

Some Features of the Australian Payments System*

This article sets out some of the basic features of the Australian payments system. It describes the flow of payments in Australia and identifies the most important payment mechanisms; it also compares our payments system to those of other industrial countries. The article abstracts from the legal and institutional framework of payments arrangements in Australia.¹

Some Basic Definitions

Payments can be classified as *high-value* or *low-value*. High-value transactions are typically related to purchases and sales of financial assets, mainly foreign exchange and securities. These transactions usually involve only financial institutions, large companies or high net-worth individuals.

Payment instruments are either *cash* or *non-cash*. Cash is probably the most important instrument for low-value transactions and has many features which are difficult to emulate. It is typically used for retail transactions and for transfers of value between individuals.

Non-cash payment instruments can be classified as either *paper* or *electronic*, a critical distinction for discussion of efficiency and cost of the payments system.

Payments systems can also be classified according to where payment processing begins. In *credit systems*, such as direct credit, the processing of the payment starts at the payer's financial institution. In *debit systems*, such as direct debit and cheques, the processing of the payment begins with the payee's financial institution. For example, when a cheque is deposited in an account, the processing for this payment begins with the recipient's financial institution, which contacts the payer's financial institution for payment.

One final concept worth mentioning is that of *own items*, sometimes called on-us items. Own items are payments made across the books of a single financial institution, for example, when the payer and the payee have accounts at the same institution. For a national and highly concentrated financial system like Australia, own items are very significant. If data on payments flows capture only payments exchanged or cleared *between* financial institutions, the total volume and value of payments will be understated.

* This article was prepared by Michele Bullock and Luci Ellis of the Bank's Payments Policy Department.

1. These details can be found in *Payment Systems in Australia*, the second edition of which will be published by the Bank for International Settlements (BIS) early in 1999.

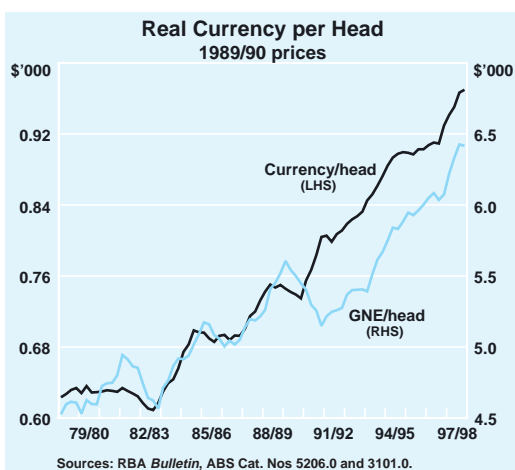
The Australian Payments System

Cash

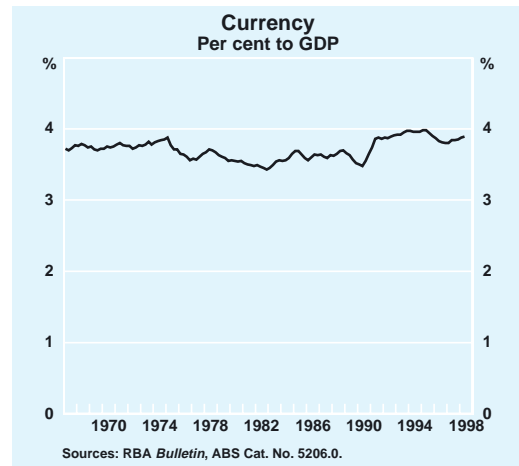
The importance of cash in the Australian payments system is difficult to quantify. Anecdotal evidence and experience suggest that cash transactions account for the dominant share of the number of transactions, but a very small share of their value. Data to verify this, however, are not available. Payments are measured as a flow – the value or volume during a period – while most measures of cash are of its stock at a point in time. A number of proxies are therefore used to give an indication of the role of cash.

The most commonly used proxy is the stock of cash in circulation. Graph 1 shows currency and expenditure per capita over the past 20 years (adjusted for inflation) while Graph 2 shows the ratio of currency to GDP over a longer period.² Both graphs suggest that more transactions were undertaken using cash in the late 1990s than in the 1980s. Holdings of currency moved closely with expenditure

Graph 1



Graph 2



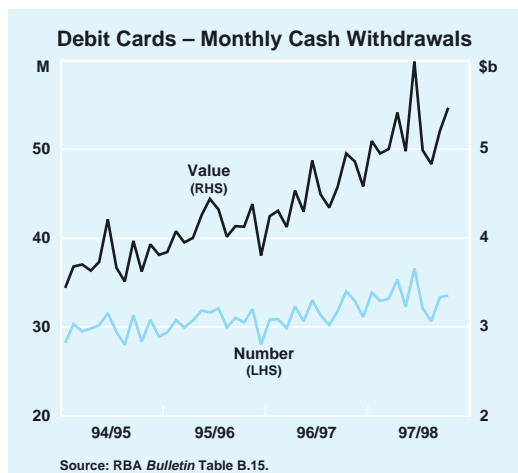
through the 1980s but the two series diverged in the 1990s; although there still appears to be some cyclical relationship, currency increased more sharply than expenditure. Similarly, the ratio of currency to GDP rose in the early 1990s and has remained at the higher level since.

Of course, the stock of cash can vary for reasons unrelated to the value of transactions. For example, a proportion of notes on issue is hoarded as a store of value; if this proportion rises for some reason, the stock of cash increases without any increase in the number of transactions undertaken with cash. An alternative proxy for changes in cash transactions is the flow of ATM withdrawals. ATM withdrawals cannot give any indication of the number of transactions undertaken using cash. But to the extent that there is a stable relationship between cash withdrawals and transactions, trends in ATM withdrawals will give some indication of trends in the value of cash transactions.

Each month, Australians currently make a little over 30 million withdrawals from bank ATMs; these average around \$150 and have a total value of around \$5 billion (Graph 3).³ The number of cash withdrawals has grown

2. The broadest definition of circulating cash is the total value of notes and coin on issue. Around 9 per cent of this total is held by banks; the rest is in the hands of the non-bank public – households, businesses and NBFIs. Notes and coin in the hands of the non-bank public, usually called ‘currency’, is considered a good indicator of the transactions demand for cash.
3. These figures do not include cash withdrawals from non-bank ATMs and EFTPOS ‘cash out’ facilities or over-the-counter cash withdrawals. Nonetheless, the data should provide a good idea of the trends in cash withdrawals.

Graph 3



fairly slowly over the past few years but the value of withdrawals has risen by around 40 per cent, implying a significant increase in the average amount withdrawn. This may reflect an increase in both the demand for cash to make payments and in average holdings of cash. There is anecdotal evidence that customers are economising on trips to bank branches and/or the ATM to minimise bank fees. The current low-inflation environment may also have induced consumers to hold larger amounts of cash on average.

Although ATM withdrawals do not give any indication of the total value of cash transactions, they do give a lower bound. With annual withdrawals of just under \$60 billion, withdrawals from bank ATMs still exceed the value of payments made by EFTPOS and credit cards combined (see below). The total value of cash transactions would therefore well outstrip transactions using these payment instruments. Cash remains an important payment instrument in the Australian economy.

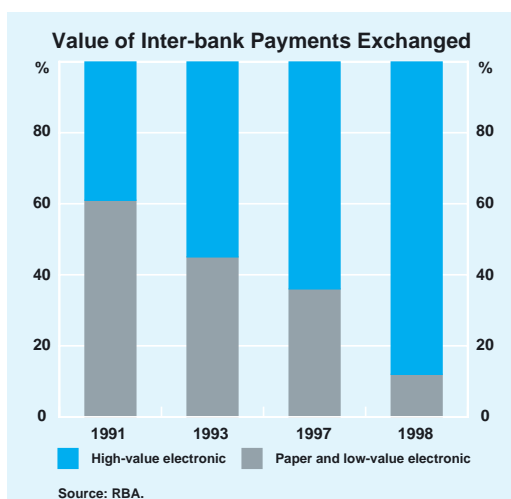
Non-cash payments

Non-cash payments account for most of the value of payments in the Australian economy. On average, non-cash payments worth around

\$120 billion are exchanged between banks each day. Adding 25 per cent as a conservative estimate for own items suggests non-cash payments of around \$150 billion each day, equivalent to about 30 per cent of GDP.

Around 90 per cent of the value of non-cash transactions is accounted for by a small number of high-value payments. Historically, high-value payments have been exchanged in one of two ways: electronically or with non-cash paper instruments such as bank cheques and warrants.⁴ In recent years, there has been a shift away from paper instruments, a migration which has accelerated with the introduction of real-time gross settlement (RTGS) for high-value payments (Graph 4). Latest data show that around 90 per cent of the value of all payments are exchanged between banks electronically, compared with 40 per cent at the beginning of the 1990s.

Graph 4



Low-value non-cash payments may also be paper or electronic. Table 1 shows the main instruments for such payments by value.⁵ The cheque is still the most important non-cash payment instrument, accounting for almost 85 per cent of low-value payments in 1997, in value terms, down only 5 percentage points from 1994. The data imply an average cheque

4. A warrant is a paper payment instrument similar to a cheque but mainly used for high-value payments between banks.
5. Data on non-cash payments are limited; some are compiled annually and released with a lag as long as a year. These data include own items and exclude warrants.

Table 1: Value of Low-value Non-cash Payments
\$billion per year

	1994	1995	1996	1997
Paper				
Cheques	6 546	6 168	6 133	6 589
Electronic				
Direct entry credits	510	684	1 066	906
Direct entry debits	346	308	418	424
EFTPOS	13	18	23	25
Credit cards	22	24	28	30
Total	7 437	7 202	7 668	7 974

Source: APCA Payments Monitor, March 1998.

Table 2: Number of Low-value Non-cash Payments
Millions per year

	1994	1995	1996	1997
Paper				
Cheques	977	1 022	983	986
Electronic				
Direct entry credits	420	499	434	467
Direct entry debits	86	102	107	114
EFTPOS	247	349	426	470
Credit cards	239	271	295	311
Total	1 969	2 243	2 245	2 348

Source: APCA Payments Monitor, March 1998.

value of around \$6 500, suggesting that there are a considerable number of cheques written for high values.⁶ Some of these transactions may have migrated to the RTGS system, so the value of cheques could decline in 1998.

The volume data in Table 2 show a different picture. The cheque is still the most important non-cash payment instrument in Australia but its relative importance has declined over the past two decades. Despite an increase of some 30 per cent in the number of cheques written since the early 1980s, the share of cheques in low-value payments, in volume terms, has declined from around 85 per cent to around 40 per cent. The number of cheques written

annually has steadied at around one billion in recent years.

On the other hand, the use of electronic payment instruments at the retail level has been growing rapidly. This is particularly so for EFTPOS, which has almost doubled in transactions terms over the three years to 1997. Of the 19 per cent growth in the number of non-cash transactions in these three years, over 11 percentage points were accounted for by growth in EFTPOS; growth in credit card transactions accounted for a further 4 percentage points (Table 3). As a group, electronic payment instruments are now more important than cheques.

6. For example, the data include bank cheques for payments such as residential property settlements.

Table 3: Contributions to Growth in the Number of Non-cash Transactions 1994–1997

	Proportion of non-cash payments Per cent, 1997	Contribution to growth Percentage points
Cheques	42	0.5
Direct entry credit	20	2.4
Direct entry debit	5	1.4
EFTPOS	20	11.3
Credit cards	13	3.7
Total	100	19.3

Source: APCA Payments Monitor, March 1998.

The International Context

Although institutional structures and legal frameworks differ widely between industrial countries, payment instruments look much the same. In nearly all countries, cash plays an important role and non-cash instruments such as cheques, credit and debit cards and direct electronic payments are all available. What distinguishes the payment systems of countries is the mix of instruments used. This section identifies the main features of payment systems in other industrial countries for which data are available, and compares these features with Australia. These comparisons must be treated with caution: the data are not always comparable because of inconsistencies in definitions. Differences in banking structure, geography and cultural preferences can also help to explain variations.

Cash

Table 4 compares the use of cash in Australia with other industrial countries, ranked by the value of cash holdings per head. There is a wide range on this measure. Switzerland and Japan have very high average holdings of cash per person (over US\$3 500) while

New Zealand has a very low average (around US\$300). Although currency per head is an easily understood concept, cross-country comparisons are problematic. For example, because of the need to convert to a common currency, exchange rate fluctuations can affect the measures.

A preferred measure for cross-country comparisons is currency to GDP. Although the ranking is slightly different, countries with high (low) average cash holdings per person also tend to have high (low) currency to GDP ratios. Australia is in the lower to middle half of the group on both measures, with quite a few countries around the same level.

Non-cash payments

There is also substantial variation in the use of non-cash payment instruments among countries. Table 4 compares the number of non-cash transactions per person. At the top end is the United States where over 300 non-cash transactions were undertaken per person in 1996. There is a large gap to the next group of countries (100 to 200 transactions) while Japan, Italy and Spain are at the lower end (40 transactions). Australia is again in the middle group of countries. There also appears to be an inverse relationship between the number of non-cash payments and the importance of cash across countries. Countries with a relatively low number of non-cash payments per person tend to have high currency to GDP ratios, and vice versa for the United States.

Paper versus electronic instruments

One way in which payment flows differ between countries is in the use of paper-based payment instruments. The English-speaking countries, France and Italy are relatively heavy users of cheques for non-cash payments (Graph 5). The United States is an outlier where cheques are especially important, accounting for almost 80 per cent of the volume of non-cash payments. The continued strong preference for cheques there is often attributed to wide acceptability by retailers and the existence of 'float' for the payer.⁷ But

7. In the United States, funds are debited from the payer's account on the day the cheque is presented to their bank. This can take anything up to three days. In Australia, the payer's account is usually debited the day the cheque is deposited to the payee's account.

Table 4: Measures of Cash Holdings and Non-cash Transactions
1996

	Value of cash holdings per person US\$	Currency to GDP ratio Per cent	Number of non-cash transactions per person
Switzerland	3 961	9.3 ^(a)	90
Japan	3 588	9.8	39 ^(b)
Spain	1 597	10.8 ^(a)	39
Netherlands	1 462	5.5 ^(a)	169
Norway	1 411	3.9 ^(a)	97 ^(b)
Germany	1 302	4.5	147
Sweden	1 193	4.2 ^(a)	92
Belgium	1 187	5.3 ^(a)	115
Italy	1 130	5.3	39
Denmark	1 014	3.0 ^(a)	89
France	870	3.3	142
Australia	807	3.8 ^(a)	121
Canada	705	3.5 ^(a)	151
United States	610	2.1	325
Finland	581	2.3 ^(a)	146
United Kingdom	549	2.8	137
New Zealand	288	1.7 ^(a)	—

(a) 1997.

(b) 1993.

Note: Currency data for the US and Germany are reduced by 60 per cent and 35 per cent, respectively, for estimated foreign holdings of currency. For other countries, information on the importance of foreign holdings of currency was not available.

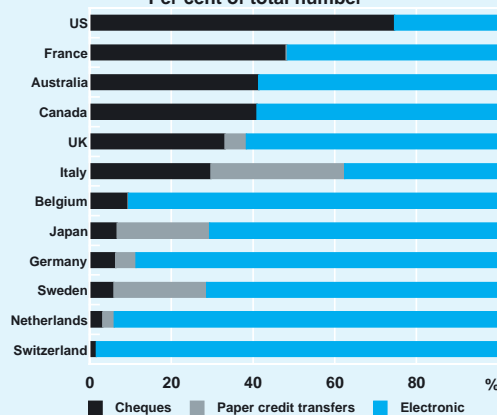
Sources: IMF International Financial Statistics; Datastream; RBA *Bulletin*; ABS Cat. Nos 5206.0 and 3101.0; APCA Payments Monitor, March 1998; UK Central Statistical Office Financial Statistics; BIS Statistics on Payment Systems in the Group of Ten Countries (1997); European Monetary Institute, Payment Systems in the European Union; Banque de France Annual Report 1996; Humphrey, D.B., L.B. Pulley and J.M. Vesala (1996), 'Cash, Paper and Electronic Payments: A Cross-country Analysis', *Journal of Money, Credit and Banking*, 28(4), Part 2, pp. 914-941.

the heavy involvement of the Federal Reserve both in cheque processing and regulation may also be a factor in keeping the cheque competitive with other payment instruments.

Graph 5 also shows paper-based credit transfers, giving a more comprehensive estimate of the importance of paper payment instruments. For many countries this makes little difference. For Italy, Japan and Sweden, however, these estimates suggest a greater role for paper payment instruments: in Italy, such instruments account for around 60 per cent of non-cash transactions, second only to the United States.

Use of individual payment instruments

Credit transfer is a particularly popular payment instrument in continental Europe

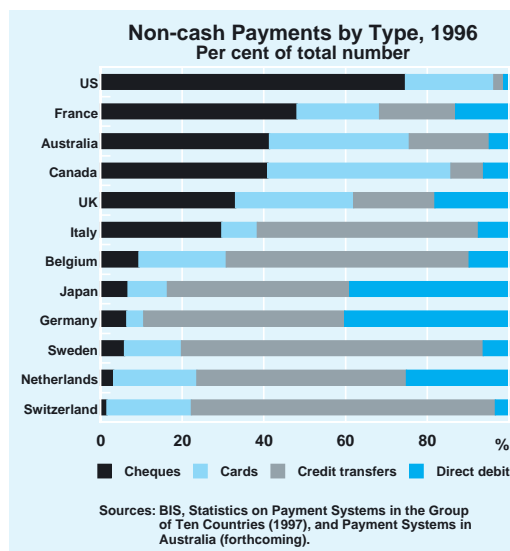
Graph 5**Non-cash Payments: Paper vs Electronic, 1996**
Per cent of total number

Sources: BIS, Statistics on Payment Systems in the Group of Ten Countries (1997), and Payment Systems in Australia (forthcoming).

other than France (Graph 6). It accounts for between 50 and 80 per cent by volume of all non-cash transactions in these countries, and is widely used for bulk recurring payments such as salaries and government benefits and for one-off payments from individuals to businesses or between individuals. It has remained more popular than direct debits for many consumer payments. Historically, post offices in these countries – at which individuals hold accounts – have provided the backbone of the credit transfer system through giro post. With its extensive branch network and government ownership, giro post represents a convenient and safe way to manage payments. The anomaly is France which, having a high cheque usage/low credit transfer pattern, looks more like the English-speaking countries.

The Australian payments system most resembles that of the United Kingdom, Canada and France. Though all these systems rely fairly heavily on cheques, electronic payment methods account for over half of non-cash payments. There are, nevertheless,

Graph 6



some interesting differences in the composition of electronic payments. In Australia, slightly more than half of electronic payments are attributed to payments by debit and credit cards. Most of the rest are direct

Table 5: Non-cash Payments
Values are US\$, 1996

	Cheques	Debit cards	Credit cards	Direct credit	Direct debit
Australia					
Transactions per person	54	22	15	24	6
Value per transaction	4 889	41	72	1 921	3 062
Canada					
Transactions per person	62	23	45	12	9
Value per transaction	1 581	33	57	499	222
France					
Transactions per person	67		35	24	16
Value per transaction	587		62	1 230	286
United States					
Transactions per person	243	10	61	7	4
Value per transaction	1 158	37	61	2 178	5 236
United Kingdom					
Transactions per person	45	22	18	27	25
Value per transaction	794	46	77	1 340	381

Sources: BIS, Statistics on Payment Systems in the Group of Ten Countries (1997), Banque de France, Annual Report 1996, APCA and RBA.

credit transfers, with direct debit accounting for only a very small proportion. Indeed, as discussed earlier, the growth in electronic payments in Australia has been largely driven by debit cards. By contrast, in the United Kingdom and France direct debits are at least as important as direct credits.

Table 5 provides some more information on the use of non-cash payment instruments for the 'high cheque use' countries. With the necessary caveats about comparability, the data show that, with the exception of Australia, use of the direct entry system is evenly distributed across debits and credits. The United States and Canada both have fairly low usage of direct credits and debits while France and the United Kingdom have a relatively high usage. In Australia, use of direct credit is broadly comparable with the latter two countries but its use of direct debit is much lower, more in line with the United States and Canada. The explanation for this needs to be explored because of its implications for efficiency.

There are substantial differences across countries in the average value per transaction, which may indicate different patterns in the usage of instruments. The average value per cheque transaction in Australia is over twice as high as the next country (Canada). This

probably reflects limited use in Australia of cheques at the point-of-sale; it also reflects the inclusion of large-value bank cheques for purchases such as real estate. Finally, at around US\$3 000, the average value of a direct debit transaction in Australia is also much higher than Canada, France or the United Kingdom, though well below the United States. This may indicate that the direct debit system in Australia and the United States is used mainly by companies and relatively little by individuals.

Conclusion

In some respects, the Australian payments system (Box A) looks much like that of the major industrial countries. Electronic payment instruments have increased in popularity but cash payments are still very important. There is a range of non-cash payment instruments available, from manual mechanisms such as writing a cheque to automated payments such as direct entry. Where the Australian system differs is in its unique mix of instruments. Australia is in a group of countries in which cheques are

Box A: Summary of Payments System Features

- Cash remains an important payment instrument in the Australian economy.
- On average, non-cash payments to the value of around \$150 billion are undertaken every day in Australia.
- The cheque is still the most important non-cash payment instrument in Australia though the volume of cheques issued has stabilised over recent years.
- Growth in non-cash payments in recent years has been driven mainly by growth in EFTPOS transactions.
- Australia is around the middle grouping of industrial countries in its use of cash.
- Australia is average among industrial countries in terms of the number of non-cash payments per person.
- The English-speaking countries, plus France and Italy are relatively heavy users of cheques for non-cash payments.
- Compared with some 'high cheque use' countries, Australia relies less on direct debit as a payment instrument, particularly for payments by individuals.

heavily used, but even compared with these countries, Australia's payment mix is different – most obviously in the limited use of direct debit, particularly by individuals. The variety

in the mix of instruments between countries suggests that institutional, legal and cultural factors all play a role – together with costs – in the choice of payment mechanism. ✕