The Role of Exchange Settlement Accounts

Introduction

Exchange Settlement (ES) Accounts provided by the Reserve Bank play an important role in the Australian payments system. This article describes the operation of ES Accounts and explains why access to such Accounts had, until recently, been restricted. It concludes with a description of the criteria that now have to be met by applicants for ES Accounts.

This article is background to the decision of the Payments System Board, announced on 1 March 1999, to widen access to ES Accounts.

Net Settlement in Payments Systems

Historically, payments systems settled on a 'deferred net' basis. Most low-value systems still do and will probably do so for the foreseeable future; the costs of settling a large number of low-value payments in real time cannot be justified by the reduction in risk.

With deferred net settlement, institutions offering payments services to their customers exchange instructions with other payment system participants throughout the day. After the close of the business day, they calculate their net obligations to each other. Most commonly, participants agree to calculate their *multilateral* net obligations 'to the system'.[1] In this case, the *total* payments made by and to each participant from all other participants are calculated and offset. The resulting multilateral net settlement obligations are 'to the system', not to an individual bank.

The key features of this process are illustrated in Figure 1. In the example, A, C and D all owe funds (8, 2 and 4 respectively) to the system while B is due to receive funds (14). For multilateral net settlement to work, all participants have to agree on an acceptable settlement medium, a financial asset they are willing to hold after settlement is complete.

1. Settlement could also be bilateral though this is rare; multilateral net settlement is generally more convenient and minimises the liquidity banks need. As an illustration of bilateral settlement, in Figure 1, A makes payments to B of 10, while B makes payments to A of 4, leaving a net obligation of A to pay 6 to B. Similar calculations can be done for the other 5 pairs of banks in the system. Each pair of banks then needs to find a settlement medium which is acceptable to both of them.

Figure 1: Net Settlement

		Receiving bank				Total payments
		A	**B**	**C**	**D**	
	A	–	10	5	0	**15**
Paying bank	**B**	4	–	1	6	**11**
	C	3	7	–	2	**12**
	D	0	8	4	–	**12**
Total receipts		**7**	**25**	**10**	**8**	**50**
Less total payments		15	11	12	12	
Multilateral net position		***-8***	***+14***	***-2***	***-4***	***0***

The Settlement Medium

Banknotes are one possible settlement medium. This was once common and high-value notes were issued specifically for the purpose. Banks owing funds to the system would pay their total obligations in and those due funds would take out the same total amount. One can envisage bankers sitting around a table with some (A, C and D in the example shown) putting their notes on the table and others (B in the example) picking them up. Before central banks were established, banknotes were used for settlement because the issuing banks had sufficient standing to make their liabilities a settlement medium of 'acceptably low' risk.

Once central banks were established, their liabilities – in the form of currency notes – generally became a more attractive settlement medium, especially when large values were involved. These liabilities are free of the default risk inherent in banknotes issued by private banks. By settling their clearing obligations using central bank-issued money, banks replaced claims on other commercial banks with risk-free claims on the central bank.

In this process, importantly, the central bank is not a counterparty in clearing and settlement.[2] It has not accumulated claims on or liabilities to the banks involved. The banks have merely used central bank-issued money to settle the obligations between themselves. There is no requirement that if one bank did not have enough notes to meet its obligations, the central bank should provide more to enable it to do so.

2. If a central bank also conducts payments clearing business it would incur obligations from that activity, but they would be quite separate from its role in providing settlement accounts.

The 'Settlement Agent'

Physical settlement using currency notes is inconvenient. Today, settlement is usually undertaken using another form of central bank liabilities, *viz*, accounts maintained by banks (or other payments providers) at the central bank. In Australia, these accounts are known as ES Accounts. Settlement takes place by debiting and crediting these accounts; that is, banks exchange their credit balances in ES Accounts, which are deposit liabilities of the central bank.

Again, the central bank is not a counterparty to the settlement. It is the 'settlement agent', providing the settlement medium which payments system participants choose to hold in preference to claims on their commercial counterparties. Funds held in ES Accounts are secure once they have been deposited, but the central bank does not guarantee that an ES Account holder will be able to meet its settlement obligations.

In short, ES Accounts have two key features relevant to the settlement process:

- balances in ES Accounts are deposits of undisputed quality; and
- they provide a convenient central mechanism for effecting settlement.

Risks to the Central Bank

When settlement takes place using currency notes, the central bank may not be immediately aware that a bank cannot meet its settlement obligations. The central bank would be immediately aware, however, when settlement takes place across its books. This can put the central bank in a position where it may be difficult to avoid taking on risks by being the settlement agent.

The risks, which are most acute in multilateral net settlement systems, arise because the central bank is also responsible for financial system stability. If, in the example above, Bank A did not have funds to meet its settlement obligations, settlement could not proceed because there would be insufficient funds to pay the amounts owed to Bank B. If the values involved were large, B in turn might be unable to meet other obligations. Such a result would be very disruptive to the payments system and could threaten overall financial system stability.

If a bank failure were to occur in a multilateral net settlement system, there are three main ways to ensure that settlement can proceed:[3]

- Liquidate assets of the bank due to make payments (Bank A in the example) to provide the ES funds to allow it to meet its obligations. This is a 'defaulter pays' system. In practice, each participant in the system would need to lodge collateral based on its largest expected obligations. Some payments systems in Canada and Japan use such arrangements.
- Have the surviving banks provide the funds to allow payments to be made, thus sharing the losses among themselves. This is a 'survivor pays' system. Such arrangements are most robust if acceptable collateral lodged by the survivors is immediately available to the settlement agent. This is the basis of the CHIPS system in New York, the world's largest payment system in value terms.
- The central bank provides the funds to allow settlement to occur and then seeks to recover them from the failed bank.

If the first two protections do not exist, the threat of systemic disruption may force the central bank to fund the settlement obligations of the failed bank. In doing so, it would put

3. Another alternative is to 'unwind' all the transactions of the failed bank and leave it out of the settlement calculations. This could have unpredictable adverse effects on other participants and it is widely agreed by central banks and commercial banks to be undesirable.

its balance sheet (and taxpayers' funds ultimately) at risk by providing funds that may not be repaid. For this reason, the central bank needs to consider:

- the design of the payments clearing system for which it is providing settlement, in particular its risk control features;
- the risk that an institution to which it provides settlement facilities will be unable to meet its obligations – this is primarily a function of the institution's financial strength and liquidity and the relative size of its payment flows;
- whether enforceable arrangements under which survivors pay or the defaulter pays are in place; and
- whether the amounts to be settled are of such size that settlement failure would be likely to disrupt the financial system as a whole.

The systemic risks inherent in deferred net settlement systems are the principal reason why Australia has introduced real-time gross settlement (RTGS) for large-value payments.

Tiered Settlement Systems

Not all payments are, or need to be, settled across the books of the central bank. Retail payments, in particular, do not generate large exposures.

Settlement across the books of the central bank is crucial when institutions generate large exposures to one another in the clearing process that need to be extinguished quickly in the interests of financial stability. Thus, Australia requires banks to settle all high-value payments on their own account in real time across their ES Accounts. However, not all countries require this means of settlement, even for high-value payments; sometimes this is a matter of history and sometimes it is for operational convenience. For instance, in the United Kingdom only 16 banks are direct members of the RTGS system, CHAPS, while the other 400 banks settle indirectly through accounts at the CHAPS member banks. In the United States, the CHIPS payment system has 18 settlement members with accounts at the Federal Reserve, while the remaining 75 members settle their obligations on the books of the settlement members.

While central bank money is the settlement medium with least risk, other slightly more risky assets may also be acceptable to participants and to authorities responsible for payments system stability.

This is often the case for low-value retail payment systems. For many years building societies and credit unions in Australia settled their obligations on the books of large commercial banks; many still do. Such arrangements are commonplace in other countries because the arrangements are convenient and, where the amounts are not large, rarely have systemic implications. It is not essential that all providers of low-value retail payments services have access to settlement at the central bank as a means of keeping systemic risks at acceptable levels.

Eligibility for ES Accounts

All banks in Australia, whether domestically owned or subsidiaries or branches of foreign banks, have ES Accounts. Prior to July 1998, this was a requirement of the *Banking Act 1959*, but this requirement has been removed. In the past, the Reserve Bank's supervision of banks gave it a degree of confidence that banks would be able to meet their settlement obligations and maintain their ES Accounts in credit.

For many years, banks were the only providers of payments services. However, as building societies and credit unions developed as alternative providers, their industry organisations argued that their members were competitively handicapped by having to depend on banks, with which they were directly competing, for some critical payment services. While building societies and credit

unions could provide card and direct entry payments, they needed to rely on banks to settle their obligations. This added operational complexity, gave competitors insight into their business and increased their costs.

In response, Special Service Providers (SSPs) were established to provide settlement services for building societies and credit unions, respectively, giving these industries greater ability to compete with banks. Two SSPs supervised by the Australian Financial Institutions Commission were granted ES Accounts in 1994. Because they were new organisations with relatively untested capacity in the settlement process, restrictions were placed on the transactions they could settle; to protect against the risk that they might be unable to meet their obligations, 'defaulters pay' arrangements were established under which they lodged collateral geared to their settlement obligations.

Since the mid 1990s, there has been a second wave of competition in the payments business. A wide range of non-traditional payments providers, some of which are not deposit-takers or supervised financial institutions, are now playing a more active role. Some new participants believe that their ability to compete with traditional providers is limited in much the same way as building societies and credit unions had been.

Although an ES Account is not a prerequisite for participation in the payments business, holding one can reduce participants' risks by allowing them to use a risk-free settlement medium. It can also affect their competitive position and lower their costs by reducing dependence on agency arrangements provided by an institution that is otherwise a competitor in the payments business.

A New Regime

In its January 1997 submission to the Financial System Inquiry, the Reserve Bank noted that the introduction of Australia's RTGS system for high-value payments provided scope to widen access to ES Accounts. The RTGS system, which went 'live' in June 1998, replaced a deferred net settlement system, with its attendant settlement risks, with one under which high-value payments are settled, as they are made, using funds in participants' ES Accounts. Around 90 per cent of the value of payments exchanged among banks and SSPs is now settled through the RTGS system. When ES Accounts are conducted on a strictly prefunded RTGS basis, the Reserve Bank is no longer at risk of credit exposure to holders. There is also less risk of disruption spreading throughout the system if one participant were to fail.

The Inquiry recommended that access to ES Accounts be liberalised, and in September 1997 the Government agreed that access should be widened on the basis of clear and open guidelines determined by the Payments System Board to be established at the Reserve Bank.

In March 1999, the Payments System Board announced the terms on which the Reserve Bank will make ES Accounts available. Applicants for ES Accounts must be:

- An actual or prospective provider of third-party (customer) payment services with a need to settle clearing obligations with other providers. In general, applicants must be current or prospective members of a payments clearing arrangement or operate a clearing house which acts as a central counterparty.
- Able to demonstrate that they have the liquidity to meet settlement obligations. In particular, applicants will need to demonstrate that they have adequate available liquidity to settle obligations under normal circumstances, including during seasonal peaks, and to deal with periods of stress. Liquidity management is critical, since settlement is about meeting flows.

Institutions authorised and supervised by the Australian Prudential Regulation Authority (APRA) are already required to meet rigorous capital and liquidity requirements on an ongoing basis. Provided

such institutions can satisfy the Reserve Bank that they have the capacity to meet their settlement obligations, they are eligible for ES Accounts without special conditions. However, where institutions have only limited payments experience, they may be required to lodge collateral to cover their participation in retail systems for a transition period, until it is clear that their business is consistent and predictable and their competence has been demonstrated, especially through seasonal peaks.

Organisations not supervised by APRA will need to demonstrate that they have sufficient financial substance and that they have liquidity policies geared to their business. Where these organisations operate in deferred net settlement systems (but not RTGS), they will, with one exception, be required to lodge collateral on an ongoing basis. The exception is that there are no collateral requirements for organisations that are always net receivers in payments clearing arrangements.

Where collateral requirements apply, they will be set in relation to an institution's maximum expected net settlement obligations. Collateral comprises Commonwealth Government Securities and Australian dollar securities issued by the central borrowing authorities of State and Territory Governments. These are the instruments which the Reserve Bank is prepared to accept as collateral for repurchase agreements in its domestic market operations.

ES Accounts must be maintained in credit at all times. The Reserve Bank may revoke an ES Account if a holder is unable, or likely to become unable, to meet this requirement or is unable to meet collateral or any other conditions imposed on the operation of the account. Most importantly, the Reserve Bank does not guarantee that an ES Account holder will be able to meet its settlement obligations.

The overall effect of these new arrangements is that APRA-supervised institutions will be eligible for ES Accounts without special ongoing conditions, although collateral requirements may apply on a transitional basis in certain cases. Institutions not supervised by APRA which are net payers at settlement will have to meet collateral requirements on an ongoing basis. That is, they will have access to ES Accounts on terms similar to those that have applied to SSPs. There are costs associated with operating an ES Account and it is up to potential applicants to weigh these up against the packages offered to them by banks.