



**RESERVE
BANK**

O F N E W Z E A L A N D

**PAYMENT, CLEARING AND
SETTLEMENT SYSTEMS
IN NEW ZEALAND**

Updated July 2012

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LIST OF ABBREVIATIONS

ATM	Automatic Teller Machine
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
FMA	Financial Markets Authority
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	NZX Limited
OCR	Official Cash Rate
ORRF	Overnight Reserve Repo Facility
PIN	Personal Identification Number
PNZ	Payments New Zealand Limited
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

OVERVIEW

New Zealand has a well-established legal and financial infrastructure serving a population of 4.4 million people and annual gross domestic product of around \$135 billion (US\$100 billion)¹. There are active primary and secondary money and securities markets, and a national exchange, NZX. The main payment instruments and services are provided by the registered banks. Banks and other financial institutions serve 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 financial institutions to identify and “know their customer”. The Anti-Money Laundering and Countering Financing of Terrorism Act 2009 provides for a more comprehensive regime for some financial institutions. It includes a set of reporting requirements and a regime for the supervision, monitoring and enforcement of anti-money laundering and countering financing of terrorism obligations. The Anti-Money Laundering and Countering Financing of Terrorism Act 2009 will come fully into effect on 30 June 2013.
- Commerce Act 1986. This Act is the New Zealand equivalent of the anti-trust law found in other countries. It specifies and prohibits (unless authorised by the Commerce Commission) a range of anti-competitive activities. The Act’s objective is to promote competition in markets for the long term benefit of consumers in New Zealand. One of

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

the ways it does this is 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.

- 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. Payments NZ Limited (PNZ) 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, 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 standards in the Act are enforced by the Commerce Commission which has 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 RBNZ Act) provides for the formal oversight of the payment system in New Zealand by the Reserve Bank (described in section 1.2.3.3), and

for the designation of settlement systems for payments finality and netting purposes (described in section 1.2.3.4).

In addition to the designation provisions, which apply specifically to settlement 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 regulates the offer of securities to the public in New Zealand. The Act sets out when and how an offer can be made to the public, and specifies who is responsible for the offer.

The Act gives the Financial Markets Authority (FMA) broad powers to review offer documents, and to suspend or prohibit public offers, where it considers this is in the public interest. This is most often where an offer document (e.g. a prospectus or an investment statement) contains a statement that is likely to deceive, mislead, or confuse the public, or where the offer document does not comply with the Securities Act or regulations. The regulations that supplement the Securities Act set out the information that must be contained in offer documents. The information required depends on the nature of the securities, and the circumstances in which they are being offered. The regulations also regulate the content and distribution of 'advertisements' (forms of communications that advertise public offers).

The Securities Markets Act 1988 and associated regulations regulate 'insider trading' and market manipulation involving securities listed on an exchange; prohibit misleading or deceptive conduct involving dealings in listed and unlisted securities; specify what information listed issuers must provide to allow investors to make informed decisions; require those with control over substantial holdings of voting securities of listed entities to disclose that control, or any change in that control; encourage good corporate governance of public issuers; regulate unsolicited offers to buy securities, and give FMA the power to restrict unsolicited offers to buy securities and provide for the authorisation of dealers in futures contracts.

The FMA has supervisory and enforcement powers under the Securities Markets Act, which allow it to ensure that those involved with the trading of securities comply with the Act's various disclosure and conduct requirements. The FMA also supervises registered securities exchanges and the market rules of those exchanges. It has the power to veto or request new markets rules, or give a registered exchange a binding enforcement order. Currently, the only registered exchange in New Zealand is NZX.

When this document was being finalised, the Financial Markets Conduct Bill was before the Commerce Select Committee with a report back date of 7 September 2012. This Bill represents the outcome of the securities law review. It brings together a number of Acts

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.

(including the Securities Act and the Securities Markets Act) and rewrites and modernises the law, especially concerning the primary market.

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, NZClear.

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 21 registered banks, of which all but four 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.

The recent establishment of Payments NZ Limited represents a new model for governance of the New Zealand payment system. An objective of the new model is to create the possibility for non-bank institutions to participate directly in the payment system rather than through agency relationships (see also section 1.2.3 below).

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 (NZX Limited) which also operates a derivatives market, and dominant registrar of listed securities (Computershare New Zealand Limited).

There are two main securities settlement systems in New Zealand. NZClear (formerly Austraclear) is operated by the Reserve Bank and allows members to settle fixed interest and equity transactions and make cash transfers. Inter-bank payments occur directly in ESAS. NZClear members' securities are lodged with New Zealand Central Securities Depository Limited. The NZCDC settlement system is operated by the New Zealand Clearing and Depository Corporation Limited, a wholly owned subsidiary of NZX Limited. This system is used to clear and settle trades on NZX markets. The system includes a central counterparty clearing house and a securities depository.

In addition, ASX Clear (Futures) provides central counterparty services for derivatives products including some New Zealand dollar denominated products traded on the ASX market.

More detail on NZClear is provided in section 3.3 below, and more detail on the NZCDC settlement system is provided in sections 4.2 and 4.3 below.

1.2.3 The role of the central bank

The *Reserve Bank of New Zealand* is New Zealand's central bank. It operates under the Reserve Bank of New Zealand Act 1989. Details on the Reserve Bank functions most closely related to payment, clearing and settlement systems are provided below.

1.2.3.1 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.

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). When deciding on an application for an ESAS account the Bank will consider whether: the applicant fits the definition of financial institution in the Reserve Bank Act 1989; provision of an account might detract from the soundness or efficiency of the financial system; there is a legitimate business interest that can be served by access to an account; and whether the provision of an account would adversely affect the reputation of the Reserve Bank. The Reserve Bank will also consider any other matters it considers relevant to the application.

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.

1.2.3.2 Operation of securities settlement systems

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

NZClear 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 NZClear by members.

1.2.3.3 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 NZClear. In this manner, a working knowledge of the various payment systems is maintained, particularly as regards to failure to settle arrangements. The oversight legislation supplements this by giving the Reserve Bank a formal mechanism to review and highlight areas of interest.

1.2.3.4 The Designation and Oversight of Designated Settlement Systems

Part 5C of the Reserve Bank of New Zealand Act 1989 makes the Reserve Bank and the FMA joint regulators of designated settlement systems. However, it also provides that the Reserve Bank is the sole regulator of designated settlement systems that are declared to be pure payment systems.

Designation under Part 5C is an opt-in regime, with settlement systems needing to apply for designation. Applications for designation are to be made to the joint regulators (the Reserve Bank and the FMA). The joint regulators make recommendations to the Minister of Finance and the Minister of Commerce. The legislation sets out the matters that the joint regulators may have regard to when assessing applications.

Designation gives legislative backing to the finality of settlements effected, netting done, and personal property transferred, in accordance with the rules of the designated settlement system. In other words, it provides certainty that trades settled will not ‘unravel’ despite any enactment or law to the contrary. This certainty is particularly important in the event of the insolvency of a settlement system participant.

The Reserve Bank and the FMA have an on-going role of overseeing designated settlement systems.

The Exchange Settlement Account System (ESAS), the Continuous Linked Settlement System (CLS) and the NZCDC settlement system have been designated under Part 5C.

The policy document “The Designation and Oversight of Designated Settlement Systems” (DSS1) provides further explanation of the roles and policies of the Reserve Bank and the FMA in relation to the designation and oversight of designated settlement systems. In addition, a Memorandum of Understanding between the two regulators provides a transparent and readily available record of how the joint regulator framework operates in practice.

1.2.3.5 International cooperation

The Reserve Bank is a member of the CLS Oversight Committee. Oversight of the CLS System is conducted co-operatively by the relevant central banks in accordance with the Protocol for the Co-operative Oversight Arrangement of CLS.³

As part of its involvement in EMEAP (the Executives' Meeting of East Asia-Pacific Central Banks), the Reserve Bank also participates in the EMEAP Working Group on Payment and Settlement Systems⁴.

1.2.3.6 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

³ The protocol is available on the internet here: www.federalreserve.gov/paymentsystems/cls_protocol.htm

⁴ The EMEAP website provides more information on EMEAP arrangements: www.emeap.org.

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 up to pre-determined levels known as tiers. Cash balances held above this tier are remunerated at the OCR less 100 basis points. The Overnight Reserve Repo Facility (ORRF) continues to be available and costs OCR plus 50 basis points. The result is a 150 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 transactions in the market which can consist of open market operations and FX swaps to smooth the impact of the forecast fluctuations in government spending and revenue on the level of settlement cash/banking system liquidity.

1.2.3.6 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.

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.

1.2.4 The role of other private and public sector bodies

The primary oversight agency for securities market activity in New Zealand is the *Financial Markets Authority* (FMA). The FMA is an independent Crown entity in terms of the Crown Entities Act 2004. It was established in 2011 under the Financial Markets Authority Act 2011. It replaced the Securities Commission and took over some roles of the Ministry of Economic Development, in particular the regulatory role of the Government Actuary and some of the roles of the Registrar of Companies.

The FMA's main objective is to promote and facilitate the development of fair, efficient and transparent financial markets. It enforces securities, financial reporting, and company law as they apply to financial services and securities markets. It also regulates securities exchanges, financial advisers and brokers, trustees and issuers - including issuers of KiwiSaver and

superannuation schemes. The FMA has primary responsibility for licensing and oversight of exchanges, approves market rules and undertakes an annual review of registered exchanges.

The Financial Markets Authority and the Reserve Bank are joint regulators of designated settlement systems (other than those declared to be pure payment systems). The Reserve Bank alone is the regulator of designated settlement systems that have been declared to be pure payment systems.

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 *NZX Limited* (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 markets for the raising of capital for listed companies, the trading of securities, including fixed interest securities and the trading of futures contracts. It is also responsible for maintaining professional standards among its members and listed companies. The *New Zealand Clearing and Depository Corporation Limited* is a wholly owned subsidiary of NZX. It operates the NZCDC settlement system that settles trades on NZX markets.

The *New Zealand Bankers' Association* (NZBA), established in 1891, is a forum for member banks to work together on a co-operative basis. Membership of the Association is open to any bank registered under the Reserve Bank of New Zealand Act 1989. Currently 13 registered banks are members of the Association. The Association carries out a number of coordination and advisory activities for and on behalf of its members, including 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. In October 2010 NZBA transferred responsibility for New Zealand's domestic payment standards and rules to the newly established Payments NZ Limited.

Payments NZ Limited (PNZ) was established in 2010 and assumed responsibility from NZBA for managing current payment system rules relating to the clearing and settlement of four types of payments: paper-based instruments (predominantly cheques), bulk direct entry electronic transactions (direct credits, direct debits and automatic payments), consumer electronics (including EFTPOS transactions) and high value transactions. PNZ was established to ensure that there are objective and publicly disclosed criteria for participation in the clearing and settlement of each of the four payment types with the criteria permitting fair and open access. All participants should also have a role in the ongoing administration and development of the rules relating to the types of payments that they can clear and settle.

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 and non-bank deposit takers (NBDT). Anyone dissatisfied with a banking service in New Zealand

from a participating bank or NBDT 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/NBDT 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 MEDIA

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 by an average of about 4% per annum from 2007 to 2011. Demand for cash by the community has tracked with that of the nominal GDP but by international standards, remains low relative to GDP. The total value of notes and coins in circulation as at March 2012 was about \$4.6 billion, approximately 2% of nominal GDP. As a percentage of the public's total money balances, notes and coins comprise about 16% of the narrowly defined money supply (M1) and 1.9% 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 and storage of an electronic image of all or part of the cheque to the paying bank's branch, instead of the cumbersome physical presentment. The electronic image of a cheque, rather than the physical item, is also returned with any cheque dishonour notice.

The payee is typically credited for the funds on the day of the deposit, and thus receives same day value, but usually has to wait up to 3 business days to 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 a rate about 6% per annum until 2003, accelerating to an average annual rate of 9% each year over the last 8 years. Payments by cheque accounted for over 50% of transactions through the banking system in 1993. Ten years later, cheques interchanged through the financial system have reduced to around 9% of total retail transactions across all payments methods, and the latest figure in 2010 shows that has been reduced further to two percent.

2.2.2 Direct debits and direct credit

Direct debits, or pre-authorized debits on the payer's bank account, account for around 6% 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 been increasing steadily 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. There are just over 1 million direct credits and automatic payments every day.

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. A new type of debit card, scheme debit cards, has quickly started to gain popularity due to its added ability to make purchases online, over the phone and overseas.

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 numbers 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 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 been increasing in number since 2000. In 2010, they accounted for around 15% of non-cash payments. However, there is a noticeable slow down in the increase, especially since 2009.

Debit cards are widely used for retail payments and automatic teller machine (ATM) cash withdrawals. They are used for retail transactions of all sizes. To reduce cash handling costs, some retailers, particularly supermarkets, also provide cash withdrawal services to EFTPOS customers. There are approximately 2 debit cards issued to every adult in New Zealand, and on average each card is used around 200 times each year.

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. The number of ATM machines has increased by 22% since 2004, although the value of transactions via ATMs has dropped 2% over 5 years, down to \$207.5 million.

Debit cards used to be restricted to face-to-face point of sale transactions only and were not suited for remote transactions (such as online shopping), which required 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 increased significantly over the years and have become the most popular non-cash payment method. The number of EFTPOS terminals is up by 50% over 5 years, and the volume of transactions has increased by 71%. EFTPOS transactions now account for around 55% 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 152,000 terminals in 2009 or 1 for every 29 inhabitants.

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. One type of stored value card 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 is also available, with the additional benefit of being able to be recharged and therefore reused. There is also one type of pre-paid and rechargeable card that is mainly for using public transport, although it is accepted at certain retailers as well. Gift cards have been quite popular – 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 banking.⁵ The number of individual transactions over the internet tripled over 5 years to 143 million in 2009.

Telephone banking has been offered by banks for some years. Some banks have started to offer mobile phone banking in the last few 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 from 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.

⁵ The figures are sourced from the Nielson Online Consumer Finance Monitor which was based on online interviews of more than 15,000 people during 2008.

Also remittance processing is widely undertaken. This is a facility whereby invoices are sent by companies to their customers (usually with a pre paid return envelope) are collated daily and processed through arrangements between banks and a third party service provider. The individual customer payments are aggregated by the bank and the funds are deposited into the companies' account. The companies' then receives an electronic file of the payments processed which they upload into their internal accounts receivable system.

A growing number of companies (such as telecommunication and utilities companies) have also been offering online bill presentation services, and in some cases, payment systems. Such systems are currently used for the company's own customers to receive, view and pay their account online.

2.2.7 Interchange fee regulation

There is no interchange fee regulation in New Zealand. However in 2009 the Commerce Commission made an agreement with Visa and MasterCard that issuers can set the interchange fees applicable to cards that they issue subject to a maximum set by the scheme (Visa or MasterCard), and that merchants can apply a surcharge for the use of credit cards.

3. INTERBANK SETTLEMENT SYSTEMS

The real-time gross settlement (RTGS) environment consists of the Reserve Bank's Exchange Settlement Account System (ESAS), NZClear 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. NZClear 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 system 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.

Two EFTPOS switches process debit card and domestic credit card transactions.

The central bank provides the ESAS, NZClear 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 Payments NZ Limited. The central bank has observer status on the board and management committees of this company.

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 settlement system. The terms and conditions governing the system are set by the Reserve Bank in consultation with account holders.

Institutional framework

ESAS is a designated settlement system under Part 5C of the Reserve Bank of New Zealand Act 1989.

Participation

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 13 ESAS settlement account holders.

Types of transactions

ESAS is used to settle most high value transactions, including those in the wholesale securities and foreign exchange markets. In the year to June 2011, the system settled an average of 7,383 transactions a day, with a daily average total turnover value of \$26.6 billion.

Operation and settlement

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 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 • NZClear 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 NZClear • ESI continues to operate until End of Day
5.00pm	<ul style="list-style-type: none"> • ESAS will again start accepting transactions submitted from NZClear (but only for certain NZClear members – presently only ESAS account holders) • ESAS continues to be available for transactions submitted via ESI, submitted by NZClear (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/NZClear systems are still on previous value date
8.30am	<ul style="list-style-type: none"> • End of day processing for ESAS and NZClear. 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 ORRF). The cash raised is secured at a margin. ESAS account holders 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.

Risk management

Back-up arrangements are in place for the hardware, software and network facilities. The system has a high degree of security. Well documented contingency procedures are in place.

Pricing

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 monthly based on historic and estimated future transaction volumes.

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 Payments NZ Limited.

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 PNZ agreements.

The system currently has 10 members (nine banks and NZ Depository Limited). In 2011, SCP processed an average of about 7,200 transactions per day with an average daily turnover value of about \$21 billion.

3.3 NZClear

NZClear (previously the Austraclear New Zealand System) 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 system's functionality is further described in section 4.

Institutional framework

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.

The system is operated by the Financial Services Group of the Reserve Bank. The Prudential Supervision Department of the Reserve Bank oversees NZClear under Part 5B of the Reserve Bank of New Zealand Act 1989.

Participation

The Reserve Bank will favourably consider an application for NZClear membership from any institution (domestic or foreign), which, in the opinion of the Reserve Bank, is of good standing and has the necessary resources to meet its obligations as a member. The system currently has 180 members in New Zealand and Australia.

Types of transactions

NZClear provides for Delivery versus Payment (DVP), Real Time Gross Settlement for various debt and equity securities as well as for cash transfers between members. NZClear settles around 850 transactions per day with a daily average turnover value of \$7.5 billion.

Risk management

There is a formal business continuity plan detailing the arrangements and decision points. This is shared with the industry and is maintained and updated by the Reserve Bank, in consultation with the industry, on a regular basis.

The RBNZ maintains two fully equipped computer operations sites, one in Wellington and one in Auckland. Production is regularly alternated between Wellington and Auckland.

All data is backed up in real time to the secondary site. There are several security levels in place to ensure the integrity of messages.

Back-up and recovery arrangements are such that even in the most extreme disaster scenario, the maximum system outage would be one hour.

Pricing

The fee structure is made up of three parts. A joining fee, an annual subscription and transaction fees. The level of joining fees and annual subscription depend on the extent of functions required and the means of access to the System. Transaction fees are the same for each membership class.

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 not located in New Zealand. It 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 gross value of NZ dollar transactions settled through CLS is \$60 billion. This represents approximately 60% of total NZ dollar settlement obligations arising from foreign exchange transactions.

3.5 EFTPOS systems

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

Paymark Limited (previously Electronic Transaction Services Limited), established in 1989, is jointly owned by four major New Zealand banks. The Paymark network is used for the interchange and clearance of point of sale debit, credit, charge and proprietary card transactions and it processes around 75% of all New Zealand's retail electronic payment

transactions (both debit and credit). About 74,000 retailers are connected to Paymark. Each day it processes about 2.5 million payment instructions.

Paymark'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 the Settlement before Interchange arrangements described below.

Transactions passing through these systems total around \$60 billion dollars annually.

3.5 Major projects and policies being implemented

The following payment system projects have been completed recently:

- (i) The Access and Governance project proposed 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.

This was completed in 2010, with the establishment of Payments NZ in October that year.

- (ii) The Settlement Before Interchange (SBI) project, led by the industry, aims to reduce settlement risk in the retail payment system. The arrangement aims to mitigate inter-bank settlement risk by settling inter-bank payments prior to banks incurring obligations based on (the expectation of) the inter-bank payments being made. Under this approach:
 - a number of windows where batches of net bilateral obligations are now settled through ESAS every day;
 - net bilateral obligations are incurred at the time payment instructions are sent to ESAS;
 - once ESAS has processed inter-bank payments, participating banks receive payment confirmation messages; and
 - once banks have received payment confirmation messages, customer accounts are credited or debited.

The SBI solution was implemented progressively from November 2011 to February 2012.

4. SECURITIES SETTLEMENT SYSTEMS

There are two major securities settlement systems in New Zealand: NZClear, which clears and settles debt securities and equities among wholesale counterparties; and the NZCDC settlement system, which clears and settles trades on NZX markets and also settles off-exchange trades. A third system, ASX Clear (Futures) – previously Sydney Futures Exchange Clearing (SFE Clearing) – based in Australia, settles New Zealand futures and options products traded on the ASX.

The securities market comprises government securities, corporate debt and equity securities and some 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 New Zealand Debt Management Office (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 have an original maturity of one year or less. Most bills are issued to mature in three, six and twelve months. 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 June 2011, there was \$7.3 billion of Treasury bills held by the market, of which non-residents held around 40%.

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 2023. (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 June 2011 was \$50 billion, of which around 60% was held by non-residents. Average monthly turnover in the government bond market over 2010 was around \$ 34 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 periodically by NZDMO from the moving averages of domestic wholesale interest rates. The minimum investment is \$1,000 with multiples of \$100 thereafter. No single investor is permitted to hold more than \$500,000 of any one issue.

In May 2011, the Government introduced a four year Earthquake Kiwi Bond. These bonds are like other Kiwi bonds but the money invested goes towards meeting the costs to the Government of the recovery from the September 2010 and February 2011 Canterbury earthquakes.

There were around \$260 million of Kiwi bonds on issue in June 2011. 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 NZClear.

NZClear 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 NZClear 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: NZClear SWIFT Interface (NSI) and Host to Host Lite (HTH*Lite).

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

HTH*Lite allows members to semi-automate the uploading of fixed interest, equity and cash trades (either individually or in batches) into NZClear 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 NZClear 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 NZCDC settlement system (See 4.3.2 and 4.3.3).

4.1.3 Settlement

NZClear 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 NZClear, 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, NZClear moves on to settlement. Where A is selling a security to B, this involves the following:

1. NZClear 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 NZClear to effect payment.
4. NZClear 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.

NZClear currently settles around two-thirds of all wholesale fixed interest security transactions and about 99.9% by value. It also settles about a third of equity securities transactions. The inventory of securities held in the depository stands at around \$150 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 notes 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 NZClear (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 NZClear, as described in sections 4.1.2 and 4.1.3.

Low volumes of short-term corporate paper and bonds are also traded on the NZX Debt Market and settled via the NZCDC settlement system (see sections 4.3.2 and 4.3.3).

4.3 Equities

NZX listed securities include:

- 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 the NZX Alternative Market (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 settling equity transactions, the NZCDC settlement system and NZClear. 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 trades that occur on NZX markets to be settled on the NZCDC settlement system. The NZCDC system inter-connects with the NZX trading system, participants’ back office systems, share registries, and payment systems.

Typical pre-settlement steps for a cash market trade made on NZX markets 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. Clients are sent contract notes by their brokers to confirm trades and payment details.

Non-broker to broker wholesale transactions by New Zealand and offshore parties (i.e. trades that are not done on the NZX) are frequently matched and settled using the NZClear 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 NZClear clearing and settlement facilities.

4.3.3 Settlement

The standard settlement period for equity trades on NZX markets is three days.

The NZCDC settlement system provides clearing and settlement of trades conducted on NZX markets. The system consists of a central counterparty clearing house (NZ Clearing Limited, NZCL) and a linked central securities depository (NZ Depository Limited, NZDL). All settlement occurs in accounts within the NZDL. On-market trades are settled on a delivery versus payment basis using the BIS model 3 approach (i.e. transactions between clearing participants and NZCL are netted so that there is one securities movement and one cash movement per day for each participant).

NZDL also provides additional services to participants, such as securities lending, corporate actions processing, direct delivery versus payment settlement of over-the-counter transactions and recording of security interests.

Standard risk management techniques are applied to all NZCL exposures. NZCL's obligations are supported by the clearing house's own capital. Clearing Participants are required to post collateral to cover initial and variation margins.

On settlement, if Clearing Participants have a net delivery obligation they must fund their Settlement Account at NZDL with the required securities. Any securities shortfall that may exist can be met by stock lending. A standard process exists for shortfall including carrying forward to the next settlement day, buy-in or close-out. Settlement occurs DvP during a twice daily batch process, when securities and cash previously deposited in the Clearing House's ESAS account are simultaneously exchanged within the Clearing Participants NZDL Settlement Accounts.

By the end of each day Clearing Participants must clear their Settlement Accounts by moving securities to their other NZDL accounts, uplifting the securities to the registry or transferring them to NZClear.

As at September 2011, there were 289 NZX-listed companies, of which 253 were New Zealand listed, 5 were dual listed and 31 were overseas listed. There were 181 equity securities and 108 debt securities. The volume of trades settled through the NZCDC system averaged about 2,800 daily with an average daily turnover of about \$100m during September 2011. Equity market capitalisation at the end of September 2011 was \$56 billion.

4.4 Derivatives

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

The NZX Derivatives Market was launched in 2010. Dairy futures and options on dairy futures are currently traded on this market.

A range of New Zealand interest rate and electricity futures and options are traded on the ASX 24 market.

4.4.1 Trading

The NZX Derivatives Market currently offers three dairy futures – whole milk powder, skim milk powder and anhydrous milk fat, as well as options on the whole milk powder futures.

The ASX 24 market offers futures contracts on the 30 day official cash rate as well as futures 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 New Zealand electricity. Interest rate products, particularly the 90-day bank bill futures contract, dominate trading. Daily Exchange turnover averaged around 5600 contracts per day in 2010, of which 99 per cent by volume was 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

Trades on the NZX Derivatives Market are cleared and settled through the NZCDC settlement system (refer section 1.2.2). A daily settlement batch settles MTM accounts for each Clearing Participant with open positions in futures contracts. On maturity, contracts are cash settled through NZCDC.

For derivatives, NZCL uses SPAN® to determine margin amounts.

The registration, clearing, and settlement of all ASX New Zealand derivatives trades are performed by ASX Clear (Futures) Pty Limited, a wholly owned subsidiary of ASX Limited. The arrangements provide straight through processing from the ASX 24 trading system to the clearing and settlement services.

ASX Clear (Futures) acts as the central counterparty in each open contract, thus guaranteeing the performance of the contract.

On maturity, contracts are cash settled using NZClear.

SELECTED REFERENCES

www.fma.govt.nz/

www.nzba.org.nz

www.nzdmo.govt.nz

www.nzx.com

www.oic.govt.nz

www.rbnz.govt.nz

www.paymentsnz.co.nz

www.sfe.com.au

www.stats.govt.nz

STATISTICAL TABLES⁶

Table 1
Basic statistical data

	2006	2007	2008	2009	2010
Population (millions)					
Year-end (December quarter)	4.211	4.253	4.292	4.347	4.394
Average	4.187	4.231	4.271	4.318	4.370
GDP (production, real, December year, 1995/96 prices) (\$ millions)	132,193	135,962	135,829	133,129	135,326
Real GDP per capita (popn average used) (\$)	31,572	32,135	31,803	30,831	30,967
Exchange rate (domestic currency vis-à-vis US\$):					
Year-end (last day)	0.7059	0.7740	0.5785	0.7217	0.7706
Average (December month average)	0.6918	0.7686	0.5569	0.7162	0.7504

Source: Statistics New Zealand, RBNZ

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

	2006	2007	2008	2009	2010
Banknotes and coins on issue	3,061	3,190	3,525	3,579	3,719
Transferable deposits	21,096	21,282	21,948	22,412	23,110
Narrow Money (M1)	24,061	24,362	25,362	25,858	26,678
<i>Memo items:</i>					
M3	188,754	204,183	215,732	217,880	224,964
Transferable deposits in foreign currencies	5,002	5,147	5,882	5,337	5,318

¹Currency in active circulation

²Cheque accounts

Source: RBNZ

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

	2006	2007	2008	2009	2010
Transferable balances held at central bank	9,091	8,371	12,749	10,221	7,972
Transferable deposits held at other banks	945	76	406	423	266
<i>Memo</i>					
Inst's borrowing from central banks (RBNZ records)	605	816	5,595	2,937	-

Source: RBNZ

⁶ Dollar values are New Zealand dollar unless otherwise noted.

Table 4
Banknotes and coins
(at end of March, \$millions)

	2006	2007	2008	2009	2010
Total banknotes and coin issued	3,556	3,746	3,945	4,210	4,432
Denomination of banknotes:					
100 dollars	1,124	1,205	1,221	1,412	1,406
50 dollars	533	611	678	798	952
20 dollars	1,171	1,188	1,256	1,207	1,265
10 dollars	183	191	196	182	183
5 dollars	92	96	96	100	105
2 dollars	10	10	10	10	10
1 dollar	9	9	9	9	9
Coin	434	436	479	492	502
Banknotes and coin held by banks	604	617	622	562	677
Total banknotes and coin outside banks	2,952	3,129	3,323	3,648	3,755

Table 5
Institutional framework
(as at end-2010)

Categories	Number of Institutions	Number of Branches	Number of accounts	Total assets (\$ millions)
Central bank	1	2	13	22,879
Registered banks	19	1,173	n.a.	380,080
Deposit-taking finance companies	23	n.a.	n.a.	2,871
Non deposit-taking finance companies	30			7,143
Building societies	6	n.a.	n.a.	1,379
Credit unions ¹	25	n.a.	n.a.	781
Total	104	n.a.	n.a.	415,133
<i>of which:</i>				
Branches of foreign banks	10			65,359

¹ Figures for credit unions are estimates

Source: RBNZ, NZBA

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

	2007	2008	2009	2010	2011
Large value systems (year ended June):					
<i>NZClear</i>	203	223	194	173	171
<i>SWIFT</i>	1,317	1,540	1,609	1,594	1,697
Total ESAS	1,520	1,763	1,803	1,767	1,868
Retail (year ended December):					
<i>ISL</i>	602,630	619,845	620,357	612,971	n.a.
<i>Card systems</i> ³	1,673,917	1,762,945	1,890,220	2,147,223	n.a.

³ Credit card, ATM & EFTPOS

Source: RBNZ, PNZ (note the retail payment data for 2011 were not yet available)

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

	2007	2008	2009	2010	2011
Large value systems:					
<i>NZClear</i>	1,412	1,234	1,273	1,288	1,493
<i>SWIFT</i>	7,668	8,536	7,981	6,023	5,250
Total ESAS	9,080	9,770	9,254	7,311	6,743
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	2006	2007	2008	2009	2010
Cheques and other MICR	172	158	144	134	111
Payments by EFTPOS debit card	857	780	843	929	1,094
Payments by credit card	432	217	223	262	294
Electronic credits	326	341	359	366	377
Direct debits	95	103	116	120	125
Total	1,882	1,599	1,685	1,811	2,001

Source: PNZ

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

(thousands)

	2007	2008	2009	2010	2011
NZClear ¹ :					
<i>Debt Securities</i>	63	59	52	54	57
<i>Equities</i>	143	158	132	117	105
<i>Cash transfers</i>	68	63	61	58	54
FASTER/NZCDC ² :					
<i>Fixed interest securities</i>	9	13	22	27	n.a.
<i>Equities</i>	454	438	398	355	n.a.

¹Year ended June

²Year ended December

Source: RBNZ, NZX

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

	2007	2008	2009	2010	2011
NZClear ¹ :					
<i>Debt Securities</i>	758	674	717	833	1,063
<i>Equities</i>	29	29	19	13	14
<i>Cash transfers</i>	875	733	827	797	732
FASTER/NZCDC ² :					
<i>Fixed interest securities</i>	0.20	0.308	0.458	0.510	n.a.
<i>Equities</i>	7.76	5.65	4.53	3.95	n.a.

¹Year ended June.

²Year ended December.

Source: RBNZ, NZX.

Table 11
Number of participants in securities settlement systems

	2007	2008	2009	2010	2011
NZClear ¹ :					
<i>Full members</i>	56	64	61	60	62
<i>Associate members</i>	49	47	41	40	39
<i>Nominated trusts</i>	77	96	87	84	79
Total	182	207	189	184	180
FASTER / NZCDC ² :					
<i>Clearing Participants³</i>	20	21	19	12	
<i>Depository Participants</i>				5	n.a.

¹As at June.

²As at December.

³For 2007-2009, refers to FASTER "Delivery and Settlement" participants.

Source: RBNZ, NZX