3

The payments system—overview

3.1 The payments system refers to arrangements which allow consumers and businesses to pay for goods and services. The key payment instruments include cash, cheques and electronic funds transfers (e.g. credit and debit cards). Non-cash payments involve arrangements that ensure that funds move to and from accounts at financial institutions. Consumers and businesses will select a payment system based on convenience, security and incentive.[1]

3.2 Within this framework, the Reserve Bank of Australia (RBA) has important regulatory responsibilities for the payments system and plays a key role in its operations. The RBA:

- has regulatory responsibility for the payments system, with the objectives of controlling risk, and promoting efficiency and competition;
- provides facilities for final settlement of payments system obligations; and
- participates in the system as banker to the Australian Government and a limited range of other customers.[2]

3.3 In its regulatory role, the RBA is particularly keen to ensure the promotion of clear price signals between the different payment methods so as to ensure efficient payment choices for consumers. The RBA has sought to achieve this largely, but not solely, through the regulation of interchange

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1 RBA, *Australian Payments System*, RBA, Sydney, viewed 22 February 2006, <http://www.rba.gov.au/PaymentsSystem/australian_payments_system.html>.

2 RBA, *Australian Payments System*, RBA, Sydney, viewed 22 February 2006, <http://www.rba.gov.au/PaymentsSystem/australian_payments_system.html>.

fees. In addition, the RBA has sought to limit various restrictions in the payment system that could effectively limit entry and restrict competition.[3]

Cash

3.4 Cash is probably the most important instrument for small-retail transactions and for transfers of value between individuals. 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.[4]

3.5 The ready availability of cash through automated teller machines (ATMs) has sustained its use. In the year to March 2006, withdrawals from ATMs averaged around $11.3 billion a month, which equates to around $550 per person.[5]

Non-cash payments

3.6 Non-cash payments account for most of the value of payments in the Australian economy. On average, non-cash payments worth more than $155 billion are made each business day, equivalent to about 20 per cent of GDP.[6]

3.7 Most payment systems involve two or more financial institutions and/or other payments providers, requiring payments to be 'cleared' between them. For instance, details of a cheque drawn on one financial institution and deposited at another must be returned to the first financial institution so that it can debit its customer's account and verify that the customer has sufficient funds.[7]

3.8 Arrangements for clearing most payment instruments in Australia are co-ordinated by the Australian Payments Clearing Association, although

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3 RBA, *Payments System Board Annual Report 2005,* RBA, Sydney, 2005, p. 1.

4 RBA, *Australian Payments System*, RBA, Sydney, viewed 22 February 2006, <http://www.rba.gov.au/PaymentsSystem/australian_payments_system.html>.

5 RBA, *Bulletin*, RBA, Sydney, May 2006..

6 RBA, *Australian Payments System,* RBA, Sydney, viewed 22 February 2006, <http://www.rba.gov.au/PaymentsSystem/australian_payments_system.html>.

7 RBA, *Australian Payments System,* RBA, Sydney, viewed 22 February 2006, <http://www.rba.gov.au/PaymentsSystem/australian_payments_system.html>.

Visa, MasterCard and BPAY have their own independent payments clearing systems.[8]

3.9 Once payments are cleared between institutions, they accrue obligations which must be settled. In Australia, final settlement of obligations between payments providers is by entries to their Exchange Settlement Accounts at the Reserve Bank.[9]

3.10 While all non-cash payments involve the same fundamental elements (clearing, settlement etc.), the non-cash payments system is made up of a number of separate payments systems:

- the debit and credit card payment systems predominantly used for retail payments by consumers;
- the direct credit and debit payment systems used by both consumers and businesses;
- the cheque payment system that, today, is mainly used by businesses; and,
- the RTGS system primarily used by banks for settlement of money market and foreign exchange transactions.[10]

3.11 Of most interest to Australian consumers are the card-based and electronic transactions which they perform on a day-to-day basis. The different types of these transactions are outlined below, as well as some of the systems which facilitate them.

3.12 However, before beginning this discussion, there are some important terms to define, which are used frequently in the card-based payments system:

- **Cardholder:** The individual who has been provided with a payment card by the issuing institution.
- **Issuer:** The financial institution that issues the card to the cardholder. It provides credit in the case of credit cards, or access to the cardholder's funds in the case of debit cards.
- **Merchant:** The entity that is accepting a card as payment for goods or services.
- **Acquirer:** The financial institution that provides payment to merchants who have accepted a card as payment. Responsible for requesting authorisation of a transaction from the issuing institution.

8 RBA, *Australian Payments System*, RBA, Sydney, viewed 22 February 2006, <http://www.rba.gov.au/PaymentsSystem/australian_payments_system.html>.

9 RBA, *Australian Payments System*, RBA, Sydney, viewed 22 February 2006, <http://www.rba.gov.au/PaymentsSystem/australian_payments_system.html>.

10 RBA, *Reasons for the decision to designate the EFTPOS payment system*, RBA, Sydney, October 2004, viewed 15 March 2006, <http://www.rba.gov.au/PaymentsSystem/Reforms/Eftpos/reasons_designate_eftpos.htm>.

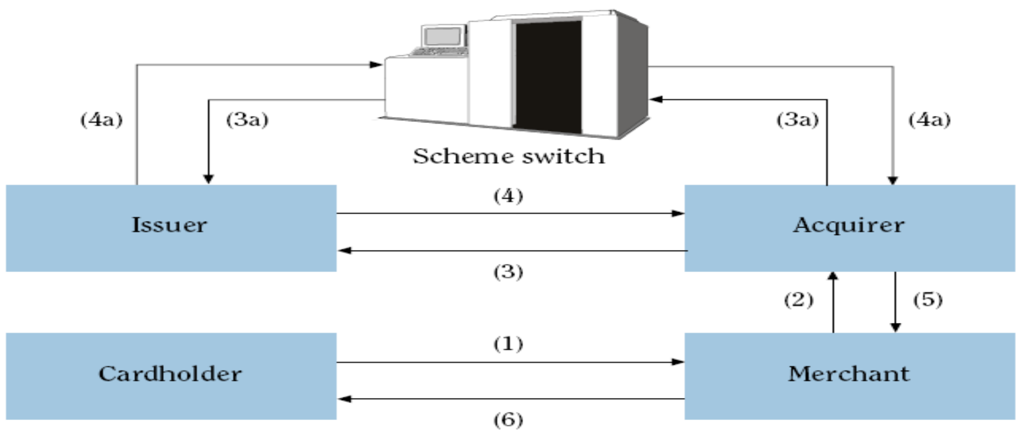
Credit and charge cards

3.13 Credit and charge cards are non-cash payment instruments with which a consumer can pay for goods and services using credit from the financial institution that issued the card.

3.14 Payments can occur in person at the point of sale, as well as via the phone or the internet. Payment occurs with a flow of information, which is outlined below and shown in figure 3.1:

1. The credit card is swiped through an electronic terminal on the merchant's counter;
2. The transaction and cardholder details are routed to the merchant's financial institution (the acquirer);
3. If the acquirer is also the issuer the transaction can be authorised internally and the authorisation returned to the merchant. However, if the issuer is another institution, the acquirer routes the transaction to that issuer either bilaterally (3) or via a 'switch' facility provided by the credit card scheme (3a);
4. The issuer either authorises or declines the transaction and a message is sent back to the acquirer bilaterally (4) or through a switch (4a);
5. The acquirer tells the merchant if the payment is authorised; and
6. If the transaction is authorised, the customer signs the voucher. The merchant checks the signature against the card and, if all is in order, the transaction is complete.[11]

Figure 3.1 Information flows for a credit card transaction



Source *RBA & ACCC, Debit and credit card schemes in Australia: A study of interchange fees and access, p. 18.*

3.15 The above diagram represents the information flows for a 'four-party' or 'open' scheme (also see figure 3.2 below). They are called four-party schemes because, as the name suggests, there are four parties involved in

11 RBA and Australian Competition and Consumer Commission (ACCC), *Debit and credit card schemes in Australia: A study of interchange fees and access,* Sydney, October 2000, pp. 17-18.

transactions—the issuer, acquirer, cardholder and merchant. Four-party schemes are also referred to as 'open' because the issuer and acquirer can be any financial institution—thus the schemes are 'open' to participants.

3.16 In four-party schemes, credit cards are issued by financial institutions. The issuer provides the cardholder with a line of credit up to a specified limit. The scheme—most commonly Visa or MasterCard—provides a range of services including transaction processing and international networking.[12]

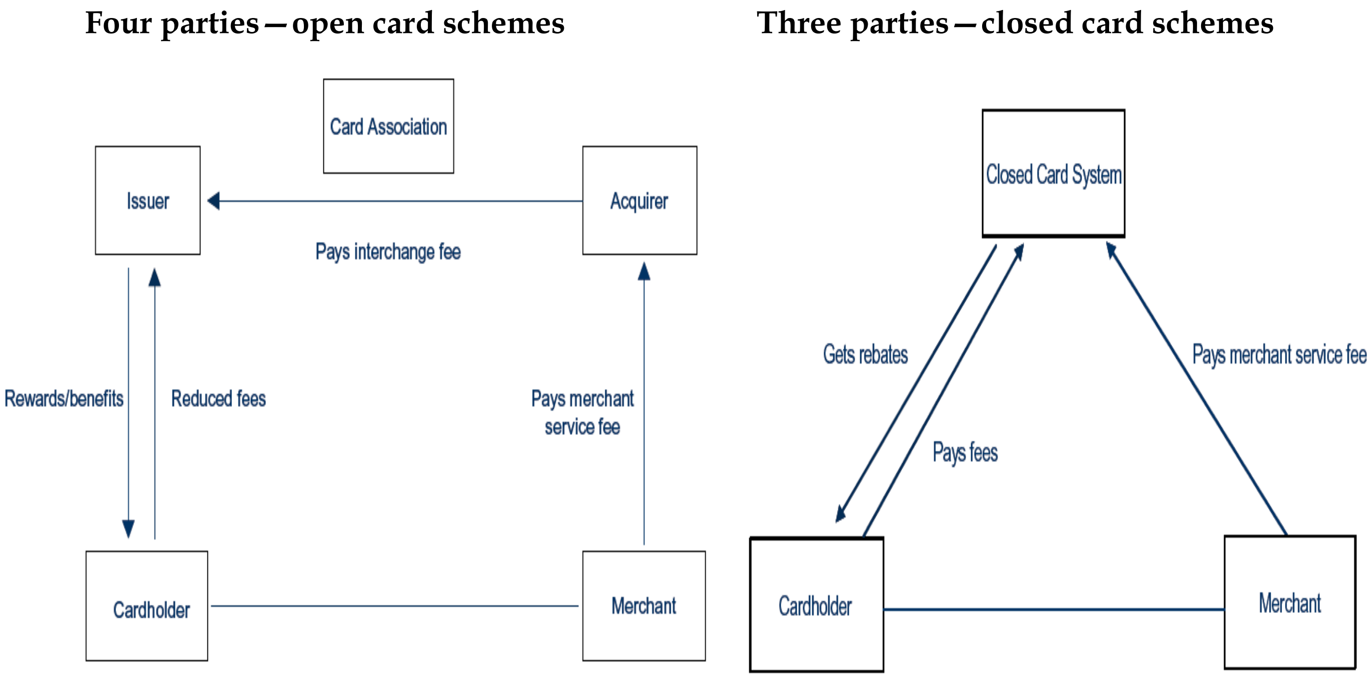
3.17 An interchange fee (discussed in detail below) may be paid between an issuer and an acquirer. For credit card (and scheme debit) transactions, it is paid *by* the acquirer *to* the issuer. Where an issuer of a credit card is also by chance the acquirer, the transaction is internal and therefore no interchange fee is paid. To recoup the costs of providing services to merchants, including the interchange fee, acquirers charge merchants a 'merchant service fee'.

3.18 In three-party schemes—Diners Club and American Express—issuing and acquiring are both typically performed by the scheme. Therefore three-party schemes are also referred to as 'closed', because the issuer and acquirer are generally the same institution—thus they have tended to be 'closed' to outside participants. As there are generally no outside participants involved, there is no interchange fee involved.[13] However, American Express cards are now issued by two Australian banks. While in this arrangement there are four parties involved in transactions, American Express remain the sole acquirer of their transactions and therefore the scheme is still partly closed. A per-transaction fee is paid between American Express and the issuing banks.

12 RBA & ACCC, *Debit and credit card schemes in Australia: A study of interchange fees and access,* p. 14.

13 RBA & ACCC, *Debit and credit card schemes in Australia: A study of interchange fees and access,* p. 14.

Figure 3.2 Four-party vs. three-party schemes



Source I Harper, R Simes & C Malam, *The Development of Electronic Retail Payments Systems*, paper presented to the International Telecommunications Society Africa-Asia-Australasia Regional Conference, 2005.

3.19 In addition to the distinction between three-party and four-party schemes, credit cards can also be differentiated according to the nature of the credit line. In Australia, most credit cards provide a revolving line of credit. The money that cardholders borrow from an issuing institution does not have to be paid back in a set time, apart from a minimum monthly payment. However, the issuer charges interest on any amounts owing, usually after a set interest-free period. The issuer, in some cases, also charges an annual fee.[14]

3.20 In contrast some cards – often referred to as charge cards – provide a line of interest-free credit that must be paid in full at the end of the statement period. Charge card providers also charge their cardholders an annual fee.[15]

3.21 A major advantage of both credit and charge cards is that you can make purchases and pay bills online or via the telephone. Increasingly, businesses' websites have credit card payment functionalities, which allow consumers to pay bills from their home or office. Payments by credit card are also made through third parties, as is discussed below.

14 RBA & ACCC, *Debit and credit card schemes in Australia: A study of interchange fees and access*, p. 14.

15 RBA & ACCC, *Debit and credit card schemes in Australia: A study of interchange fees and access*, p. 14.

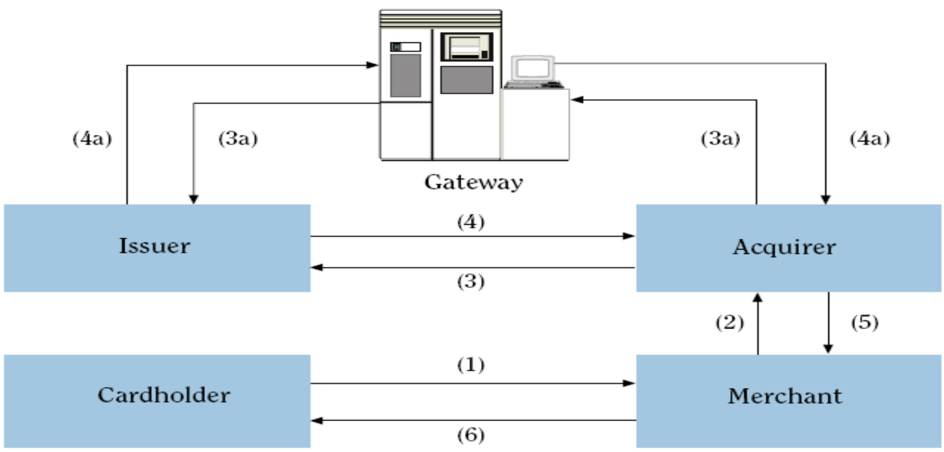
Debit cards

3.22 Debit cards provide users with electronic access at the point-of-sale to a transaction account at their financial institution. Unlike credit and charge cards, debit cards provide users with access to their own money, not to credit provided by a financial institution.

3.23 There are two types of debit card in Australia—EFTPOS and scheme debit. The EFTPOS system is operated by Australian banks. It is only available in Australia and transactions are authorised using a personal identification number (PIN). The flow of information is outlined and illustrated below:

1. The cardholder presents the card to the merchant and enters a PIN;
2. The relevant data are transmitted to the merchant's financial institution (the acquirer);
3. If it is one of the acquirer's own cards, the account is checked internally and authorisation returned to the merchant. If the card is issued by another financial institution, the information is switched to the card issuer either directly via a bilateral link (3) or, if the issuer does not have this link, via a third institution acting as a gateway (3a);
4. The issuer then checks the account and returns an authorisation (or a decline) to the acquirer either directly (4) or via the gateway (4a);
5. The acquirer passes the message to the merchant; and,
6. The transaction is complete.[16]

Figure 3.3 Information flows for an EFTPOS transaction



Source *RBA & ACCC, Debit and credit card schemes in Australia: A study of interchange fees and access, p. 21.*

16 RBA & ACCC, *Debit and credit card schemes in Australia: A study of interchange fees and access*, p. 20.

3.24 PINs are initially assigned by the issuer of the cards; however, they can later be changed to a number chosen by the cardholder. Examples of these cards are the 'Handycard' for Westpac customers, or the 'Keycard' for customers of the Commonwealth Bank. There are, of course, numerous other examples.

3.25 In an EFTPOS transaction an interchange fee is paid *from* the issuer *to* the acquirer—the reverse of the credit card system. The EFTPOS interchange fee is also a flat fee rather than a percentage of the transaction value. Similarly, the merchant service fee is often, although not always, a flat fee per transaction. In addition, because acquirers receive rather than pay an interchange fee, some of the larger merchants who are involved in maintaining their own EFTPOS networks are actually paid a rebate on each transaction they process, rather than paying a merchant service fee.

3.26 'Scheme debit' cards, which are offered by both Visa and MasterCard[17], operate through the credit card schemes' systems. Aside from operating through different networks, there are two other key differences between scheme debit and EFTPOS transactions. Scheme debit transactions:

- Involve signature-based authorisation rather than a PIN; and
- Have an interchange fee that is paid in the opposite direction to that in an EFTPOS transaction—*from* the acquirer *to* the issuer.

3.27 Scheme debit cardholders are generally not charged to transact, in part because their issuer *receives* an interchange fee. EFTPOS cardholders usually pay account keeping fees—typically around $5 per month—and are able to make a number of EFTPOS transactions at no additional charge. At some institutions there is no limit to the number of 'free' EFTPOS transactions, while at others there may be limits, after which customers are charged an additional per-transaction fee.

3.28 While scheme debit products normally require signature authorisation, some merchants, as with credit cards, allow them to be used without this authorisation—generally over-the-phone or internet. In Australia EFTPOS transactions must always be authorised using a PIN and therefore cannot be used for online or over-the-telephone purchases.

Automated Teller Machines (ATMs)

3.29 ATMs allow people to access funds from their transaction accounts and their credit card accounts, in the form of cash. The RBA asserts that ATMs:

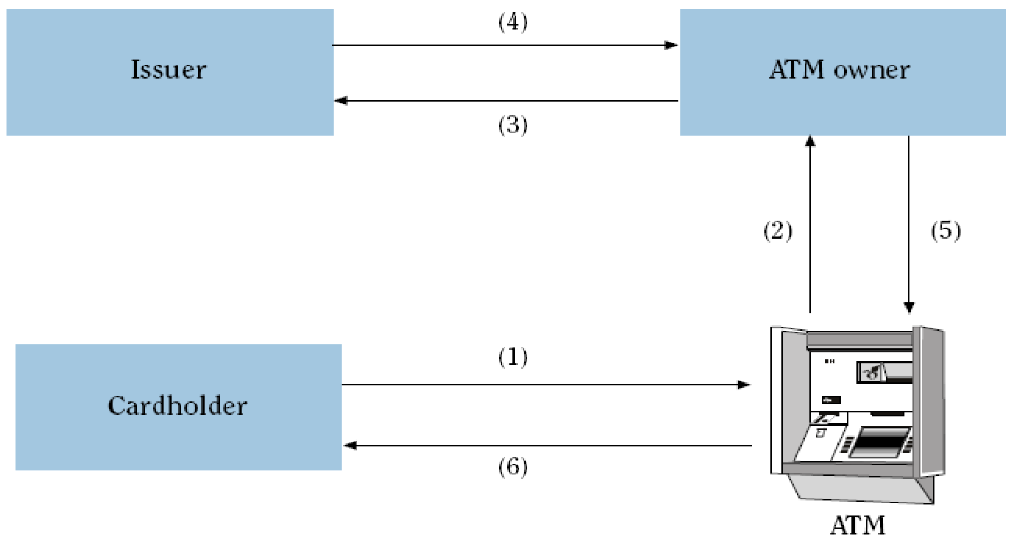
17 MasterCard Debit has only very recently been introduced in Australia, issued for the first time by BankWest in November 2005.

> Were [initially] installed to provide customers with greater convenience and to encourage transactions away from costly branch operations to this less costly electronic service.[18]

3.30 ATM transactions typically occur with the following flow of information between participants:

1. The cardholder puts their card into an ATM, enters their PIN and the details of the withdrawal;
2. The relevant information is then transmitted to the ATM owner;
3. If the ATM owner and card issuer are the same institution, the transaction remains internal to that network. If the card has been issued by another institution, the ATM owner will 'switch' the information to that issuer (3).
4. The issuer then checks if its customer has available funds, and if so, it will return an authorisation message via the ATM owner.
5. That message is then sent to the ATM; and,
6. Cash is dispensed.[19]

Figure 3.4 Information flows for an ATM transaction



Source RBA & ACCC, *Debit and credit card schemes in Australia: A study of interchange fees and access*, p. 14.

3.31 When ATMs were first introduced, customers of a particular institution were only able to use their institution's ATMs to withdraw cash. However, agreements now exist between ATM networks, therefore allowing people to use ATMs all over Australia, regardless of who owns the machine.

18 RBA & ACCC, *Debit and credit card schemes in Australia: A study of interchange fees and access*, p. 12.

19 RBA & ACCC, *Debit and credit card schemes in Australia: A study of interchange fees and access*, p. 13.

3.32 Interchange fees in the ATM network are paid by the issuer to the ATM owner. If the ATM owner is also the issuer then ATM transactions are often free for cardholders. If the issuer is not the ATM owner then the issuer usually charges the cardholder a foreign fee, which in most cases is higher than the interchange fee.

Third-party bill payments

3.33 A significant contributor to the non-cash payments system are payments that involve the consumer interacting with a third party to initiate the transaction, rather than with the merchant.

3.34 Within this category, payments occur in a number of different ways, depending on which service is used.

Australia Post

3.35 The first and most common third-party payment involves Australia Post. Consumers can make payments in person, by telephone or via the internet. While internet payments are increasingly important, a recent Reserve Bank survey of 40 Australian billers showed that over-the-counter payments at the post office remain the most popular.[20]

3.36 Australia Post accepts payment in cash and by cheque, as well as by debit and credit card.[21] The payment is deposited to Australia Post's bank account, which is then forwarded to the biller, minus a transaction charge, the size of which depends on the payment method.

3.37 The information flows in Australia Post's bill payments service reflect those of the debit and the credit systems outlined previously, with the addition of a final step—the transfer of funds from Australia Post's financial institution to the biller's institution. Australia Post's bill payment service is not regarded as a separate payment system because it simply operates within existing structures.

PayPal

3.38 Another type of third party payment occurs through PayPal. PayPal is a service—predominately used by EBay members and which only operates online—that allows people to create an account by registering their email address and the details of their credit card(s) and/or bank account(s). They

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20 RBA, *Payments System Board Annual Report 2005,* RBA, Sydney, 2005, p. 25.

21 Australia Post's internet payment service, www.postbillpay.com.au, only accepts credit cards and payments directly from transaction accounts.

are then able to log into their PayPal account and transfer money to other PayPal members—most often for items purchased on EBay.

3.39 PayPal members paying money to a biller first pay that money to PayPal, who subsequently forward the money to the seller's PayPal account. Billers can then opt to transfer funds to their financial institution from their PayPal account. PayPal does not charge consumers, only the biller, and, once again, the charge reflects the payment method.

3.40 PayPal, like Australia Post's bill payment service, does not constitute a separate payment system, because payments simply occur within the structures of other payment systems.

BPAY

3.41 BPAY is a type of third party payment, although it differs quite significantly from the likes of Australia Post and PayPal. The main difference, as described on BPAY's website, is that: 'BPAY … has no direct relationship with billers or end customers'.[22]

3.42 Another difference is that BPAY does not operate within the existing debit and credit card systems as the other bill payments services do—it has its own unique structure, information flows and fees. Therefore, BPAY is regarded as a separate payment system.

3.43 Since its introduction in 1997, BPAY, which is owned by a group including the major banks, has grown rapidly. The Reserve Bank stated:

> In 2004, BPAY processed around 106 million transactions valued at around 65 billion dollars … and the total value of BPAY payments exceeds the total value of EFTPOS transactions.[23]

3.44 In some ways BPAY can be likened to credit card schemes Visa and MasterCard:

- It has its own payment clearing system;[24]
- It performs a processing function between the two financial institutions;
- It sets interchange fees centrally; and
- Interchange fees are paid *from* the customer's bank *to* the merchant's bank.[25]

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22 BPAY Pty. Ltd., *BPAY Today,* BPAY, Sydney, viewed 9 March 2006, <http://www.bpay.com.au/about/bpaytoday.asp>.

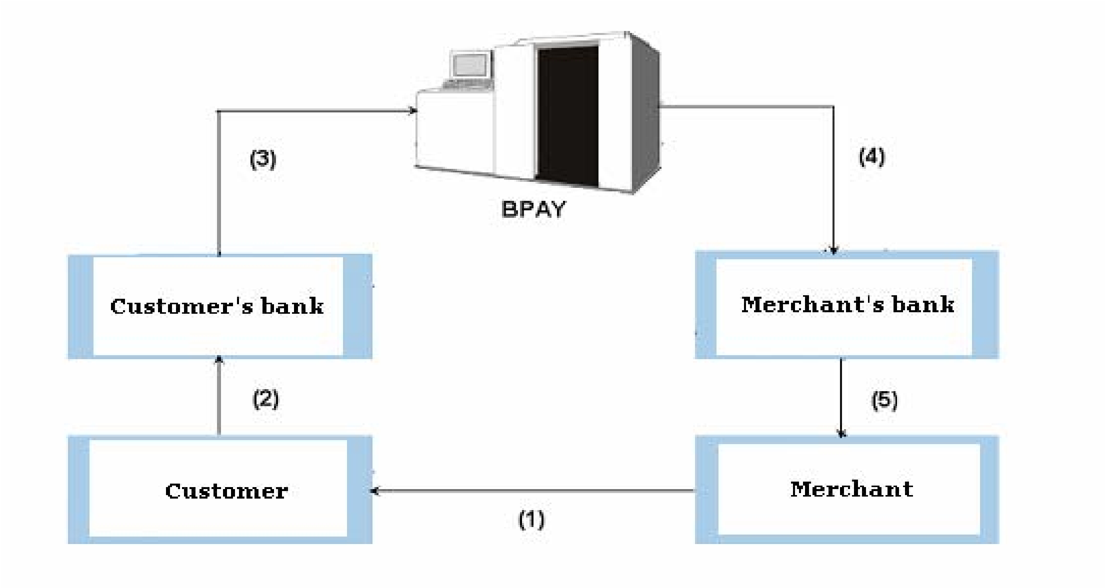
23 RBA, *Payments System Board Annual Report 2005,* RBA, Sydney, 2005, p. 27.

24 RBA, *Australian Payments System*, RBA, Sydney, viewed 22 February 2006, <http://www.rba.gov.au/PaymentsSystem/australian_payments_system.html>.

3.45 BPAY's unique information flows are described and displayed below:

1. The merchant sends the consumer a bill for services or goods provided.
2. The consumer decides that they will pay using BPAY. They use their bank's phone or internet banking to make the payment. The consumer tells the bank the merchant's BPAY number, the customer reference number and the amount they wish to pay. If the transaction is successful (i.e. all details are correct and there is sufficient money or available credit in the account) the consumer will receive a receipt if online, or a receipt number if using the phone.
3. The customer's institution provides the payment details to the merchant's institution via BPAY.
4. BPAY processes the details and if correct forwards the details and the funds to the merchant's institution.
5. The merchant's institution then informs the biller of the transaction.

Figure 3.5 Information flows for a BPAY transaction



Source *Adapted from: RBA & ACCC, Debit and credit card schemes in Australia: A study of interchange fees and access, p. 18.*

What are interchange fees?

3.46 According to the Reserve Bank, interchange fees are:

> Fees that are paid between the cardholder's bank and the merchant's bank every time a payment [or ATM withdrawal] is

25 RBA, *Payments System Board Annual Report 2005*, p. 28.

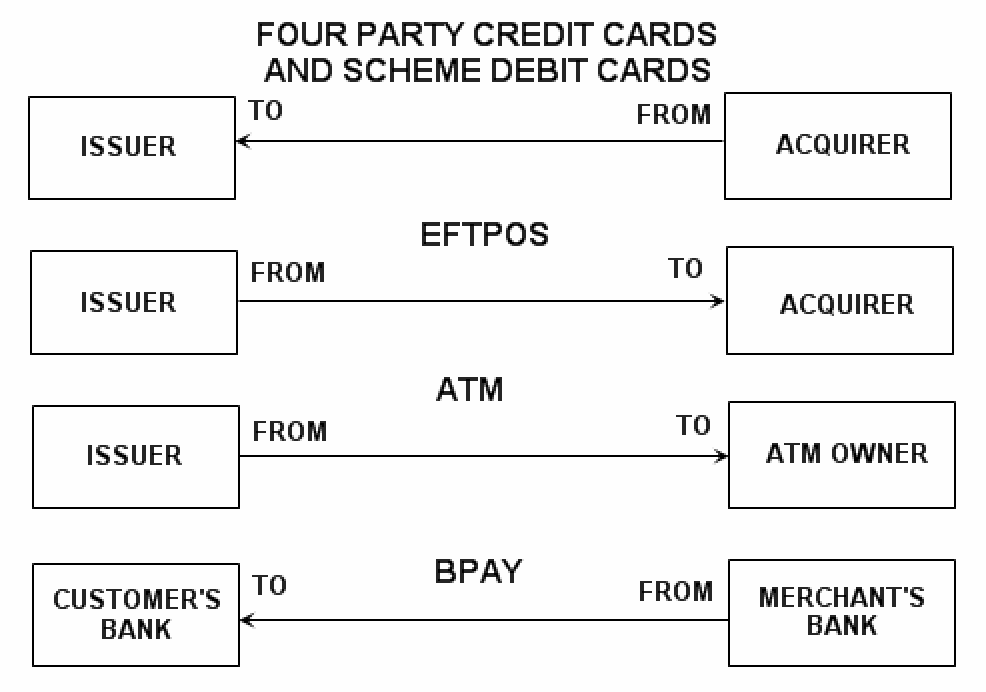
made with a Bankcard, MasterCard or Visa credit card, or made with an EFTPOS or Visa Debit card or through BPAY.[26]

3.47 For credit cards (Visa and MasterCard debit included) and BPAY, interchange fees are set centrally in agreement between the financial institutions and the schemes. For EFTPOS and ATMs, interchange fees are negotiated bilaterally between the participating institutions.

3.48 As discussed above, there are generally no interchange fees in American Express and Diners Club transactions, because the schemes are both the acquirer and the issuer. However, where a bank issues an American Express branded credit card, fees are paid from American Express—the sole acquirer—to the issuing institution. This fee is negotiated bilaterally.

3.49 The flow of interchange fees was discussed above in the outline of each separate payment system, and is also demonstrated below in figure 3.6.

Figure 3.6 Flow of interchange fees in different payment systems



3.50 The level of interchange fees in the various payment systems will be discussed in Chapter 4 on the reform of the payments system.

What is the purpose of an interchange fee?

3.51 Electronic payment systems operate through a series of networks. As discussed above, the parties involved in these networks are largely the same for each payment system—financial intuitions, consumers and

26 RBA, *Payments System Board Annual Report 2005,* p. 2.

merchants. For a payment network to grow, all of these parties need to participate in the network, but they will only do so when they are going to receive a benefit—either real or perceived.[27]

3.52 For merchants and cardholders a payment instrument is a means to an end; namely the exchange of goods or services for a price that satisfies both parties. Merchants and cardholders choose payment instruments based on a number of criteria, such as cost and convenience. For the financial institutions who participate in payment systems, their goal is to provide a service to their customers but, in doing so, also to make a profit.

3.53 If the cost of participation in the network exceeds the real or perceived benefits to an individual or organisation, they will not participate in the network.[28] Interchange fees exist for the purpose of redistributing some of the cost of providing non-cash payments—thus providing whoever is receiving the interchange fee with an incentive for network participation.

3.54 In the credit card network, for example, merchants are willing to bear a cost, provided it does not exceed the benefit they receive from accepting credit cards. Acquirers participate if the fee they receive from the merchant covers their costs and generates an appropriate profit margin. Issuers will participate if the revenues they receive from interchange fees and charges from the cardholder exceed the cost of providing the service. Cardholders will obtain and use a credit card if they perceive that the value of benefits that they receive—access to merchants, no need for cash and, in some cases, reward programs—exceed any fees they pay.[29]

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27 RBA & ACCC, *Debit and credit card schemes in Australia: A study of interchange fees and access*, p. 23.

28 RBA & ACCC, *Debit and credit card schemes in Australia: A study of interchange fees and access*, pp. 23-26.

29 RBA & ACCC, *Debit and credit card schemes in Australia: A study of interchange fees and access*, pp. 25- 26.