



**PAYMENT AND
SETTLEMENT SYSTEMS
IN NEW ZEALAND**

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PAYMENT AND SETTLEMENT SYSTEMS IN NEW ZEALAND

OVERVIEW

New Zealand has a well-established legal and financial infrastructure serving a population of 4.2 million people and annual gross domestic product of around \$130 billion (US\$100 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. The Act provides for 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. This 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 Act’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 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 UNCITRAL 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 and Consumer Finance Act, which came into effect in April 2005, replaced the Credit Contracts Act 1981 and the Hire Purchase Act 1971. The Act governs disclosure requirements for credit contracts, consumer leases and buy-back transactions of land and deregulates credit contracts between businesses. The Act imposes strict disclosure requirements on lenders for consumer credit contracts, which include credit contracts between a bank credit card issuer and the card holder. In addition to disclosure requirements lenders have obligations relating to the charging of interest, fees, variations and cancellations. It also provides for oppressive credit contracts to be reopened. The new standards in the Act are enforced by the Commerce Commission which has been given a range of powers in order to do so. These include powers to prosecute creditors, lessors and buy-back operators for non-compliance and powers to bring civil proceedings on behalf of consumers.

The Reserve Bank of New Zealand Act 1989 (the Act) 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 Part 5C of the RBNZ 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. The Exchange Settlement Account System (ESAS) and the Continuous Linked Settlement System (CLS) have been designated under Part 5C.

The Government has recently announced that the designation powers in the RBNZ Act will be expanded to include settlement systems. The scope of Part 5C of the Act will be broadened to provide for the designation of settlement systems. This will allow for designation of payment systems as well as systems that settle products, including securities, derivatives and carbon emission units. The Reserve Bank and the Securities Commission will be joint regulators under this new regime. The proposed changes are contained in a draft bill, the Emissions Unit Settlement Systems and Futures Bill, which is discussed further below.

In addition to the designation provisions, which currently 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. Currently there are no recognised clearing houses under this legislation.

1.1.2 Securities market

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 that is an investment statement or in an authorised advertisement that is not an investment statement. 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

² The legislation is contained in the Companies Act 1993, the Corporations (Investigation and Management) Amendment Act 1989, the Insolvency Act 2006 and the Reserve Bank of New Zealand Act 1989.

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, 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 recommendations concerning approvals to the Minister. Two systems, FASTER and CHESS, have been approved to date.

Depositories acting as custodian trustees must 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, share brokers, and futures dealers.

There are comprehensive disclosure obligations on investment advisers. Any person or organisation offering investment advice must comply with the Securities Markets Act 1998 as amended in 2006 and the Securities Markets (Investment Advisers and Brokers) Regulations 2007. The new provisions came into force on 29 February 2008. Investment advisers are required to disclose (in a disclosure statement) before providing advice and before receiving investment money or investment property from a member of the public. The disclosure statement must contain information about: experience and qualifications; criminal convictions; fees; other relevant interest and relationships; and types of investment for which advice is provided. It must also include information about criminal convictions, insolvency and disciplinary proceeding as well as information pertaining to the procedure for dealing with investment money and investment property. The Securities Commission has powers under the Act to enforce the obligations of investment advisers and brokers.

The Financial Advisers Bill, which was introduced in December 2007 as part of the first phase of the financial reforms referred to in the Reform of the Financial Sector section below, will, when passed, repeal the disclosure provisions referred to above. This new legislation will hold financial advisers to higher standards of competency, accountability and disclosure. It aims to give consumers confidence that their financial adviser meets acceptable standards of competency and accountability and that they have been advised of any potential conflicts of interest their adviser may have. Financial advisers will operate under a co-regulatory arrangement involving Approved Professional Bodies and the Securities Commission. The Bill will require disclosure of financial advisers' conflicts of interests, fees, and competency to ensure that members of the public can make informed decisions about whether to use a financial adviser and whether to follow a financial adviser's advice. It will provide that financial advisers have the experience, expertise, and integrity to match effectively a member of the public to a financial product that best meets that person's need and risk preference. Finally, it will ensure that financial advisers are held accountable for their actions. The Bill proposes that financial advisers belong to an Approved Professional Body (APB) which will act as frontline supervisor of their activities, with oversight by the Securities Commission. The Bill establishes a regime for the approval of APBs by the

Commerce Minister and provides enforcement powers for the Securities Commission and the Courts, based on the existing provisions of the Securities Markets Act.

A draft Emissions Unit Settlement Systems and Futures Bill was put out for consultation in February 2008. The draft bill is intended to reflect policy decisions made by Cabinet late in 2007 to create a statutory framework for designated settlement systems and to clarify the legal status of emissions units and the trading thereof. The Bill itself is expected to be introduced into Parliament in the first half of 2008.

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. The 2006 amendments to the Securities Markets Act also provide for prohibitions on market manipulation. The new laws prohibit persons from making false or misleading statements or spreading false or misleading information that affects securities listed on a registered exchange or traded on an authorised futures market. There is also a ban on false or misleading statements or the spreading of such information that is likely to affect the way a person votes on a transaction involving securities.

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 Office or Commerce Commission consent is required. The consent of the Overseas Investment Office 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 \$100 million. The Overseas Investment Office's approval is also required for non-resident investment in commercial fishing and, in specified circumstances, investments in land.

1.1.3 Reform of the Financial Sector

In July 2007, the Government announced a package of reforms to the non-bank financial sector as a result of the Review of Financial Products and Providers and the Review of Financial Intermediaries. These reviews were wide ranging and included insurance, superannuation, collective investment schemes, platforms and portfolio management services, non-bank deposit takers, securities offering and issuers of equity and debt securities.

A two-phased approach is being taken. The first phase of the reforms includes: registration of all financial institutions, improved supervision of corporate trustees; improved prudential supervision of non-bank deposit takers; and provision for a comprehensive approach to consumer dispute resolution and redress. Legislation to implement these decisions was subsequently drafted and a number of bills were introduced in late 2007 as a result.

Also as part of the first phase, the Financial Service Providers (Registration and Dispute Resolution) Bill, which was introduced in December 2007, sets up a registration system that will identify financial service providers and allow more effective monitoring and evaluation of them. This will, inter alia, assist in meeting New Zealand's anti-money laundering obligations under the Financial Action Task Force (FATF) recommendations. This bill also

established an industry-based dispute resolution system to improve consumer access to redress in the financial sector.

Finally, the first phase also includes the Reserve Bank becoming the single prudential regulator of the financial sector. In addition to supervising the registered banks, the Reserve Bank will become the regulator of non-bank financial institutions and the prudential supervisor of insurers. The Reserve Bank of New Zealand Amendment Act (No 3), which was introduced in November 2007, provides for the regulation of non-bank deposit takers as well new provisions. Under these proposals, non-bank deposit-takers will have to comply with minimum prudential requirements under a new regulatory framework. Non-bank deposit-takers will include finance companies, building societies and credit unions. The requirements to be imposed on non-bank deposit takers will include obtaining a credit rating from a rating agency approved by the Reserve Bank and having a minimum capital ratio “Small deposit-takers” – those with total assets of under \$10 million – will be exempted from the need for a credit rating, but will have to disclose prominently that they are unrated. Deposit-takers will continue to be subject to trust deeds and be supervised by trustee corporations under the Securities Act, but trust deeds will have to comply with the new prudential requirements. Deposit-takers will also continue to be subject to public disclosure under the Securities Act, but this will be strengthened.

Legislation to strengthen the current model of trustee supervision that applies to debt issuers, non-bank deposit takers, and collective investment scheme is expected to be introduced in the first half of 2008. That legislation will provide for the licensing of trustees and their supervision by the Securities Commission. The aim is to promote consistency, provide assurance that trustees are competent and to achieve compliance with international obligations.

The second phase of the reforms involves the supervision by corporate trustees of collective investment schemes and debt issuers; security offerings disclosure; insurer prudential and market conduct regulation; regulation of mutuals’ governance and platforms and portfolio management services. These proposals are at various stages of development at this time with some areas still requiring further decisions by Cabinet.

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 (Austraclear).

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 17 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 relatively low formal entry 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).

There are two main securities settlement systems in New Zealand. These are: Austraclear, 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.

NZX securities services are currently in the process of being changed. More detail can be found on this in section 4.5 below.

1.2.3 Role of other private and public sector bodies

The *Reserve Bank of New Zealand* is New Zealand's central bank. It has 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. As part of those objectives, it has a policy oversight 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 Crown entity in terms of the Crown Entities Act 2004. It aims to strengthen investor confidence and foster 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 accordance with 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 (see Section 1.1)

The *Overseas Investment Office* administers the government's foreign investment policies in terms of the framework established by the Overseas Investment Act 2005, the Overseas Investment Regulations 2005, 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 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 contracts are listed and traded on the Sydney Futures Exchange (SFE). These products are based on New Zealand equity securities listed on NZX's markets and marketed in New Zealand by NZX.

The *New Zealand Bankers' Association* (NZBA), established in 1891, is a professional industry organisation, representing banking industry interests in the public arena. Membership is voluntary and open to any registered bank. Currently eight 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 be an independent and impartial arbitrator of unresolved disputes about the provision of banking services by participating banks. 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 \$200,000. It does not cover complaints about bank policies on interest rates or fees and charges, or about commercial judgement on lending decisions.

2. PAYMENT METHODS

While cash remains significant for low value transactions, the last decade or so has seen a marked increase in the range of available 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, and some banks have recently started to offer mobile phone banking.

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.

The Reserve Bank has the sole right to issue banknotes and coins in New Zealand. Coins are issued in 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 GDP but by international standards, remains low relative to GDP. The total value of notes and coins in circulation as at September 2007 was \$3.41 billion, approximately 2% of nominal GDP. As a percentage of the public's total money balances, notes and coins comprise about 15.2% of the narrowly defined money supply (M1) and 1.8% 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. In the past, the physical paper was exchanged and it could take up to five business days for a cheque to be cleared. The introduction of cheque truncation and imaging in 1995 has removed the need for the physical movement of cheques and reduced the total cheque clearance time, as well as eliminating the costs of physically moving the cheque. Truncation allows for the transmission of an electronic image of all or part of the cheque to the paying bank's branch, instead of the cumbersome physical presentment.

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 and their usage is declining at about 6% per year. Payments by cheque accounted for over 50% of transactions through the banking system in 1993 and averaged 130 cheques per capita. By the end of 2006, the per capita annual figure had reduced significantly to 41 cheques, and accounted for 9% 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 a 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 nearly doubled 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 as instructions to their bank to make payments directly to the account of named payees. Electronic credits may be in the form of a schedule of payment instructions 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.

Electronic credits accounted for over 23% of non-cash transaction volume in 2000, but have since gradually trended down to around 17% by the end of 2006.

Direct debits and electronic credit transactions are generally processed as part of the overnight settlement arrangements.

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 programmes and the ability to use them for on-line shopping. Growth in debit card usage reflects 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 no more than \$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 benefits of loyalty programmes, they are used increasingly for payments previously settled by other payment methods (e.g. for supermarket purchases previously paid by cash or cheque). The increasing popularity of online shopping sites has also contributed to the growing use of credit cards, as credit cards are usually the most widely acceptable payment method for online merchants.

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. Some banks have recently introduced currency-converted capability so that overseas customers are given the choice at the point of sale to pay in their preferred home currency.

Credit card transactions have trebled in number over the last ten years and now account for around 23% of non-cash payments. At the end of 2007, credit card advances outstanding totalled \$5.2 billion, while credit card billings for the year on New Zealand cards were \$28.2 billion. A total of 2.5 million bank credit cards were on issue.

Debit 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 over 70% of retail sales. To reduce cash handling costs, some retailers, particularly supermarkets, also provide cash withdrawal services to EFTPOS customers.

In the past, ATM cards were separate from EFTPOS debit card. Nowadays, the original ATM cash cards have largely been superseded by EFTPOS debit cards, which provide both ATM and EFTPOS facilities.

Debit cards are used for face-to-face point of sale transactions and are not suited for remote transactions (such as online shopping), which require the card and a PIN to be entered for the transaction to be authorised by the cardholder's bank. To overcome this problem for debit card holders, a scheme debit card has been introduced recently, which gives the flexibility of a credit card, but cardholders can only use the money in their transaction accounts.

EFTPOS transaction numbers (both debit and credit cards) have more than doubled since 1998 and have become the most popular non-cash payment method. EFTPOS transactions now account for around 46% 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 125,000 terminals in 2006 or 1 for every 30 inhabitants.

Debit and credit transactions in 2006 averaged 306 per capita in number and \$56 in value while the number of ATM transactions has levelled at around 50 per capita per annum. A total of 5.1 million debit cards and 2.7 million credit cards were on issue at the end of 2006.

2.2.4 Stored value cards

There is some, but a rather limited supply of stored value cards in New Zealand. This is largely attributable to the widespread acceptance and use of debit and credit cards for transactions of any 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. Recently a new type of stored value card has emerged, which has a pre-paid balance and can be used online as well as at points of sale wherever one of the major credit cards is accepted. A similar product has also been introduced lately, with the additional benefit of being able to be recharged and therefore reused. There is also a growing popularity with gift cards – where a certain amount is stored on a card, and the card holder can only use that card with certain retailers.

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, payments to third parties and foreign exchange transactions are widely available via the internet. Customer penetration has grown rapidly in recent years, with surveys suggesting two out of three Internet users (68%) access online banking³. In New Zealand, 84% of people over 15 have access to the Internet and 71 percent use the Internet at least once a month. On their last visit to an online banking site, 90% of customers checked their account balances and about half transferred money or made payments online.

Telephone banking has been offered by banks for some years. Some banks have started to offer mobile phone banking in the last couple of years. Customers with registered mobile phones that have the required functionality can get bank statements, transfer funds between personal accounts and in some cases, transfer funds to third parties' bank accounts.

2.2.6 Third party bill payments

Third party bill payment services, in addition to those provided by the banks, have been available mainly from one major non-bank provider, New Zealand Post, a national postal services company. New Zealand Post offers an over-the-counter bill payment service for a range of businesses including utility companies and local body organisations. This service is now managed by New Zealand Post's wholly owned bank subsidiary.

A few companies (notably telecommunication and utilities companies) have also been offering online bill presentation service, and in some cases, payment system. Such 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 the Reserve Bank's Exchange Settlement Account System (ESAS), Austraclear and the ESAS SWIFT Interface (ESI). ESAS provides real-time irrevocable settlement of inter-bank transactions across Exchange Settlement Accounts held with the Reserve Bank. Austraclear is a securities settlement system that allows members to submit payment requests for fixed interest and equity settlements as well as cash transfers directly into ESAS. The ESI is a direct interface from SWIFT into ESAS, the users of which include participants in the Same Day Cleared Payment facility (SCP). SCP is an electronic payment service used for high value inter-bank transactions and for customer transactions where timeliness is important. Settlement is on a real-time, transaction by transaction basis through ESAS.

New Zealand financial institutions use the CLS Bank to settle foreign exchange transactions. The large banks use CLS to settle the majority of their foreign exchange trades. Settlement occurs on a payment versus payment basis.

A non real-time switch, Interchange and Settlement Limited (ISL) processes cheques, direct debit, direct credits, automatic payments and EFTPOS transactions. These payments are

³ The figures are sourced from the Nielson Online Consumer Finance Monitor which was based on interviews of more than 15,000 people during 2007.

settled via Austraclear during the morning settlement session for value from the previous day. Two EFTPOS switches process debit card and domestic credit card transactions.

The central bank provides the ESAS, Austraclear and the ESAS-SWIFT interface, but is not directly involved in the management of the bank-owned payment systems in New Zealand. Each switch sets its own rules. However, as part of its payment system oversight activities, the central bank does take an interest in aspects of each system's rules and operations that may affect the stability of the financial system.

Co-ordination of industry and technical standards is undertaken through a payments system committee of the New Zealand Bankers' Association (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.

RTGS makes the financial system as a whole more robust. Previously, if a bank collapsed during the working day, other banks could have been owed very large sums of money from incomplete settlement requests with the failed bank. This could potentially put these other banks at risk, or have seen them attempt to reverse payments, creating financial chaos.

With RTGS, finality and irrevocability are achieved through a mutual contract binding on all account holders and on the central bank. Finality is further enhanced by the status of ESAS as a designated payment system. The terms and condition governing the system are set by the Reserve Bank in consultation with account holders.

Exchange Settlement Account holders are currently mainly 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 14 ESAS settlement account holders.

Pricing is set by the Reserve Bank based on the 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.

The ESAS banking day runs from 9:00am each business day until 8:30am the next business day and the ESAS system is available to account holders to process settlement requests for 23 hours and 30 minutes each business day. The system closes for 30 minutes from 8:30am each day for end of day processing. The one exception to this is over a weekend when the system closes at 4am Saturday morning and re-opens at 4am Monday morning. The following is an illustration of the operation times of an ESAS day.

9.00am	<ul style="list-style-type: none">• Start of day – ESAS open to accept settlement requests
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	<ul style="list-style-type: none"> • Austraclear and ESI open to send and receive settlement requests
4.45pm	<ul style="list-style-type: none"> • Last time that ESAS will accept cash transactions submitted from Austraclear • ESI continues to operate until End of Day
5.00pm	<ul style="list-style-type: none"> • ESAS will again start accepting transactions submitted from Austraclear (but only for certain Austraclear members – presently only ESAS account holders) • ESAS continues to be available for transactions submitted via ESI, submitted by Austraclear (ESAS account holders only) or submitted manually • Note: while ESAS continues to operate continuously, RTGS Helpdesk support ceases from the end of processing for CLS transactions (approx 10.30pm NZ summertime, 8.30pm NZ wintertime)
7.30am	<ul style="list-style-type: none"> • Systems are once again fully supported but only available for ESAS account holders' settlement • Morning settlement session begins – ESAS/Austraclear systems are still on previous value date
8.30am	<ul style="list-style-type: none"> • End of day processing for ESAS and Austraclear. Systems close for 30 minutes. • The ESI stops receiving settlement requests.

The settlement request queuing algorithm used within the ESAS system is Next Down Looping, where the settlement process starts at the top of the queue and continues down the queue settling any settlement requests where an account holder has sufficient funds. Account holders also have access to auto-offset functionality, which is the process of searching the payment queue for eligible settlement requests that, if settled simultaneously, would allow an initiating settlement request to settle. This test is applied if an account holder has insufficient funds to settle an authorised payment instruction. Auto-offset is bilateral – the system will only consider simultaneous settlement of a transaction (the initiating transaction) between two parties, and one or more transactions (the offsetting transaction(s)) between the same two parties. This means that settlement requests may not necessarily settle in the order that they are received by the ESAS system. Exchange settlement accounts must be in credit at all times. No overdrafts are permitted.

The ESAS system also has an operation called Freeze Frame which is run every hour and will settle all settlement requests within the ESAS system if it means that no accounts will go below its minimum allowed balance. If one account goes below its minimum allowed balance then no settlement requests will be settled. Account holders also have access to authorisation functionality where they can have all settlement requests either authorised or not authorised or they can set limits for settlement requests that can be settled and settlement requests that require authorisation. In addition, account holders have the ability to de-authorise any authorised settlement requests.

New Zealand dollar liquidity is provided to the system by the Reserve Bank undertaking Foreign Exchange Swap transactions and Open Market Operations. For inter-day liquidity, the Reserve Bank offers to approved account holders a secured cash raising facility (the

Overnight Reserve Repo Facility (ORRF)). The cash raised is secured at a margin. ESAS accountholders must sign an Inter-Day Master Repurchase Agreement with the Reserve Bank to participate in the ORRF. Securities acceptable to the central bank are determined primarily on issuer credit rating.

In 2007, the system settled an average of 7,000 transactions a day, with a daily average total turnover value of \$40 billion.

3.2 SCP (Same Day Cleared Payment)

SCP is an electronic payment service used for high value inter-bank 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 10 members, all registered banks. In 2007, SCP processed an average of 5,500 transactions per day with an average daily turnover value of \$30 billion.

3.3 Austraclear (Austraclear New Zealand System)

Austraclear 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.

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 Reserve Bank.

The system currently has 224 members in New Zealand and Australia, and settles around 1,500 transactions per day with a daily average turnover value of \$10 billion.

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

3.4 CLS (Continuous Linked Settlement)

The New Zealand dollar became eligible for settlement within the Continuous Linked Settlement (CLS) system in December 2004. CLS is an international initiative aimed at reducing foreign exchange settlement risk (Herstatt risk). It primarily provides a payment versus payment system for settling foreign exchange transactions. It substantially reduces

settlement risk and economises on the liquidity required to make foreign exchange settlements. It works by collecting payment instructions from member banks, and matching and combining these into net pay-in requirements which each member is then required to provide. Payouts to members are only made when the funds have been received, so the credit risk is eliminated.

Each New Zealand dollar Nostro Agent who provides settlement services to settlement members of CLS must be an ESAS account holder. Funding payments to and from CLS are exchanged over the ESAS-SWIFT Interface.

The average daily value of NZ dollar transactions settled through CLS is \$2 billion. This represents approximately 60% of total NZ dollar settlement obligations arising from foreign exchange transactions.

3.5 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 settlement transactions⁴, telephone banking, and Internet banking. It has been in operation since the mid 1960's and is collectively owned by eight registered 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 Austraclear 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. The industry has reviewed its failure to settlement arrangements with a view to adopting more robust legal and operational arrangements. Recently, ISL has developed new operational capabilities to manage transactions in a failure to settle or bank insolvency event. ISL has the technical ability to freeze processing, and if required, to return and reverse transactions to and from a failed bank if those transactions have not gone past the point where an inter-bank debt has been created.

ISL owners set the rules governing the operation of the system, including transaction pricing, and the contractual arrangements. ISL's rules comply with applicable NZBA rules and standards.

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 enter commercial representative agreements with NZBA members, who will interchange and settle transactions on their behalf.

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

⁴ 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.

3.6 EFTPOS systems

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

Electronic Transaction Services 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 and it processes around 70% of all New Zealand's retail electronic payment transactions (both debit and credit). About 65,000 retailers are connected to ETSL. Each day it processes about 1.5 million payment instructions.

ETSL's board governs business strategy. Participation is open to financial institutions, bank and non-bank, that are bona fide card issuers or merchant acquirers.

The second system, Eftpos NZ Ltd, is owned and operated by one of the four major banks, 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 EFTPOS settlement obligations are included within the ISL's bilateral net settlement balances which are settled at the end of the banking day through Austraclear.

Transactions passing through these systems are estimated to account for around 70% of retail turnover, or around \$56 billion dollars annually.

3.7 Major projects and policies being implemented

The following payment system projects are currently underway or have been completed recently:

- (i) The industry has been reviewing the failure to settle arrangements in the net deferred payment switches through its Failure to Settle project. The review aims to strengthen the operational, financial, and legal arrangements in place, to minimise the risks and impact on the system and other participants of a participant failing, and to provide the central bank with more options during a failure to settle event.
- (ii) The Access and Governance project proposes to establish a new payment standards company to take over the NZBA's responsibility for governing the retail payment system and the rules for access to the individual clearing streams. Each individual clearing stream would have a management committee responsible for the stream's specific operational requirements.

The primary objectives of the project are to allow more open access to participate in the retail payment system for entities outside the membership of NZBA, and to promote transparent governance of the system.

- (iii) In July 2006, the Reserve Bank commenced implementation of changes to its liquidity management regime. Under the existing regime, there had been increasing

evidence of insufficient liquidity in the banking system at various times and some inefficiencies in the way it was provided. The new regime involves moving to a fully cashed-up payment system (currently around \$7 billion versus \$20 million previously). Since the Reserve Bank liquefied the payment system, there have been few signs of stress. The Bank will continue to monitor the new regime closely and, as necessary, make adjustments.

- (iv) In September 2007 the Reserve Bank upgraded the ESAS/Austraclear application. The upgrade has been made as part of a technology refresh project for the ESAS and Austraclear NZ Systems to update the application technology and platform in line with current standards and best practices and to improve the supportability and longevity of the application. As part of the development a secure Internet based platform was introduced, which allows the mobility and convenience for a wider audience. The Reserve Bank is now utilising this infrastructure and technology by redeveloping the 'front-end' of the system to be a more efficient and user friendly application.

4. SECURITIES SETTLEMENT SYSTEMS

There are two major securities settlement systems in New Zealand: Austraclear, 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, Sydney Futures Exchange Clearing(SFE Clearing) based in Australia, settles the New Zealand futures and options products. All three systems are electronic and operate in real-time.

NZX is currently developing a new clearing and settlement system to replace FASTER, which will be implemented towards the end of 2008. More details of the system can be found in section 4.5.

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 Finance 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.

Treasury bills are issued by the NZDMO on behalf of the Crown through regular weekly tenders and as required for liquidity management through open market operations. Maturity tranches are created of a size (typically around \$300 to \$600 million) that facilitates the liquidity of the instruments.

Participants in the primary market for Treasury bills consist of institutions registered as bidders. Only bids from registered bidders are accepted. 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 January 2008, there was \$2.35 billion of Treasury bills held by the market, of which non-residents held around 6%.

4.1.1.2 Government bonds

Government bonds are issued by the NZDMO on behalf of the Crown through tenders. The bonds are denominated in New Zealand dollars with a fixed coupon paid semi-annually in arrears.

Current maturities of conventional government bonds on issue range through to 2017. (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.

Government bonds are quoted and priced in the secondary market on a yield to maturity basis, and traded in the over-the-counter market. However, the secondary market has become increasingly illiquid in recent years.

The total amount of government bonds held by the market at the end of December 2007 was \$18.5 billion, of which around 76% was held by non-residents. Average monthly turnover in the government bond market over 2007 was around \$23 billion.

4.1.1.3 Kiwi bonds

Kiwi bonds are issued to provide a default-free investment for small investors. Kiwi bonds are issued on a tap basis with maturities of six months, one and two 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 \$370 million of Kiwi bonds on issue in January 2008. 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, the principal can be returned on demand, subject to a penalty.

4.1.2 Pre-settlement

Pre-settlement and settlement activities for cash and securities take place in New Zealand primarily through Austraclear.

Austraclear 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.

Two options currently exist within Austraclear that provide members with the ability to achieve an element of Straight Through Processing (STP) for fixed interest and equity trades and cash transactions. These are: Austraclear SWIFT Interface (ASI) and Host to Host Lite (HTH*Lite).

The ASI is a full application to application interface, allowing members to adopt an exception based processing approach. The ASI allows members to enter cash transactions, fixed interest and equity trades automatically into Austraclear via SWIFT messages sent over the SWIFT network, without a user connection to an Austraclear terminal.

HTH*Lite allows members to semi-automate the uploading of fixed interest, equity and cash trades (either individually or in batches) into Austraclear via a file transfer mechanism. The member's back office system is responsible for preparing the trades in the correct format for the transfer file to take place.

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 Austraclear 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 are 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

Austraclear 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 real-time gross basis through ESAS.

All payments 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.

For settlement to take place via Austraclear, securities must be held by New Zealand Central Securities Depository Limited (NZCSD), the custodian trustee, owned by the Reserve Bank. Each member has at least one security account 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 purchaser 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, Austraclear moves on to settlement. Where A is selling a security to B, this involves the following:

1. Austraclear 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 Austraclear to effect payment.
4. Austraclear 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.

Austraclear currently settles over 98% of all wholesale fixed interest and money market security transactions and an estimated 95% by value, 40% by volume of equity securities transactions. The inventory of securities held in the depository stands at around \$99 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

Broadly speaking, there are two similar money market registered certificates of deposit (RCD): registered commercial paper and bank bills. They are both types of promissory notes.

Primary issuance of bank RCDs is by private placement. The secondary market for bank RCDs is among the most liquid of the securities markets in New Zealand.

Corporates obtain short-term funds through the issue of commercial paper. Other names for commercial paper include promissory notes, bearer notes, and one-name paper. The last term is derived from the fact that promissory notes carry only the name of the issuer. A "bill of exchange" is a promissory note that has been issued by an entity and accepted or endorsed by a bank, such instruments are often called 'two-name paper'.

The commercial paper RCD market is relatively small. Three common methods exist for issuing commercial paper 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 panel 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 is private placement, where notes are sold on a tap basis in response to demand from participants and known investors. The secondary market in commercial paper is considerably less liquid than that in bank bill RCDs, particularly for notes issued by organisations with low credit ratings.

Commercial paper and bank bills are primarily issued as RCDs within the New Zealand Central Securities Depository (NZCSD). The transfer of ownership of RCDs is principally effected through NZCSD with electronic transfer through Austraclear (see 4.1.2 and 4.1.3).

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 Austraclear, as described in sections 4.1.2 and 4.1.3.

Low volumes of short-term corporate paper and bonds are also traded and 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 two boards: the Main Board, NZSX, where all the major companies’ shares are listed; and NZAX, which is designed for fast-growing, developing companies and companies with non-traditional structures (such as co-operatives).

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 Austraclear. 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 trading system, participants' back office accounting systems, public subscribers, share registries, and payments systems.

Typical pre-settlement steps for a trade made on the NZX involve buy and sell orders flowing electronically from clients through a trading participant and into the trading system. Where bid and offer prices overlap the trading system automatically matches orders and notifies participants' systems of the resulting trades. Buyers and sellers are sent contract notes to confirm trades and payment details. At this stage the selling trading participant 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 delivery and settlement participants (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 Austraclear 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 Austraclear clearing and settlement facilities.

4.3.3 Settlement

FASTER permits paperless settlement for NZX participants and buying clients.

The settlement rules of FASTER vary depending on the type of instrument, value and other conditions associated with the trade. The default settlement period is three days for equity trades.

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 Austraclear. 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 Austraclear (see section 3.3).

The NZX accepts no liability for counterparty risk.

As at December 2007, there were 237 NZX-listed companies, of which 194 were New Zealand listed and 64 were overseas listed. There were 247 equity securities and 100 debt securities. The volume of trades settled through FASTER averaged around 1,842 daily with an average daily turnover of \$30 million to \$35 million. Equity market capitalisation at the end of December 2007 was \$70.5 billion (including 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 SFE and over-the-counter.

4.4.1 Trading

The SFE 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 NZSE-15 Share Index (a share index containing the fifteen largest and most liquid New Zealand companies).

Interest rate products, particularly the 90-day bank bill futures contract, dominate trading. Daily Exchange turnover averaged around 5,000 contracts per day in 2007, 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 SFE 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 Austraclear.

4.5 Major project undertaken by NZX

NZX will launch, by the end of 2008, an IOSCO compliant Clearing House, that will offer Central Counterparty clearing and settlement services for all trading activities that take place on NZX, now and in the future – including: cash equities and debt, commodities and commodity futures, equity, debt and derivatives.

Standard risk management techniques will be undertaken on all Clearing House exposures. The Clearing House's obligations will be supported by a combination of capital from NZX and Synthetic capital. Clearing Participants will be required to post collateral to cover initial margins and any variation margins.

All settlement will be undertaken on a newly created NZX Central Securities Depository (CSD) using the BIS model 3 approach (i.e. one stock movement and one cash movement per day for each Clearing Participant). The NZX CSD will have enhanced functionality allowing it to offer additional services to participants, such as stock lending, direct delivery versus payment settlements and recording of securities interests.

On settlement, if Clearing Participants have a net delivery obligation they must fund their Settlement Account at the NZX CSD with the required stocks. Any stock shortfall that may exist can be met by stock lending or via a buy-in process. Settlement occurs when stocks are moved between NZX CSD Settlement Accounts and cash previously deposited in the Clearing House's ESAS account is dispersed to Clearing Participants ESAS accounts, thus all NZD settlement are completed in central bank funds.

After settlement, Clearing Members must clear their Settlement Accounts by moving stock to their other NZX CSD accounts, uplift to the registry or transfer it to Austraclear.

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 promote the maintenance of a sound and efficient financial system by, inter alia, registering and supervising banks;
- To issue currency.

Other important functions include:

- Providing exchange settlement accounts for settling transactions in central bank funds;
- Providing depository and settlement facilities for wholesale market securities;
- Overseeing the payment system;
- managing foreign reserves; and
- providing liquidity to the financial system.

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 14 account holders.

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). 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 Austraclear, a securities clearing and settlement system, as part of its role in promoting and maintaining a sound and efficient financial system.

Austraclear 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 Austraclear 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 RBNZ 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 maintenance of a sound and efficient financial system. The provisions essentially codify the previous informal arrangements and do not indicate any major change in the way the oversight has been 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.

As explained in the RBNZ's *Statement of Principles: Payment System Oversight*, the key central bank objectives for the payment system are:

- To ensure that payment systems do not generate high levels of risk to participants or to users of financial services, and any risks that are generated are managed appropriately by system participants;
- To ensure that payment systems can continue to operate without disruption in the event of the sudden financial or operational incapacity of a participant, or following other types of financial crisis, or natural disaster;

- To incorporate delivery-versus-payment arrangements where appropriate, especially with respect to high-value transactions;
- To help ensure that the status of payments is certain at all times, and, in particular, the attributes of ‘finality’ and ‘irrevocability’ are supported;
- To encourage banks and others to offer efficient, reliable and relevant payments services to their customers, and are responsive to their customers’ needs; and
- To maintain an open, flexible and competitive payment systems, and ensure that no unwarranted barriers to entry exist.

These six objectives, supplemented 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 Austraclear. In this manner, a working knowledge of the various payment systems is maintained, particularly as regards the failure to settle arrangements. The oversight legislation supplements 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. 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 Minister of Finance. 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 Reserve Bank remunerates overnight cash balances in the payment system at OCR; ORRF continues to be available and costs OCR plus 50 basis points. 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 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 a monetary policy lever. The Reserve Bank conducts daily open market operations to smooth the impact of the 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 September 30, 2007 the total value of currency in circulation was \$3.41 billion, approximately 2% of nominal GDP.

The Reserve Bank used to provide 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.

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LIST OF ABBREVIATIONS

ATM	Automatic Teller Machine
Austraclear	Austraclear New Zealand System
CD	Certificate of Deposit
CHESS	Clearing House Electronic Sub-register System
CLS	Continuous Linked Settlement
CPI	Consumers' Price Index
EDI	Electronic Data Interchange
EFTPOS	Electronic Funds Transfer at the Point Of Sale
FASTER	Fully Automated Screen Trading and Electronic Registration system
GDP	Gross Domestic Product
ISL	Interchange and Settlement Limited
NZBA	New Zealand Bankers' Association
NZCSD	New Zealand Central Securities Depository Limited
NZDMO	New Zealand Debt Management Office
NZX	New Zealand Exchange
OCR	Official Cash Rate
PIN	Personal Identification Number
RBNZ (Reserve Bank)	Reserve Bank of New Zealand
RTGS	Real-Time Gross Settlement
SCP	Same Day Cleared Payment
SFE	Sydney Futures Exchange
SOE	State Owned Enterprise
UNCITRAL	United Nations Commission on International Trade Law

Table 1
Basic statistical data

	2003	2004	2005	2006	2007
Population (millions):					
<i>Year-end</i>	4,027	4,088	4,136	4,186	4,231
<i>Average</i>	4,018	4,068	4,105	4,182	4,224
GDP (\$ millions)	118,867	124,226	127,684	129,679	129,277
GDP per capita (\$)	29,518	30,388	30,871	30,979	30,555
Exchange rate (domestic currency vis-à-vis US\$): ¹					
<i>Year-end</i>	0.6545	0.7184	0.6814	0.7059	0.7740
<i>Average</i>	0.6466	0.7142	0.6961	0.6918	0.7686

¹Quoted as US\$ value of one NZ\$.

Source: Statistics New Zealand, RBNZ

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

	2003	2004	2005	2006	2007
Banknotes and coins on issue ¹	2,597	2,737	2,946	3,061	3,190
Transferable deposits ²	19,729	20,183	19,549	20,308	20,459
Narrow money supply (M1)	21,573	22,337	21,979	22,824	23,107
<i>Memorandum items:</i>					
Broad money supply (M3)	139,575	148,395	159,281	185,715	199,481
Transferable deposits in foreign currencies	2761,69	3,698	4,252	5,314	5,146

¹Currency in active circulation

²Cheque accounts

Source: RBNZ

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

	2003	2004	2005	2006	2007
Transferable balances held at central bank	1	80	245	9,091	8,371
Transferable deposits held at other banks	1,366	1,248	544	1,013	104
<i>Memorandum item:</i>					
Institutions' borrowing from central bank	2,829	748	518	222	816

Source: RBNZ

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

	2003	2004	2005	2006	2007
Total banknotes and coin issued	2,700	2,788	3,069	3,123	3,310
Denomination of banknotes:					
<i>100 dollars</i>	954	984	1,046	1,124	1,205
<i>50 dollars</i>	412	473	519	533	611
<i>20 dollars</i>	1,069	1,059	1,212	1,171	1,188
<i>10 dollars</i>	162	166	183	183	191
<i>5 dollars</i>	84	87	91	92	95
<i>2 dollars</i>	10	10	10	10	10
<i>1 dollar</i>	9	9	9	9	9
Coin	954	984	1,046	1,124	1,205
Banknotes and coin held by banks	908	929	974	896	896
Total banknotes and coin outside banks	1,792	1,859	2,095	2,227	2,414

Source: RBNZ

Table 5
Institutional framework
(as at end-2007)

Categories	Number of Institutions	Number of Branches	Number of accounts	Total assets (\$ millions)
Central bank	1	1	14	22,242
Registered banks	17	1155 ²	n.a.	331,895
Deposit-taking finance companies	30	n.a.	n.a.	10,140
Non deposit-taking finance companies	20			9,437
Building societies	10	n.a.	n.a.	4,758
Credit unions ¹	50	n.a.	n.a.	800
 Total	 128	 n.a.	 n.a.	 379,272
of which:				
Branches of foreign banks	8			44,498

¹ figures for credit unions are estimates

² based on 2006 figure

Source: RBNZ, NZBA

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

	2003	2004	2005	2006	2007
Large value systems:					
<i>Austraclear</i>	222	211	221	199	223
<i>SWIFT</i>	669	819	1,009	1,255	1,442
Total ESAS	891	1030	1230	1455	1665
Retail:					
<i>ISL</i>	592,348	596,557	611,272	592,718	n.a.
<i>Card systems</i> ³	1,152,346	1,262,723	1,397,991	1,497,220	n.a.

³ Credit card, ATM & EFTPOS

Source: RBNZ, NZBA (note the retail payment data for 2007 were not yet available)

Table 7

**Payment instructions handled by selected interbank settlement systems:
value of transactions**

(\$ billions)

	2003	2004	2005	2006	2007
Large value systems:					
<i>Austraclear</i>	1,988	1,815	2,047	1,784	1,214
<i>SWIFT</i>	6,719	7,153	5,753	7,830	8,106
Total ESAS	8,708	8,968	7,800	9,614	9,320
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.

Source: RBNZ

Table 8

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

Instruments	2002	2003	2004	2005	2006
Cheques and other MICR	221	206	192	186	172
Payments by EFTPOS debit card	583	618	695	800	857
Payments by credit card	285	334	360	386	432
Electronic credits	290	299	310	330	326
Direct debits	80	88	95	96	95
Total	1,459	1,545	1,652	1,798	1,882

Source: NZBA

Table 9

Transfer instructions handled by securities settlement systems:

Volume of transactions

(thousands)

	2003	2004	2005	2006	2007
Austraclear ¹ :					
<i>Debt Securities</i>	94	80	84	76	59
<i>Equities</i>	111	116	131	120	162
<i>Cash transfers</i>	92	81	76	71	68
FASTER ² :					
<i>Fixed interest securities</i>	8.67	8.87	8.69	8.9	8.78
<i>Equities</i>	442	459	472	421	454

¹Year ended June

²Year ended December

Source: RBNZ, NZX

Table 10
**Transfer instructions handled by securities settlement systems:
Value of transactions**

(\$ billions)

	2003	2004	2005	2006	2007
Austraclear ¹ :					
<i>Debt Securities</i>	1,371	1,151	1,324	1,189	640
<i>Equities</i>	20	25	28	28	31
<i>Cash transfers</i>	1,114	1,031	1,045	927	787
FASTER ² :					
<i>Fixed interest securities</i>	0.23	0.24	0.24	0.24	0.20
<i>Equities</i>	6.15	7.34	8.34	7.95	7.76

¹Year ended June

²Year ended December

Source: RBNZ, NZX

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

	2003	2004	2005	2006	2007
Austraclear:					
<i>Full members</i>	53	57	55	56	64
<i>Associate members</i>	55	56	54	49	48
<i>Nominated trusts</i>	82	84	83	84	96
<i>Other</i>	12	12	11	11	16
<i>Total</i>	202	209	203	200	224
FASTER:					
<i>Delivery and Settlement Participants</i>	19	18	18	19	20

Source: RBNZ, NZX