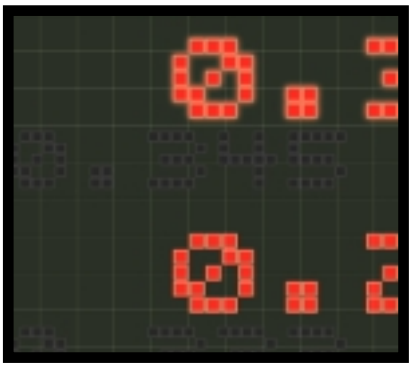

SAFETY AND STABILITY

Because it provides the infrastructure for the final settlement of transactions between financial institutions, the payments system is one of the channels through which disturbances may spread throughout the financial system. The safety and stability of the payments system is therefore fundamental to overall financial stability. With the introduction of a real-time gross settlement (RTGS) system for high-value payments, Australia now has a very robust payments system, but some safety and stability issues remain on the agenda of the Payments System Board. During 1999/2000, the Board undertook an assessment of Australia's compliance with emerging international norms in this area, monitored progress in reducing foreign exchange settlement risk and oversaw the Year 2000 preparations of payments system participants. Looking ahead to its new regulatory responsibilities, the Board also began to explore the potential for rationalisation of Australia's securities clearing and settlement systems.

COMPLIANCE WITH THE *CORE PRINCIPLES*

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

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

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

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

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

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

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

Systemically Important Systems

Average Daily Turnover 1999/2000

	($ billion)
HVCS	70
Austraclear	20
RITS	13
	103

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

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

THE CORE PRINCIPLES AND CENTRAL BANK RESPONSIBILITIES

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

Core Principles for systemically important payment systems

I. The system should have a well-founded legal basis under all relevant jurisdictions.

II. The system's rules and procedures should enable participants to have a clear understanding of the system's impact on each of the financial risks they incur through participation in it.

III. The system should have clearly defined procedures for the management of credit risks and liquidity risks, which specify the respective responsibilities of the system operator and the participants and which provide appropriate incentives to manage and contain those risks.

IV.* The system should provide prompt final settlement on the day of value, preferably during the day and at a minimum at the end of the day.

V.* A system in which multilateral netting takes place should, at a minimum, be capable of ensuring the timely completion of daily settlements in the event of an inability to settle by the participant with the largest single settlement obligation.

VI. Assets used for settlement should preferably be a claim on the central bank; where other assets are used, they should carry little or no credit risk and little or no liquidity risk.

VII. The system should ensure a high degree of security and operational reliability and should have contingency arrangements for timely completion of daily processing.

VIII. The system should provide a means of making payments which is practical for its users and efficient for the economy.

IX. The system should have objective and publicly disclosed criteria for participation, which permit fair and open access.

X. The system's governance arrangements should be effective, accountable and transparent.

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

Responsibilities of the central bank in applying the Core Principles

A. The central bank should define clearly its payment system objectives and should disclose publicly its role and major policies with respect to systemically important payment systems.

B. The central bank should ensure that the systems it operates comply with the Core Principles.

C. The central bank should oversee compliance with the Core Principles by systems it does not operate and it should have the ability to carry out this oversight.

D. The central bank, in promoting payment system safety and efficiency through the Core Principles, should cooperate with other central banks and with any other relevant domestic or foreign authorities.

Principles with Objective Criteria

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

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

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

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

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

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

Principles Requiring Some Subjective Assessment

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

A well-founded legal basis ensures that the rules and procedures of a payment system are enforceable with clear and predictable consequences, particularly in the event of the insolvency of a participant. Until recently, Australia would not have met this principle. Legal uncertainty attached to whether RTGS transactions might be declared void under a so-called "zero hour" ruling, in which a court may date the bankruptcy of an institution from the midnight before the bankruptcy order was made; there was also uncertainty about whether a multilateral netting arrangement would be enforceable in times of stress. Both uncertainties were addressed by the passage of the *Payment Systems and Netting Act 1998*. Approvals granted by the Board under this Act in 1998 have ensured the finality of all RTGS transactions by precluding a possible "zero hour" ruling. Approvals granted in 1999, and discussed later, provide legal certainty for APCA's and Austraclear's RTGS systems in fall-back mode, where they would operate as netting systems.

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

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

Principles Requiring Considerable Subjective Assessment

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

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

Effective governance of a payment system does not depend on the detailed form of the arrangements but on the quality of the results they deliver. Such judgements may be difficult and can change markedly depending on the issues under consideration. Nevertheless, effective governance structures provide a sound starting point. Australia's three systems have transparent arrangements and decision-making processes and report fully to users and the public. APCA, which operates HVCS, is a limited liability company, with an independent chairman and a board of directors representing shareholders including banks, building societies, credit unions and the Reserve Bank. HVCS is controlled by a set of regulations and procedures which are publicly available and have been approved by the ACCC. APCA issues an annual report covering all of its operations. Austraclear is owned by its users and governed by a board appointed by its shareholders; members must conform with the company's regulations. Austraclear publishes an annual report. RITS is managed by the Reserve Bank's Payments Settlements Department and is the responsibility of the Assistant Governor (Business Services). Its regulations and conditions of operation are publicly available and operating results, including separate financial accounts, are published in the Reserve Bank's Annual Report.

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

Central Bank Responsibilities

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

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

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

FOREIGN EXCHANGE SETTLEMENT RISK

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

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

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

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

The CLS project is being overseen by central banks from countries whose currencies and banks are involved; CLS Bank itself will be supervised by the Federal Reserve Bank of New York. In preparation for the inclusion of the Australian dollar, the Reserve Bank has been working closely with CLS Services, with banks active in the Australian market and with other central banks, including through its participation in a sub-group of the CPSS. Some of the issues that are being dealt with include establishing an ES account for CLS Bank, varying the opening hours for Australian payment and securities settlement systems to overlap with the core hours of the CLS Bank (7.00 am to midday Central European Time), and the management of payment system liquidity during the extended hours.

YEAR 2000 PREPARATIONS IN THE PAYMENTS SYSTEM

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

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

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

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

SECURITIES CLEARING AND SETTLEMENT

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

Securities clearing and settlement systems which act as score-keepers and recorders of transactions, but not as central counterparties to any transactions they settle, are not subject to daily balance sheet volatility as a result of their operations. Their regulation would be quite a different proposition to prudential regulation of financial institutions, whose day-to-day activities can have an immediate and significant impact on their risk profiles and balance sheets. The Board's approach to regulation of these systems would focus on legal foundations, how the rules and procedures allow participants to control risks and on a range of operational issues.

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

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

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

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

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

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

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

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

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

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

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

A working group of representatives of the five systems subsequently reviewed the nature of these systems, the issues they faced in improving their own efficiency and the options for improving efficiency in the industry as a whole. The group's report, *The Future of Clearing and Settlement in Australia: A Discussion Paper*, was released in March 2000. The report drew out that the systems transferring title to debt and equities have largely common business processes, as do those settling margin payments for futures and options. Hence, there was considerable potential for processing economies from a single system for transferring title (debt and equities) and a single system for margin settlements (futures and options). The report also noted the risks from persevering with the status quo. One was the possibility that market forces might lead to a single domestic system, but with an ownership and control structure that left important groups of users disenfranchised. Another was that even with some consolidation, Australian systems would struggle to achieve the economies of scale available to larger overseas operators, leaving them in danger of being taken over or simply bypassed. Such an outcome could threaten Australia's future as a centre for global financial services in the Asia-Pacific region.

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

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

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

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

APPROVALS UNDER THE *PAYMENT SYSTEMS AND NETTING ACT 1998*

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

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