	0%
Electronic incentive	–	–	4.0¢
Recurring payments	–	9.1¢	8.0¢
Quick/express payments	–	0.50%	8.0¢
<b>Benchmark</b>	<b>12.0¢</b>	<b>12.0¢</b>	<b>12.0¢</b>

Sources: MasterCard website; RBA; Visa website

a chip rate for its debit cards, applicable when a card with a chip is used in a terminal that is not chip enabled. MasterCard initially had a relatively simple structure with only electronic and standard rates. At the end of June 2007, it released a table of rates very similar to those of Visa. MasterCard also introduced a ‘tiered merchants’ rate for large merchants that is substantially below other interchange rates. This rate requires merchants to meet volume thresholds but, unlike MasterCard’s tiered merchants rate for credit cards, does not require merchants to accept all MasterCard products.

## Overseas developments

When the Board first began examining interchange fees there were relatively few instances in which these fees had been subject to close scrutiny or analysis in other countries. This has changed significantly over recent years. In the United States this scrutiny has come as a result of legal actions taken by private parties, while in other countries it has resulted from actions taken by the competition authorities and, less commonly, by the central bank.

In the United States, private anti-trust litigation has alleged anti-competitive practices in the setting of interchange fees in the MasterCard and Visa systems. A large number of actions by merchants were consolidated in 2005 and are currently before the US District Court for the Eastern District of New York.

Both MasterCard and Visa began publishing their interchange fee schedules in the United States in late 2006, updating these schedules in the first half of 2007.<sup>13</sup> These schedules reveal

<sup>13</sup> MasterCard, MasterCard Worldwide: U.S. and Interregional Interchange Rates, February 2007; Visa, Visa U.S.A. Interchange Reimbursement Fees, April 2007.

interchange fee structures for both card schemes that are substantially more complex than those implemented in Australia. In particular, there are as many as 30 merchant/authorisation categories for each single card type. In announcing its new interchange schedule, Visa estimated that its effective system-wide interchange rate for the United States would be 1.77 per cent in 2007, up from 1.76 per cent in 2006; MasterCard has not published its average interchange rate.<sup>14</sup>

In Europe, the European Commission (EC) continues to investigate MasterCard's cross-border interchange rates, and in 2006 published a report on payment cards as part of an inquiry into retail banking.<sup>15</sup> The report found that:

- interchange fees did not seem necessary for the profitability of card businesses at a majority of banks;
- many domestic payment systems operated without interchange fees;
- there were large variations across countries in interchange fees, suggesting a lack of an objective basis for the fees; and
- there was little evidence of competitive forces between schemes affecting interchange fees.

The EC inquiry's final report, released in January 2007, suggests that anti-trust enforcement action may be appropriate to address the level of interchange fees in some networks.<sup>16</sup>

Competition authorities in a number of countries have also taken action against the credit card schemes. In the past year, authorities in New Zealand and Poland announced actions related to credit card interchange fees. In New Zealand, the Commerce Commission initiated proceedings against MasterCard, Visa and member institutions of the two schemes, alleging price-fixing in the setting of interchange fees. And in Poland, the multilateral setting of interchange fees was found to be illegal by the Competition Authority (this finding is currently on appeal). In addition, in Israel, the industry reached an agreement with the Competition Authority to reduce interchange fees from a reported average of 1.25 per cent to 0.875 per cent by 2012.

Although interchange fees in most countries are not generally made public, some information has become available in recent years, largely as a result of industry agreements with regulators. In cases where there has been regulatory pressure, interchange fees have tended to decline.

## Honour-all-cards Rule

On 1 January 2007, the honour-all-cards Standard covering the Visa system came into force; MasterCard provided a voluntary undertaking that had the same effect for the MasterCard system. The effect of this Standard and undertaking is that the schemes are no longer allowed to require that merchants accept debit cards as a condition of accepting credit cards and *vice versa*. There are also requirements that scheme debit cards must be visually and electronically distinguishable from scheme credit cards.

---

14 Visa, Press Release 'Visa USA Updates Interchange Rates', April 2007.

15 European Commission, Press Release 'Competition: Commission sends Statement of Objections to MasterCard', June 2006; Kroes N, Speech to the 13th International Conference on Competition and the 14th European Competition Day 'Fact-based competition policy – the contribution of sector inquiries to better regulation, priority setting and detection', March 2007; European Commission, Interim Report I – Payment Cards, April 2006.

16 European Commission, Sector Inquiry under Art 17 of Regulation 1/2003 on retail banking (Final Report), January 2007.

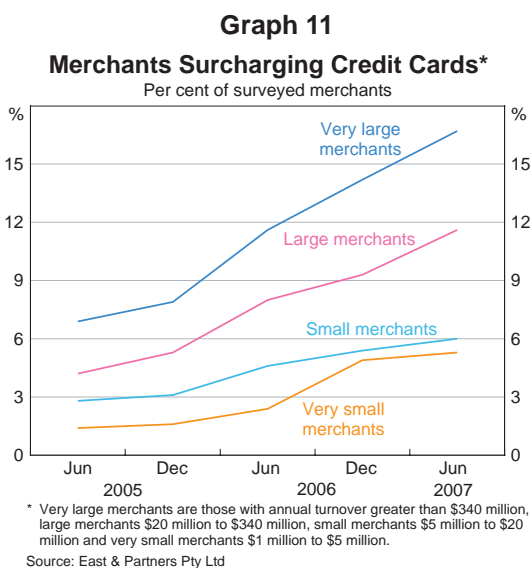
While not directly affecting interchange fees, this Standard means that merchants that accept credit cards are free to refuse acceptance of scheme debit cards if they feel the price they are charged does not reflect the value they receive. This is particularly relevant in Australia because scheme debit cards are typically issued as multifunction cards, such that transactions are processed through the EFTPOS system if the ‘cheque’ or ‘savings’ button is pressed at the point of sale, or through the scheme networks if the ‘credit’ button is pressed. Thus a merchant (other than an online merchant) can be confident that, in most situations, if it refuses to accept a scheme debit card, the customer could still pay just by pressing a different button on the card processing terminal. It seems likely that these considerations have had an influence on negotiations over the pricing of scheme debit interchange fees, particularly those for larger merchants for which both MasterCard and Visa have introduced lower interchange fees.

## Surcharging

An important part of the package of reforms has been the removal of the credit card schemes’ no-surcharge rules. Since these rules were removed on 1 January 2003, the Board has been monitoring the extent to which merchants have been prepared to pass directly to customers the cost that they incur in accepting credit cards. In 2006, as part of this monitoring, the Bank commissioned East & Partners to include additional questions on surcharging in its survey of merchant acquiring business.

The results of the East & Partners survey show that, while most merchants do not surcharge for credit card payments, surcharging is becoming more common. In June 2007, 17 per cent of very large merchants imposed a surcharge on credit card transactions compared with 7 per cent two years earlier (Graph 11). Surcharging by smaller firms is less common but the number of merchants surcharging continues to increase.

Most merchants that surcharge apply the same percentage rate for all credit and charge cards. However, there are some merchants that choose to apply a higher rate for, or only apply a surcharge to, the more expensive American Express and Diners Club cards than for MasterCard or Visa. Survey evidence indicates that the average surcharge for MasterCard and Visa transactions is around 1 per cent, while the average surcharge for transactions on American Express and Diners Club cards is about 2 per cent.<sup>17</sup>

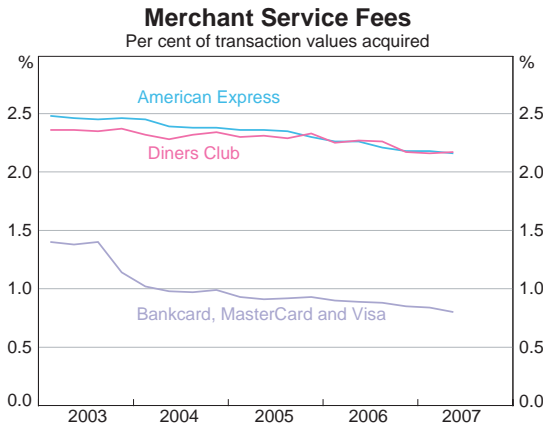


<sup>17</sup> East & Partners, Special purpose market report prepared for the Reserve Bank of Australia ‘Australian Merchant Acquiring and Cards Markets’, 2007.

## Merchant Service Fees

Merchant service fees in the credit and charge card schemes have continued to fall over the past year. The average merchant service fee for the Bankcard, MasterCard and Visa schemes fell by 0.09 percentage points over 2006/07, taking the decline since the implementation of the reforms in 2003 to around 0.60 percentage points (Graph 12). This decline is larger than the decline in interchange fees, suggesting increased competition between acquirers for the business of merchants.

**Graph 12**



Source: RBA

Merchant service fees for American Express and Diners Club have also fallen over the past year by around 0.10 percentage points. Since the end of September 2003, the average fee in the American Express scheme has fallen by 0.29 percentage points, while the average fee in the Diners Club scheme has fallen by 0.18 percentage points.

These reductions in merchant service fees represent a significant cost saving to merchants. Based on the card schemes' transaction values over 2006/07, the falls in merchant

service fees imply a saving of around \$890 million on Bankcard, MasterCard and Visa purchases, and around \$80 million on American Express and Diners Club purchases. These savings are offset slightly by the small increase in the combined market share of American Express and Diners Club since the reforms were implemented such that the net saving to merchants was around \$920 million in 2006/07. Since the reforms came into effect in 2003, merchants have saved a net total of at least \$2.5 billion which, in the normal course, would be passed through into lower prices for goods and services.

The Bank does not currently collect separate data on merchant service fees for scheme debit cards. Historically, these fees have been the same as for credit cards, and so fell alongside those for credit cards in late 2003. However, with interchange fees on scheme debit cards now different from those on credit cards, merchant service fees on scheme debit transactions are expected to eventually reflect this difference. Indeed there is some evidence that merchant service fees are being 'unbundled' to reflect the merchant's specific mix of both transaction and card types. Similarly, most merchants were historically offered a blended rate on MasterCard and Visa transactions but this is beginning to change for at least some merchants.

In the EFTPOS system, the fall in interchange fees has also affected merchant service fees. However, given that interchange fees in the EFTPOS system are paid by the issuer to the acquirer, the fall in interchange fees has led to an increase in merchant service fees. Prior to the EFTPOS interchange Standard coming into effect, the average merchant fee was minus 2 cents, reflecting the fact that some large merchants were paid by their acquirer whenever an

EFTPOS card was used. Data from financial institutions suggest that since September 2006 the average merchant service fee has increased by around 10 cents per transaction, compared with a reduction in interchange fees of around 15 cents (Graph 13).

### Pricing to Cardholders

As expected, the reforms have affected the pricing of credit cards not only to merchants, but also to cardholders. While most of the changes to cardholder pricing

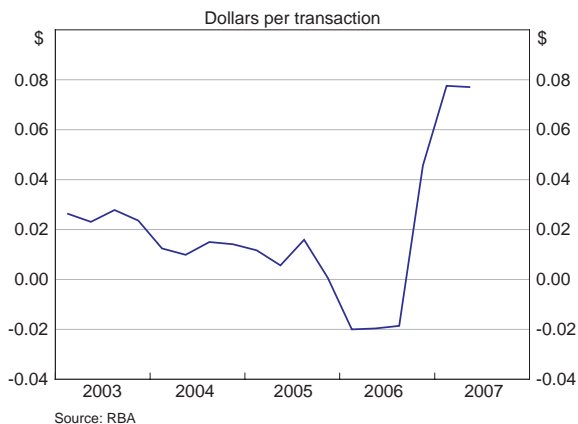
occurred in previous years, a number of issuers of credit cards have continued to make adjustments to pricing and the range of products offered.

The average annual fee on a standard rewards card was broadly unchanged over the year to June 2007 at \$85, while the average fee on a gold rewards cards was \$140. Average cash advance fees, late payment fees and over-limit fees have increased over recent years. There is, however, wide variation between card types. Cards in the small, but relatively fast-growing, premium category, for instance, can have an annual fee of several hundred dollars. Other cards, including low-rate cards, are sometimes available with no annual fee.

The value of reward points has also generally declined over recent years. Currently, a cardholder using a MasterCard or Visa card issued by one of the major banks will have to spend, on average, around \$16 300 to earn a \$100 shopping voucher. This is up from around \$12 400 in 2003, representing an effective increase in the price of a credit card transaction of around 0.2 per cent of the transaction value (Table 8). Some issuers have also introduced caps on the number of points that a cardholder may accrue over a specified period.

The average interest rate margin on standard credit cards rose somewhat during 2006/07 to be around 11½ percentage points in June 2007. The margin has, however, been fairly constant over the past five years, after rising in the early part of this decade. By contrast, the margin on low-rate cards is as low as half of that on standard cards, significantly reducing the cost of borrowing for some holders of credit cards. Average margins on low-rate

**Graph 13**  
**EFTPOS Merchant Service Fees**



**Table 8: Credit Card Rewards Programs**  
Four largest banks, June 2007

	Average spending required for \$100 voucher	Benefit to cardholder as a proportion of spending (%)
2003	\$12 400	0.81
2004	\$14 400	0.69
2005	\$15 100	0.66
2006	\$16 000	0.63
2007	\$16 300	0.61

Sources: Banks' websites; Cannex

cards have tended to fall over the past two years, as a number of issuers have not fully passed on increases in the cash rate.

The pricing of EFTPOS transactions to cardholders has also changed over recent years, particularly with the introduction of ‘all you can eat’ transaction accounts. All the major banks now offer accounts with an unlimited number of electronic transactions including EFTPOS, own ATM, BPAY and direct entry transactions for a fixed account keeping fee of around \$5 per month. In contrast, average foreign ATM fees have risen over the past year. In particular, some financial institutions increased the fees they charge customers for using another bank’s ATM from \$1.50 to \$2.00.

## **EFTPOS Access**

Over recent years, there have also been important reforms affecting access to a number of Australian payment systems. In 2004 and 2005, the Bank introduced access regimes for the credit card and Visa Debit schemes. In this past year, the Bank and the industry finalised their work on liberalising access to the EFTPOS system. This involved the establishment by the industry of an EFTPOS Access Code, complemented by an Access Regime implemented by the Bank. The Code provides new and existing participants with the right to establish direct connections with participants in the EFTPOS system and sets a time frame under which connections must be established. The Access Regime sets a cap on the price that an existing participant can charge to establish a new connection and includes provisions that will help ensure that negotiations over interchange fees are not used to frustrate entry.

The Access Code is relatively new so it is difficult to judge its full effect at this stage. Nonetheless, there are indications that it has improved access opportunities with a number of enquiries and at least two applicants taking advantage of its provisions. Notwithstanding this, EFTPOS connectivity is generally implemented alongside other links, such as for credit cards or ATMs, and this can affect the timing for businesses to complete their overall projects. The Board will continue to monitor the use of the EFTPOS Access Code to ensure it is meeting its objectives.

## **Automated Teller Machines**

The Board has, over many years, been monitoring developments in the ATM system and in particular, industry attempts to introduce reforms that would increase competition and efficiency. During the past year the Bank has been actively involved in facilitating this reform after the industry was unable to come to an agreement on the way forward.

The Board has had a long-standing concern about the structure of the ATM system in Australia. The Joint Study, published in 2000, identified a number of aspects of the system that the Bank felt could be improved. In particular it noted that the level of interchange fees was not closely related to costs and there seemed to be few competitive forces that would act to change the level of interchange fees. Furthermore, the interchange fee system was not transparent and could not allow for variations in the cost of providing ATMs at different locations. At the time, the Bank noted that an alternative to the interchange fee system would be to introduce a direct



charging system whereby the ATM owner would set the charge for using a particular ATM and inform the consumer of this at the time of the transaction.

Since then, the industry has engaged in a number of efforts to develop a model for reform that would address the concerns the Bank raised in the Joint Study. Notwithstanding this effort, a consensus around a reform model failed to emerge. Over the past year, however, there has been a renewed effort to finalise reform. This was driven by the Australian Bankers' Association (ABA) and, after input from other participants in the industry, a proposal has been agreed.<sup>18</sup> It involves:

- the development of an objective and transparent access code by the Australian Payments Clearing Association (APCA), setting out the conditions that new entrants are required to meet, the rights of new entrants, and the requirements on current participants in dealing with new entrants;
- the clear disclosure of any charges levied by the ATM owner *before* the customer proceeds with a withdrawal, with the customer able to cancel the transaction at no cost; and
- the abolition of the *bilateral* interchange fees paid by banks and other financial institutions to ATM owners for the provision of ATM services. These fees – which average around \$1 per transaction – are neither transparent to customers nor subject to the normal forces of competition. With these fees abolished, ATM owners will be free to charge customers who use their ATMs but must disclose the fee, increasing the overall transparency of pricing.

The new framework is expected to be in place by 1 October 2008.

Under this proposed reform model, *multilateral* interchange fees in sub-networks – either those currently in existence (in the Rediteller and Cashcard networks) or those that may form in the future – would be possible. However, the Board's view is that if such fees exist, they should be publicly disclosed. In addition, the rules that govern access to sub-networks should be transparent and objective and not impair efficiency and competition in the payments system.

While an industry agreement has been reached on the broad shape of the reform model, a number of details still need to be finalised. In particular, one issue that remains to be resolved is how to implement the proposal for zero interchange fees. Although a regulatory solution might be one option, the Board's preference is for this issue to be addressed by the industry and it is willing to work with the industry to facilitate such an outcome.

The Board acknowledges the significant concessions made by some industry participants in reaching agreement on this reform package. Although the process has taken some time, the reforms represent a successful example of the industry and the Bank working together to improve competition and efficiency in the Australian payments system.

---

<sup>18</sup> Reserve Bank of Australia Media Release 2007-13, 'Reform of the ATM System in Australia', 31 August 2007.

# Risk in the Payments System

Over the past year, the Board has re-examined the risks that payment systems might pose to financial stability, focusing on systems where large values of payments are settled. In addition, the International Monetary Fund (IMF) finalised its report on Australia's high-value payment system, the Reserve Bank Information and Transfer System (RITS), conducted under the Financial Sector Assessment Program (FSAP).

## Financial Sector Assessment Program

In October 2006, the IMF released the results of its assessment of Australia's real-time gross settlement (RTGS) system, RITS, against the *Core Principles for Systemically Important Payment Systems* (the Core Principles) (Table 9). This assessment was undertaken as part of the IMF's FSAP, and followed an earlier self-assessment by the Bank. The IMF concluded that RITS is a sound and efficient payment system and that it fully complies with all the relevant international standards. It also concluded that the Bank meets all of its responsibilities in applying the Core Principles. The full FSAP assessment of RITS is available in *Australia: Financial Sector Assessment Program – Detailed Assessment of Observance of Standards and Codes*, which can be found on the IMF's website, or through the Bank's website.

As part of its assessment, the IMF also made a number of recommendations which it believed had the potential to further enhance Australia's compliance with the Core Principles. In particular, it recommended further consideration of issues related to legal risk, security, business continuity, pricing, consultation with participants, governance arrangements and oversight. The recommendations covered both policy and operational matters, and therefore were considered by both the Board and the relevant operational areas of the Bank. In some cases, changes were already in train at the time of the FSAP, while in others, changes to processes have been considered. The recommendations and the Bank's responses are summarised in Table 10.

In response to the IMF's recommendation that the Bank adopt more 'formal methods and procedures' for oversight of important payment systems, the Board undertook a broader evaluation of possible approaches to oversight and their appropriateness in the Australian setting. The more formal approach adopted in some countries typically involves assessment of the main payment systems against the Core Principles. The Board, however, concluded that there was limited value in such an approach in Australia. This conclusion partly reflects the fact that the Core Principles are designed specifically to assess risks in *high-value* payment systems. This reduces their applicability to other systems, although in some areas they provide useful guidance. The Board also recognised that a system-by-system evaluation is not always helpful, particularly if it leads to insufficient attention being paid to the interactions between the various systems. Further, the Core Principles focus mainly on risk issues, and deal only briefly with efficiency and competition issues, which are given prominence by Australia's payments legislation.

**Table 9: Core Principles and Central Bank Responsibilities for 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 payment, 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.

**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 observance 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.

**Table 10: Actions to Improve Observance of the Core Principles – Recommendations and Responses**

### **Legal foundation**

*Recommendation:* Require entities located outside the Australian jurisdiction that apply for participation in RITS either as a branch or on a remote basis to provide a legal opinion that analyses possible conflict of laws and potential legal risk for RITS and its participants.

*Response:* At this stage the RBA is not convinced that the potential legal risks arising from the participation in RITS of entities not located in Australia warrant the additional cost to new participants of gaining further legal certainty.

### **Security and operational reliability, and contingency arrangements**

*Recommendation:* Require security enhancement of the proprietary communication network to meet international standards with regard to confidentiality, integrity and authenticity of the transmitted information and data. Consider an external review of the RBA's business continuity plan that would include the assessment of the hardware, software and internal procedures.

*Response:* Implementation of a new RITS user interface was completed in April 2007, bringing the confidentiality, integrity and authenticity of transmitted data up to best practice. This project was well advanced at the time of the FSAP assessment. The RBA is considering the commissioning of an external review of RITS architecture in 2007/08, including business continuity arrangements.

### **Efficiency and practicality of the system**

*Recommendation:* Consider following up its studies of RITS costs and pricing structure by consulting RITS users. The RBA should consider a review of the pricing structure to ensure that it promotes efficient functioning of the system.

*Response:* The RBA's Business Services Group has undertaken considerable work on pricing of RITS transactions and various means of balancing requirements for cost recovery, system efficiency and the provision of appropriate incentives for participants. Liaison with industry will occur in due course.

### **Governance of the payment system**

*Recommendation:* Consider establishing a consultative framework with the users in order to ensure RITS continues to meet users' needs in terms of efficiency, practicality and service level. The RBA may wish to re-establish its advisory user groups, representing different categories of RITS participants, to discuss issues related to technical and business features of RITS.

*Response:* The RBA now holds RITS User Group Forums in Sydney and Melbourne twice each year. The first forums were held in February 2007.

### **Central bank responsibilities in applying the Core Principles**

*Recommendation:* Consider whether current arrangements avoid potential conflicts of interest between the policy and oversight functions (that fall under the jurisdiction of the PSB) and the RBA's role as an operator of the RITS system. Strengthen the implementation of the PSB's oversight responsibility by developing formal methods and procedures including regular monitoring and reporting, on-site inspections of important payment systems and arranging regular meetings with payment system providers and other stakeholders.

*Response:* Internal RBA discussion offers considerable benefits and the Board is satisfied that procedures are in place to identify and address any conflicts of interest that might arise.

The Board's general approach to oversight is to consider the payments system as a whole, focusing on both stability and efficiency issues, including interactions between various payment systems. While assessments against international standards for high-value systems have an important role to play, much of the Board's work has focused on the economics of the individual payment systems, and how these systems compete with one another. In conducting this work, the Bank has consulted widely, both formally and informally, with payment system operators, financial institutions, users of payment services, consumer groups, and other domestic and international regulators. While the broader approach can pose additional challenges, the Board's view is it is both necessary and appropriate, particularly given the Board's broad responsibilities set out in legislation.

## Residual Risks in the Payments System

As part of the Board's work, it periodically takes stock of the various risks in the payments system and the actions and processes that mitigate those risks. In doing so, it recognises the significant number of developments over the past decade that have enhanced the stability of the payments system. These developments include:

- the introduction of RTGS in 1998, which greatly reduced the build-up of interbank credit exposures during the course of the payments day;
- the granting of legal certainty to RTGS payments and obligations in multilateral netting arrangements through the introduction of the *Payment Systems and Netting Act* in 1998 and the subsequent approval of RTGS systems and key multilateral netting arrangements under the Act by the Bank;
- changes in 2004 to APCA's 'failure to settle' rules, which specify how to deal with the failure of a participant in a deferred net settlement system;
- the introduction of a standing facility in 1997 that allows institutions with Exchange Settlement Accounts to obtain overnight liquidity from the Bank at 25 basis points above the target cash rate, provided that they have eligible securities to undertake a repurchase agreement;
- the move to real-time delivery versus payment (DvP) for settlement of debt securities in 1998; and
- the introduction of CLS in 2002, which significantly reduced risks arising from the two sides of a foreign exchange transaction being settled at different times.

The result of these developments is that the system is much more robust than it was previously, and that problems in the payments system itself are much less likely to be the source of systemic disruption in the financial system.

Notwithstanding this positive assessment, over the past year the Board has considered a number of residual risks in the payments system. One of these risks is that settlement problems in deferred net settlement systems could have broader implications for the financial system.

Currently, around 90 per cent of interbank payments, by value, are settled through the RTGS system, which prevents the accrual of settlement risk during the day. The remaining 10 per cent of payments are settled on a deferred net basis, with payments being aggregated and settled at 9am the day after payment instructions are exchanged. These payments include cheque payments, consumer electronic payments (such as credit and debit card payments), and payments through the direct entry system. By far the largest component of deferred net settlement values originates from the direct entry system and, as a consequence, this was the Board's main focus.

Risks arise in the direct entry system because payments are typically credited to the receiving customer's account before settlement between banks occurs (as is the case for other deferred net arrangements). This means that the recipient's bank is exposed if the payer's bank fails prior to settlement, since it will not receive a covering payment for the credit to its customer's account. A system established today to process significant payment values might not be set up in this way, but there are significant costs of changing well-established systems. The industry has periodically examined these risks and has not seen a compelling case to change existing arrangements. APCA is, however, currently developing a road map for the evolution of Australia's low-value payment systems, and this will include the development of a work program for any industry cooperative effort required in a variety of areas, including risks. The Board will continue to monitor developments in this area.

A second issue that the Board considered was whether there are significant risks in netting arrangements that have not been protected under the *Payment Systems and Netting Act*. Where netting is not protected under the Act, the administrator of a failed participant may seek to have net obligations unwound to gross obligations, eliminating the risk reduction benefits of netting arrangements. At the time of the Board's discussion, the largest multilateral netting arrangement not protected under the *Payment Systems and Netting Act* was the equities settlement batch operated by ASX Settlement and Transfer Corporation. This was, however, granted protection under the Act during the year (see 'Ongoing Regulatory Responsibilities'). The Bank is also seeking to ensure that the *Payment Systems and Netting Act* protections of elements of the '9 am Batch' – where deferred net obligations are settled – are sufficiently robust.

A third possible source of risk to the payments system examined by the Board was operational risk. The focus on operational risk worldwide has increased dramatically since the terrorist attacks in the United States in 2001 and it is now expected that key elements of the financial system should be able to continue operations with minimal disruption when faced with a wide range of contingencies. Among the key elements considered specifically by the Board in the context of operational resilience were RITS and the SWIFT messaging system.

The Board concluded that the Bank's RITS system, which is at the core of the Australian payments system, has a high degree of resilience with several levels of backup. These arrangements were enhanced significantly in July 2007 when the Bank's new, dedicated business resumption facility became operational. The facility is staffed permanently and allows rapid recovery from any incidents affecting Head Office.

The Board also concluded that there are well developed business continuity arrangements in place for the SWIFT system. Given the importance of the SWIFT messaging system to the

Australian foreign exchange market and RTGS system, however, the Board remains interested in SWIFT's resilience. In this context, the Board noted that SWIFT has voluntarily submitted to the oversight of the G10 central banks, led by the National Bank of Belgium, with operational resilience an important focus. It also noted that the Executives' Meeting of East Asia-Pacific Central Banks (EMEAP) grouping of Asian central banks (including Australia) has been working with the National Bank of Belgium to obtain greater access to SWIFT oversight information. The Board supported the development of these new information-sharing procedures.

# Ongoing Regulatory Responsibilities

The Board has a number of ongoing regulatory responsibilities that require either regular review or periodic decisions. Over the past year, it has focused heavily on its oversight of licensed clearing and settlement facilities and, in particular, on understanding risks and risk mitigation in central counterparties. It has also granted one approval under the *Payment Systems and Netting Act*, and the Bank has granted three Exchange Settlement (ES) Accounts.

## Oversight of Clearing and Settlement Facilities

The operators of clearing and settlement facilities that serve financial markets in Australia are required to be licensed under the *Corporations Act*. One of the key obligations of licensees is to meet Financial Stability Standards determined by the Bank. Two standards were determined by the Bank in 2003: the *Financial Stability Standard for Central Counterparties* and the *Financial Stability Standard for Securities Settlement Facilities*. The aim of these standards is to ensure that licensees operate their facilities in a way that promotes overall stability in the Australian financial system.

There are four main clearing and settlement facility licensees serving Australia's financial markets – Australian Clearing House (ACH), SFE Clearing Corporation (SFECC), ASX Settlement and Transfer Corporation (ASTC) and Austraclear.<sup>19</sup>

ACH provides central counterparty clearing services to a range of financial products traded on the ASX market, including equities, warrants and equity-related derivatives, while SFECC provides similar services for derivatives traded on the Sydney Futures Exchange (SFE) market. ASTC provides for the settlement of equities and warrants traded on the ASX market. Austraclear offers securities settlement services for over-the-counter trades in debt securities and also provides for cash settlements for derivatives contracts on the SFE market. Cash settlements in relation to derivatives traded on the ASX market can be settled either through ASTC or Austraclear. Following the merger of the Australian Stock Exchange Limited and Sydney Futures Exchange Limited in July 2006, these licenses are held within the one corporate group, now known as the Australian Securities Exchange (ASX) (Figure 1).

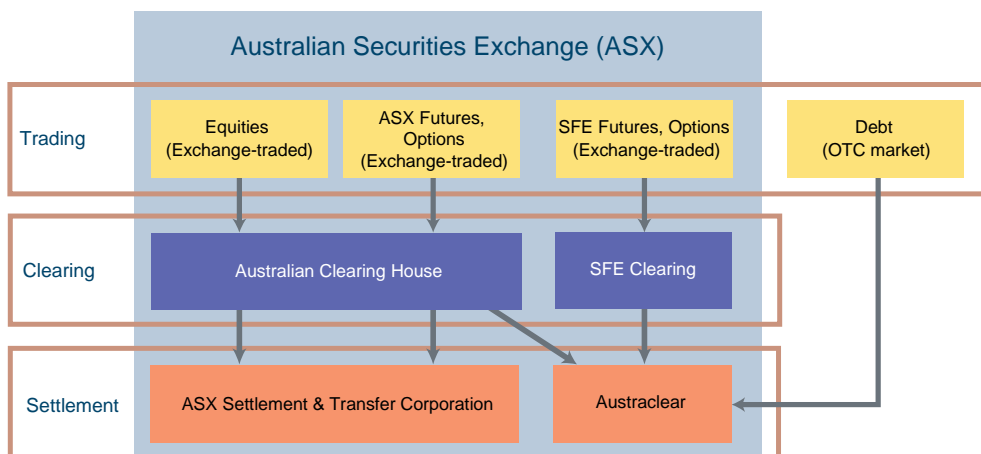
The continued rapid growth in trading in Australian financial markets in 2006/07 has seen the value of transactions processed by the four clearing and settlement facilities also expand rapidly. Trading in equities and warrants on the ASX market increased by 35 per cent over the past year to \$5.3 billion per day, while the notional value of equity derivatives traded on that market grew by 7 per cent. The notional value of derivatives trading on the SFE market increased by 33 per cent in the year, to \$148 billion per day. Since debt securities are traded in an over-the-counter market, trading values are not directly observable, but settlements of debt securities through Austraclear averaged \$34 billion per day in 2006/07, an increase of 36 per cent from 2005/06.

---

<sup>19</sup> A fifth licensed facility operated by IMB Limited is not subject to the Financial Stability Standards due to its small size.



**Figure 1**  
**Clearing and Settlement in Australia**



Around 70 per cent of cash equities trades are novated to the equities central counterparty, ACH. Netting within ACH reduces the central counterparty's exposure from each day's novated equities trades to an average of \$450 million. However, because equities typically settle three days after the trade date, ACH's cumulative exposures are higher, averaging \$950 million during 2006/07, an increase of 30 per cent from the previous year.

Equities settlements through ASTC incorporate both trades novated to ACH and non-novated transactions. After netting, the average daily value of ASTC settlements was \$525 million in 2006/07, an increase of 37 per cent from 2005/06.

Quantification of the derivatives exposures managed through central counterparties is more difficult. The average volume of open derivatives contracts increased by 7 per cent during the year for ACH and by 40 per cent for SFECC. A more complete measure of the exposures managed is initial margins held by the central counterparty, which reflect both open interest and the central counterparty's assessment of the riskiness of individual contracts, as embodied in margin requirements. Initial margins held by ACH for ASX derivatives increased by 45 per cent to average \$503 million in 2005/06, while initial margins held by SFECC increased by 80 per cent to an average of \$3 billion.

The Bank is required to assess each clearing and settlement facility licensee at least annually on how well it meets the applicable Financial Stability Standard. These assessments rely upon extensive information gathering from the licensees, quarterly reporting obligations, as well as regular liaison. In 2006/07, the Bank finalised its assessments of the four licensed clearing and settlement facilities for the year ended September 2006. The Bank determined that each of the licensees had satisfied its obligations with respect to the relevant standard.

In the most recent assessment, the Bank focused particularly on the risk management practices of ACH and SFECC. As providers of central counterparty services, these facilities simplify counterparty risk management by replacing exposures to a variety of participants with an exposure to the central counterparty. This arrangement also allows more robust risk

controls to be placed on participants and provides additional scope for netting of obligations. Central counterparties, however, also result in a significant concentration of risk. This risk can crystallise if a participant defaults on its obligations to the central counterparty, which is nonetheless required to meet all its obligations to other participants. This concentration of risk means that it is important that measures are in place to provide confidence that, in all but the most extreme circumstances, a central counterparty can accommodate a default without threatening its solvency, or causing significant disruption to financial markets or the financial system more generally.

Clearing and settlement facilities are responsible for determining their own risk management arrangements, consistent with the Financial Stability Standards. These arrangements typically operate at a number of levels.

Firstly, criteria for participation in each facility are used to ensure that only participants that will not adversely affect the safety and stability of the facility are admitted. These criteria cover areas such as the financial strength and operational capacity of the participants.

Secondly, margining is used to limit risk to the central counterparty from a participant defaulting on its derivatives obligations. Participants must post cash or other collateral with the central counterparty when contracts are initiated and pay in additional funds if the market moves against them. SFECC can also impose 'additional initial margins' in response to stress tests, and places position limits on participants based on net tangible assets. There are currently no initial margins imposed on physical equities, but unlike most futures and options, equities exposures are short-lived, usually lasting three days.

Thirdly, the financial resources available to the central counterparty are an important protection to the facility. These can be drawn on in the event that losses exceed margins and other assets of a defaulting participant held by the central counterparty. This situation could arise if a default by a participant coincided with a very large market movement.

In the case of ACH, a minimum amount of \$110 million was set aside over the assessment period to meet the central counterparty's obligations in the event of a default. This amount included capital and funds paid into a restricted reserve from the National Guarantee Fund in 2005. In addition, insurance of \$100 million was obtained in late 2005, which could be drawn upon for losses exceeding \$110 million. ACH also had the capacity, over the assessment period, to require non-defaulting participants to contribute up to a total amount of \$220 million to meet clearing losses not covered by those other resources, and has access to a line of credit that can be drawn down at short notice to facilitate settlement.

Over the assessment period, SFECC's default fund was \$90 million, comprised of capital of \$30 million and participant contributions of \$60 million. It could call for additional participant contributions if required. Insurance of a further \$60 million to cover a range of risks, including default, was also in place.

Both ACH and SFECC have increased the financial resources they have on hand to deal with a participant default since the September 2006 assessment was finalised. In March 2007, ACH increased the minimum funds it holds to \$150 million and the amount that ACH may call from non-defaulting participants should other financial resources be exhausted was increased to

\$300 million. In addition, ACH increased the value of the line of credit it holds to \$150 million, enhancing its ability to meet its obligations in a timely manner. Similarly, SFECC increased the size of its default fund to \$140 million. Both these changes are currently being assessed by the Bank in the context of the 2006/07 assessment period (see below).

Finally, central counterparties are expected to have systems that allow them to monitor the exposures of individual participants, the level of risk faced by the facility as a whole, and the adequacy of financial resources and margins on an ongoing basis. Stress testing is central to these arrangements, enabling the central counterparty to evaluate potential losses under extreme but plausible circumstances. Stress tests provide a means of evaluating whether a particular combination of risk management arrangements and resources is adequate. Models for determining margins must also be adequate and their validity assessed on a regular basis.

The Bank emphasised in its assessments of central counterparties that, while the facilities are considered to have satisfied the Financial Stability Standards, work being undertaken to improve some elements of risk management should continue to be given a high priority. The ACH assessment also drew attention to the large stress loss exposures faced by ACH from time to time. ACH has subsequently put in place a system of participant contributions that addresses these exposures for cash equities.

The Bank has decided, in consultation with ASX, to change the assessment timetable from 2006/07. Assessments will now be undertaken as at the end of June each year. The Bank is currently in the process of conducting an assessment of the licensed clearing and settlement facilities for the nine months to June 2007; from 2008, the assessments will relate to the full year to June.

### **Approvals under the *Payment Systems and Netting Act 1998***

Under Part 3 of the *Payment Systems and Netting Act*, the Bank has the power to approve a multilateral netting arrangement. An approval protects the net amounts calculated in a multilateral netting arrangement in the event of legal challenge should a party to the arrangement enter external administration. Without approval, there is some risk that surviving participants in the arrangement may be forced to pay their gross obligations to the defaulting institution with the prospect of receiving nothing in return.

ASTC operates the settlement system for the Australian equities market and for related markets, including some derivatives. As a part of this operation, each day ASTC calculates settlement obligations between its settlement participants arising from financial market transactions. This involves the calculation of net settlement positions in funds and equities for each participant.

The net payment positions between ASTC settlement participants give rise to interbank payment obligations. Therefore, ASTC also calculates net interbank obligations between holders of ES Accounts acting on behalf of ASTC settlement participants. These payment obligations are settled in RITS as a batch at around 12.30pm each day, with the settlement of related equities positions occurring in ASTC's clearing house electronic sub-register system (CHESS).

ASTC applied to the Bank for these netting procedures to be approved under Part 3 of the *Payment Systems and Netting Act*. Given the importance of legally robust clearing and settlement arrangements to the financial markets which ASTC serves, the risk of disruption to the banking system, and having regard to the criteria set out in the *Payment Systems and Netting Act*, the Board agreed that approval of the multilateral netting arrangement operated by ASTC was warranted. An approval was issued on 1 May 2007.

## **Exchange Settlement Accounts**

When the Payments System Board was established in 1998, one of its first tasks was to determine the Bank's policy on access to ES Accounts. These accounts are important for providers of payment services because they provide a means for settlement obligations to be extinguished through the exchange of a settlement asset that carries no credit risk. Some payment systems specify settlement of obligations through ES Accounts.

In early 1999, the Board established a new policy liberalising access to ES Accounts as recommended by the Financial System Inquiry in 1997. Under the policy, providers of third-party payment services are eligible for an ES Account, with institutions supervised by APRA eligible for an account without special conditions.

In addition, in 2003, the Board agreed to relax the requirement that all banks settle RTGS transactions through their own ES Account. In particular, the Board agreed to allow banks with a small value of aggregate payments – less than 0.25 per cent of the value of all RTGS payments – to apply to the Bank to appoint another bank as agent to make payments on their behalf.

In 2006/07, the Bank granted ES Accounts to three applicants: the HongKong and Shanghai Banking Corporation Ltd; Sumitomo Mitsui Banking Corporation; and Allied Irish Banks PLC. The latter two applied for and were granted permission to appoint an agent to make payments on their behalf. A full list of ES Account holders is available on the Bank's website.

## **Foreign Exchange Settlement Risk**

For a number of years the Bank has participated in a subgroup of the BIS Committee on Payment and Settlement Systems (CPSS) (the Foreign Exchange Settlement Risk (FXSR) Subgroup). The subgroup is responsible for assessing strategies for the reduction of foreign exchange settlement risk and, as part of that role, also undertakes, in conjunction with the US Federal Reserve, co-operative oversight of Continuous Linked Settlement (CLS) Bank. These roles have involved the Bank in two major streams of work during the year – the process for approval of new business to be undertaken by CLS Bank and a survey of foreign exchange settlement risk.

### **CLS Bank**

CLS Bank was established in 2002 as a response to the concern of many central banks and other regulators that no effective mechanism existed for the elimination of settlement risk associated with foreign exchange transactions. That risk is created when the settlement of the sale of one currency is completed before settlement of the currency bought. Because settlement occurs across different payment systems in different time zones (for example, RITS for the

Australian dollar and Fedwire for the US dollar) there was no effective means of achieving payment-versus-payment (PvP) settlement (where both currencies are settled simultaneously) prior to the establishment of CLS Bank.

During 2006/07, the international community of central banks considered proposals by CLS Bank to expand its business beyond PvP foreign exchange settlements. One proposal, now approved, is to settle non-deliverable forward (NDF) foreign exchange contracts and foreign exchange option premiums. While these are foreign exchange related products, payments are one-sided; a participant settling an NDF or option premium will either pay or receive funds in CLS Bank rather than paying funds in one currency and receiving funds in another, as occurs with traditional CLS settlements. A second proposal is for CLS Bank to settle one-sided payments associated with over-the-counter credit derivatives housed in the Depository Trust & Clearing Corporation (DTCC) Deriv/SERV Trade Information Warehouse. This proposal has been subject to close scrutiny by central banks since it extends CLS Bank's settlement of one-sided payments beyond its core foreign exchange business. One concern, expressed by some central banks in the Asia Pacific region, is that the use of CLS Bank to settle a broader range of payments could lead to a further concentration of payments late in the day, increasing operational and other risks. The discussion of these issues was elevated from the FXSR Subgroup to a Senior Level Ad-Hoc Task Force convened specifically for the purpose. Following extensive discussion and consultation, the international community of central banks has approved this additional business subject to a set of conditions and a series of undertakings by CLS Bank.

## **Foreign exchange settlement risk survey**

Also in 2006/07, the FXSR Subgroup continued work on a comprehensive survey of financial institutions in order to assess current foreign exchange (FX) settlement practices. This updates two earlier surveys conducted by the CPSS in 1996 and 1997 (and replicated by the Bank in 1997 and 1998). The current survey sought information on settlement practices for the month of April 2006, and aimed to cover at least 80 per cent of total FX settlements by involving 109 institutions. The Bank coordinated collection of data from Australian-based banks with significant FX operations, while data on the operations of foreign banks based in Australia were collected by the central banks in the countries where the banks' head offices are located. The report on the survey 'Progress in reducing foreign exchange settlement risk' was released by the Bank for International Settlements in July 2007 as a consultation document.

The survey collected data from institutions on the values settled through different settlement methods, by currency and by counterparty. It also incorporated a qualitative component, based on interviews, to assess institutions' management of FX settlement risk. Globally, the surveyed institutions reported average daily FX settlements equivalent to US\$3.8 trillion in April 2006; Australian dollar settlements accounted for around 3 per cent of the total.

As part of the survey, settlements were classified into six settlement methods: CLS Bank; traditional correspondent banking; bilateral netting; 'on us' without settlement risk; 'on us' with settlement risk; and other PvP. The results show that settlement through CLS Bank has become the predominant method of settling FX transactions, accounting for 55 per cent of the

value of global settlements (Table 11). The next most common method is through traditional correspondent relationships, with this method still accounting for around one-third of settlements. The only other method of settlement accounting for significant values is bilateral netting, which accounted for around 8 per cent of the total.

**Table 11: FX Obligations by Settlement Method**  
\$US billion equivalent

	All institutions	% of total	Australian banks	% of total
CLS (PvP)	2 091	55	76	60
Correspondent banking	1 224	32	44	35
Bilaterally netted	304	8	5	4
'On us' without settlement risk	112	3	1	1
'On us' with settlement risk	53	1	0	0
Other PvP	38	1	0	0
<b>Total settlement obligations</b>	<b>3 821</b>	<b>100</b>	<b>126</b>	<b>100</b>

Source: BIS

The pattern for the Australian-based banks is similar to that for banks in other countries, with around 60 per cent of settlements through CLS Bank and 35 per cent through traditional correspondent banking arrangements. Across currencies, the settlement methods used for the Australian dollar are similar to those used for other currencies (see Table 12).

**Table 12: FX Obligations by Currency and Settlement Method**  
Per cent of total

	All	USD	EUR	JPY	GBP	CHF	AUD
CLS (PvP)	55	55	58	62	54	58	58
Correspondent banking	32	31	29	24	32	26	30
Bilaterally netted	8	8	7	8	9	8	8
All other	5	6	5	6	4	7	3
<b>Total settlement obligations</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>

Source: BIS

Overall the development of the CLS service and its adoption means a large proportion of FX settlements are now undertaken on a PvP basis and generate little or no FX settlement risk.

# Engagement with Industry

## Relationship with APCA

Since the establishment of the Australian Payments Clearing Association (APCA) in 1992, the Bank has had an automatic right to appoint representatives to the APCA Board and management committees. Over the past year, the Bank decided to relinquish these automatic rights. This followed the completion of a strategic review by APCA, which emphasised its role as a self-regulatory industry association. Given the Bank's regulatory responsibilities in the payments system, both the Payments System Board and the management of the Bank concluded that a change to the relationship between the Bank and APCA was appropriate.

Under the new arrangements, which were agreed in May 2007 and can be found on the Bank's website, the Bank and APCA will consult regularly on issues of common interest. In addition, the Bank continues to be represented on a number of APCA committees, although the representation is from the operational, rather than policy, areas of the Bank.

## Ongoing Liaison

The Bank also continues to consult widely, both on a formal and informal basis, with a range of other participants in the payments system. Over the past year, discussions have typically focused on the upcoming review of the payments system reforms and the architecture and governance of the payments system.

Discussions on this latter topic followed work that the Board conducted in the previous year and outlined in the 2006 Annual Report.<sup>20</sup> This work suggested that while Australia had a good record of innovation in payment systems, there were some areas in which arrangements in Australia were starting to slip behind. In addition, it highlighted the bilateral nature of many payment systems in Australia and suggested that, under some circumstances, bilateral arrangements may pose challenges to access and innovation. In September 2006, the Deputy Chairman of the Board presented the Bank's research and findings to an industry forum assembled jointly by the Australian Bankers' Association (ABA) and APCA. The presentation emphasised that the Board saw the topics of technology and governance as largely ones for industry, although it would continue to monitor developments closely.

In response to the issues raised by the Bank, a number of industry working groups have been established and are currently examining issues related to the structure and governance of the payments system. One outcome of this work so far is the announcement by the ABA in July 2007 that it and APCA are considering options for establishing a centralised commercial governance structure for the EFTPOS network to develop and promote the EFTPOS system. The Board welcomes this initiative.

---

<sup>20</sup> *Payments System Board Annual Report 2006, September 2006.*

## Speeches and Presentations

Over 2006/07, the Bank made a number of public speeches and presentations to explain the reforms and the Bank's plans for the upcoming review. The Deputy Chairman gave talks to: a forum established by the ABA and APCA on technology; SIBOS 2006; a conference on non-banks in the payments system organised by the Federal Reserve Bank of Kansas City; and the 4th International Consumer Credit Card Summit 2007 in Sydney. The Head of Payments Policy Department also gave two presentations focusing on the review of the payments system reforms to conferences on card payments, as well as a number of other presentations providing general information on the Bank's activities to industry participants.

## International Meetings

In addition to engagement with payment system participants, operators and regulators in Australia, the Bank was represented on two regular international groups in 2006/07: the Committee on Payment and Settlement Systems Subgroup on Foreign Exchange Settlement Risk and the EMEAP Working Group on Payment and Settlement Systems.

As discussed in the chapter 'Ongoing Regulatory Responsibilities', the first of these groups, which met three times during the year, is responsible for oversight of CLS Bank and has been working on a survey of foreign exchange settlement risk. The second group is comprised of representatives from the EMEAP countries. The group meets twice a year to exchange information on developments in payment and settlement systems in their respective countries and to conduct joint work on topics of mutual interest. Over the past year, the group met in Sydney in October 2006 and in Singapore in April 2007. Its work has focused on oversight of SWIFT and, following the recommendations of the Task Force on Regional Cooperation, a detailed terms of reference and work program for the group.

In addition to these standing groups, Bank staff have contributed to a number of overseas courses and technical assistance. The Bank provided speakers for SEACEN's advanced course on payment and settlement systems in November 2006 and its intermediate course on payment and settlement systems in May 2007, as well as an IMF workshop on payments in April 2007. At the request of Bank Negara Malaysia, the Bank also provided a representative to the Malaysian National Payments Council which met in November 2006. The Bank also provided technical assistance to Bank Indonesia related to their payment systems under an AusAID program.



# The Board's Decisions and Reserve Bank Reports

This section lists publications since the beginning of 2006. A full listing of the Board's decisions and Reserve Bank reports up to the end of July 2006 is available in the Payments System Board Annual Report 2006.

## 2006

Media Release 2006-02, 'Payments System Reforms' (Announcing the imposition of an interchange fee standard on the EFTPOS system, the revocation of the designation of the Bankcard scheme and the access regime imposed on it, and the removal of references to Bankcard from the Credit Card Interchange Standard, and the exclusion of a number of classes of purchased payment facilities from the provisions of the *Payment Systems (Regulation) Act 1998*), 27 April 2006.

*Reform of the EFTPOS and Visa Debit Systems in Australia: Final Reforms and Regulation Impact Statement*, Reserve Bank of Australia, Sydney, April 2006.

Media Release 2006-04, 'Reform of Debit Card Systems in Australia' (Announcing the imposition of an interchange fee Standard on the Visa Debit system, a Standard dealing with 'honour all cards' rules in the Visa Debit and Visa credit card systems and the 'no surcharge' rule in the Visa Debit system, and the receipt of an undertaking from MasterCard that it would voluntarily comply with the Standards imposed on the Visa Debit system), 7 July 2006.

Media Release 2006-06, 'Update on Payments System Issues' (Announcing the imposition of an EFTPOS Access Regime, the calculation of a benchmark for interchange fees in the EFTPOS system, decisions not to regulate scheme-based pre-paid cards at that time and to conduct a review of the Bank's card payment systems reforms in 2007/08 and a call for submissions on the content and process of this review), 13 September 2006.

Media Release 2006-08, 'Interchange Fees for the MasterCard and Visa Schemes' (Announcing the calculation of a common benchmark for interchange fees in the MasterCard and Visa credit card schemes and the calculation of a benchmark for interchange fees in the Visa Debit system), 29 September 2006.

*Core Principles for Systemically Important Payment Systems: Self Assessment of the Reserve Bank Information and Transfer System*, Reserve Bank of Australia, Sydney, November 2006.

Media Release 2006-13, 'Payments System Issues' (Announcing details of the scope, process and timing of the 2007/08 review of card payment systems reforms, a call for submissions on the possible impact of the interchange fee standards on competition between schemes and the collection of additional transaction and interchange revenue data from schemes), 11 December 2006.

## 2007

Media Release 2007-02, 'Payments System Issues' (Announcing the Board's decision not to make changes to the interchange fee standards ahead of the upcoming review of card payment systems reforms, the latest moves to reform the ATM system and the conditional approval of the multilateral netting arrangement operated by the ASX Settlement and Transfer Corporation (ASTC) under Section 12 of the *Payment Systems and Netting Act 1998*), 5 March 2007.

Media Release 2007-06, 'Payment Systems and Netting Act 1998: Approval of Netting Arrangement' (Announcing the formal approval of the multilateral netting arrangement operated by the ASTC), 1 May 2007.

Media Release 2007-09, 'Review of the Reforms to Australia's Payments System' (Announcing the release of an issues paper for the review of card payment systems reforms, further details regarding the review and a call for submissions on the questions raised in the paper), 29 May 2007.

*Reform of Australia's Payments System: Issues for the 2007/08 Review*, Reserve Bank of Australia, Sydney, May 2007.

RESERVE BANK *of* AUSTRALIA