Nominees, registries and settlement systems: gathering securities statistics for soundness and efficiency purposes

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Introduction

In the past decade financial authorities have paid more attention to "financial stability". Many central banks now publish regular reviews on the state of their respective financial systems. The impetus for this was financial instability in a number of regions around the world in 1997–98. At about the same time there was the Federal Reserve's management of a potentially global system-threatening event with the collapse of Long Term Capital Management in 1998.

This paper provides a brief overview of the use of data from settlement systems that can assist a financial authority in its monitoring of the financial system. Three case studies are appended to the paper:

(i)   a historical overview of the development of the non-resident holdings survey in New Zealand;

(ii)   the use of payment system data to help in discerning liquidity stress; and

(iii)   an example of the use of settlement system statistics during the current period of financial stress.

Financial system plumbing – settlement systems, registries, custodians and nominees

The financial system, even in a relatively small economy such as New Zealand, is complex, with many and diverse linkages through institutions, financial intermediaries and individuals. A part of this system is composed of elements which facilitate transactions and the holding of securities. Generically, the systems which settle securities and cash transactions are called settlement systems.[2] It is through these systems that the majority (by value) of all transactions flow in economies with even a modest amount of development.

The settlement systems form the core "plumbing" of the financial system – they are a critical component of any financial system. In many jurisdictions around the world, the wholesale financial markets rely on this plumbing. In the past two decades, settlement systems and the custody and registry networks around them have become highly efficient and nearly riskless. To the initiators of transactions, settlement systems have become almost invisible.

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[1]   Reserve Bank of New Zealand.

[2]   See the selected glossary at the end of this paper for definitions of terms. See also CPSS-IOSCO (2001), which provides useful background information (www.iosco.org/library/pubdocs/pdf/IOSCOPD123.pdf).

What information is in these systems?

The information held by the settlement system's service participants (ie the system operators, custodians/nominees and registries) can provide an almost complete picture of what is happening in the financial system.

Information held in these systems includes (but is not necessarily limited to):

- new issuance;

- which parties have traded;

- the amount and price of each trade;

- the type of transaction – outright purchase/sale or a repurchase or loan;

- levels of holdings of securities; and

- the domicile of the holder of the securities.

As custodians act on behalf of parties, many of which are offshore, they can provide ownership information (primarily the domicile of the holder) which would otherwise not necessarily be within the jurisdiction of authorities. However, one problem faced by many authorities is the lack of disclosure available from depositories beyond the custodians, especially when those depositories are outside their jurisdiction.

Figure 1

Debt securities turnover in the listed and over-the-counter markets in New Zealand
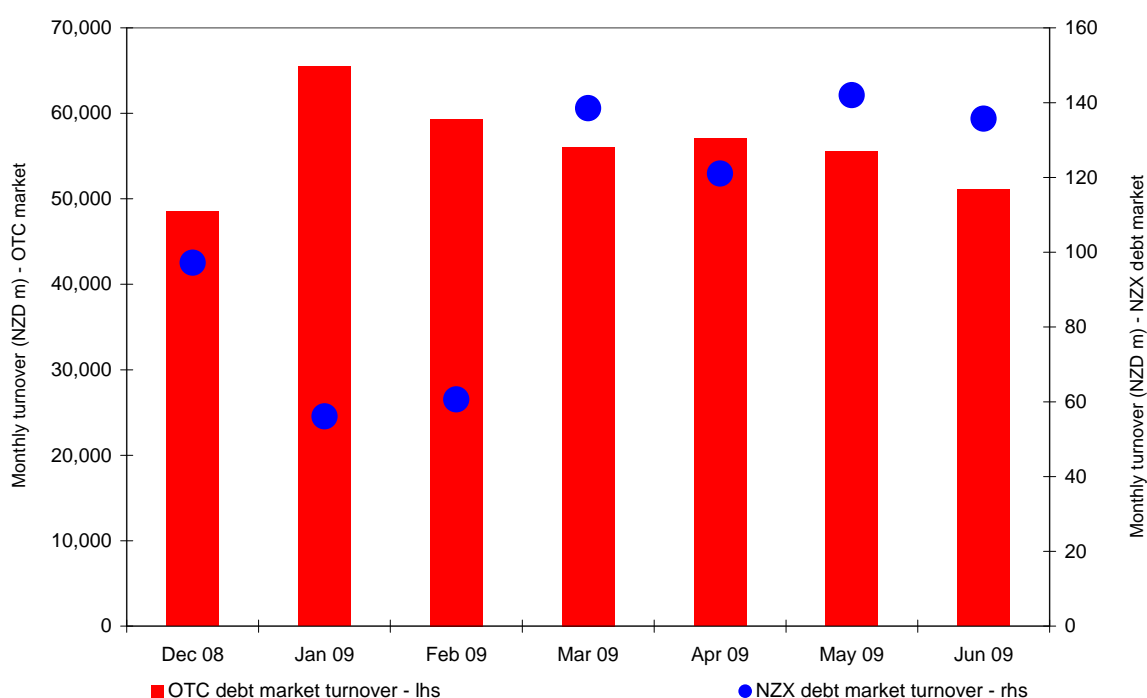
Sources: Reserve Bank of New Zealand; NZX.

The availability of the information outlined above depends very much on the development of information systems in the market and the various financial market disclosure requirements. In New Zealand, much of this information is not readily available. In part this is because it has not been recognised as being a useful source of information for system participants. It is now recognised that for over-the-counter (OTC) trades these systems are a rich source of

information. This is especially important in New Zealand where debt securities are primarily traded in the OTC market.

As can be seen in Figure 1, in New Zealand the vast majority of debt security trades are transacted in the OTC market. As such, the information on trading in this market is not readily available to market participants.

The wholesale market trades all settle in Austraclear New Zealand (Austraclear[3]), a delivery-versus-payment electronic settlement system. Within Austraclear is a depository, the New Zealand Central Securities Depository (NZCSD), which holds the securities on behalf of Austraclear members. It is estimated[4] that NZCSD holds nearly all the wholesale market's securities.

With the dominance of Austraclear and the wholesale market, information on transactions held in the Austraclear system can provide a fairly complete picture of the prevailing trading environment in financial securities. Austraclear is not unique in New Zealand in being able to supply authorities with this information, but the authorities may not have the legal power to request it. Similarly, authorities in other countries may not have adequate powers to request such information. Settlement system operators may be reluctant to provide information for a number of reasons, not least of which is the cost of reporting. In today's environment, the reporting burden is ameliorated by the automated nature of the systems.

For over two decades the Reserve Bank surveyed custodians and registries for ownership information, primarily to ascertain the domiciles of the beneficiary holders. This was a particularly burdensome survey. The reporting load was significantly reduced by moving to a unit record reporting method as detailed in the first case study appended to this paper. To improve the quality of the reporting, the Reserve Bank also included the Austraclear depository as part of the survey to assure the integrity of the aggregated data from each respondent.

In the course of work to improve the quality of data from the ownership survey. it was realised that the information in Austraclear could provide a significant improvement in the transparency of New Zealand's capital markets. As noted, in New Zealand most debt market securities do not trade on an exchange, but do settle in Austraclear. By making at least summaries of the trading available, the understanding of the state of the debt market would be enhanced for both system regulatory agencies and market participants. This approach would be helpful in other markets where much of the trading takes place over the counter and is settled in centralised settlement systems. Currently, work is under way in the Reserve Bank to publish this type of information.

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[3] Since 26 June 2010, Austraclear New Zealand has been renamed NZClear.

[4] Austraclear estimate.

Figure 2

**Schematic diagram of the payment and settlement
system in New Zealand as at July 2009**
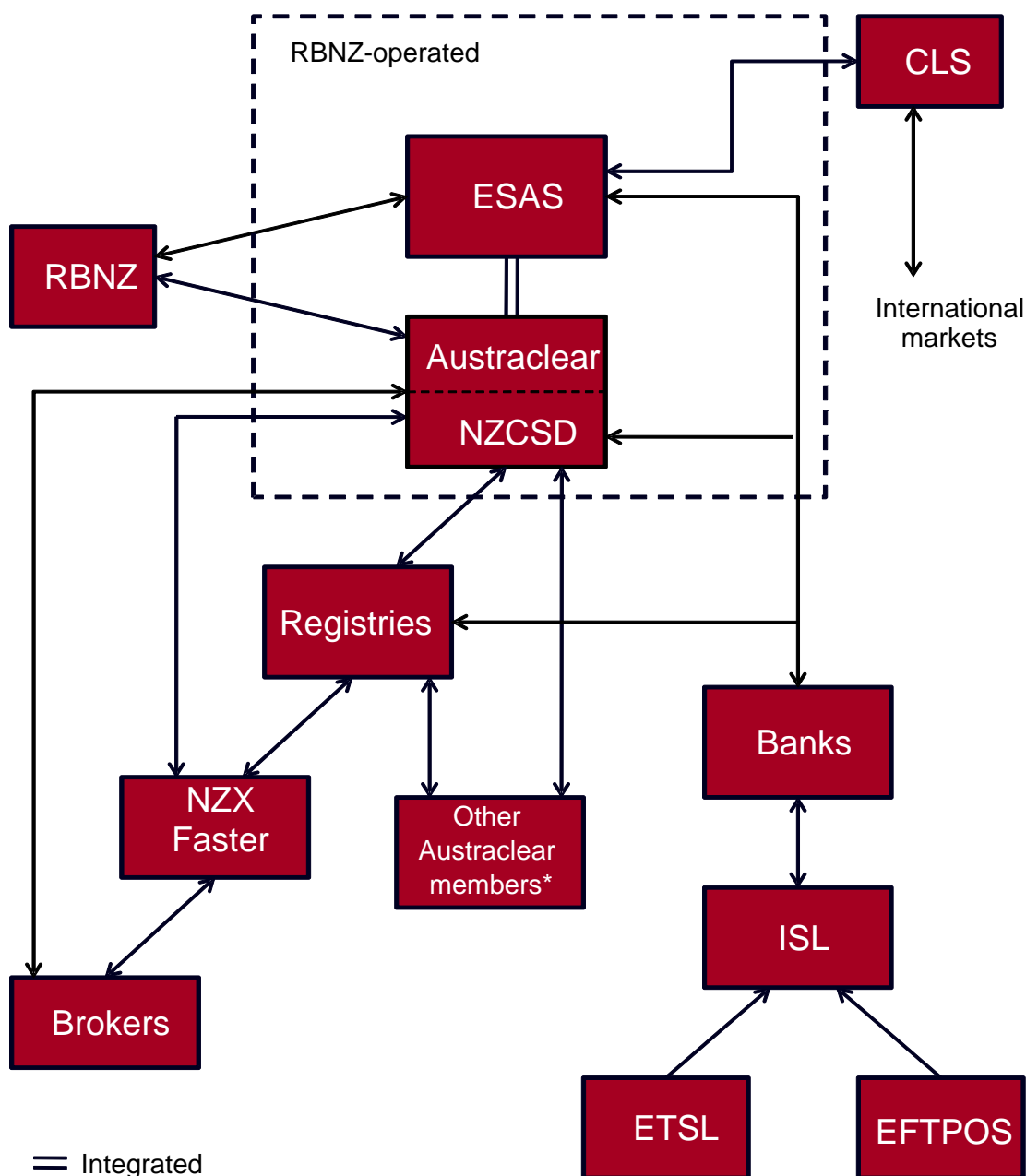
CLS – Continuous Linked Settlement Bank, the global system for settlement of foreign exchange transactions

EFTPOS – EFTPOS New Zealand Limited

ETSL – Electronic Transaction Services Limited**

ETSL, EFTPOS – the two commercial bank operated EFTPOS clearing switches

ISL – Interchange and Settlement Limited, a netting and clearing system for commercial bank cheques, EFTPOS, automatic payments and direct credits

NZCSD – New Zealand Central Securities Depository

NZX Faster – the settlement platform operated by the NZX, New Zealand's stock exchange

* Other Austraclear members include exchanges (eg the SFE), nominees, and corporates.

** ETSL was de-registered and replaced by Paymark Limited in September 2009.

From a financial system monitoring perspective, the information that settlement systems can potentially provide has often been reserved for market anecdote. How institutions trade in a stress situation can reveal certain preferences: for example, with whom they trade, the type of security used in repurchase transactions and the price at which they are prepared to trade. All of this information is available in settlement systems and can assist authorities in deciding how to act.

The third case study appended to this paper illustrates how the Reserve Bank of New Zealand was able to enhance its monitoring of the domestic bank bill market in August 2007 by using settlement system data. In this case, the issuance information was of prime concern.

Provided that they have the powers, authorities in other jurisdictions can readily make use of the information held in their settlement systems to supplement other information and data sources that they currently use. Such information can be provided in a timely manner, even in real time, and has the potential to provide important insights in a variety of situations.

Case study I – the non-resident holdings survey

Over time, central banks around the world have gradually increased their ability to collect information which they believe to be pertinent to their role. The Reserve Bank of New Zealand is no exception. The original 1934 Act did not provide the Bank with any particular powers to collect data. It was not until the 1964 Act was amended in 1973 that some data collection powers were granted to the Bank. These powers have been gradually extended since then. At present the Bank has fairly comprehensive collection powers to enable it to carry out its functions.

A survey of non-resident holdings of New Zealand government securities was first taken in March 1985. The survey has been conducted on a monthly basis since then and has undergone a number of changes both in the information collected and in its use. The current survey collects information on nearly all New Zealand registered securities on a case-by-case basis and is complemented by data held in other systems operated by the Reserve Bank.

The early years

In 1984 the concept of surveying the non-resident holders of New Zealand government securities was part of an effort to assist the Bank in estimating the timing of capital flows. The Bank was the registrar for government securities, so determining the ownership structure of direct holdings of securities was straightforward. The Bank understood that holders would not only be directly named in the registry, but also held in nominee structures. So from the beginning the Bank knew that it had to survey the various nominee firms.

The first survey asked two questions of respondents: first, the amount invested by clients in New Zealand government securities over the previous three months; second, the amount held by offshore investors and the maturity dates of the holdings. In subsequent surveys, only the second question was asked.

Although the first survey was conducted in 1985, it was not until January 1988 that the data were first made publicly available. Since then, the results have been published on a monthly basis around the middle of the month following the survey date.

In the early years, the information was processed mainly on a manual or at best a semi-automated basis. It was not until the advent of Excel-based spreadsheet collection and

automated reading of data in 1998 that the bulk of the processing became more or less automated at the Reserve Bank. Unfortunately, many respondents were still completing the survey manually.

By the early 1990s the survey was being used to assist with balance of payments statistics. There were discussions as to which government agency (the Reserve Bank or the Department of Statistics[5]) was best suited to collect the data. It was decided that the survey should remain with the Reserve Bank, but this necessitated a few changes to the survey, in particular, broadening the survey from government securities to other government and private sector debt securities and the inclusion of the income earned during the period. Respondents were asked about these extensions in mid-1992. The survey was broadened from the December 1992 return, but did not include the yield questions, as a number of respondents were not able to comply with the request.

Between 1984 and 1992, financial markets had evolved considerably in New Zealand, as had the international appeal of the New Zealand Government's domestic securities. One aspect of the market which had been overlooked was the "repurchase" market. During 1993 the Bank started to deliberate about collecting repurchase data and a formal proposal was put forward in January 1994. From the end of March 1994 the survey collected the repurchase information.

It was not until 1995 that the Reserve Bank started to collect more detailed information on the residency of the ownership of the securities. It was at this time that those involved in the survey realised that this information, though useful, would be limited due to an inability to survey beyond the main international depositories.[6]

The new millennium – our purpose, the costs and the benefits

With changes in the needs of the Reserve Bank, and of Statistics New Zealand, it was desirable to make a number of alterations to the survey. This led to a review of the way the data were obtained and processed.

An initial review merely redesigned the spreadsheet template. When respondents were surveyed about the use of the proposed template, it was clear that there were issues both with the respondents and with the internal mechanisms for processing it. The review's overall mandate was changed in accordance with the following criteria:

- Information

    – Quality

    – Granularity

    – Depth and breadth

- Timeliness

- Flexibility

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[5] In 1994 the Department of Statistics was renamed "Statistics New Zealand – Tataurana Aotearoa".

[6] Although the Reserve Bank surveys nominee and custodian firms, if these firms themselves hold the securities through another depository, such as Clearstream or Euroclear, it is not possible to determine the residency of the ultimate beneficiary. Thus, for many securities, the dominant offshore holder appears to reside in Belgium or Luxembourg.

- Compliance

- Synergies

As its starting point, the revised review had a broader perspective on the purpose of the survey and how it fitted with other functions of the Reserve Bank. In particular, the Reserve Bank is the operator of the primary wholesale settlements system and the central depository. For example, while historically there had been no way of checking the accuracy of respondents' data, the broader view opened up the possibility of significantly improving the integrity of the survey.

It became clear that over time there was likely to be an increasing demand for more refined categories of analysis, for example, the classification of the originator of the securities in the market and a general broadening of scope to include securities that had not been previously surveyed. The initial review had resulted in a spreadsheet template that was far too burdensome for respondents to complete – especially as it had been indicated that there might be more frequent changes to it.

The end result was a recommendation to migrate from the existing template to a system in which respondents send a file of more or less raw data, comprising the security identifier, the face amount held (ie a currency value for debt and a number of shares for equities), the country of domicile of the holder and a flag indicating whether it is an outright holding or is held under a repurchase agreement. Nearly all respondents were able to make modest adjustments to their main reporting systems in order to generate the data files with relative ease. Unfortunately, it was easier for the respondents than for the Reserve Bank. It took some 18 months to develop the internal applications to process the files and integrate the data into the Bank's statistical systems.[7]

The implementation difficulties at the Reserve Bank did, however, result in a major reduction in the compliance burden for respondents and improve the timeliness of the survey. Previously, the survey was published towards the end of the month; it is now released around the middle of the month – a lag of two weeks from the time the data are collected.

Because the survey uses raw data, it has been possible to expand it to cover all registered securities in New Zealand. Although at present equity market data are not analysed, the intention is to do so as resources become available.

As a corollary, it has been possible to use the information from the various registries to provide robust estimates of the size of the various securities markets. Similarly, the greater availability of raw data which can be manipulated has been of use in other areas of the Reserve Bank, such as financial markets and prudential supervision.

## Case study II – stress in the payment system

In 2005 the Reserve Bank of New Zealand embarked on a project to review the way liquidity was provided to the banking system. As part of this project a study was made of the way payments are made during the banking day. The study demonstrated that as liquidity conditions became tighter, payments slowed through the system during the day.

Figure CS2.1 below depicts the percentage of the volume transacted at the end of each hour up to 6 pm each day for three periods. The reference period is the five years ending in

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[7] The project highlighted structural issues with regard to the main statistical repository system and resulted in development of a new statistical system.

December 2004. During 2005, while the Reserve Bank was deliberating on what changes needed to be made, liquidity conditions gradually worsened. The worst period was from November 2005 to January 2006. At the end of January 2006 it was decided to make an initial adjustment to the system and the target level of settlement cash left in the payment system was increased from $25 million to $2 billion in two stages. The third period in Figure CS2.1 covers the time from the initial adjustment to the end of September 2006.

Figure CS2.1
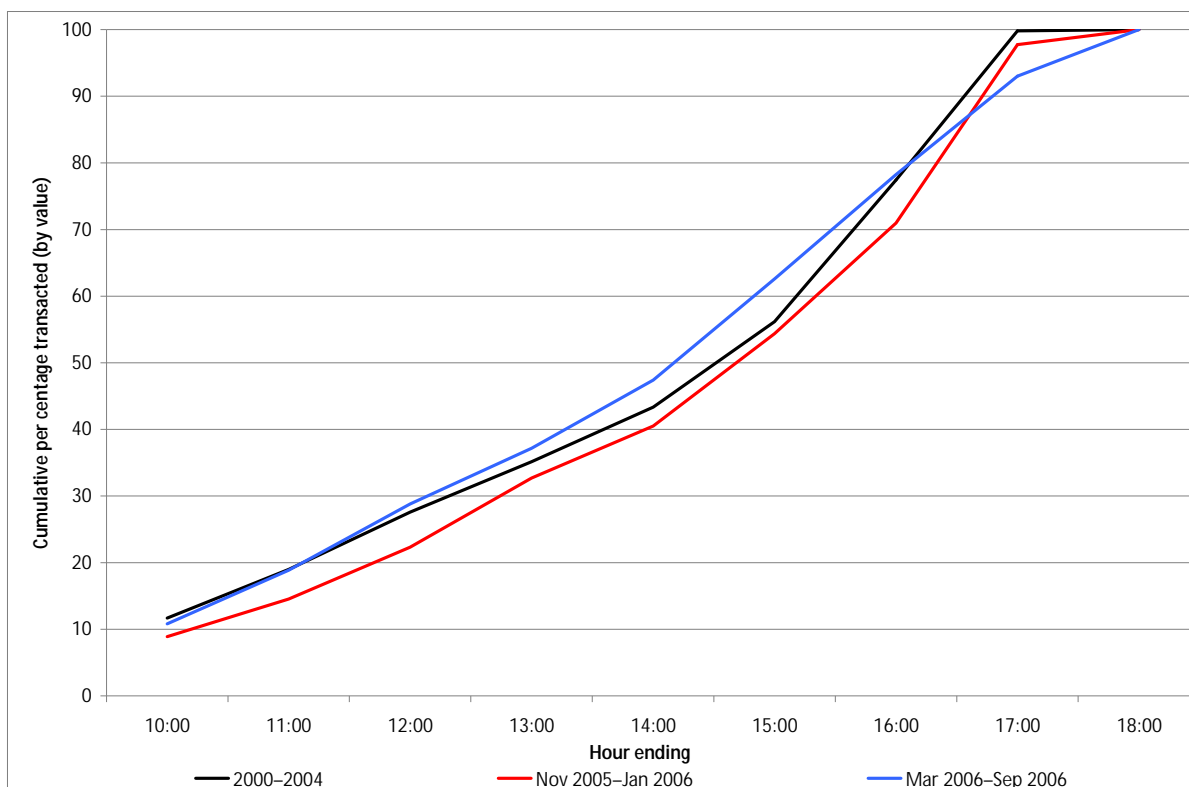
As can be seen, there was a significant improvement in the progress of payments through the system once liquidity constraints were eased in the system. Overall, payments were made earlier in the day, with the median payment occurring about an hour earlier. The impact of the introduction of the New Zealand dollar into the CLS can be seen in the slightly lower volumes occurring for the third period (red line) in the last hour or so of the day.

It is also instructive to see the impact of the recent stresses in the global financial system on the payment system.
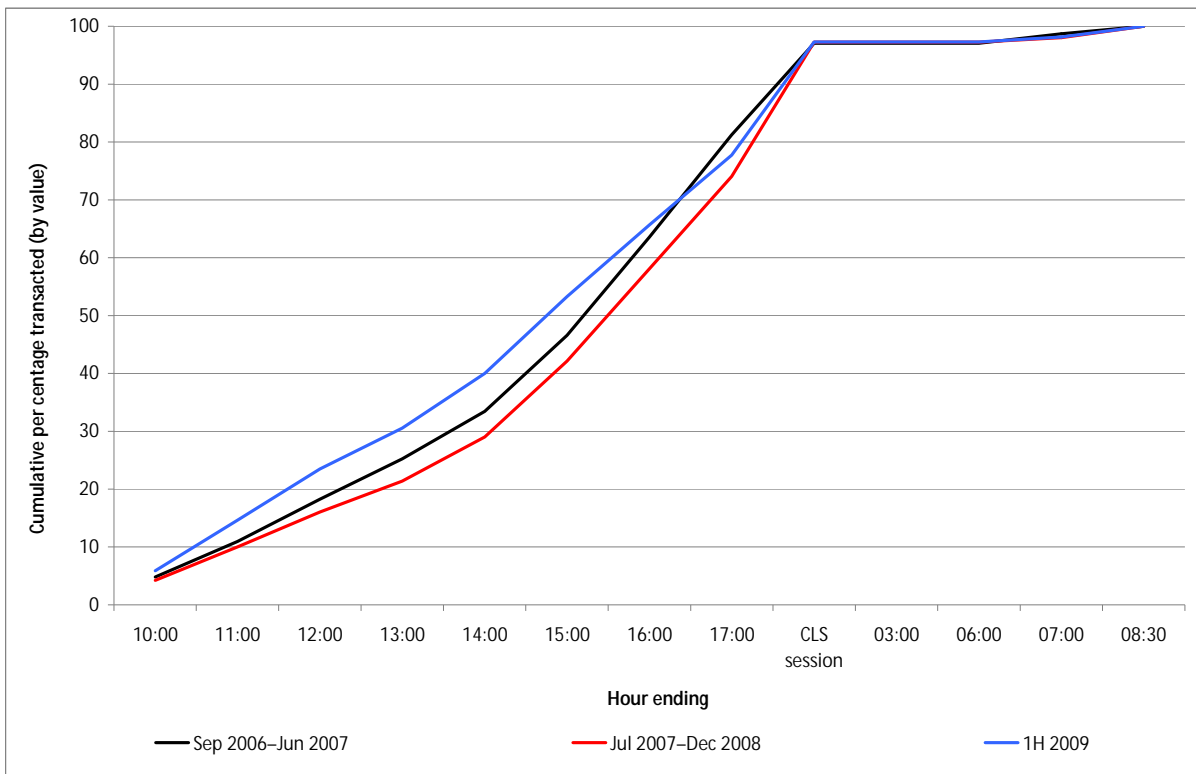
Figure CS2.2

Figure CS2.2 follows the form of Figure CS2.1 and depicts payment system behaviour for three periods in the past three years, ie:

- A pre-stress period following the implementation of the Reserve Bank's liquidity management reforms, from September 2006 to June 2007;

- The stress period – from July 2007 to the end of December 2008;

- And the first half of 2009, when there have been few stress events.

During the most stressed period there was a shift to delaying payments into the CLS session. It would appear that banks with large payments to make on behalf of overseas banks delayed payments until they had received the funds as opposed to providing intraday credit to the offshore parties.

In the stressed period about 23 per cent of the payments were made during the CLS session, as opposed to 16 per cent previously and about 20 per cent in the first half of 2009.

This type of behaviour in the payment system probably demonstrates the concern of the banks about the potential risks due to the deterioration in the credit quality of many overseas banks.

Case study III – August 2007

In August 2007 the first major wave of the 2007–09 global financial crisis was felt in New Zealand as short-term money markets were disrupted by offshore events. Other than the events in overseas markets, initial indications in New Zealand were the sudden rise in the overnight deposit rate and anecdotes of possible disruption in the domestic bank bill market.
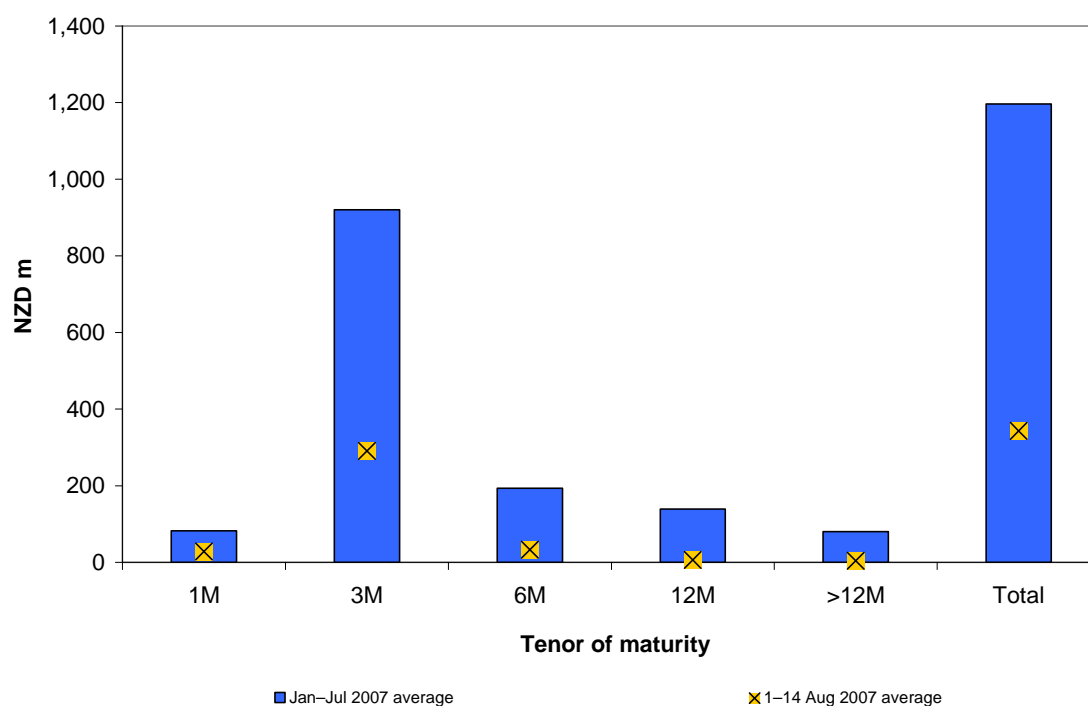
Figure CS3.1

Figure CS3.1 depicts the monthly average issuance data from one of the registries for a pre-crisis period and during the crisis. As can be seen, there was a significant drop in the issuance of securities in the first two weeks of August 2007.

These data from the settlement system were used to verify market anecdote and assist the Governor in deciding to reallow bank bills to be discounted at the Reserve Bank. Following the announcement of this decision, the bank bill market rapidly reverted to more normal behaviour.

Selected glossary[8]

Clearing	The process of transferring securities on the settlement date.
CLS	Continuous Linked Settlement Bank – the entity created by the private sector to eliminate settlement risk in foreign exchange transactions (see Figure 2).
Custodian	An entity that keeps securities safe for its customers. A custodian often provides other services, including clearing and settlement and cash management.
Central securities depository (CSD)	An institution for holding securities that enables securities transactions to be processed by means of book entries. Physical securities may be immobilised by the depository or securities may be dematerialised (so that they exist only as electronic records).
Delivery versus payment	A link between securities transfers and fund transfers that ensures that delivery occurs if, and only if, payment is made.
Issuer	The entity that is obligated on a security or financial instrument.
Nominee	An entity named by another to act on its behalf and commonly used in a securities transaction to obtain registration and legal ownership of a security. A custodian may act as a nominee.
Registration/registry	Registration occurs once the details of the ownership of the securities are entered in the register, the records of the issuer pertaining to the issue. The *registry* function is often carried out by an official registrar/transfer agent rather than the issuer.
Securities settlement system	The complete set of institutional arrangements for confirmation, clearance and settlement of securities trades and safekeeping of securities.
Settlement	The completion of a transaction through the final transfer of securities and funds between the purchaser and the seller.

Reference

Committee on Payment and Settlement Systems-Technical Committee of the International Organization of Securities Commissions (CPSS-IOSCO) (2001): *Recommendations for securities settlement systems*, Basel, November.

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[8] Based in part on the definitions adopted by the CPSS-IOSCO (2001).