
The Reserve Bank's payment system oversight role applied to settlement risk in the retail payment system

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The Reserve Bank oversees the payment system for the purpose of promoting the maintenance of a sound and efficient financial system. Consistent with the Reserve Bank's relatively light-handed payment system oversight powers, the Reserve Bank's approach is to be clear about its objectives and to encourage industry to develop solutions towards these objectives. However, as other central banks have found, industry-led solutions cannot always be delivered, or delivered in a timely manner. Consequently, the Reserve Bank is stepping up engagement with industry to expedite projects that help meet our policy objectives. A current payment system oversight issue for the Reserve Bank is settlement risk in the retail payment system. Empirical analysis shows that routing high-value transactions through the retail system significantly increases end-of-day inter-bank exposures. This article assesses this risk and possible ways to address settlement risk in the retail payment system.

1 Introduction

Payment systems are an essential mechanism supporting the effectiveness of the financial system. The oversight of these systems is therefore a key part of the Reserve Bank's efforts to promote financial stability.

The conceptual framework for the Reserve Bank's payment system oversight has been discussed elsewhere.² The main aim of this article is to illustrate the Reserve Bank's payment system oversight role by highlighting a current oversight issue of interest: settlement risk originating in the retail payment system.

The article proceeds as follows. Section 1 provides an introduction to payments and payment systems, and notes the distinction between 'retail' and 'large-value' payments. Section 2 describes the Reserve Bank's payment oversight role and includes a box that describes the oversight roles of other selected central banks and how these roles have changed over time. Section 3 describes settlement risk originating in the retail payment system. Section 4 links the issue of settlement risk to the Reserve Bank's objectives, and describes how the Reserve Bank's payment oversight approach has been applied to this issue. Section 5 summarises.

2 Payments and payment systems

The payment system is the means by which individuals and organisations make and receive payments for goods and services. Payments can be made by handing over cash (coins or notes) or by shifting funds from the account of one person or business to another. The latter involves a shift of funds from one financial institution to another when the transacting parties use payment accounts held at different financial institutions.

Payments literature generally recognises a distinction between retail payments and large-value payments. There is no clear dividing line in dollar value between these two types of payments. The typical features of retail and large-value payments that are of interest can be distinguished as set out in table 1 overleaf.³

A country's payment system will comprise a number of elements, including payment instruments (such as cash, EFTPOS, credit card, cheques, direct debits and credits, and automatic payments), payment instructions or messages, contractual arrangements, and physical and electronic infrastructure for exchanging messages and for interchanging and settling payment obligations.

¹ The authors are grateful to the following Reserve Bank colleagues for their valuable comments: Willy Chetwin, Tim Ng, Andrew Rodgers and Ian Woolford.

² See Stinson, A and M Wolyncewicz (2003), and Reserve Bank of New Zealand (2006b), p35.

³ Table One draws on Committee on Payment and Settlement Systems (CPSS) (2001a), p28; CPSS (2003), p6; and CPSS (2005), p5.

Table 1
Typical features of retail and large-value payments

Retail payments	Large-value payments
<p>Relatively small amounts.</p> <p>Very large and diverse number of participants, and large number of transactions per day.</p> <p>Wide range of payment instruments (e.g. cash, credit/debit card, internet-based).</p> <p>Payments not generally urgent.</p> <p>Includes payments made by individuals and small businesses.</p> <p>Extensive use of private sector payment system infrastructure more likely.</p>	<p>Large amounts.</p> <p>Smaller number of participants with greater financial sophistication, and fewer transactions per day.</p> <p>In practice, a narrower range of payment instruments.</p> <p>Payments may be urgent.</p> <p>Typically payments made by government departments, large corporations or between financial institutions.</p> <p>In practice, more likely to make use of central bank payment system infrastructure.</p>

Many payment systems are characterised as either retail or large-value payment systems. However, not all retail payments are directed through retail payment systems, and not all large payments are directed through large-value payment systems.

The retail and large-value payment systems within any country are typically connected and do not operate in isolation from one another. For instance, payments made from one individual (payer) to another individual (payee) initiated through the retail payment system often ultimately result in a transfer of funds from the financial institution of the payer to the financial institution of the payee via a large-value payment system.

3 The role of the Reserve Bank

The Reserve Bank has multiple roles in the payment system, including as supplier of New Zealand notes and coins and as provider and operator of New Zealand's large-value payment system, the Exchange Settlement Account System (ESAS).⁴ The Reserve Bank may also 'designate' payment systems. Under section 156M of the Act the Reserve Bank can recommend a payment system be designated to provide greater legal certainty to payments executed through it.⁵

Finally, another role, and the focus of this article, is the role of payment system oversight.

The Reserve Bank conducts payment system oversight for the purpose of promoting the maintenance of a sound and efficient financial system. This purpose is set out in section 156B of the Reserve Bank of New Zealand Act 1989 (the Act). The Act provides for the Reserve Bank to oversee the payment system by (at its discretion):

- Requiring the supply of information or data relating to a payment system (section 156C).
- Requiring the independent review of information (section 156E).
- Publishing or disclosing any information or data supplied in accordance with section 156C, subject to certain conditions (section 156G).

The provisions of the Act set the high-level framework for the Reserve Bank's payment system oversight objectives and activities. The Reserve Bank has articulated how this broad framework translates into more specific objectives in the document 'Statement of principles: payment system oversight'.⁶ These specific objectives are closely aligned to the recognised set of international standards for payment systems known as the Core Principles for Systemically Important Payment System (Core Principles). The Core

⁴ For more complete descriptions of the Reserve Bank's roles in the payment system see: Bollard (2005) and Reserve Bank of New Zealand (2008).

⁵ In September 2008 the Settlement Systems, Futures and Emissions Units Bill was introduced into Parliament. Among the changes made by this Bill are amendments to expand Part 5C of the Act to allow for the designation of settlement systems in addition to designation of payment systems. If this Bill becomes law, the Reserve Bank and the

Securities Commission will become joint regulators of designated systems other than those classified as "pure payment systems", which will be regulated by the Reserve Bank only.

⁶ The 'Statement of principles: payment system oversight' is available on the Reserve Bank website at <http://www.rbnz.govt.nz/finstab/payment/1911038.html>.

Principles were developed by the Committee on Payment and Settlement Systems (CPSS).⁷

The 'Statement of Principles' also sets out the Reserve Bank's approach to payment system oversight. The document notes that the Reserve Bank carries out payment system oversight by:

- engaging with the industry on specific issues from time to time;
- regularly engaging with the industry more generally;
- collecting information and data relating to the payment system from time to time; and
- regularly publishing its analysis of payment system issues in the *Financial Stability Report*.

The Reserve Bank's approach to oversight is light-handed, consistent with the nature of its payment system oversight powers. The Reserve Bank's current oversight approach is to be clear about our objectives, and to be generally open to ideas for achieving these objectives with a preference for industry to lead the development of solutions. However, as other central banks have found, industry is not always able to develop solutions consistent with payment system oversight objectives within reasonable timeframes. Potential reasons for this may include:

- The commercial interests of the industry as a whole or of some particular entities may not align with the public-interest objectives of the central bank.⁸
- Individual industry players may be forced to act individually, while if they were willing and able to act collectively they would be better off.⁹

In New Zealand, the payments industry is currently progressing two projects that have important implications for the soundness and efficiency of the retail payment system.¹⁰ Recently the Governor of the Reserve Bank of New Zealand

wrote to bank chief executives to note concern about the slow speed at which these projects were progressing. The letter noted that in light of this concern, and to help expedite any future projects to meet its policy objectives, the Reserve Bank intended to take a more active interest in payment system matters going forward.

Internationally, payment system oversight powers vary among central banks, and the powers of some central banks have evolved over time in response to circumstances. Central bank powers can include, for example, authority to collect information, licensing regimes, and authority to approve or impose payment system rules. The oversight powers of the Reserve Bank are towards the light end of the spectrum and have not changed since their inception in 2003. Box 1 describes the payment system oversight powers of the Reserve Bank of Australia and those of the Bank of England, and provides the background to recent or planned changes to these powers.

To some extent the more active interest shown by the Reserve Bank parallels the responses seen in other jurisdictions when there have been difficulties achieving payment system oversight objectives. However, in the case of the Reserve Bank, the response does not entail a change in regulatory objectives or powers, but rather an adjustment to its approach within the existing legislative framework.

⁷ CPSS (2001b).

⁸ This point is noted in Lowe (2006).

⁹ This point is noted in Lowe (2008).

¹⁰ The Reserve Bank is actively engaged with the NZBA on two NZBA-led projects: the Failure to Settle project and the Access and Governance project. Several recent editions of the Reserve Bank's *Financial Stability Report* discuss these projects. The Failure to Settle project is discussed further on in this article.

Box 1

Payment system oversight powers – selected international comparisons

Australia

The Payment Systems Board at the Reserve Bank of Australia is an example of a central bank with relatively extensive payment system oversight powers. These powers include the ability to: designate a particular payment system as being subject to its regulation; determine rules of participation in that system; set standards for safety and efficiency of that system; and direct participants to comply with a standard or access regime. It can also arbitrate on disputes over matters relating to access, financial safety, competitiveness and systemic risk, if the parties concerned wish.

The establishment of the Payment Systems Board in 1998 stemmed from the Financial System Inquiry, which recommended changes to the payment system regulatory arrangements within Australia to resolve certain issues in the payment system industry.¹¹ Although the Payment System Board has extensive powers, its approach has been to work cooperatively with industry, viewing regulation as a last resort. As noted by the RBA, in a number of cases voluntary reform has proved possible, while in others it has not, and the RBA has used its regulatory powers in response.¹²

United Kingdom

The Bank of England is an example of a central bank that undertakes payment system oversight on a non-statutory basis. However, the UK Government plans to give the Bank of England various powers with respect to 'recognised' inter-bank payment systems including the power to:

- Publish principles to which operators of payment systems must have regard.

- Publish codes of practice.
- Require a payment system to establish rules or change its rules;
- Give directions to the operator of a payment system.
- Appoint a person to inspect the operation of a payment system.
- Require the operator of a payment system to appoint an expert to report on the operation of the system.
- Publish details of a payment system compliance failure.
- Impose penalties.
- Require a payment system to cease certain activities (or close the payment system).
- Disqualify a person from managing a payment system.¹³

The powers planned for the Bank of England stem from a broad review of Financial Stability and Depositor Protection led by the UK Treasury.¹⁴ Although the proposed powers are extensive, they have been characterised as 'graduated' powers, to be used only after the Bank of England has requested change through informal means akin to its current approach. However, the motivations for the granting of the powers were in part recognition of the difficulties the UK authorities have meeting payment and related policy objectives by relying on moral suasion.¹⁵

¹¹ More information on the Financial System Inquiry can be found at <http://fsi.treasury.gov.au/content/default.asp>, accessed 19 November 2008.

¹² Reserve Bank of Australia (2007), p4.

¹³ These powers are contained in the 'Banking Bill' which is currently before Parliament (see <http://services.parliament.uk/bills/>, accessed 24 November 2008).

¹⁴ Information about the review is on the UK Treasury website: http://www.hm-treasury.gov.uk/financial_stability_depositor.htm, accessed 24 November 2008.

¹⁵ Bank of England, HM Treasury and Financial Services Authority (2008).

Box 2

The operation of New Zealand's retail payment system

The processing of non-cash retail payments in the current New Zealand retail payment system follows a daily cycle as set out below and illustrated in Figure 1.

Step 1

Payment instruction is issued

Non-cash payments are initiated when a bank's customer issues a payment instruction to its bank via a payment instrument.

The customer initiating the transaction may be the payer or the payee. For example, in the case of the purchase of goods from a shop, the payment instruction would be issued by the payer; while in the case of a direct debit arrangement for a telephone or power bill, the payment instruction would be initiated by the payee.

If the accounts of the payer and the payee are with the same bank, then ordinarily that bank will simply debit the account of the payer and credit the account of the payee. If the accounts of the payer and the payee are with different banks then the remaining steps below apply.

Step 2

Banks send payment instructions to Interchange and Settlement Limited (anytime between 'start of day' at 2:00am and 'end of day' at 12:15am).

Interchange and Settlement Limited (ISL) is the main retail payment switch in New Zealand. Its function is to determine the net bilateral positions of each of its users

(its users are banks).¹⁶ In other words, it determines who owes what to whom. For example, if Bank A's customers wished to pay Bank B's customers \$100 and Bank B's customers wished to pay Bank A's customer \$60, then the next bilateral position between these two banks would be that Bank A owes Bank B \$40.

Banks send the customer payment instructions they receive to Interchange and Settlement Limited (ISL) in batches during the business day.

Some payment instructions (those relating to debit and credit card transactions) are routed through other switches prior to being sent to ISL (not shown in Figure 1). These instructions are sent to ISL by the other switches' banks already in the form of net bilateral positions rather than as individual payment instructions. In order to calculate the net bilateral positions from all payment instructions, the information from other switches is combined with individual payment instructions sent directly from banks to ISL.

Step 3

Net bilateral positions are determined and banks are advised of their obligations (inter-bank debt created by 12:15am).

ISL calculates the net bilateral positions of each of its users (banks) against all other users as a result of each day's transactions. ISL then sends each bank all payment instructions affecting each of its customers (i.e. for each transaction, the account affected and the debit or credit that applies), and information about that bank's inter-bank payment obligations arising from the calculations of net bilateral positions.

At this point a bank may credit and debit its customer accounts according to the day's transactions.

Step 4:

Transfer of funds between banks (between 7:30am and 8:30am).

The final step is the transfer of funds between ISL users in line with the net bilateral positions calculated by ISL. This takes place within the Reserve Bank's Exchange Settlement

¹⁶ At present, all of the direct participants in New Zealand's retail payment system are registered banks, although not all registered banks are direct participants. Other financial institutions may gain indirect access to ISL by holding an account with an ISL user. Suppose for example that Bank X is not an ISL user but holds an account at Bank A that is an ISL user. If a customer of Bank X sends a payment instruction to Bank X, unless it relates to a transfer of deposits from one account to another within Bank X, this instruction will be sent to Bank A. The payment instruction will then be treated in a similar way to an instruction from any other customer of Bank A.

Account System (ESAS). Each ISL user holds an ESAS account with the Reserve Bank. These accounts are called settlement accounts.

ISL users send payment instructions to ESAS at the end of each banking day to settle their payment obligations with other ISL users. These instructions are based on the information received by the ISL users regarding their net bilateral obligations. Settlement within ESAS occurs on a bilateral net basis. That is, one net payment between each pair of ISL users takes place in accordance with the net bilateral positions calculated in ISL. For instance, if Bank

A owed Bank B \$40, then \$40 would transfer from the settlement account of Bank A to the settlement account of Bank B.

The payment instructions from ISL users to ESAS are sent via the Austraclear system. Austraclear is principally a Securities Settlement System for wholesale trades in securities such as shares and bonds. Payment instructions in respect of Austraclear trades are sent from Austraclear to ESAS and are executed once authorised by the paying bank. The same process is used to make inter-bank payments in respect of ISL net bilateral positions.

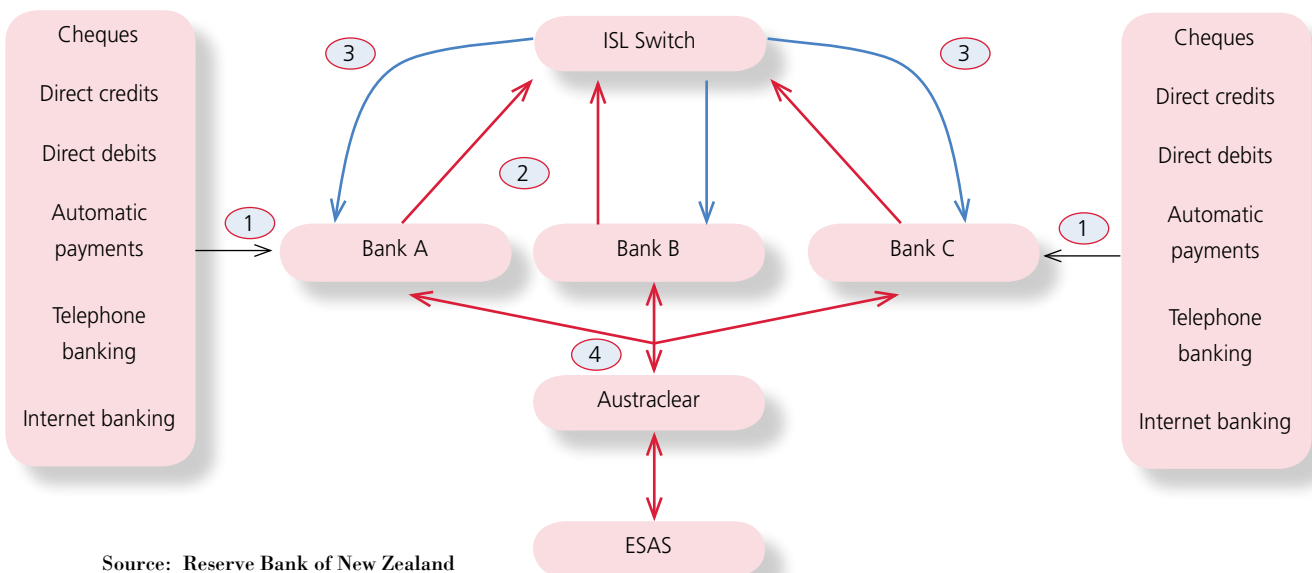
4 Settlement risk originating in the retail payment system

The remainder of this article illustrates the Reserve Bank's payment system oversight role by considering the issue of settlement risk originating in the New Zealand retail payment system. The aim of the discussion is to link these issues to the Reserve Bank's objectives, and to describe how the Reserve Bank's payment oversight approach has been applied to this issue. The discussion assumes some knowledge of the New Zealand retail payment system. Readers are encouraged to read box 2, which provides an overview of how the retail payment system works.

The nature of settlement risk

Settlement risk is the risk that one participant in a payment system will not meet its payment obligations to another party as expected. It may comprise liquidity risk (obligations are not met in full when due) or credit risk (obligations are not met in full when due or at any time thereafter). Settlement risk is relevant to both retail and large-value payment systems. Management of settlement risk in the payment system is critical for the soundness of the financial system and is the motivation for several of the Core Principles.

Figure 1
Transactions passing through the ISL Switch



Source: Reserve Bank of New Zealand

In recent times there has been a heightened awareness of settlement risk, especially in foreign exchange transactions. This has been particularly the case earlier in 2008 with problems at Bear Stearns and more recently with Lehman Brothers. The risk of settlement failure of FX transactions undertaken by counterparties with these and other institutions was significantly reduced by the use of CLS Bank, a system that eliminates credit risk in the settlement of foreign exchange transactions. In New Zealand, the Crown's foreign exchange settlement risk has been reduced by the Reserve Bank itself joining CLS for its foreign exchange settlement (see Nield, 2008).

One of the features of the retail payment system is the settlement risk (or exposure) faced by ISL users when they are owed money on the basis of their net bilateral positions with other ISL users. Settlement of net bilateral positions relating to a particular day's transactions ordinarily takes place across ESAS on the morning of the following business day. There is normally at least seven hours from the time that ISL users incur settlement debt based on their net bilateral positions and when settlement of these positions takes place. During this period, ISL users that are owed money by other users face the risk that they will not receive full payment when it is due (liquidity risk) or at all (credit risk).

Settlement risk can in turn create a risk that ISL users that are reliant on receiving money owed from other users to meet their obligations will not be able to meet those obligations. This could occur, for example, if an ISL user credits the account of a customer on the basis of payment instructions that have still to be processed across ESAS. In this example, the nature of the settlement risk would depend on the legal obligation of the ISL user to honour the amount it has credited in its customer's account ahead of settlement. The legal obligation may vary among different account types and among different ISL users.

The contagion effect that occurs when the failure of one payment system participant to meet its obligations results in the failure of another participant to meet its obligations can spread rapidly, resulting in liquidity or credit problems for a number of participants and in turn threaten the stability of the financial system.

Settlement risk in the New Zealand retail payment system is an example of that which typically arises in a 'deferred net settlement' (DNS) system. A DNS system can be described as a system in which payment orders are accumulated throughout the day, with settlement of the net amount taking place typically once, at the end of the day.¹⁷

Internationally, high-value payments are increasingly being settled on a 'Real Time Gross Settlement' (RTGS) basis. In this context 'gross' means payments are processed transaction by transaction rather on the basis of net positions, and 'real time' means settlement occurs on receipt of payment messages (providing the payer's balance is sufficient) rather than deferring until the end of the day as a matter of course. In RTGS, if the payer's balance is insufficient, the payment is typically queued until funds are sufficient to settle, at which point settlement occurs. ESAS is a high-value payment system that operates on a RTGS basis.

The alternatives of DNS and RTGS represent a trade-off between risks and costs. An RTGS system is safer in terms of settlement risk, but is more costly for participants because of the need to have funds available throughout the day to settle transactions on a gross basis. In some jurisdictions the trade-off between risks and costs is becoming more favourable over time as innovations providing liquidity saving features are incorporated into RTGS systems.¹⁸ For example, there are liquidity-saving features built into ESAS including the 'auto-offset' functionality¹⁹ and an operation called 'freeze frame'.²⁰

¹⁷ Committee on Payment and Settlement Systems (2005), p1.

¹⁸ Committee on Payment and Settlement Systems (2005) provides fuller discussion of liquidity savings features and of the comparison between DNS and RTGS systems.

¹⁹ ESAS account holders 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.

²⁰ 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.

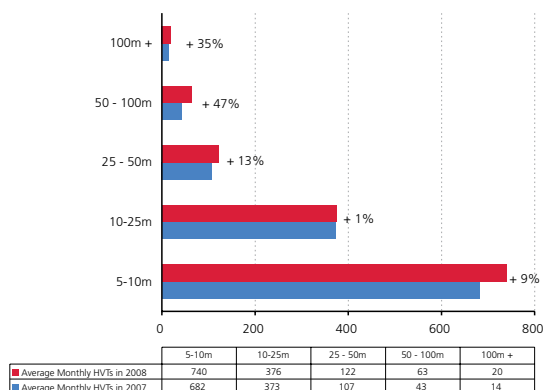
Intuitively, the size of a payment should be a key factor determining the net benefit of settling it on a RTGS rather than a DNS basis. In New Zealand, large payments from one bank to another processed through ISL that are not offset by payments proceeding in the opposite direction potentially result in significant end-of-day net bilateral exposures and thus increase settlement risk. Moreover, this risk could increase quickly and significantly during a period of stress, if high-value transactions that are usually settled in the RTGS system are diverted to ISL due to liquidity constraints.

Evidence of the impact of high-value transactions in the retail payment system

Data from New Zealand's retail payment system allow an examination of the impact of high value transactions (HVTs), defined as those of \$1 million or more, on end-of-day exposures.²¹ It also allows observation of retail payment flows during the recent period of liquidity pressure.

The data show that the level of net bilateral exposure increases significantly when some transactions are of very high value (eg, over \$25 million). Transactions of this value are not uncommon in ISL. Throughout 2007, there was an average of 160 transactions of \$25 million or more each month, and this increased to an average of 200 in the first

Figure 2
Growth in HVT's between 2007-2008



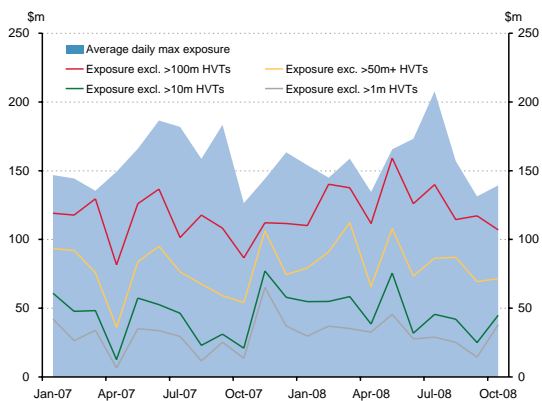
Source: New Zealand Bankers' Association

ten months of 2008 (see the breakdown of growth in various HVTs categories in Figure 2). To provide context, the average transaction settled through ESAS (which is designed and used mainly for large-value transactions), was about \$5.5 million in the year to June 2008.

Figure 3 below shows that from January 2007 to October 2008 the average, over a calendar month, of the largest daily bilateral net exposures between any two banks:

- ranged between \$130 to \$210 million;
- would have declined by about 25 percent if exceptionally large transactions (ie, those above \$100 million) were excluded;
- would have declined by about 50 percent if transactions over \$50 million were excluded;
- would have declined by 70 percent if transactions over \$10 million were excluded; and
- would have declined by over 80 percent if transactions over \$1 million were excluded.

Figure 3
Average daily maximum bilateral net exposure



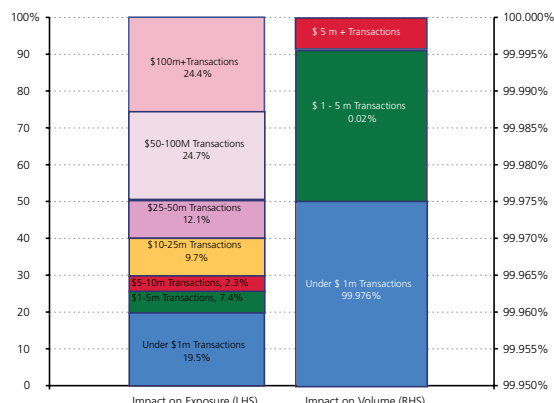
Source: New Zealand Bankers' Association

Figure 3 demonstrates the intuition that the size of the transaction impacts on retail payment system settlement risk.

Figure 4 below shows that a significant portion of average net bilateral exposure is associated with only a very small portion of total payments. In particular, the chart shows how much various HVT categories contribute to the average daily net bilateral exposure, as compared to their respective volumes. For example, HVTs that are over \$1

²¹ The analysis reported here has been undertaken using data provided by the New Zealand Bankers' Association.

Figure 4
Impact on exposure and impact on volume



Source: New Zealand Bankers' Association

million contribute to about 80 percent of the average daily maximum net bilateral exposure, but they only make up 0.024 percent of daily volume going through ISL. In theory, this suggests if, for instance, a blanket approach of diverting all transactions above \$1 million out of ISL and into ESAS is applied, it will reduce the net bilateral exposure significantly without impacting on over 99.976 percent of transactions in ISL. The recent period of liquidity pressure has not resulted in any discernible impact on retail payment flows to date. In particular, there is no evidence of high-value transactions being diverted through the retail payment system. However, this does not mean that future periods of liquidity pressure would not result in large-value payments being diverted.

Management of settlement risk in the retail payment system

Given that DNS systems are typically associated with a higher level of settlement risk, management of settlement risk in these systems is desirable. Approaches to managing settlement risk within a DNS system include:

- Limiting access: access could be limited to those institutions that are most able to manage the risks created in the system. However, restrictions on access can reduce the overall efficiency of the payment system.
- Direct measures to limit risks: this includes measures such as limits on exposures to other participants, controls on the value of payments that can be processed by the

system, posting of collateral, and limits on the time between an instruction entering the settlement queue and being settled.

Settlement risk in the retail payment system is an issue that is relevant to the payment oversight role of many central banks. Planned developments to key payment system infrastructure in Japan are an example of an initiative to manage settlement risk in the retail payment system. Japan's main retail payment switch is the Zengin Data Telecommunication System (Zengin System). Payments processed through this system are settled on a DNS basis. As part of a project to enhance its RTGS system, the Bank of Japan is planning measures that will substantially reduce the value of transactions settled on a DNS basis. These plans included changes to the Zengin System so that it will sort payments into small and large-value categories. Small value payments will continue to be processed on a DNS basis, while large-value payments will be directed through the RTGS system. New liquidity-saving features within the RTGS system (payment queuing and offsetting functionality) will help manage the additional liquidity demands associated with more payments being settled on a RTGS rather than DNS basis.²²

5 Payment system oversight applied to settlement risk

The Statement Of Principles: Payment System Oversight states that in the Reserve Bank's view, a sound and efficient

²² The Bank of Japan is currently phasing in the implementation of the 'next-generation real-time gross settlement (RTGS-XG) project'. The project consists of two measures with a view to further enhancing the safety and efficiency of large-value payment systems in Japan. The first measure is the introduction of liquidity-saving features into the RTGS mode of the BOJ-NET Funds Transfer System (Japan's RTGS system). The second is the modification of the BOJ-NET Funds Transfer System to incorporate large-value payments that are currently handled by two private-sector deferred net settlement systems into the new RTGS system with liquidity-saving features. One of these systems is the Foreign Exchange Yen Clearing System (which processes mainly large-value payments) and the other is the Zengin System. More information about the RTGS-XG project can be found on the Bank of Japan's website: http://www.boj.or.jp/en/theme/psys_seibi/paysys/bojnet/index.htm

payment system is one that does not generate high levels of risk to participants and in which any risks that are generated are managed appropriately by system participants. The Reserve Bank's objective is that settlement risk is eliminated or minimised, and where residual risk remains that this be borne by those best placed to manage it.

As outlined above, significant settlement risk exists in the New Zealand retail payment system. Moreover, this risk is not always borne by those best placed to manage it. For instance, a payment instruction sent to ISL can expose the bank that will be due to receive the funds to the bank which sent the instruction and will be due to send the funds.

Satisfactory resolution is likely to require collective action as individual action could be disadvantageous to the individual. For instance, if a bank elected to stop sending high-value transactions through the retail payment system, it might lose customers to another bank that continued to do so. Not initiating such transactions might also increase a bank's end-of-day net bilateral exposure if such action meant its gross obligations to other banks decreased but the gross obligations other banks had to it remained unaffected.

The industry has been working collectively to identify how settlement risk can be reduced in the retail payment system as part of the NZBA Failure to Settle project. The current proposal, known as 'Settlement Before Interchange' (SBI) seeks to mitigate inter-bank settlement risk by settling interbank payments prior to banks incurring obligations based on (the expectation of) inter-bank payments being made. Under this approach:

- a number of batches of net bilateral obligations would be processed each day through ESAS;
- net bilateral obligations would be incurred at the time payment instructions are sent to ESAS;
- once ESAS had processed inter-bank payments, participating banks would receive payment confirmation messages; and
- once banks receive the payment confirmation message, customer accounts would be credited or debited.

The Reserve Bank has engaged with industry as the Failure to Settle project has progressed. However, consistent with

its approach to payment system oversight, the Reserve Bank has encouraged industry to resolve the issue of settlement risk and has not promoted any particular solutions.

The main way that the Reserve Bank has engaged with industry on retail payment system policy issues is through acting as an observer in the NZBA Payment Systems Committee (which oversees, among other things, the Failure to Settle project).²³ Also, through various editions of the *Financial Stability Report* the Reserve Bank has expressed its views and has published analysis of the incidence of high-value transactions in the retail payment system.

Through its engagement, the Reserve Bank has stated that its support for the SBI proposal is conditional on the development of further arrangements to limit the amount of time between when an instruction enters the payment system and when it is settled and banks are advised of settlement, and to limit the value of transactions that could be awaiting settlement and/or payment confirmation at any time.

The Reserve Bank has also, on a number of occasions, noted its concern about the slow pace of the Failure to Settle Project.²⁴ Although recent progress has been made the timeline for the SBI solution has been extended on several occasions and is currently not expected to be implemented until late in 2011. The recent letter from the Governor of the Reserve Bank to bank chief executives noted above was partly in response to concerns about the timing of the Failure to Settle project.

Conclusion

The Reserve Bank's approach to payment oversight is to be clear about its objectives and encourage industry to lead the development of solutions towards those objectives. This approach is consistent with our relatively limited payment

²³ The NZBA is also progressing the Access and Governance project. The Failure to Settle project and the Access and Governance project are related to each other and are both relevant to the Reserve Bank's payment system oversight objectives. However, in order to contain the discussion, this article focuses only on the Failure to Settle project.

²⁴ The Reserve Bank has expressed the same concern in relation to the Access and Governance project.

system oversight powers. Our experience engaging industry on the issue of settlement risk in the retail payment system demonstrates our payment system oversight approach 'in action', and the way the Reserve Bank responds to industry initiatives relevant to our oversight objectives. Recently, in light of our experience working with industry, we have indicated that we intend to take a more active interest in payment system matters in order to help expedite projects that meet our policy objectives.

References

Bank of England, HM Treasury and Financial Services Authority (2008) 'Financial stability and depositor protection: further consultation' HM Treasury, July 2008.

Bollard, A (2005) 'New Zealand Payment System', speech to the Institute of Financial Professionals New Zealand, <http://www.rbnz.govt.nz/speeches/1950398.html>, accessed 14 November 2008.

Committee on Payment and Settlement Systems (2000) 'Clearing and Settlement Arrangements for Retail Payments in Selected Countries', Bank for International Settlements, September 2000.

Committee on Payment and Settlement Systems (2001a) 'A glossary of terms used in payments and settlement systems', Bank for International Settlements, January 2001.

Committee on Payment and Settlement Systems (2001b) 'Core Principles for Systemically Important Payment Systems', Bank for International Settlements, January 2001.

Committee on Payment and Settlement Systems (2005) 'New developments in large-value payment systems', Bank for International Settlements, May 2005.

Committee on Payment and Settlement Systems (2003) 'Policy issues for central banks in retail payments', Bank for International Settlements, March 2003.

Lowe, P (2006) 'The Central Bank and the Payment System', remarks at SWIFT International Banking Operations Seminar, http://www.rba.gov.au/Speeches/2006/sp_ag_121006.html, accessed 14 November 2008.

Lowe, P (2008) 'The Preliminary Conclusions of the Payments System Review', address to the Visa Forum 2008, http://www.rba.gov.au/Speeches/2008/sp_ag_040608.html, accessed 14 November 2008.

Nield, I (2008) 'Evolution of the Reserve Bank's liquidity facilities', Reserve Bank of New Zealand *Bulletin*, Vol. 71, (4), pp. 5-17.

Reserve Bank of Australia (2007) 'Reform of Australia's Payment System Issues for the 2007/08 Review' Reserve Bank of Australia, May.

Reserve Bank of New Zealand (2006a) *Financial Stability Report*, May.

Reserve Bank of New Zealand (2006b) *Financial Stability Report*, November.

Reserve Bank of New Zealand (2008) 'Payment and settlement systems in New Zealand', <http://www.rbnz.govt.nz/finstab/payment/>, accessed 14 November.

Stinson, A and M Wolyncewicz (2003) 'Recent developments in the payment system', Reserve Bank of New Zealand *Bulletin*, Vol. 66 (1), pp. 21-33.