



**PAYMENT AND
SETTLEMENT SYSTEMS
IN NEW ZEALAND**

Updated September 2003

CONTENTS

OVERVIEW	1
1. INSTITUTIONAL ASPECTS	1
1.1 Legal and regulatory framework	1
1.1.1 Payment instruments and systems	2
1.1.2 Securities settlement	3
1.2 Institutions	4
1.2.1 Providers of payment services	4
1.2.2 Providers of securities services	5
1.2.3 Role of other private and public sector bodies	5
2. PAYMENT METHODS	6
2.1 Cash	7
2.2 Non cash	7
2.2.1 Cheques	7
2.2.2 Direct entry transactions	7
2.2.3 Payment cards	8
2.2.4 Stored value cards	9
2.2.5 Electronic data interchange	9
2.2.6 Third party bill payments	10
3. INTERBANK SETTLEMENT SYSTEMS	10
3.1 ESAS (Exchange Settlement Account System)	10
3.2 SCP (Same Day Cleared Payment)	11
3.3 AustraclearNZ (Austraclear New Zealand System)	12
3.4 ISL (Interchange and Settlement Limited)	12
3.5 EFTPOS systems	13
3.6 Major projects and policies being implemented	13
4. SECURITIES SETTLEMENT SYSTEMS	14
4.1 Government securities	14
4.1.1 Trading	14
4.1.1.1 Treasury bills	14
4.1.1.2 Government bonds	15
4.1.1.3 Kiwi bonds	15
4.1.2 Pre-settlement	15
4.1.3 Settlement	16
4.2 Corporate debt	17
4.2.1 Trading	17
4.2.1.1 Money market instruments	17
4.2.1.2 Corporate bonds	18
4.2.2 Pre-settlement and settlement	18
4.3 Equities	18
4.3.1 Trading	19
4.3.1.1 Primary market	19
4.3.1.2 Secondary market	19
4.3.2 Pre-settlement	20
4.3.3 Settlement	20

4.4	Derivatives	20
4.4.1	Trading	21
4.4.2	Pre-settlement and settlement	21
4.5	Major projects and policies being implemented	21
5.	ROLE OF THE CENTRAL BANK	21
5.1	Statutory responsibilities	21
5.2	Provision of settlement accounts and payment systems	22
5.3	Operation of securities settlement systems	22
5.4	Oversight of payment systems	23
5.5	Monetary policy and payment systems	24
5.6	Currency issue	24
	SELECTED REFERENCES	25
	LIST OF ABBREVIATIONS	26
	STATISTICAL TABLES	27
Table 1	Basic statistical data	
Table 2	Settlement media used by non-banks	
Table 3	Settlement media used by banks	
Table 4	Banknotes and coin	
Table 5	Institutional framework	
Table 6	Payment instructions handled by selected systems (volume)	
Table 7	Payment instructions handled by selected systems (value)	
Table 8	Indicators of use of various cashless payment instruments (volume)	
Table 9	Transfer instructions handled by securities settlement systems (volume)	
Table 10	Transfer instructions handled by securities settlement systems (value)	
Table 11	Number of participants in securities settlement systems.	

PAYMENT AND SETTLEMENT SYSTEMS IN NEW ZEALAND

OVERVIEW

New Zealand has a well-established legal and financial infrastructure serving a population of 4 million people and annual gross domestic product of \$110 billion (US\$60 billion)¹. There are active primary and secondary money and securities markets, and two national exchanges, the New Zealand Exchange and the New Zealand Futures and Options Exchange. The main payment instruments and services are provided by the registered banks. Banks and other financial institutions service the securities market.

The payment and securities settlement systems that serve these markets have evolved to meet the needs of the market and the participants. The major payment and settlement systems are fully electronic and the high value systems settle on a real-time gross basis.

1. INSTITUTIONAL ASPECTS

1.1 Legal and regulatory framework

New Zealand is an independent state, with a parliamentary government. The law of the country consists of statute law enacted by the New Zealand Parliament, common law, constitutional conventions, regulations, by-laws and other forms of subordinate legislation.

Commercial and consumer protection laws apply to all business activities, regardless of the instrument or channel used. Umbrella financial market and general legislation includes the:

- Companies Act 1993. This Act is generally permissive, but includes a high degree of personal responsibility on company directors for the solvency and proper administration of the company. There are also a number of investor protections, including public registration; equal treatment and protection of shareholders rights; and provision of information.
- Financial Reporting Act 1993. The provisions of this Act define the nature and content of the financial information companies must provide to shareholders.
- Financial Transactions Reporting Act 1996. The Financial Transactions Reporting Act facilitates the prevention, detection, investigation and prosecution of money laundering. It requires reporting of suspicious cash transactions to the Commissioner of Police, and places an obligation on banks and financial institutions to identify and “know their customer”.
- Commerce Act 1986. This Act is the New Zealand equivalent of the anti-trust law found in other countries. The law’s objective is to promote competition in markets for the long term benefit of consumers. It does this by preventing any business acquisition which results in a person acquiring or strengthening a dominant position in a market, unless that business acquisition can be justified in terms of public benefit. The Act specifies and

¹ All values are in domestic (New Zealand dollar) terms unless otherwise stated.

prohibits (unless authorised by the Commerce Commission) a range of anti-competitive activities.

- Fair Trading Act 1986. The Fair Trading Act, also administered by the Commerce Commission, aims to ensure customers receive accurate information about goods and services. It deals with misleading advertising; prohibits deceptive or misleading conduct and false representations about the provision of goods and services; prohibits certain unfair trading practices; promotes product safety; and provides for consumer information.
- Electronic Transactions Act 2002. This Act facilitates the use of electronic technology. It aims to achieve functional equivalence with regard to electronic and paper transactions, and for technology neutrality in terms of the technology used. The provisions give greater certainty regarding the legal effect of electronic information and allow certain paper-based legal requirements (such as a requirement for writing, a signature, or the retention of documents) to be met by using electronic technology. The provisions of the Act closely follow the Model Law on Electronic Commerce prepared by UNICITRAL in 1996.

1.1.1 Payment instruments and systems

There are few specific legislative or regulatory requirements governing payment systems in New Zealand. Payment systems must be operated within the general law including compliance by payments providers with anti-competitive requirements. General commercial and consumer law and the contractual conditions agreed between the participants in the separate systems govern the day-to-day operations of payment instruments and systems. The New Zealand Bankers' Association establishes industry standards and policies in some instances, but the payment services entities have their own governance arrangements, business strategies and rules.

Instrument-specific legislation includes the Cheques Act 1960, which codifies aspects related to the cheque payment instrument, notably the procedures for the endorsement, presentment and payment of cheques. A 1995 amendment provided for the electronic presentment of cheques and removed the previous requirement to deliver cheques physically to the paying bank, opening the way for cheque truncation and imaging.

The Cheques Act is part of the Bills of Exchange Act 1908, the latter being the principal Act dealing with negotiable instruments. The Act sets out the rules governing bills of exchange, including some provisions relating specifically to cheques, and promissory notes.

The Credit Contracts Act 1981 covers the provision of credit under contracts of various kinds, including credit contracts between a bank credit card issuer and the cardholder. This Act requires the disclosure of the cost of credit on a uniform basis and provides for the ability to re-open any credit contract that is deemed to be oppressive. The Credit Contracts and Consumer Finance Bill is currently in the House. The Bill will replace both the Credit Contracts Act and the Hire Purchase Act 1971, and gives the Commerce Commission enforcement powers for consumer credit.

The Reserve Bank of New Zealand Amendment Act 2003 provides for the formal oversight of the payment system in New Zealand by the Reserve Bank (described in section 5.4), and for the designation of payment systems for payments finality and netting purposes.

The designation provisions in the RBNZ Amendment Act provide for finality of payments settled through a designated payment system and make netting under the rules of a designated payment system valid and enforceable in the event of insolvency. Applications for designation are subject to assessment by the Reserve Bank, having regard to, inter alia, the purpose and scope of the payment system, the rules of the system, and the laws and regulatory requirements relating to the operation of the system. No systems had been designated as at September 2003.

In addition to the designation provisions, which apply specifically to payment systems, New Zealand's insolvency law provides more generally for the enforceability of netting agreements and payments finality on insolvency². This legislation provides that payments that have been completed on the same day, but prior to the time at which a liquidation, bankruptcy, or statutory management commences, will not have to be unwound. The netting provisions provide for both bilateral and multilateral netting agreements. In the case of multilateral netting, recognition is restricted to an agreement that is subject to the rules of a 'recognised clearing house', determined by the Reserve Bank. The rules of one payment system, the Austraclear New Zealand system, have been recognised to date.

1.1.2 Securities settlement

The Securities Act 1978 is the main statute governing the securities market in New Zealand. This Act and associated regulations provide for the issue of securities to the public (whether by debt, equity or other instruments), the conduct and record keeping requirements of issuers, and disclosure requirements.

The Securities Act provides that no security may be offered to the public for subscription unless the offer is made in, or accompanied by, a registered prospectus or the offer is made in an authorised advertisement. Unless exempted from these provisions, it is necessary for a public offer prospectus to comply with the Act and be registered by the Registrar of Companies.

The Securities Commission has supervisory responsibility for securities exchanges under the Securities Markets Act 1988. The Act provides for the registration of securities and futures exchanges and for the review of their rules. Issuers and market participants that are companies are also required to meet the general requirements of the Companies Act 1993 and, in the case of listed securities, to meet the listing requirements of the New Zealand Exchange. The listing requirements are quite extensive and are imposed by the Exchange as part of its self-regulatory role. The Securities Markets Act requires continuous disclosure of information to securities markets by public issuers.

The transfer of securities is regulated under the Securities Transfer Act 1991. The provisions of this Act provide for the transfer of securities by electronic means where the transfer system has been approved. The Securities Commission has the responsibility for making the recommendations concerning approvals to the Minister. Two systems, FASTER and CHESSE, have been approved to date.

² The legislation is contained in the Companies Amendment Act 1999, the Corporations (Investigation and Management) Amendment Act 1999, the Insolvency Amendment Act 1999 and the Reserve Bank of New Zealand Amendment Act 1999.

Depositories acting as custodian trustees must also comply with the Trustee Act 1956. This Act covers the general power of trustees, their appointment and discharge, and provisions relating to the investment of trust funds.

There are no sales restrictions preventing certain types of investors being offered particular instruments. Authorisation or licensing applies to securities and futures exchanges, sharebrokers, and futures dealers.

There are comprehensive disclosure obligations on investment advisers. Any person or organisation offering investment advice must comply with the Investment Advisers (Disclosure) Act 1996. This requires that investment advisers disclose their procedures for invested monies, together with details of personnel, including qualifications, experience and whether the adviser has any financial interest in the matter upon which advice is being offered.

The Securities Markets Act 1988 provides the statutory framework prohibiting insider-trading and prescribes financial penalties for persons who act or who incite others to act upon inside information. It also gives the Securities Commission the power to bring actions regarding insider trading.

New Zealand does not constrain general investment in its stock market. There are no exchange control restrictions on the movement of currency by residents or non-residents; no regulatory constraints on New Zealand investors wishing to invest abroad; no exchange controls on the repatriation of capital or income by non-residents; and no restrictions imposed on the physical movement of securities.

Portfolio investment does not require consent unless it will breach the thresholds at which Overseas Investment Commission or Commerce Commission consent is required. The consent of the Overseas Investment Commission is required in the case of non-residents seeking to acquire control of 25% or more of any class of shares or voting power in a company where the consideration for the transfer of the value of the assets exceeds \$50 million. The Commission's approval is also required for non-resident investment in commercial fishing and, in specified circumstances, investments in land.

1.2 Institutions

1.2.1 Providers of payment services

The Reserve Bank of New Zealand provides the central Exchange Settlement Account System (ESAS) and a high value payment and securities settlement system, the Austraclear New Zealand system (AustraclearNZ).

The registered banks provide the current retail payment services and a wholesale payment facility. Banks are registered and supervised by the Reserve Bank. There are currently 18 registered banks, of which all but two are wholly overseas owned.

There is a high level of ownership and governance commonality among the bank payment entities. The bank-owned payment services are typically owned and operated collectively by a consortium of banks through a separately incorporated entity established for the purpose. A single bank owns and operates one of the retail card systems.

The bank-owned and operated payment services companies provide messaging and processing services, but do not carry any value for the transactions processed. They do not operate as central counterparties, nor do they offer liquidity facilities. The participant banks intermediate the positions and carry the financial risk of the transactions.

Some non-bank financial institutions, such as building societies and credit unions, have agency arrangements with the banks to allow the former to provide retail payment services, typically cheque and card facilities, to their customers. Because of the open policy to bank registration and low formal thresholds, non-bank deposit-taking financial institutions are not significant in New Zealand.

1.2.2 Providers of securities services

Securities services are provided by banks and non-bank financial institutions, including funds managers, investment houses, financial advisers, and brokers.

New Zealand has a listed stock exchange (the New Zealand Exchange), a derivative exchange (the New Zealand Futures and Options Exchange Limited), a dominant registrar of listed securities (Computershare New Zealand Limited) and a single depository (New Zealand Central Securities Depository Limited). Government securities are registered with the Reserve Bank, acting as agent for the New Zealand Debt Management Office.

There are two main securities settlement systems in New Zealand, AustraclearNZ, which is operated by the Reserve Bank, and the Fully Automated Screen Trading and Electronic Registration (FASTER) system, operated by the New Zealand Exchange. The futures and options exchange products are cleared and settled as part of the Sydney Futures Exchange arrangements.

1.2.3 Role of other private and public sector bodies

The *Reserve Bank of New Zealand* is New Zealand's central bank. It is responsible for three main functions: operating monetary policy to maintain price stability; promoting the maintenance of a sound and efficient financial system; and meeting the currency needs of the public. It also has a policy and operational role in the payment and securities settlement system, described in section 5.

The primary oversight agency for securities market activity in New Zealand is the *Securities Commission*. The Securities Commission is an independent statutory body corporate. It aims to facilitate capital investment in New Zealand by: promoting the efficiency of New Zealand's securities markets; enhancing the integrity of these markets; promoting the regulation of these markets; and strengthening public and institutional confidence in these markets, both in New Zealand and overseas. The Commission oversees the registration and operation of securities and futures exchanges in terms of the Securities Markets Act and reviews practices relating to electronic offerings, trading and transfer of securities in terms of the Securities Transfer Act. The Commission has some enforcement powers. It may, for example, suspend or cancel false or misleading prospectuses.

The *Commerce Commission* is responsible for promoting and bringing about compliance with the Commerce and Fair Trading Acts, which are aimed at ensuring consumers and producers benefit from healthy competition.

The *Overseas Investment Commission* administers the government's foreign investment policies in terms of the framework established by the Overseas Investment Act 1973, the Fisheries Act 1996, and related regulations. Its primary function is to assess applications for consent from non-residents who intend making substantial investments in New Zealand.

The *New Zealand Exchange* (NZX) is the sole registered national stock exchange. NZX was originally formed, and operated for many years, as a broker-owned mutual entity. At the end of 2002 it demutualised under the mechanism of the New Zealand Stock Exchange Restructuring Act 2002, and in June 2003 it became a publicly listed company. NZX provides and operates a market for the raising of capital for listed companies and the trading of securities, including fixed interest securities. It is also responsible for maintaining professional standards among its members and listed companies.

New Zealand Futures and Options Exchange Limited (NZFOE) operates as an authorised futures exchange in New Zealand. It offers and trades a range of standard derivative products based on New Zealand securities and commodities. NZFOE is a wholly owned subsidiary of the Sydney Futures Exchange (SFE).

The *New Zealand Bankers' Association* (NZBA) is a professional industry organisation, representing banking industry interests in the public arena. Membership is voluntary and open to any registered bank. Currently nine banks are members. The Association carries out a number of coordination and advisory activities for and on behalf of its members, including development of rules and standards for payment instruments, and representing the collective view of members on public policies that affect the banking industry. It is also responsible for the Code of Banking Practice, a plain English document outlining the standards member banks agree to observe when dealing with customers. The code is monitored by the Banking Ombudsman and covers, inter alia, customer privacy issues, bank disclosure, and cheque and other payment methods.

The role of the *Banking Ombudsman* is to provide an independent and impartial arbitrator of unresolved disputes about the provision of banking services. Anyone dissatisfied with a banking service in New Zealand from a participating bank can submit a complaint for review. The service is free. The Banking Ombudsman's jurisdiction covers complaints about all types of banking business normally transacted through bank branches, (including complaints about payment services), up to a maximum value of \$120,000 (\$150,000 for banking services relating to insurance), but does not cover complaints about general bank policy or about commercial judgement decisions on lending.

2. PAYMENT METHODS

While cash remains dominant for low value transactions, recent years have seen a marked increase in the range and number of payment instruments and services, particularly retail payments. In addition to the traditional paper-based instruments (notably cheques), direct debit and credit transfers, debit and credit cards, and telephone banking facilities are readily available. All the major banks also offer Internet banking facilities.

Electronic systems have rapidly increased in importance, both for retail and wholesale (high value) transactions to the point where they now account for the majority of payments, by number as well as by value.

2.1 Cash

Cash (New Zealand dollar banknotes and coins) is used widely for small value, face-to-face transactions between individuals and between individuals and merchants. Being legal tender, banknotes and coins have the advantage of convenience and immediate final transfer of value. Estimates suggest cash accounts for around 30-35% of retail transactions by number.

The Reserve Bank has the sole right to issue banknotes and coins in New Zealand. Coins are issued in 5c, 10c, 20c, 50c, \$1 and \$2 denominations and banknotes in denominations of \$5, \$10, \$20, \$50 and \$100.

Notwithstanding the increasing use of electronic funds transfer at the point of sale (EFTPOS) and other forms of non-cash payment, the total value of currency in circulation has grown between 5 and 10% per annum in recent years. Demand for cash by the community has tracked ahead of the nominal growth in the economy but, by international standards, remains low relative to GDP. The total value of notes and coins in circulation as at June 2003 was \$2.9 billion, approximately 2.3% of nominal GDP. As a percentage of the public's total money balances, notes and coins comprise about 12% of the narrowly defined money supply (M1) and 2% of the broad money supply (M3).

2.2 Non cash

2.2.1 Cheques

Traditionally, cheques have been the major non-cash payment instrument in New Zealand, heavily used by both business and consumers. They are used for face-to-face and remote transactions and for any size of payment. In the case of face-to-face transactions by individuals, some form of identification of the payer is frequently required.

Once banked, cheques are processed electronically together with other retail payment instruments, such as direct debits and credits and telephone banking transactions. The physical paper is exchanged in the day(s) following and it can take up to five business days for a cheque to be cleared. The introduction of cheque truncation and imaging is starting to remove the need for the physical movement of cheques and should reduce the total cheque clearance time.

The payee is typically credited for the funds on the day of the deposit, and thus receives same day value, but may not be able to draw on the funds until the cheque has cleared.

Payment statistics indicate a strong move away from cheques in favour of electronic payment methods. From being the most popular form of non-cash payment until the mid-1990s, cheques now lag behind EFTPOS payment transactions and electronic credits. Payments by cheque accounted for over 50% of transactions through the banking system in 1993 and averaged 130 cheques per capita. By 2002, the per capita annual figure had more than halved to 56 cheques, and accounted for 15% of non-cash payments.

2.2.2 Direct entry transactions

Direct debits, or pre-authorised debits on the payer's bank account, account for around 5% of payments through the banking system. Direct debit transfers are initiated by the payee and are subject to the payer completing a direct debit authority for the payer's bank. They must be processed in electronic form and are typically used for processing payments from large number of payers to one payee and for regular bills, including those where the amount due may vary,

for example, payments for property tax to local authorities and recurring payments to utility and other firms.

The number of direct debits has grown in recent years, although the use of the instrument has shown little growth in terms of its share of total non-cash payments.

Electronic credits are widely used. They are initiated by the payer to their bank to make payments direct to the account of named payees. Electronic credits may be in the form of a schedule of payments submitted directly by the payer to their bank or set up as automatic payments involving a regular payment of fixed amounts from one account to another. They are used for private and public payroll payments, government benefit payments and recurring payments to utility firms, insurance and rental providers, and other regular suppliers of services.

As for direct debits, electronic credit transactions are generally processed as part of the overnight settlement arrangements and account for around 20% of non-cash transactions by number.

2.2.3 Payment cards

Debit and credit cards are well established in New Zealand. Their use has increased in recent years, with credit card transactions being boosted by loyalty programs, and debit card use reflecting the overall convenience and acceptability of the cards, coupled with fee structures designed to encourage the use of electronic rather than more costly paper-based transactions.

Both debit and credit cards include contractual risk allocation conditions. Cardholders typically assume some risk for unauthorised transactions (generally limited to \$50) subject to the cardholder safeguarding the PIN and promptly advising the loss or theft of the card.

Credit cards are used for a variety of payments, domestic and foreign, and for large and small value. Moreover, with the introduction of loyalty programs, they are being used increasingly for payments previously settled by other payment methods (e.g. for supermarket purchases previously paid by cash or cheque).

The major credit cards held are Visa and MasterCard, issued by the banks, and the older style travel and entertainment cards issued by American Express and Diners Club. Additionally, some retail stores offer store charge cards to their customers.

The bank-issued cards generally have revolving credit facilities associated with them, with an interest free period of up to 55 days, depending on the billing cycle. Many credit cards are also multi-functional, functioning as a cash or debit card.

The majority of transactions are processed electronically with direct links to the banks for authorisation. The small number of paper-based credit card transactions are processed in a similar manner to cheques.

Transactions involving overseas-issued cards are switched to the applicable international card entity network for authorisation and processing.

Credit card transactions have trebled in number over the last five years and now account for around 20% of non-cash payments. At the end of 2002, credit card advances outstanding totalled \$3.8 billion, while credit card billings for the year on New Zealand cards were \$17.7 billion. A total of 2.7 million bank credit cards were on issue.

Debit/EFTPOS cards are widely used for retail payments and automatic teller machine (ATM) cash withdrawals. They are used for retail transactions of all sizes and are estimated

to account for around 60% of retail sales. To reduce cash handling costs, some retailers, particularly supermarkets, also provide cash withdrawal services to EFTPOS customers.

There are two types of PIN-based debit cards: ATM cards used for cash withdrawals (against the cardholder's bank account) and other services at automatic teller machines, and EFTPOS cards for electronic funds transfer point of sale transactions (where funds are transferred to the merchant and the cardholder's account is debited).

The original ATM cash cards have largely been superseded by EFTPOS debit cards, which provide both ATM and EFTPOS facilities.

EFTPOS cards are used for face-to-face point of sale transactions and are not suited for remote transactions, requiring the card and a PIN to be entered for the transaction to be authorised by the cardholder's bank. Once authorised, the payment to the merchant is effectively guaranteed by the cardholder's bank.

EFTPOS transaction numbers have grown fivefold since 1994 and have surpassed the use of cheques for payments. EFTPOS transactions now account for around 40% of all non-cash payments by number and continue to grow annually. New Zealand also has a comparatively high number of EFTPOS terminals per capita – over 95,000 terminals as at the end of 2002 or 1 for every 41 inhabitants.

EFTPOS transactions in 2002 averaged 148 per capita in number and \$52 in value while the number of ATM transactions has levelled at around 50 per capita per annum. A total of 4.7 million debit cards were on issue at the end of 2002.

2.2.4 Stored value cards

Trials to date indicate there is little demand or interest in New Zealand for stored value cards. This is largely attributed to the widespread acceptance and use of debit and credit cards for transactions of all value. EFTPOS card transactions as low as \$1 in value are not uncommon.

The major use of stored value cards are single use cards, such as phonecards, which are issued by the telecommunications companies and used for prepaid cellular phone calls or for calls from public telephones.

2.2.5 Electronic data interchange

The major New Zealand banks can receive electronic data interchange (EDI) payment requests from their customers, which are then processed through the normal payment channels. Dedicated personal computer-based systems enable customers, typically business customers using proprietary software, to dial a bank's computer system using a secure link to undertake enquiries and initiate transactions. Accounts are either updated in real-time or memorandum items are held which record transaction details until the full update at the end of the day when the main processing occurs.

Use of the Internet for payment and banking services is well established in New Zealand. Internet payment facilities are expanding and becoming more customer-focussed. Account balance information, funds transfers between accounts, bill payments and, in some cases, foreign exchange transactions are widely available via the internet. Customer penetration has grown rapidly in recent years, totalling more than 1 million banking customers at the end of 2002. Future growth in percentage terms may slow in coming years because the proportion of New Zealanders with access to the Internet has levelled off recently at around 65%.

2.2.6 Third party bill payments

Third party bill payment services, in addition to those provided by the banks, have been available from one major non-bank provider, New Zealand Post, a national postal services company. New Zealand Post traditionally offered an over-the-counter bill payment service, predominantly for government and local body organisations. In 1999, the service was extended to include an Internet-based bill presentation and payment service, eBill, which is now offered through New Zealand Post's registered bank subsidiary. eBill allows users to receive and pay their bills from participating companies from any computer connected to the Internet and provides an integrated website platform for multiple billing and banking organisations. Users, once registered, access the eBill website by way of a personal identifier and password. Payments are made electronically from pre-authorised bank accounts.

A national telecommunications company has also launched an online bill presentation and payment system, Bill Online. The system is currently used for the company's own customers to receive, view and pay their account online.

3. INTERBANK SETTLEMENT SYSTEMS

The real-time gross settlement (RTGS) environment consists of two real-time payment switches, AustraclearNZ and Same Day Cleared Payment facility (SCP), which link directly to the Reserve Bank's Exchange Settlement Account System (ESAS). A non real-time switch, Interchange and Settlement Limited (ISL), processes deferred settlement transactions and settles via AustraclearNZ during the morning settlement session for value the previous day, while two EFTPOS switches process debit card and domestic credit card transactions.

The central bank provides the ESAS/SWIFT interface and ESAS and AustraclearNZ, but is not directly involved in the management of the bank-owned payment systems in New Zealand. Each switch sets its rules as it sees fit without reference to the central bank. The primary interest taken by the central bank is in aspects that may affect systemic stability.

Co-ordination of industry and technical standards is undertaken through a payments system committee of the NZBA. The central bank has observer status on this committee.

3.1 ESAS (Exchange Settlement Account System)

ESAS provides the base to New Zealand's RTGS environment. The system became fully operational in 1998 and provides real-time irrevocable settlement across the Exchange Settlement Accounts held with the Reserve Bank in respect of wholesale financial transactions. The system is owned and operated by the Reserve Bank.

Finality and irrevocability are achieved through a mutual contract binding on all account holders and the central bank. The terms and conditions governing the system are set by the Reserve Bank in consultation with account holders.

The ESAS banking day runs from 9:00 each business day until 8:30 the next business day and the ESAS system is available to account holders to process settlement requests for over 23 hours each day. The system closes for 15 minutes from 19:00 for a system back-up and for 30 minutes from 8:30 the next day for end of day processing.

ESAS currently uses a FIFO (first-in first-out) queuing mechanism for settlement requests, but will change to a next-down looping queuing and auto-offset mechanism as part of the

preparation for the New Zealand to be included in the Continuous Linked Settlement system (see section 3.6). Exchange settlement accounts must be in credit at all times. No overdrafts are permitted.

Intra-day liquidity is provided through an 'autorepo' facility available to settlement account holders who have intra-day repurchase agreements with the Reserve Bank and who have specified acceptable securities to be sold to the Reserve Bank for liquidity purposes. The autorepo mechanism is automated. It accesses the AustraclearNZ securities settlement system throughout the day in accordance with settings in the system controlled by the account holder and the central bank. Securities acceptable to the central bank are determined primarily on issuer credit rating. If auto-repos are not repurchased within the same ESAS day (thereby providing inter-day liquidity to the counterparty), penalty interest is charged.

Exchange Settlement Account holders (known as settlement members) are currently all registered banks. However, the ESAS access rules permit non-bank institutions to hold accounts. In essence, account holders must be financial institutions, have a legitimate business case for access to the account, and have systems and arrangements in place that would not jeopardise the soundness or efficiency of the financial system. There are presently 12 ESAS settlement members.

Pricing is set by the Reserve Bank based on the marginal cost of developing and operating the system. There is no fee for credit transactions while debit transactions incur a flat per transaction fee. The transaction fee is reviewed and adjusted quarterly based on historic and estimated future transaction volumes.

In 2002, the system settled an average of 3,200 transactions a day (including autorepo liquidity transactions), with a daily average total turnover value of \$39 billion.

3.2 SCP (Same Day Cleared Payment)

SCP is an electronic payment service used for high value inter-bank transactions, notably the NZ dollar leg of foreign exchange transactions, and for customer transactions where timeliness is important. Settlement is on a real-time, transaction by transaction basis through ESAS.

The business rules for the SCP product are governed by a user group comprising member banks of the NZBA Payments Systems Committee.

The operational/interface aspects of the system are the responsibility of the Reserve Bank, as the SWIFT central institution. The system has been operated by the Reserve Bank since October 2001 using the ESAS/SWIFT interface, which in turn uses SWIFT FinCopy to pass settlement requests, authorisations and confirmations between SCP users.

Participation is governed by the Reserve Bank and the SCP user group. Participants are required to maintain an exchange settlement account at the Reserve Bank, have a SWIFT BIC (Bank Identifier Code) address, be a member of the Reserve Bank's SWIFT FinCopy service, and accept applicable SCP and NZBA agreements.

The system currently has 9 members, all registered banks. In 2002, SCP processed an average of 2,100 transactions per day with an average daily turnover value of \$23 billion.

3.3 AustraclearNZ (Austraclear New Zealand System)

AustraclearNZ is primarily a securities settlement system and central depository. It is also used for high value cash transfers, providing real-time irrevocable settlement of payments on a gross basis through ESAS.

All payments, whether for the settlement of securities transactions or straight cash transfers, are irrevocable once they are settled by the system. Transactions are not accepted by the system unless the paying member has sufficient credit provided by their banker to allow the transaction to be completed. The banker can alter this credit limit in real-time via a 'debit caps' facility and thus control their exposure to their customer.

The Reserve Bank has operated the system since 1990 under a software licence agreement. The rights and obligations of participants to each other and the rights and obligations of the Reserve Bank as operator of the system are governed by a mutual contract entered into by all participants. Transaction fees are set by the central bank and are set on a cost recovery basis.

The system currently has 229 members in New Zealand and Australia, and settles around 1,000 transactions per day with a daily average turnover value of \$8 billion.

The system's functionality is further described in section 4.

3.4 ISL (Interchange and Settlement Limited)

The ISL system is the major retail payment processing switch in New Zealand. The system is used to interchange cheques, direct debits, direct credits, automatic payments, ATM transactions³, telephone banking, and internet banking. It has been in operation since the mid 1960's and is collectively owned by eight settlement banks via a limited liability company.

ISL operates on an overnight batch basis. Settlement positions are advised to the participants who arrange inter-bank settlement through AustraclearNZ on a bilateral net basis at the end of the banking day.

While the introduction of RTGS in March 1998 reduced the systemic significance of this system, it is still the primary means of making retail payments and the industry is currently reviewing the failure to settlement arrangements with a view to adopting more robust legal and operational arrangements. ISL currently has "wind back" as its failure to settle mechanism. In essence, this would involve returning and reversing transactions to and from a failed bank for the day it failed. This mechanism has never been used and there are some reservations as to whether it could be done, in a physical sense, in an acceptable time scale.

The owners set the rules governing the operation of the system, including transaction pricing, and the contractual arrangements.

Participation in the system is governed by the user group. At present, the participants are registered banks who are members of the NZBA and ESAS account holders. In addition, some non-bank financial institutions have agency arrangements in place with participant banks.

³ Most banks operate their own ATM networks, with agreements providing links between the networks and allowing mutual access by cardholders to other banks' ATMs. Interbank positions are processed through ISL.

The system currently has nine direct participants and processes around 1.5 million payment instructions per day.

3.5 EFTPOS systems

Two bank-owned systems capture EFTPOS/debit card transactions and the majority of domestic credit card transactions.

Electronic Transactions Settlement Limited (ETSL), established in 1989, is jointly owned by four major New Zealand banks. The ETSL network is used for the interchange and clearance of point of sale debit, credit, charge and proprietary card transactions. The second system is owned and operated by a fifth major bank, which also uses its network to support its ATM and other electronic banking services.

Interchange agreements in place mean that card transactions are automatically switched to the appropriate system, via links to financial institutions and card processing centres, for authorisation and processing. The arrangements establish a many-to-many facility, such that in general all domestic cards can go in all terminals. Transactions are authorised in real-time and customer accounts updated. Interbank obligations are settled on a bilateral net basis at the end of the banking day via ISL through AustraclearNZ.

The owners govern management and participation, including pricing. Participation is open to financial institutions, bank and non-bank, that are bona fide charge or debit card issuers or credit card acquirers.

Transactions passing through these systems are estimated to account for around 60% of retail turnover, or around \$30 billion dollars annually.

3.6 Major projects and policies being implemented

Three payment system projects are underway or planned in the near future:

- (i) The NZ dollar has been approved in principle for entry into the Continuous Linked Settlement (CLS) system. CLS is an international initiative aimed at reducing foreign exchange settlement risk (Herstatt risk). The Reserve Bank is working together with the industry in a number of areas in preparation for entry by the New Zealand dollar, currently planned for 2004. Key aspects are satisfying the legal requirements of CLS, enhancing system liquidity, and extending the domestic operating hours to overlap with those of CLS. The designated payment system arrangements introduced in the Reserve Bank of New Zealand Amendment Act address the legal certainty requirements, and testing is underway for the use of auto-offset and next-down looping queuing mechanisms in ESAS to improve system liquidity. The new queuing arrangements are scheduled to go into production in late October.
- (ii) Failure to settle arrangements. The industry is currently reviewing the failure to settle arrangements in the net deferred payment switches. The review aims to strengthen the operational, financial, and legal arrangements in place and to minimise the risks and impact on the system and other participants of a participant failing.
- (iii) Operating hours. Consideration is being given to the hours of operation of the ESAS/SWIFT interface. The interface is currently available to receive settlement

requests from 9:00 to 16:45 each business day. These hours are to be reviewed over the coming year, with a view to extending the availability of the system for users.

4. SECURITIES SETTLEMENT SYSTEMS

There are two major securities settlement systems in New Zealand: AustraclearNZ, which clears and settles debt securities and equities among wholesale counterparties; and FASTER, which clears and settles listed securities traded on the NZX. A third system, SFE Clearing, based in Australia, settles the NZFOE products. All three systems are electronic and operate in real-time.

The securities market comprises government securities, corporate debt and equity securities and some related derivative products.

4.1 Government Securities

The government issues three types of domestic debt instruments to meet its core financing requirements:

- Treasury bills – short-term zero coupon wholesale debt instruments;
- Government bonds – medium-term instruments paying a fixed coupon interest rate, aimed at the wholesale market (mainly large institutional investors); and
- Kiwi bonds – a fixed-interest instrument designed for retail investors wanting domestic sovereign risk.

All Crown securities are issued under the Public Securities Act 1989, and managed by the NZDMO, a unit of the New Zealand Treasury.

4.1.1 Trading

4.1.1.1 Treasury bills

Treasury bills are denominated in New Zealand dollars and issued with maturities of three, six and twelve months. They can also be issued for liquidity management purposes. The bills are sold at a discount to par and carry no coupon. The Reserve Bank acts as the Registrar and payment agent for the bills.

Treasury bills are issued by the NZDMO on behalf of the Crown through regular weekly tenders conducted by the Reserve Bank, and as required for liquidity management through open market operations, again conducted by the Reserve Bank. Maturity tranches are created of a size (typically around \$600 million to \$750 million) that facilitates the liquidity of the instruments.

Participants in the primary market for Treasury bills consist of institutions registered as bidders with the Reserve Bank. Only bids from registered bidders are accepted by the Reserve Bank. The process of becoming a registered bidder is relatively straightforward and is based on the creditworthiness of the bidder. Bidders are not confined to any particular institution type.

The bills are quoted and priced in the secondary market on a yield to maturity basis, and traded in the over-the-counter market. There are a number of price makers in the secondary market,

quoting two-way prices in agreed parcel sizes. Turnover in the market is, on average, very low.

In August 2003, there were \$6 billion Treasury bills held by the market, of which non-residents held around 9%.

4.1.1.2 Government bonds

Government bonds are issued by the NZDMO through tenders conducted by the Reserve Bank. The bonds are denominated in New Zealand dollars with a fixed coupon paid semi-annually in arrears. The Reserve Bank also acts as the Registrar and payment agent for the bonds.

Current maturities of conventional government bonds on issue range through to 2015. (There is also an inflation-indexed bond outstanding, with maturity in 2016.)

As for Treasury bills, participants in the primary market for government bonds consist of institutions registered as bidders with the Reserve Bank.

Government bonds are quoted and priced in the secondary market on a yield to maturity basis, and traded in the over-the-counter market. There are a number of price makers in the secondary market, quoting two-way prices in agreed parcel sizes.

The total amount of government bonds held by the market at the end of August 2003 was \$21.2 billion, of which around 51% was held by non-residents. Average monthly turnover in the government bond market over 2002 was around \$65 billion.

4.1.1.3 Kiwi bonds

Kiwi bonds are issued to provide a default-free retail instrument for small investors. Kiwi bonds are issued on a tap basis with maturities of six months, one, two and four years, and with the option for interest to be paid quarterly, or compounded quarterly and paid on maturity. The interest rates on Kiwi bonds are set at a margin below that of government bonds of similar maturity. The minimum investment is \$1,000 with multiples of \$100 thereafter. No single investor is permitted to hold more than \$250,000 of any one issue.

There were around \$470 million of Kiwi bonds on issue in June 2003. There is no secondary market. It is, however, possible to transfer the registration of the bond from one party to another. Alternatively, if an investor decides not to hold the bonds to maturity, they can have their principal returned to them on demand, subject to a penalty.

4.1.2 Pre-settlement

Pre-settlement and settlement activities for government securities take place in New Zealand principally through AustraclearNZ.

AustraclearNZ is a real-time trade matching, transfer, clearance and settlement system for money market instruments, government and local authority bonds and notes, corporate bonds and notes, and equities. Other functions of the system include electronic tendering, a cash transfer facility that provides irrevocable commercial bank funds, and a foreign exchange confirmation function.

The system provides a secure paperless settlement environment for the electronic transfer of funds and securities.

Direct participation is available to any organisation of good standing that operates in the securities market. Members include banks, brokers, financial institutions and corporates, both resident and foreign. The rights and obligations of participants to each other and the rights and obligations of the Reserve Bank as operator of the system are governed by a mutual contract entered into by all participants.

Pre-settlement steps in AustraclearNZ typically involve both buying and selling parties entering and authorising the agreed details of a transaction into the system. The system will match the details and move into the settlement phase (see 4.1.3).

Government bonds may also be traded on the NZX Debt Market (NZDX), although trade volumes to date have been low. Listed bonds are traded and settled in much the same way as the equities listed on the exchange, via the NZX's FASTER system (See 4.3.2 and 4.3.3).

4.1.3 Settlement

AustraclearNZ provides delivery versus payment settlement on a gross transaction-by-transaction basis in irrevocable bank funds. Interbank transactions resulting from customer and banks' own transactions are settled on a gross real-time basis through ESAS. All payments, whether for the settlement of securities transactions or just cash transfers, are irrevocable and final once they are settled by the system.

For settlement to take place via AustraclearNZ, securities must be held by New Zealand Central Securities Depository Limited (NZCSD), the custodian trustee, owned by the Reserve Bank. Each member has a security account(s) on the system which records the securities lodged with NZCSD. NZCSD becomes the legal owner of the securities on the respective register and holds securities on behalf of the member, the beneficial owner. Each member also has a system New Zealand dollar cash account. This account is provided by a registered bank. The bank providing a system cash account has real-time access to set daylight limits (debit caps) on that account.

If the seller holds the security outside NZCSD, the security will have to be transferred from the seller's name and lodged into NZCSD's name to allow the trade to complete. Once the security is lodged into NZCSD's name, the seller will become the beneficial owner of the security once their security account is credited. Alternatively, if the buyer wants to be the legal owner of the security (not the beneficial owner), they can uplift the security from NZCSD and transfer the ownership into their own name at the security register once the trade has settled.

On completion of the above steps, AustraclearNZ moves on to settlement. Where A is selling a security to B, this involves the following:

1. AustraclearNZ sends a payment request to ESAS for B's bank to pay the funds to the Exchange Settlement Account of A's bank.
2. B's bank authorises the transfer of funds to A's bank.
3. ESAS sends a payment confirmation message to AustraclearNZ to effect payment.
4. AustraclearNZ irrevocably settles the transaction. The security and cash records of the system are updated simultaneously.

If all conditions are not met regarding the trade information, the trade will remain pending settlement, and settlement will be continually attempted by the system. If the trade is not settled by the end of day it is removed from the system overnight.

AustraclearNZ currently settles over 90% of all wholesale fixed interest and money market security transactions and an estimated 40% of equity securities transactions. The inventory of securities held in the depository stands at around \$78 billion. The system has a bilateral link to the Hong Kong Monetary Authority's securities settlement system.

4.2 Corporate Debt

Bank certificates of deposit and corporate bills of exchange are important sources of short term funding in New Zealand. Longer-term corporate debt instruments tend to be similar in structure to bonds issued by the government although some may include additional features.

4.2.1 Trading

4.2.1.1 Money Market Instruments

There are three similar money market securities: certificates of deposits, promissory notes and bank bills.

Certificates of deposit (CDs) are securities issued by banks and are one of their main sources of short-term funding. CDs are issued by banks in registered form. The transfer of ownership of CDs is principally effected through NZCSD with electronic transfer through AustraclearNZ (see 4.1.2 and 4.1.3).

Primary issuance of CDs is by private placement. The secondary market for CDs is among the most liquid of the securities markets in New Zealand. Exact turnover data is not available, but estimates suggest approximately \$500 million of CDs are traded in the wholesale market daily.

Bills of exchange are discount instruments issued by organisations, other than banks, that wish to undertake short-term borrowing. There are two types of bill: promissory notes (or commercial paper) and bank bills. Both types of bill are typically held in dematerialised form within NZCSD, with the transfer of beneficial ownership cleared through AustraclearNZ.

Corporates obtain short-term funds through the issue of promissory notes. Promissory notes are also known as P-notes, bearer notes, commercial paper and one-name paper. The last name is derived from the fact that promissory notes carry only the name of the issuer, unlike bank bills.

Bank bills are bills of exchange that have been issued by an entity and accepted or endorsed by a bank. This gives bank bills the alternative name of 'two-name paper'.

The promissory note market is relatively small. Three common methods exist for issuing promissory notes into the market. The first is a tender, where bids are lodged with the programme manager (normally a bank) acting for the borrower. The second method is via a dealer issue. This type of issue is similar to a normal tender except that the bidding is restricted to the dealers appointed to the dealer panel. An alternative method, gaining increased popularity, is private placement, where notes are sold on a tap basis in response to demand from investors.

The secondary market in promissory notes is considerably less liquid than that in CDs, particularly for notes issued by organisations with lower credit ratings. Activity in the bank bill market is extremely limited.

4.2.1.2 Corporate Bonds

The New Zealand corporate bond market consists of bonds issued by State Owned Enterprises (SOEs), local authorities and corporations.

Corporate bonds are usually issued in registered form and most issues are similar in structure to bonds issued by the Crown. Some issues, however, are convertible into the issuer's equity. They are sold by tender or private placement.

The secondary market for corporate bonds is relatively illiquid compared to that for Crown debt. Market makers quote prices mainly only on the larger issues that are of interest to institutional investors.

4.2.2 Pre-settlement and settlement

The majority of corporate debt market transactions are settled through AustraclearNZ, as described in sections 4.1.2 and 4.1.3.

Low volumes of short-term corporate paper and bonds also trade and are settled via the NZX's FASTER system (see sections 4.3.2 and 4.3.3).

4.3 Equities

The New Zealand stock (or share or equity) market instruments consist of:

- Ordinary shares, representing an equity or part ownership of a company;
- Preference shares. These shares have preferential rights over ordinary shares as to claim on assets, earnings and dividends, and rank below creditors and debenture holders. They usually have a fixed dividend rate;
- Redeemable preference shares. These are preference shares that are redeemable for cash on a fixed date. New Zealand company law requires that redemption may be made only from profits of the company or a further issue of capital;
- Convertible preference shares. Shares with a preferential right over ordinary shares as to claims on assets, earnings and dividends and including a right to convert to ordinary shares on either a fixed or optional basis on a future date or dates;
- Rights (traded) - A transferable right to subscribe for new securities in the offering organisation. These rights are traded on the NZX and are used to offer capital increases to existing shareholders on advantageous terms;
- Rights (non-renounceable) – These have the same purpose as traded rights above except that the rights must be exercised and subscribed for by the existing holder and cannot be traded until fully paid and accepted for trading on the NZX; and
- Warrants - Long-dated institution issued options over specific securities. The originating institution maintains the obligations attached to the warrant.

4.3.1 Trading

All of the instruments outlined in 4.3 may be registered and traded on the NZX.

4.3.1.1 Primary Market

The Securities Act 1978 governs the public offering of securities. A combination of private placement and public offer is often used, particularly in the issuance of ordinary shares. Listings may also be arranged by means of an offer of already issued securities.

Depending on the size of the primary issue, the organising broker and other intermediaries managing the issue will choose the type of support structure in conjunction with the issuer. Underwriting/distribution syndicates are typically organised by invitation from the 'lead' underwriting institution.

4.3.1.2 Secondary Market

The majority of secondary market equities trading takes place on the NZX. The Exchange runs three boards: the Main Board, NZSX, where all the major companies' shares are listed; the Unlisted Board, on which smaller companies trade; and the New Capital Market, which is designed as a market place for the equity of 'start-up' companies.

Trading is via a screen-based automated order-matching system. All quotations are captured electronically and broadcast to market participants and the media. The NZX's trading system operates from 10:00 to 17:00 each business day.

4.3.2 Pre-settlement

There are two main systems for clearing and settling equity market transactions, FASTER and AustraclearNZ. In addition, a small number of (retail) transactions are completed by the physical exchange of transfer documents and cheques.

The NZX rules require all equity transactions between brokers who are NZX members to be completed on the NZX's FASTER system. FASTER is responsible for the management and reporting of all trades up to and including final settlement between brokers. It clears, settles and registers NZX equity trades and also provides facilities for inquiries to be made on trades. FASTER inter-connects the FASTER Trading system, members' office accounting systems, public subscribers, share registries, and payments systems. Member firms receive on-line advice of matched trades.

Typical pre-settlement steps for a trade made on the NZX involve buy and sell orders flowing electronically from clients through brokers and into the FASTER Trading system. FASTER Trading automatically matches orders and notifies brokers' systems of the resulting trades. Buyers and sellers are sent contract notes to confirm trades and payment details. At this stage the selling broker is required to transfer securities from the shareholders' accounts to their FASTER Transfer Account. Trades are then passed to the FASTER settlement pool for settlement between member firms (see section 4.3.3 below).

Non-broker to broker wholesale transactions by New Zealand and offshore parties (i.e. trades that are not done on the NZX) are frequently pre-settled and settled using the AustraclearNZ system (refer sections 4.1.2 and 4.1.3). Over one third of listed equities are held in NZCSD. The beneficial owners of these securities are able to use the AustraclearNZ clearing and settlement facilities.

4.3.3 Settlement

FASTER, together with the NZX's broker-to-broker accounting system, permits paperless settlement for member firms and buying clients.

The settlement rules of FASTER vary depending on the type of instrument, value and other conditions associated with the trade. A maximum settlement period of three days is mandated for equity trades. Trades over \$100,000 in value default to settlement on the third business day, although this can be earlier by mutual consent of counterparties. (The current average settlement time of all trades through FASTER is T+1.5 days.)

Settlement occurs on a trade-by-trade delivery versus payment basis within FASTER. Funds are transferred simultaneously and irrevocably with the transfer of ownership of shares. All shares are transferred directly by name on the listed company's own electronic (book entry) register.

All listed company registers are connected permanently to FASTER during business hours to facilitate electronic transfers. The transfer of securities is based on registration into the name of the beneficial owner or the owner's nominee. Selling clients are required to deliver to their broker a signed standard transfer form (accompanied by the relevant share certificate as required).

Payments due between brokers are made using AustraclearNZ. Settlement is for net amounts. Brokers make settlement of many transactions via one daily direct electronic credit or debit using the cash transfer function of AustraclearNZ (see section 3.3).

The NZX accepts no liability for counterparty risk.

As at August 2003, there were 223 NZX-listed companies, of which 159 were New Zealand listed and 64 were overseas listed. There were 221 equity securities and 66 debt securities. The volume of trades settled through FASTER averaged around 1,700 daily with an average daily turnover of \$20 million to \$25 million. Equity market capitalisation at the end of August 2003 was \$47 billion (excluding overseas listed issuers).

4.4 Derivatives

A range of derivative products are traded between professionals and are available to investors. Such products are traded on the NZFOE and over-the-counter.

4.4.1 Trading

The NZFOE offers futures contracts, and options on those futures contracts, on 90-day bank bills, three year and ten year government bonds. It also offers futures contracts, and options on those futures contracts, on the NZX-10 Share Index (a share index containing the ten largest and most liquid New Zealand companies). Share options on 11 major New Zealand companies and a New Zealand electricity futures contract are also available.

Interest rate products, particularly the 90-day bank bill futures contract, dominate trading on the NZFOE. Daily Exchange turnover averaged around 2,500 contracts per day in 2002, of which over 90% by volume is accounted for by the 90-day bank bill futures contract.

Over-the-counter markets, particularly in interest rate and currency related products are reasonably developed. Forward rate agreements (FRAs) are widely used amongst both professional trading institutions and 'end users'.

4.4.2 Pre-settlement and settlement

The registration, clearing, and settlement of all NZFOE trades are performed by SFE Clearing Corporation Pty Limited (SFE Clearing), a wholly owned subsidiary of the SFE. The arrangements provide straight through processing from the SFE's trading system, SYCOM IV, to the clearing and settlement services.

Settlement is made with the Exchange, not the counterparty, and cleared through SFE Clearing. Accordingly, SFE Clearing acts as the central counterparty in each open contract, thus guaranteeing the performance of the contract.

On maturity, contracts are cash settled using AustraclearNZ.

4.5 Major projects and policies being implemented

Current securities market projects include:

- (i) Cooperation between SFE and NZX. In September 2003 SFE (the owner of NZFOE) and NZX announced an agreement to develop an exchange-traded market for New Zealand equity derivatives listed on the SFE and settled using SFE technology. The two parties plan to list New Zealand equity index futures and options, and individual equity options by March 2004.
- (ii) NZX market changes. NZX has announced plans to replace the Unlisted Board and New Capital Markets with the New Zealand Alternative Market, NZAX, by the end of 2003. NZAX is aimed at smaller and rapidly developing companies, and companies with non-traditional structures.

5 ROLE OF THE CENTRAL BANK

5.1 Statutory responsibilities

The Reserve Bank of New Zealand operates under the Reserve Bank of New Zealand Act 1989. At the broadest level, the Reserve Bank's role is to work to ensure that the New Zealand economy is supported by an efficient and effective monetary system that facilitates trade in goods, services and capital. Its main statutory responsibilities are:

- To formulate and implement monetary policy to achieve and maintain stability in the general levels of prices;
- To promote the maintenance of a sound and efficient financial system by, inter alia, registering and monitoring the prudential soundness of banks;
- To manage the note and coin issue; and
- To act as the central bank of New Zealand.

Other important functions include:

- Providing banking services to registered banks and the government;
- Providing depository and settlement facilities for wholesale market securities;
- Overseeing the payment system;
- Acting as a lender of last resort; and
- Implementing exchange rate policy.

5.2 Provision of settlement accounts and payment systems

The Reserve Bank provides Exchange Settlement Accounts, across which settlement members can exchange value to settle inter-bank clearings. Currently there are 12 account holders, all of which are registered banks.

To facilitate the exchange settlement account service, the Reserve Bank owns and operates ESAS. ESAS commenced in March 1998 and provides real-time, final, irrevocable payments between account holders at the central bank (described in section 3.1). While all present account holders are banks, the access policy provides for an account to be available to any financial institution, which, in the view of the central bank, has a need for an account. This is consistent with the central bank's concern for financial system soundness and efficiency.

The Reserve Bank also provides the Crown Settlement Account for the government. This account serves as the Crown's central 'disbursement account' although actual cheque processing and other transactional banking services are provided for the government by one of the registered banks. The balances with this bank are 'swept' to the Crown Settlement Account at the Reserve Bank at the end of each day.

There are no reserve ratio requirements in New Zealand.

5.3 Operation of securities settlement systems

The Reserve Bank operates AustraclearNZ, a securities clearing and settlement system, as part of its role in promoting and maintaining a sound and efficient financial system.

AustraclearNZ is a real-time settlement system. It provides electronic securities clearing and settlement services to members on a real-time delivery versus payment basis, as described in sections 4.1.2 and 4.1.3. Members can also use the system to transfer cash (described in section 3.3).

The system operates using a depository structure, whereby members transfer security ownership to the Reserve Bank's trustee company, NZCSD, for safe custody. The trustee company is used to record details of all securities deposited in the AustraclearNZ system by members.

5.4 Oversight of payment systems

The Reserve Bank was given formal statutory authority relating to the oversight of payment systems in August 2003 following the enactment of the Reserve Bank of New Zealand Amendment Act 2003. Previously, an indirect mandate had been derived from the Bank's legislative responsibility to advise on financial sector policy and to promote the maintenance of a sound and efficient financial system.

Part 5B of the 2003 Amendment Act formally sets out the Reserve Bank's role, objectives and powers in overseeing the payment system. The provisions give the Reserve Bank the power to collect and publish payment system information for the purpose of promoting the robustness of the payment system and maintaining a sound and efficient financial system. The new provisions essentially codify the previous informal arrangements and do not indicate any major change in the way the oversight is conducted.

The Reserve Bank's payment system oversight focuses on prudential and systemic aspects of the payments infrastructure. Matters relating to access and pricing of proprietary systems are subject to the same general competition policy and consumer protection laws as other industries.

Key central bank objectives for the payment system are:

- To ensure that payment system risks are reduced to acceptable levels, and are managed appropriately by system participants;
- To ensure that the payment system can continue to operate without disruption in the event of the sudden withdrawal of a participant from the system, or following other types of financial crisis, or natural disaster;
- To encourage movement towards delivery-versus-payment arrangements in all financial markets, especially with respect to high-value transactions;
- To help ensure that the status of payments is certain at all times, and, in particular, the legal environment supports 'finality' and 'irrevocability' in payment instructions;
- To encourage banks and others to offer efficient, reliable and relevant payments services to their customers; and
- To maintain an open, flexible and competitive system, and ensure that no unwarranted entry or operational barriers exist.

These six objectives, supplemented more recently by the CPSS Core Principles for Systemically Important Payment Systems, are used by the Reserve Bank to guide its thinking and policy stance on new initiatives and enhancements in payment systems.

The approach taken has been to make progress through a combination of co-operation and consultation with the banking industry and through the Reserve Bank's ownership and operation of ESAS and AustraclearNZ. In this manner, a working knowledge of the various payment systems is maintained, particularly as regards the failure to settle arrangements. The recent oversight legislation will supplement this by giving the Reserve Bank a formal mechanism to review and highlight areas of interest.

5.5 Monetary policy and payment systems

The Reserve Bank of New Zealand Act makes the goal of monetary policy explicit and non-negotiable. Monetary policy must be directed at 'achieving and maintaining stability in the general level of prices'. The specifics of the objective are set out in a written agreement (the Policy Targets Agreement) between the Governor of the Reserve Bank and the Treasurer. The Agreement is signed by both parties every five years, on a change of Governor or at any time by mutual agreement, and is made public. The current target range is annual CPI inflation of 1 to 3 per cent, as measured by Statistics New Zealand, on average over the medium term.

Since 1999, monetary policy has focussed on managing the level of the Official Cash Rate (OCR), the overnight interest rate set by the Reserve Bank. The OCR is the rate around which the Reserve Bank will borrow and 'lend', thus influencing the level of other short-term interest rates and monetary conditions more generally. The OCR is reviewed (and adjusted as required) approximately every six weeks.

The OCR is the centre of the 'band' of the central bank interest rates. The Reserve Bank pays an interest rate 25 basis points below the OCR for money deposited overnight in settlement accounts, and provides overnight cash on demand against government securities collateral (using repurchase agreements) at 25 basis points above the OCR. The result is a 50 basis point corridor between the interest rates at which the Reserve Bank will inject or absorb overnight funds. This directly anchors interest rates at the very short end of the yield curve and controls the financial price at the beginning of the transmission mechanism.

Unlike the previous monetary policy implementation regime, the quantity of settlement cash left in accounts at the end of each day is not the policy lever. The Reserve Bank conducts daily open market operations to smooth the impact of the day-to-day forecast fluctuations in government spending and revenue on the level of settlement cash/banking system liquidity.

5.6 Currency issue

The Reserve Bank has the sole right to issue banknotes and coins in New Zealand. This includes the responsibility to determine the denominations, form, design, content, weight and composition of the notes and coins. As at June 30, 2003 the total value of currency in circulation was \$2.9 billion, approximately 2.3% of nominal GDP.

Until recently, the Reserve Bank provided a daily clearing-house service for the distribution of currency, supplying and accepting repatriations of currency by banks and security companies on demand and in relatively small amounts. Since mid-2000, to improve efficiency, the Reserve Bank has taken a less prominent role in cash distribution, providing wholesale supplies as required, replacing damaged stock and meeting seasonal demands while encouraging the banks and security companies to re-distribute their day-to-day cash needs among themselves.

SELECTED REFERENCES

- Butterworths of New Zealand Limited, "Electronic Business and Technology Law", 2001
- Stinson A and Wolyncewicz M (2003), "Recent developments in the payment system", Reserve Bank of New Zealand Bulletin, Volume 66, Number 1, pages 21-33.
- Reserve Bank of New Zealand, "Financial Markets and Payment Systems in New Zealand (A General Description)", Reserve Bank of New Zealand, June 1997, Updated January 2000.
- Statistics New Zealand, "New Zealand Official Yearbook 2000", 102nd Edition
- www.nzba.org.nz
- www.nzdmo.govt.nz
- www.nzx.com
- www.oic.govt.nz
- www.rbnz.govt.nz
- www.sec-com.govt.nz
- www.sfe.com.au
- www.stats.govt.nz

LIST OF ABBREVIATIONS

ATM	Automatic Teller Machine. Refer to section 2.2.3
AustraclearNZ	Austraclear New Zealand System. Refer to sections 3.3 and 5.3
CD	Certificate of Deposit. Refer to section 4.2.1.1
CHESS	Clearing House Electronic Sub-register System. Refer to section 1.1.2
CLS	Continuous Linked Settlement. Refer to section 3.6
CPI	Consumers' Price Index. Refer to section 5.5
EDI	Electronic Data Interchange. Refer to section 2.2.5
EFTPOS	Electronic Funds Transfer at the Point Of Sale. Refer to section 2.2.3 and 3.5
EMEAP	Executives' Meeting of East Asia and Pacific Central Banks and Monetary Authorities. Refer to section 3.6.
FASTER	Fully Automated Screen Trading and Electronic Registration system. Refer to sections 4.3.2 and 4.3.3
GDP	Gross Domestic Product
ISL	Interchange and Settlement Limited. Refer to section 3.4
NZBA	New Zealand Bankers' Association. Refer to section 1.2.3
NZCSD	New Zealand Central Securities Depository Limited. Refer to section 4.1.3
NZDMO	New Zealand Debt Management Office. Refer to section 4.1.1
NZFOE	New Zealand Futures and Options Exchange Limited. Refer to sections 1.2.3 and 4.4
NZX	New Zealand Exchange. Refer to sections 1.2.3 and 4.3
OCR	Official Cash Rate. Refer to section 5.5
PIN	Personal Identification Number. Refer to section 2.2.3
RBNZ (Reserve Bank)	Reserve Bank of New Zealand. Refer to sections 1.2.3 and 5
RTGS	Real-Time Gross Settlement. Refer to section 3
SCP	Same Day Cleared Payment. Refer to section 3.2
SFE	Sydney Futures Exchange. Refer to section 4.4.1
SOE	State Owned Enterprise. Refer to section 4.2.1.2
UNCITRAL	United Nations Commission on International Trade Law. Refer to section 1.1

STATISTICAL TABLES (updated July 2003)

Table 1
Basic statistical data

	1998	1999	2000	2001	2002
Population (millions):					
<i>Year-end</i>	3.830	3.852	3.874	3.912	3.976
<i>Average</i>	3.783	3.805	3.826	3.875	3.950
GDP (\$ millions)	97,093	100,901	104,911	107,680	112,391
GDP per capita (\$)	25,666	26,518	27,421	27,786	28,454
Exchange rate (domestic currency vis-à-vis US\$): ¹					
<i>Year-end</i>	0.5269	0.5233	0.4402	0.4155	0.5265
<i>Average</i>	0.5358	0.5294	0.4563	0.4207	0.4646

¹Quoted as US\$ value of one NZ\$.

Source: Statistics New Zealand, RBNZ

Table 2
Settlement media used by non-banks
(at year-end, \$ millions)

	1998	1999	2000	2001	2002
Banknotes and coins on issue ¹	1,724	2,077	2,069	2,241	2,451
Transferable deposits ²	11,195	12,874	13,791	15,890	16,598
Other ³	-31	-71	-60	-79	-67
Narrow money supply (M1)	12,888	14,880	15,800	18,053	18,981
<i>Memorandum items:</i>					
Broad money supply (M3)	92,383	98,748	105,179	117,213	130,720
Transferable deposits in foreign currencies	1,781	1,503	2,097	1,934	3,346

¹Currency in active circulation

²Cheque accounts

³Inter-institutional transaction balances (cheque) and Government transaction deposits netted for the calculation of M1.

Source: RBNZ

Table 3
Settlement media used by banks
(at year-end, \$ millions)

	1998	1999	2000	2001	2002
Transferable balances held at central bank	5	699	9	29	11
of which:					
<i>Required reserves</i>	0	0	0	0	0
<i>Free reserves</i>	5	699	9	29	11
Transferable deposits held at other banks	1,293	1,190	675	1,606	1,254
<i>Memorandum item:</i>					
Institutions' borrowing from central bank ¹	451	2,178	1,802	2,247	2,931

¹ Overnight and term borrowing via repurchase agreements and foreign exchange swaps.

Source: RBNZ

Table 4
Banknotes and coin
(at year-end, \$ millions)

	1998	1999	2000	2001	2002
Total banknotes and coin issued	2,172	3,127	2,887	3,060	3,304
Denomination of banknotes:					
<i>100 dollars</i>	548	831	809	926	1,018
<i>50 dollars</i>	403	495	392	393	400
<i>20 dollars</i>	792	1,286	1,173	1,292	1,411
<i>10 dollars</i>	136	187	182	184	189
<i>5 dollars</i>	64	80	78	81	89
<i>2 dollars</i>	12	12	12	12	12
<i>1 dollar</i>	10	10	10	10	10
Coin	206	227	232	163	176
Banknotes and coin held by banks	448	1,050	818	819	853
Total banknotes and coin outside banks	1,724	2,077	2,069	2,241	2,451

Source: RBNZ

Table 5
Institutional framework
(as at end-2002)

Categories	Number of Institutions	Number of Branches	Number of accounts	Total assets (\$ millions)
Central bank	1	1	12	12,710
Registered banks	17	1098	n.a.	204,520
Finance companies	50	n.a.	n.a.	9,200
Building societies	10	n.a.	n.a.	2,280
Credit unions ¹	60	n.a.	n.a.	410
Other	20 ²	n.a.	n.a.	<500
Total	158	n.a.	n.a.	229,620
of which:				
<i>Virtual institutions</i>	0			
Branches of foreign banks	10			

¹ figures for credit unions are estimates

² minimum number

Source: RBNZ, NZBA, Statistics New Zealand

Table 6
Payment instructions handled by selected interbank settlement systems:
Volume of transactions
(thousands)

	1998	1999	2000	2001	2002
Large value systems:					
<i>AustraclearNZ</i>	215 ¹	246	221	225	220
<i>SCP</i> ²	450 ¹	525	493	478	523
<i>ESAS-initiated</i> ³	102 ¹	75	66	71	61
Total ESAS	767 ¹	847	780	774	804
Retail:					
<i>ISL</i>	599,700	606,200	629,000	598,000	591,000
<i>Card systems</i> ⁴	681,700	772,200	857,700	999,425	1,064,000

¹ April-December

² KITS prior to July 2000

³ Predominantly liquidity repurchase transactions

⁴ Credit card, ATM & EFTPOS

Source: RBNZ, NZBA

Table 7
**Payment instructions handled by selected interbank settlement systems:
value of transactions**
(\$ billions)

	1998 ¹	1999	2000	2001	2002
Large value systems:					
<i>AustraclearNZ</i>	1,875	2,039	1,857	2,101	1,995
<i>SCP</i> ²	5,263	5,800	5,138	5,117	5,771
<i>ESAS-initiated</i> ³	1,229	1,619	1,802	1,944	2,023
Total ESAS	8,367	9,458	8,797	9,162	9,790
Retail:					
<i>ISL</i>	n.a.	n.a.	n.a.	n.a.	n.a.
<i>Card systems</i>	n.a.	n.a.	n.a.	n.a.	n.a.

¹ April-December

² KITS prior to July 2000

³ Predominantly liquidity repurchase transactions

Source: RBNZ

Table 8
Indicators of use of various cashless payment instruments: volume of transactions
(millions)

Instruments	1998	1999	2000	2001	2002
Cheques and other MICR	292	277	250	228	222
Payments by EFTPOS debit card	401	450	484	542	583
Payments by credit card	103	145	194	259	285
Electronic credits	259	271	305	298	290
Direct debits	49	58	73	72	80
Total	1,104	1,201	1,307	1,399	1,459

Source: NZBA

Table 9
Transfer instructions handled by securities settlement systems:
Volume of transactions
(thousands)

	1998	1999	2000	2001	2002
AustraclearNZ ¹ :					
<i>Fixed interest securities</i>	129	132	100	90	91
<i>Discount securities</i>	5	1	0.5	-	-
<i>Equities</i>	98	111	103	103	100
<i>Cash transfers</i>	120	121	109	105	105
FASTER ² :					
<i>Fixed interest securities</i>	0.7	0.8	1.5	2.0	5.6
<i>Equities</i>	547	546	603	563	414

¹Year ended June

²Year ended December

Source: RBNZ, NZX

Table 10
Transfer instructions handled by securities settlement systems:
Value of transactions
(\$ billions)

	1998	1999	2000	2001	2002
AustraclearNZ ¹ :					
<i>Fixed interest securities</i>	1,275	1,568	1,180	1,187	1,247
<i>Discount securities</i>	34	10	4	-	-
<i>Equities</i>	23	27	26	23	19
<i>Cash transfers</i>	1,262	1,302	1,303	1,268	1,137
FASTER ² :					
<i>Fixed interest securities</i>	0.04	0.02	0.02	0.04	0.16
<i>Equities</i>	8.88	8.87	9.20	7.89	5.35

¹Year ended June

²Year ended December

Source: RBNZ, NZX

Table 11
Number of participants in securities settlement systems
(at end December)

	1998	1999	2000	2001	2002
AustraclearNZ:					
<i>Full members</i>	76	78	75	72	72
<i>Associate members</i>	61	77	63	60	50
<i>Nominated trusts</i>	132	145	118	97	94
<i>Other</i>	16	15	14	10	10
Total	285	315	270	239	226
of which:					
<i>Banks</i>	26	28	30	30	28
<i>Other financial</i>	87	104	95	87	88
<i>Other</i>	172	183	145	122	110
FASTER:					
<i>Participant broking firms</i>	24	22	23	27	26

Source: RBNZ, NZX