New Zealand's Experiment with Prudential Regulation:

Can Disclosure Discipline Moderate Excessive Risk Taking

in

New Zealand Deposit Taking Institutions?

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Abstract

The New Zealand economy in the period up to 2006 provides an opportunity to assess an alternative disclosure based approach to the prudential regulation of deposit-takers, in a market free of many of the distortions which arise from traditional regulatory schemes. The overall objective of this research has been to assess the effectiveness of the prudential regulation of New Zealand financial institutions and judge if the country is well served by it.

Analysis of New Zealand's registered bank sector suggests public disclosure adds value to New Zealand's financial system. However, the significant relationship found between disclosure risk indicators and bank risk premiums was not as a result of market discipline, rather it is argued self-discipline was the mechanism, demonstrating bank management and directors are discharging their duties in a prudent manner. A feature of the New Zealand disclosure regime for banks is the significant responsibilities placed on bank directors; directors are then held accountable for their actions.

Findings in the management of banks were in contrast to non-bank deposit-takers, where disclosure was judged to be ineffective, and of no practical use due to its poor quality. The management of non-bank deposit-takers appeared to receive very little oversight from depositors, their trustees or official agencies. As a result, many appear to have managed their institution in their own interests, with little consideration given to other stakeholders. Failures which occurred in NBDTs from 2006 resulted from deficiencies in the prudential regulation of these deposit-takers, demonstrating the severity of asymmetric information and moral hazard problems which can arise if

prudential regulation is not correctly designed and management interests are not aligned with other stakeholders.

The New Zealand disclosure regime will never guarantee a bank will not fail, nor should it try to do so, but it should assist the functioning of a sound and efficient financial system. To this end, it is recommended that the Reserve Bank, in re-designing the regulatory framework for NBDTs, hold the management and directors of NBDTs similarly accountable, while also incorporating regular disclosure and minimum prudential standards. Governments have an important role to play in ensuring the financial system is efficient.

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1 Introduction

1.1 Introduction

Banking is one of the oldest professions known to man, with evidence of temples being used to store gold and make loans in ancient Babylonia (Bromberg, 1942). Ancient Greece provides further evidence of loans being made and interest charged. The *trapezitai* or moneylenders of Greece extended their services by offering a rudimentary payment function, in which a credit note given to a trader in one Greek port could be cashed with a moneylender in another, thus transferring funds (Lopez, 1979). Today, these classical functions — the provision of a payments system; the transfer of funds from one party to another in order to settle their obligations; and financial intermediation, in which the needs of borrowers and savers are matched, enabling funds to be transferred through time — can still be used to define a bank.

The banking industry touches every part of our daily existence, with the health of the economy largely dependent on the confidence we have in the banking system. The payment system facilitates trade, relieving people of the need to barter for goods and services. Traders are no longer tied to their immediate environs, as payments can be made quickly, reliably and cheaply on a local and international basis. Consequently, trade has expanded from the village square to the international marketplace. Financial intermediation likewise facilitates economic development. Entrepreneurs who were once restricted by the need to seek funding from personal acquaintances can now seek funding through banks. Banks provide a cost-effective method for those with surplus funds to invest in those with productive opportunities and a need for capital. The charging and payment of interest, which is often simplistically seen as an unjust impost on development, or in some societies as even being immoral, ensure that only the most

efficient productive opportunities are funded in. In return, savers, who need to provide for future consumption, are appropriately compensated for the use of their financial resources and the risk they bear.

There can be little debate as to the importance of the banking industry, as the payment system and particularly financial intermediation are critical to the health of our modern economies (Frederic S. Mishkin, 2001). When a bank fails, the economy as a whole may be damaged. The cost of failure is not entirely borne by the bank's shareholders and depositors; the entire economy is impacted, with a consequential loss in economic development and ultimately a lower standard of living for all.

1.2 Background and Motivation

The important role played by banks in modern economies is so critical that it is commonly believed their management cannot be left entirely to their own devices. In other words, banks must be regulated and supervised. Consequently, banks in most countries[1] are regulated and supervised, some more than others, with supervision normally the responsibility of each country's central bank or some other government agency (Bank for International Settlements, 2006).

Globalisation of the banking industry, which occurred in the second half of the 20th century, has resulted in individual banks spanning a multitude of countries. As a result, there is now a need for the supervision of banks to be co-ordinated on an international basis as evidenced by the speed with which the financial crisis of 2008

[1] At the International Conference of Banking Supervisors held in Mérida, Mexico, on 4-5 October 2006, bank supervisors from central banks and supervisory agencies of 120 countries endorsed the updated version of the Basel Core Principles for Effective Banking Supervision and its Methodology. They declared their continued support for the implementation of international minimum standards for banking supervision in all countries.

spread globally. To this end, the Basel Committee on Banking Supervision was established in 1974 by the central bank governors of the G10 countries. The committee, although having no legal supervisory authority over individual banks, has evolved into a standard setting organisation, through at first the 1988 Capital Accord and then more recently Basel II, which has been adopted by most nations as the basis of their bank regulatory regimes.

The committee believes the effective supervision of banking organisations is an essential component of a strong economic environment (Basel Committee on Banking Supervision, 1997). Recently, Basel II set out a revised framework for the supervision of internationally active banks, comprising three mutually reinforcing pillars: 1) Minimum capital requirements; 2) A supervisory review process; and 3) Market discipline. The detail of the framework is contained in the 25 Core Principles, endorsed by 120 countries at the 2006 International Conference of Banking Supervisors (Bank for International Settlements, 2006). Although the 25 Core Principles are extensive, they are not prescriptive. That is, countries endorsing Basel II must implement banking regulations as they see necessary to comply with Basel II.

In 1998, the World Bank sponsored a global survey, collecting detailed information on the regulation and supervision of banks. This was undertaken and reported on by Barth, Caprio et al., (2001 & 2004). In responses from 107 countries, they find little evidence to support the effectiveness of traditional methods of bank supervision. Instead, they suggest that, in order to promote bank development, performance and stability, governments should design regulations and supervisory practices that "1) Force accurate information disclosure; 2) Empower private-sector corporate control of banks; and 3) Foster incentives for private agents to exert corporate

control" (Barth, Caprio, & Levine, 2004, pp. 245-246). These three factors to some extent address the adverse moral hazards resulting from poorly designed deposit insurance schemes.

The work of Barth, Caprio et al., (2004) highlights two important questions. First, why are traditional systems of prudential regulation of banks ineffective? Second, given the importance of banking institutions to the economy, if traditional methods are ineffective, are there better ways of controlling banking activities?

The answer and solution, according to New Zealand's bank regulator, the Reserve Bank of New Zealand (RBNZ), lie in self-discipline and market discipline, rather than regulator-imposed discipline. Regulations introduced in 1996 are designed to address the Reserve Bank's concerns regarding the country's conventional bank supervision regime at the time. This regulation foreshadowed the findings of Barth, Caprio et al., (2004) by replacing the private monitoring of banks by supervisors with a system requiring the comprehensive disclosure of financial information to the public. The regulation of banks in New Zealand has as its sole focus the protection of the financial system as a whole, with the new regime aimed at lowering compliance costs, reducing moral hazard and promoting market discipline, thereby alleviating the risk to taxpayers of bearing the cost of a bank crisis (Brash, 1995).

New Zealand has 19[2] registered banks (RBs), under the watch of the RBNZ, with retail deposits of NZ$120 billion (RBNZ Staff, 2008b). In addition, there are approximately 200 non-bank deposit-takers (NBDTs) that have NZ$8 billion in retail

[2] At the time of this research New Zealand had 16 RBs. Since this research was undertaken, the number of registered banks has increased to 19 with the registration in 2008 of the Southland Building Society as a bank and in 2009 of the Bank of Baroda and of a branch of the Australian ANZ group (separate from the existing NZ subsidiary).

deposits (RBNZ Staff, 2008b). NBDTs are not regulated by the RBNZ. Instead, they operate under the provisions of the Securities Act 1978. Importantly, there is no official body with responsibility for the prudential oversight of NBDTs, as the Securities Commission's only interest in them is their compliance with provisions of the Securities Act 1978. In New Zealand, at the time of this study, there were no explicit protections for depositors. Funds on deposit were not guaranteed, there was no deposit insurance, and there was limited prudential oversight. Depositors with no safety net were instead expected to monitor the riskiness of institutions themselves and take responsibility for making their own (appropriate) investment choices. New Zealand provided an ideal laboratory in which to test the usefulness of market discipline in the prudential regulation of deposit-taking financial institutions. This was the case until the New Zealand government, in October 2008, in response to the global credit crisis and an expected Australian deposit guarantee, introduced a temporary two-year opt-in deposit guarantee for New Zealand deposit-taking institutions. The scheme has since been modified and extended until the end of 2011, bringing it into line with the Australian deposit guarantee scheme.

New Zealand and Australia now face the difficult task of credibly unwinding the temporary deposit guarantee currently in place. If this is not well managed, the respective governments will simply have replaced an explicit guarantee with an implied guarantee. The Australia-New Zealand Shadow Financial Regulatory Committee (2009) believes a return to the pre-crisis caveat emptor will not be possible. If the guarantees are still thought necessary when economic conditions normalise, they should be replaced with ones which promote competition, moderate excessive risk-taking and are fully priced to reflect their underlying value (ANZSFRC, 2009).

1.3 Research Objectives and Questions

This dissertation examines the prudential regulation of New Zealand deposit-takers – banks and non-banks – prior to the 2008 global financial crisis to determine if the country is well served by its disclosure regulation model. Ultimately the underlying research objective of this thesis is to determine if depositors in banks and non-bank institutions can have confidence in the New Zealand institutions to which they entrust their capital. If they can, the Reserve Bank will have been successful in assisting the functioning of a sound and efficient financial system, where the payment system facilitates trade and the needs of both savers and borrowers are satisfied through financial intermediation. Such a system will assist the economic development of New Zealand, leading to a more prosperous society.

The precept underlying this thesis is that for disclosure to be effective, deposit-takers must moderate their behaviour in response to market discipline or the threat of market discipline. Depositors who observe a change in the risk profile of a deposit-taker may take three responses, or a combination of them, in applying discipline to an institution. The three basic responses are price-based, volume-based and maturity-based. In the price-based response, depositors would require an increase in the risk premium they receive in compensation for facing additional risk. In the volume-based response, depositors would simply shift their deposits to an alternative deposit-taker who matches their risk-return requirements. In the maturity-based response, depositors who are unsure of the longer-term risk of the deposit-taker may limit the term of their deposits whilst they gauge the situation. As a result of an increase in the perceived riskiness of a particular deposit-taker, the institution in question should face any or all of these three responses.

An institution subject to market discipline has only limited options. If possible, it could address issues surrounding its riskiness, though this is likely to take some time, or it could respond directly to depositors' demands, increase its risk premium and offer higher deposit rates. This latter option would be the more direct and quicker response. A deposit-taker who does not address its risk issues or increase its risk premium in compensation will be forced, as deposits are withdrawn, to reduce the size of its assets (sell loans) or to call on additional funding from owners to maintain its current level of assets.

The New Zealand deposit market is primarily a retail market, and prior to the introduction of the temporary deposit guarantee in 2008, disclosure and market discipline were extensively relied upon to ensure the prudential safety of New Zealand deposit-takers. For market discipline to be effective, depositors must recognise the risk they bear. Before empirically testing the effectiveness of disclosure, New Zealand depositors are surveyed to determine if they appreciate the risk they take when depositing funds in New Zealand institutions and, secondly, if they are aware of their entitlement, under current legislation, to relevant information.

If disclosure is effective in moderating excessive risk-taking by deposit-takers, then there should be an observable relationship between disclosure risk indicators and a deposit-taker's risk premium or its share of available deposits. A null response would suggest the current public disclosure of financial risk information adds little to the safety and soundness of New Zealand deposit-takers, rendering the current disclosure regime ineffective. This gives rise to the following research questions.

1.3.1 Research Question 1 Test of Bank Risk Premium

Is there a statistically significant relationship between New Zealand-registered banks' risk premiums and their disclosure risk indicators?

1.3.2 Research Question 2 Test of Bank Deposit Market Share

Is there a statistically significant relationship between the market share of available deposits to each New Zealand-registered bank and its disclosure risk indicators?

(Due to a lack of suitable data it is not possible to test the relationship between registered banks' risk indicators and the maturity structure of deposits, though Figure 6 indicates the average maturity of deposits in RBs is around 90 days, which would limit deposit maturity as a discipline mechanism.)

1.3.3 Research Question 3 Test of NBDT Risk Premium

Is there a statistically significant relationship between New Zealand non-bank deposit-takers' risk premiums and their disclosure risk indicators?

(As the only source of deposit volume data for NBDTs is their annual financial statements, it is not possible to test deposit volume or deposit maturity against NBDTs' disclosure RIs.)

1.3.4 Research Question 4 NBDT Probability of Crisis

Is it possible to use New Zealand non-bank deposit-takers' disclosures to determine the probability of an institution suffering a crisis event?

1.4 Data, Methodology and Findings

All data used in this analysis is publicly available. No access is made to confidential data from any government agency or financial institution. Furthermore, all data used is available to depositors close to real time (within one quarter), so they can use it in their investment decision-making, thus applying market discipline. The use of this public data makes the study realistic. Interest rate data is collected from the Investment Research Group (IRG) database. This is the source of retail deposit (and mortgage) interest rates published in New Zealand newspapers on a weekly basis. In the case of RBs, the risk premium (RP) for each institution is calculated by subtracting the three-month bank bill rate from each institution's advertised three-month deposit rate. Each bank's market share of available deposits is calculated from deposit levels reported in its General Disclosure Statements (GDS) over total New Zealand bank deposits as reported by the RBNZ. For NBDTs, the RP is calculated by subtracting the 12-month NZ Government Bond rate from each institution's 12-month (secured) deposit rate.

Risk indicators (RIs) used, are extracted from each institution's public disclosure statements. For RBs, these are sourced from the RBNZ database of Key Information Summaries (KIS) as maintained on the RBNZ website[3]. As the KIS contained no liquidity data, this is supplied by Dr David Tripe, director of the Massey University Centre for Banking Studies, who maintains copies of GDS for New Zealand RBs. Three sources are used for NBDT RIs: the KPMG Financial Institutions Performance Surveys,

[3] http://www.rbnz.govt.nz/statistics/banksys/index.html

the interest.co.nz website[4], and NBDT prospectuses published on the website of the New Zealand Companies Office[5].

Ordinary least squares (OLS) regression analysis is used in this study to determine if there is a statistically significant relationship between the RIs of deposit-takers and their required RPs. As the sample of NBDTs contained a number of firms which subsequently failed, it is possible to complement OLS analysis with Logit analysis, in an attempt to determine if it is possible to predict failures from disclosure RIs.

Research question 1 is answered by applying ordinary least squares (OLS) regression to model the risk-return relationship in equation (1) for New Zealand registered banks (RBs). There is evidence of a statistically significant risk-return relationship in registered banks, indicating the effectiveness of New Zealand's bank disclosure regime. As the relationship is strongest prior to disclosure publication, it is suspected this effect is related to self-discipline rather than market-discipline.

$$RP_{RB} = C + \beta_1 RI_1 + \beta_2 RI_2 + \beta_3 RI_3 + \ldots + \beta_n RI_n + \beta_i Bank + \beta_v Macro + \varepsilon \qquad (1)$$

Note: RP_{RB} is the risk premium for individual registered banks at disclosure publication calculated by subtracting the NZ 90-day bank bill rate from each bank's advertised 90-day term deposit rate, C is a constant term, $\beta_{1..,n}$ are regression coefficients, $RI_{1\ldots n}$ are risk indicators extracted from published disclosure statements, RI variables are detailed in **Table 24**, Bank is a dummy variable taking the value of (1,0) to indicate individual banks, Macro stands for a vector of macroeconomic factors and ε is an error term.

Research question 2 is similarly addressed by applying ordinary least squares (OLS) regression to model the relationship between RBs' deposit share and their disclosure risk indicators as shown in equation (2). Analysis of results from equation (2)

[4] http://www.interest.co.nz/intermediate.asp

[5] http://www.companies.govt.nz/cms/how-do-i/search-the-register/banner_template/CNAME

indicates there is no statistically significant relationship between deposit market share and risk indicators. No evidence is found of a relationship between deposit market share and disclosure risk indicators.

$$\Delta DMS_{RB} = C + \beta_1 RI_1 + \beta_2 RI_2 + \beta_3 RI_3 + \ldots + \beta_n RI_n + \beta_i Bank + \beta_v Macro + \varepsilon \quad (2)$$

Note: ΔDMS_{RB} for individual registered banks at disclosure publication is calculated by dividing their total deposits by the total deposits for all registered banks, C is a constant term, $\beta_{1..,n}$ are regression coefficients, $RI_{1...n}$ are risk indicators extracted from published disclosure statements, RI variables are detailed in **Table 24**, Bank is a dummy variable taking the value of (1,0) to indicate individual banks, Macro stands for a vector of macroeconomic factors and ε is an error term.

Moving to the analysis of non-bank deposit-takers (NBDTs), no evidence of a significant relationship between the RP and RIs in NBDTs in the form of equation (3) is apparent. While on the face of it this would suggest market discipline is applied by depositors, the null result could also be due to the poor quality of disclosure information available to the market, which is required to be updated only annually.

$$RP_{NBDT} = C + \beta_1 RI_1 + \beta_2 RI_2 + \beta_3 RI_3 + \ldots + \beta_n RI_n + \beta_i Industry + \varepsilon \quad (3)$$

Note: RP_{NBDT} is the risk premium for individual NBDTs at balance date calculated by subtracting the NZ 1-year Government Bond rate from each bank's advertised 1-year secured debenture rate, C is a constant term, $\beta_{1..,n}$ are regression coefficients, $RI_{1...n}$ are risk indicators extracted from published disclosure statements, RI variables are detailed in **Table 35**, Industry is a dummy variable taking the value of (1,0) to indicate individual industries NBDTs commonly lent to, and ε is an error term.

As a number of NBDTs suffered a crisis event in 2006 or 2007, a crisis dummy variable is created and then a binary logistic model in the form of equation (4) is used, to estimate the probability of a failure. This model correctly predicted 74% of the non-crisis firms, but when it came to failure prediction it managed to identify only 50% correctly. Given the negative consequences of investing in a deposit-taker which subsequently fails this level of accuracy means the model is of little value.

$$Crisis_{NBDT} = C + \beta_1 RI_1 + \beta_2 RI_2 + \beta_3 RI_3 + ... + \beta_n RI_n + \varepsilon \quad (4)$$

Note: $Crisis_{NBDT}$ is a dummy variable taking the value of (1,0) to indicate individual NBDTs which suffered a crisis event in 2006 or 2007, C is a constant term, $\beta_{1..,n}$ are regression coefficients, $RI_{1...n}$ are risk indicators extracted from published disclosure statements, RI variables are detailed in **Table 35**, and ε is an error term.

1.5 Contributions of the Study

The New Zealand economy over the study period provided a unique opportunity to assess the prudential regulation in a market free of the distortions arising from the safety nets of deposit insurance and government guarantees combined with little official oversight of deposit-takers since 1996. In that context, this study makes important contributions to research into the prudential regulation of deposit-taking institutions in a number of areas.

Firstly, it is revealed the New Zealand public has an apathetic attitude to deposit risk and a poor knowledge of disclosure information.

Secondly, despite the public's poor knowledge of deposit risk and disclosure information, analysis of the risk-return relationship in registered banks demonstrates New Zealand's disclosure-based banking regulation regime is effective in moderating excessive risk-taking in banks. However, it is concluded this is due to self-discipline rather than market-discipline as New Zealand's disclosure regime is designed to place significant responsibilities on bank directors to act prudently with the funds entrusted to them (Brash, 2001). Disclosure in New Zealand banks does provide valuable information for depositors and competitors; the most important financial ratios are identified for those evaluating bank riskiness.

Thirdly, in contrast to the banking sector, analysis of New Zealand NBDTs, which operate under separate legislation, reveals no risk-return relationship is present. The lack of a risk-return relationship and the numerous failures which occurred in this industry from 2006 are a result of deficiencies in the outdated legislation under which they operate. Disclosure in NBDTs is inadequate, management have carte blanche to set their own rules and there is no government body charged with their oversight. Finally, this research should be of immediate benefit to those New Zealand agencies charged with designing a new regulatory framework for this important sector of the New Zealand financial market.

1.6 Significance of the Study

The effectiveness of New Zealand's mandatory disclosure of bank RIs is significant given the current turmoil in world credit markets. The recent failure of a number of high-profile international banks would suggest they were inadequately supervised by government-appointed agents. In response, many stakeholders have called for greater regulation and tighter supervision of banks by government agencies. Results of analysis in this thesis suggest a better option would be for regulators to follow the call of Barth, Caprio et al., (2004) for increased disclosure of accurate financial information and the private-sector control of banks, along with greater incentives for private agents to monitor the risk of their investments as well as their return.

1.7 Organisation of the Study

The structure of the remainder of the thesis is as follows. Chapter 2 reviews relevant literature. Areas reviewed are the development of modern banks and their

prudential regulation, an overview of the New Zealand financial system as it relates to deposit-taking institutions, with details of the regulatory regimes under which registered banks (RBs) and non-bank deposit-takers (NBDTs) operate, and a survey of recent market discipline research in New Zealand and other countries.

Chapter 3 reports the results of a postal survey of New Zealanders, measuring their attitudes to deposit risk and their knowledge of disclosure information. Analysis of survey results suggests the New Zealand public have a very trusting attitude towards the institutions in which they place their funds, with most relying directly on the institution in making the investment decision. Another group of investors believe they can rely on the news media to do risk monitoring and analysis for them. Overall, few New Zealanders appear to fully know the risks they face or their rights to disclosure information.

In chapter 4, research question 1 is answered by empirically testing the risk-return relationship (the relationship between the market-discipline risk premium and disclosure risk indicators) in RBs. As a statistically significant relationship between the RP and some RIs is found, the relationship between RIs and the share of deposit funds held by sample banks is tested to address research question 2; however, no significant relationship is found.

Analysis of NBDTs is undertaken in chapter 5, where an attempt to answer research question 3 is made, empirically testing the risk-return relationship (the relationship between RP and disclosure RIs) in NBDTs. Despite finding little evidence of a risk-return relationship in NBDTs, the large number of failures in this industry prompted further investigation using Logit analysis to answer research question 4, which uses disclosure RIs to calculate a probability of failure for NBDTs.

Chapter 6 presents findings and answers the overall research objective, which is to determine the effectiveness of New Zealand's disclosure regime. It is concluded that the disclosure-based regime for RBs introduced by the Reserve Bank in 1996 works effectively and New Zealand has a sound and efficient banking system. However, the same cannot be said for NBDTs. The shambolic state of the industry is a result of outdated legislation, which has few incentives in place for management to act prudently, coupled with poor-quality disclosure to depositors. This research has significant policy implications which can be drawn on for the future regulatory review of deposit-taking institutions as well as giving the New Zealand government the confidence necessary to lift its temporary guarantee of deposits enjoyed by all New Zealand deposit-taking financial institutions.

2 Literature Review

2.1 Introduction

This chapter looks at the development of modern banks and their regulation leading up to Basel II. The development of banks and other deposit-takers in New Zealand is tracked from the 1840 Treaty of Waitangi through to the introduction in 1996 of the bank disclosure regime. As New Zealand's disclosure regime is heavily reliant on market discipline, recent market-discipline research in New Zealand and other countries is surveyed.

The first *modern* banks developed in response to colonial expansion by the Dutch and English in the 16th century. The financing of the Dutch and English empires was conducted in the coffee houses of the two countries' respective home ports. The resultant increase in trade led to Amsterdam and London becoming financial centres (Irwin, 1991). An efficient financial system is still critical for economic development because without it the investment which New Zealand needs will be curtailed.

2.2 Banking Supervision and Regulations

The important role played by banks in the economy has led to governments taking on the role of supervisor and regulator of banks. Governments consider supervision and regulation necessary to ensure bank managements do not take excessive risks, which could put the funds of depositors at risk. While a loss of funds is devastating to individual depositors in a bank failure, significant damage to the economy as a whole can result with the failure of unrelated banks. There are two main reasons for the contagious nature of a bank failure; first, the inability of depositors to assess the riskiness of banks, due to the presence of asymmetric information, results in

their withdrawing funds from otherwise healthy banks; and second, the interrelatedness of the payment system means all banks have significant exposures to one another.

Excessive risk-taking by banks has led to financial crises in many developing countries. Mishkin (1999) argues that costly crises in Chile in 1982, Mexico in 1994 and 1995 and several Asian countries beginning in 1997 were the result of bank liberalisations and inflows of funds which led to unsustainable lending booms. Due to the asymmetric nature of banking contracts, depositors and other investors were unaware of the deterioration in bank loan asset values until it was too late. This is not unlike the current crisis, with banks failing in many developed countries as a result of their investments in financial assets they were not able to correctly value. Governments are facing the direct costs of bailing out banks as a result of unwise investment and loan decisions. The greater cost, however, is the loss of economic activity as credit is curtailed throughout the economy, forcing those with profitable and productive ventures to limit growth due to a reduced supply of capital.

2.2.1 Short History of Banking Supervision and Regulations

In 1609, the Wisselbank, or Amsterdam Exchange Bank, was licensed, becoming an official state bank. Not only did it handle the city finances, but all merchants were forced to maintain bank accounts, as they were required to pay bills over a specified amount through the bank (G. J. Benston, 2000). The requirement to pay bills through the bank was designed to prevent the debasement of gold and silver coins, eliminating the common practice of passing on light coins (Quinn & Roberds, 2006), as the Wisselbank accepted coin valued only on its metal value and withdrawals were paid out in coins of a consistent weight and value.

Although initially merchants were required by law to make transactions through the Wisselbank, they did benefit from the provision of a reliable payment system. Prior to this, merchants and money changers had to contend with more than 1000 different types of gold and silver coins (Neal, 2000). Furthermore, there was no charge for bill settlement, deposits were guaranteed by the city, and the system operated in real time (van Dillen, 1964, cited in Quinn and Roberds, 2006), reducing the need to hold cash. That more than 3000 merchants from all over Europe had opened accounts before 1720 indicates the success of the bank (Neal, 2000). The gold and silver left in the vaults of the Wisselbank was available to finance trade, and bills of exchange drawn on the bank were reliably, and promptly, honoured.

Eventually, the Wisselbank began charging a small fee for the withdrawal of funds. Consequently, by the late 1640s, a market developed for the buying and selling of bank deposits. The rate of exchange that developed was called the *agio,* and this fluctuated according to demand for bank money relative to coin, rising when more coins were being deposited than withdrawn, and vice versa. The floating *agio* provided a local shock absorber, keeping coin in circulation, whilst allowing the maintenance of a fixed exchange rate for international transactions (Neal, 2000). Quinn and Roberds (2006) point to the open market operations of the Wisselbank as a move from a medieval model of an exchange bank towards becoming a central bank, affecting more than the local economy.

Across the English Channel, the Bank of England was established in 1694 primarily to finance William of Orange in his war against Louis XIV (Webber, 1981). Participating creditors were organised as the governors of the bank and its initial share capital of £1.2 million was passed directly to the state. In return, the proceeds of the

government's salt tax were pledged to the bank. The bank was given further rights, becoming an agent of the government and, in 1708, was given the monopoly on the issuing of bank notes in England and Wales. Similar models were adopted in France, Sweden and Germany at about the same time.

In contrast to the model followed in England, the Bank of Scotland, established in 1695 by the Scottish Parliament, was specifically forbidden to lend to the state. Banking in Scotland developed into what has come to be known as the *free banking model*. Free banking was very much unregulated, with entry unrestricted and all banks having the right to issue notes, backed by specie. The number of banks in Scotland peaked at 37 in 1810 and, as evidence of their success, bank notes replaced specie as the circulating medium in Scotland in this period (Gorton, 1985).

Deposits in Scottish banks were relatively safe, as bank owners faced unlimited liability under Scottish bankruptcy laws. Bank owners were liable to lose all their *real and heritable* estates in the event of failure. For example, Gorton (1985) cites the failure of the Fife Bank in 1829, where each £50 shareholder was assessed £5,500. Although some banks collapsed during this time, there were very few losses to note-holders and no tendency for bank runs, due to the unlimited liability of owners. The closest Scottish free banking came to a panic was the collapse in 1772 of the Ayr Bank, at the time the largest bank in Scotland. On its collapse, the Bank of Scotland and the Royal Bank of Scotland stepped in and honoured its notes, and shareholders made good the losses by selling their land and property (Dow & Smithin, 1992).

2.2.1.1 Development of Central Banks

Central banks developed haphazardly in the 18th and 19th centuries, as the need arose in individual economies. Banks were set up either under free banking rules or the auspices of a government charter. Those established by government charter were normally responsible for the management of the national currency, as well as acting as bankers to the government. It was these government-chartered banks that in the main developed into what we know today as central banks. The best example of this was the Bank of England, which towards the end of the 19th century was providing key central-bank functions. The first of these was the provision of banking services to the government, and involved the management of the government debt. From its inception, the Bank of England was called on to provide resources to the government, as needed. Between 1688 and 1815, England participated in seven significant wars, such that the original loan of £1.2 million to William of Orange in 1694 had blown out to £792 million and, by the end of the Napoleonic War in 1816, represented 250% of the national income (Wright, 1999).

The second key function provided by the Bank of England was the management of the economy's payment system. Legislation passed in 1826 allowed the bank to do business anywhere in the country and led to the establishment of an inter-bank network that facilitated the settlement of payment obligations throughout much of the country. Further legislation in 1844 gave the bank sole responsibility for issuing currency and managing the country's gold standard, enabling the convertibility of currency, both domestically and internationally.

While the above factors are critical to a healthy economy, it is a bank's responsibilities when the economy is under stresses that have come to define its role as

a central bank. In the case of the Bank of England, this was shown in its actions in 1890, when faced with the collapse of Barings Bank. In the previous two years, Barings had invested a total of £13.6 million in Argentina, mainly in infrastructure projects such as the provision of water and sewerage to Buenos Aires (Kornert, 2003). The Argentinean economy subsequently deteriorated, with inflation of 98% in 1889 making the servicing of debt impossible. As a result, Barings faced a liquidity crisis (Kornert, 2003). The Bank of England, which had been supporting Barings by accepting its bills, approached the Chancellor of the Exchequer and threatened that unless the government relieved the Bank of England of some of the potential losses, the bank would stop all further acceptances. Under this pressure the government agreed to bear half the loss and the Bank of England put together a rescue package for Barings (Kynaston, 1995). The actions of the Bank of England were as the *lender of last resort* (LOLR), designed to support a basically sound bank in need of temporary liquidity support. Goodhart (1988) views the bank's transformation into a non-competitive, non-profit-maximising central bank as providing the only sort of organisation that could be relied upon to act as arbiter in the face of contagious bank runs, when coupled with the informational asymmetries present in banking.

Other developed economies, such as Sweden (1668), Denmark (1773) and Italy (1893), formed their central banks from failed private banks. The governments of France (1800), Belgium (1835), Russia (1860), Germany (1875), Japan (1882) and Switzerland (1905) set up their central banks from scratch. This left the US as the only economy of significance without a central bank and without a lender of last resort to provide liquidity when needed. The cost of this was numerous banking failures, which led ultimately to the enactment of the Federal Reserve Act in 1913.

Prior to the launching of the Federal Reserve, the closest that the US came to having a lender of last resort was the New York clearinghouses, which for a 50-year period from 1857 offered loan certificates to member banks who were facing liquidity constraints. Borrowing banks pledged collateral, such as commercial paper, bills receivable and stocks and bonds, against which the clearinghouses advanced certificates of up to 75% of the collateral value. Loan certificates were a temporary form of liquidity, with a term of one to three months. The interest rate of 6% per annum rose progressively if not repaid at maturity (Myers, 1931, cited in (Timberlake, 1984). Clearinghouse certificates were widely used in place of currency when liquidity was tight and, although probably illegal, worked effectively in preventing unnecessary bankruptcies (A. P. Andrew, 1908). Following the San Francisco earthquake of 1906 and during the ensuing recession in 1907, US banks were again in crisis. The six large national banks of New York took out clearinghouse certificates in excess of their needs to provide liquidity to the economic system as a whole, thus averting a crisis (Tallman & Moen, 2006). Writing at the time, Andrew (1908) puts the size of the emergency currency issued by clearinghouses in 1907 at US$334 million.

2.2.1.2 20th Century Banking

The US began the 20th century without a central bank, but in 1914, while congressional hearings were in progress to establish the Federal Reserve, the US was faced with another financial crisis. European investors were preparing for war by liquidating their gold stocks, and US$83 million in gold flowed out of the country in a three-month period (Silber, 2006), the largest outflow of capital since 1900. With no operational central bank, the administration of President Woodrow Wilson responded on July 31, 1914, by closing the New York Stock Exchange and using the Aldrich-

Vreeland Act to issue emergency currency in order to avoid a panic similar to that of 1907 (Silber, 2006). The NYSE remained closed until December 12, 1914. An unforeseen consequence for banks (especially those in New York) of the closing of the NYSE was that a large proportion of their assets were effectively taken out of circulation, with the banks unable to liquidate not only security investments but also time and demand collateral loans while the market was closed (O. M. W. Sprague, 1915). Sprague (1915) does concede, however, that without the closure of the NYSE the decline in prices would have been so severe as to cause the failure of brokers and their customers, with much consequential loss to the banks.

Federal Reserve Banks opened for the first time on November 16, 1914, in Boston, New York, Philadelphia, Cleveland, Richmond, Atlanta, Chicago, St. Louis, Minneapolis, Kansas City, Dallas and San Francisco. As the size of each bank was determined by that of its member banks, the Reserve Bank of New York had over 40% of the assets of the 12 Reserve Banks (O. M. W. Sprague, 1916). An immediate benefit to the economy that occurred on the opening of the Reserve Banks was a reduction in the required reserves, which for central reserve city banks went from 25% to 18%, for reserve city banks from 25% to 15%, and for country banks from 15% to 12%. This resulted in an immediate increase in liquidity, which in the case of New York national banks saw surplus reserves going from US$5 million to US$85 million overnight (O. M. W. Sprague, 1916).

The outbreak of the Great War brought to a head the issue of central bank independence. At the beginning of the 20th century, most central banks were either independent or were moving towards independence from their respective governments. The Federal Reserve was no exception, having been designed to be independent. The

outbreak of war, with its subsequent rampant inflation, meant that governments needed to take greater control of their economies. The United Kingdom, for instance, took control of the Bank of England and abandoned the gold standard. The Federal Reserve operated independently until the US entered the war in April 1917, when it also lost its independence. Following the war, there was widespread recognition of the undesirability of political interference in central banking, and independence was returned to the Bank of England and the Federal Reserve[6] (Capie, 1995).

2.2.1.3 Post Depression — Modern Banking Regulation

The Great Depression was a defining point in time for the world economy and important questions still remain unanswered as to its cause, the relationship between the 1929 sharemarket crash and the Depression, and whether it could occur again. Although these are interesting topics in themselves, they are not the subject of this thesis. What is important here is the impact the 1929 crash and the subsequent Depression had on banking regulation in the US and, ultimately, the rest of the world.

In 1929, the US had 24,500 commercial banks, with aggregate deposits of US$49 billion (Ballantine, 1948, p. 129). Of these, 7500 were under the supervision of the Comptroller of Currency, with the remaining 17,000 being the responsibility of the 48 state banking authorities. Ballantine[7] (1948, p. 131) reports that in October 1929 *call loans* backed by stock-market collateral stood at US$6 billion. A vicious circle of deflation ensued, with every action taken by banks to protect their positions seemingly

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[6] Governors of the Federal Reserve (7 members) are nominated by the US President and confirmed by Congress for staggered 14-year terms. As an independent federal government agency, the board of governors receives no congressional funding. The board reports on its operations annually to the Speaker of the House of Representatives.

[7] Arthur A. Ballantine served as Undersecretary of the Treasury from 1931 to 1933 in the Hoover administration.

depressing values further, thus worsening the position of banks. Bank closures were not immediate, with the 659 suspensions in 1929 being about normal for the 1920s, but the total increased to 1352 in 1930. The US economy was further tested when, on September 21, 1931, the UK came off the gold standard. Doubt as to the soundness of the US dollar led to increased demand for gold. In September, 305 banks closed, and October saw a further 522 closures. Overall, bank deposits fell by US$6 billion, or 12%, during the last half of 1931, leaving the US served by 19,000 banks with US$40 billion in deposits (Ballantine, 1948, p. 132).

Initially, banks attempted to address the difficulties the industry faced by forming the National Credit Corporation. This proved to be insufficient, however, and in January 1932 the Reconstruction Finance Corporation (RFC) was formed, charged with making loans to all classes of banks on *adequate* security. That year, the corporation made loans totalling US$950 million to 5582 institutions (Ballantine, 1948, p. 133). The US ended 1932 with 18,000 banks holding deposits of US$36 billion.

From the US election in November 1932, decision-making in regards to the economy was subject to a political stalemate between the outgoing administration of Herbert Hoover and the incoming administration of Franklin D. Roosevelt. The two main points at issue were the publication of loan reports and the devaluation of the dollar. Loan reports to Congress by the RFC were initially required to be published, but the outgoing administration was reluctant to do so, fearing that it would put too much pressure on banks. These were eventually published by the Roosevelt administration, setting off a further runs on banks. Whereas the Hoover administration had been strongly in favour of maintaining the existing gold standard, the Roosevelt administration appeared to be receptive to lobbying for a cheapening of the dollar. As a

consequence of the ongoing debate on the gold standard, hoarding of gold by the public became an issue, putting further pressure on already stretched banks (Ballantine, 1948).

Matters came to a head in February 1933, when the Guardian Detroit Union Group (the smaller of two bank-holding companies in Michigan) was closed, while it asked the RFC for a US$50 million loan over and above the US$13 million it had already received. A dispute arose between the RFC and the Ford Motor Company, which was the major shareholder, over the subordination of claims amounting to US$7.5 million held by Ford. In response, Ford threatened to withdraw the US$25 million it currently had on deposit at the First National Bank (the largest bank in Detroit) if the Guardian Group did not reopen the following day. Consequently, on February 13, the Governor of Michigan declared a four-day holiday for all Michigan banks. This was extended, and other states also declared bank holidays as the crisis deepened. On March 4, with stocks of gold close to being exhausted, the Governors of New York and Illinois also closed their banks. Effectively, most US banks were closed by state proclamation, and on March 6, the newly inaugurated President Roosevelt declared a national bank holiday, making all banking operations illegal (Ballantine, 1948).

In their *Monetary History of the United States*, Friedman and Schwartz (1963) argue that the failure of monetary policy to stem the Depression and the collapse of the banking system led to an environment accepting of the need to experiment with closer regulation of banks and relaxation of the monetary standard. The Emergency Banking Act of March 9, 1933, made provision for the re-opening of banks licensed by the Secretary of the Treasury, or by state banking authorities. Of the 17,800 banks in operation prior to the banking holiday, 12,000 were relicensed to open (on March 13,

14, and 15). The rest were left in limbo, with 3,000 reopening at a later date, while more than 2,000 were either consolidated with other banks or closed (Friedman & Schwartz, 1963, p. 425).

New Deal changes to banking regulation were substantial, the foremost being the creation of the Federal Deposit Insurance Corporation (FDIC) in 1933. FDIC deposit insurance was required of all Federal Reserve member banks and optional for approved non-member banks (those subject to FDIC supervision). Eventually, most non-member banks took out FDIC deposit insurance, meaning that for the first time, federal supervision and examination were extended to almost the entire US banking system (Spong, 1994). Federal Reserve and FDIC restrictions imposed on banks at this time included the prohibition of the paying of interest on call deposits and limits placed on interest rates paid on time deposits. A common view held at the time was that the payment of interest encouraged banks to run down their reserves, while also taking increased risks, in order to pay the required interest (Friedman & Schwartz, 1963).

The second significant change was the separation of commercial and investment banking activities. While investment banks were prohibited from taking deposits, commercial, or traditional, banks were prevented from issuing, underwriting, selling or distributing stocks, bonds, debentures, notes or other securities (Spong, 1994). This change was designed to address perceived conflicts of interest apparent in the run-up to the sharemarket crash, with many banks acting for both the firms that were raising capital and the bank customers buying the newly issued securities.

Finally the hoarding of gold was forbidden, with an executive order on April 5, 1933, requiring all holders of gold, both individuals and banks, to transfer their gold and gold certificates to the Reserve Banks by May 1, receiving in return payment of

US$20.67 per ounce. The Gold Reserve Act of 1934 formalised the situation, with the Secretary of the Treasury controlling all dealings in gold and the President authorised to fix the weight of the gold dollar, which he did at US$35 per ounce. The revaluation of the dollar presented the Treasury with a paper profit — on its existing holding of gold and that newly acquired from individuals and banks — of approximately US$3 billion. This effectively gave it the ability to put a further US$3 billion of paper currency into the US economy (Friedman & Schwartz, 1963, p. 470). The Thomas Amendment to the Agricultural Adjustment Act had already provided for an additional US$3 billion (Friedman & Schwartz, 1963, p. 470)

The US learnt valuable lessons from the Depression. Ballantine (1948), in concluding his account of the period, states that bank examiners, if faced with a situation similar to 1929, would not insist on the liquidation of loans and collateral that had been so damaging in 1929. The Gold Reserve Act of 1934, which put gold under the control of the Treasury, would prevent any new rush on gold. Federal insurance of bank deposits up to US$5000 was an effective deterrent against contagious bank runs and the Governors of the Federal Reserve and Federal Reserve Banks had greater freedom in lending to provide bank liquidity.

In summary, the US emerged from the Depression with a very prescriptive set of regulations controlling all facets of banking. Under the dual state/federal system, market entry was limited, with banks often having multiple supervisors. Controls on the payment of interest rates by banks limited their activities and deterred risk-taking. Almost universal deposit insurance, whilst discouraging bank runs, absolved depositors from any responsibility in monitoring their bank, instead placing it entirely on the shoulders of the government. The dominant position of the US in the global economy,

then and over the following 50 years, ensured that as economic systems developed, or were rebuilt, much banking regulation that was standard in the US was adopted by other countries.

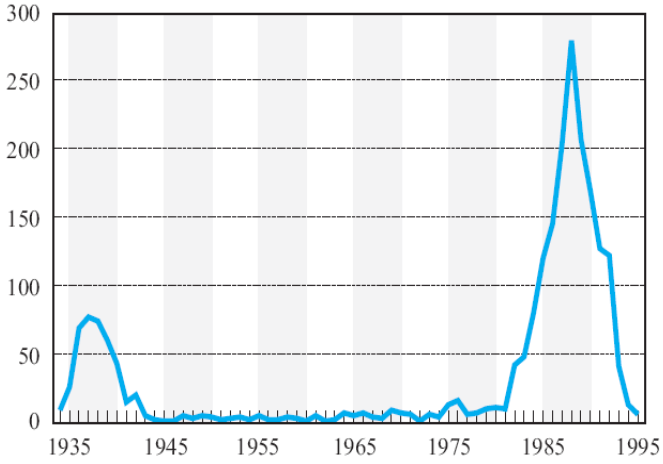
2.2.1.4 Bank Regulation at the End of the 20th Century

For the most part, banks fared well in the mid part of the 20th century, with few in the US needing assistance. In fact, a 1963 speech by Congressman Wright Patman, chairman of the House Banking and Currency Committee, indicated that some US leaders felt banking regulations were too conservative. Patman declared when opening the new headquarters of the FDIC: "I think we should have more bank failures. The record of the last several years of almost no bank failures and, finally last year, no bank failure at all, is to me a danger signal that we have gone too far in the direction of bank safety." (cited in (FDIC Staff, 1984, p. 7).

These favourable conditions for banks were in spite of significant global events such as World War II, the international currency reforms resulting from the Bretton Woods agreement, the Korean War and the Vietnam War. At the same time, most economies were industrialising on the back of improvements in technology. International trade was increasing rapidly.

In 1980, four years after Wright Patman's death, the reason for the congressman's alarm became clear when once again the US banking system was in crisis. In the decade from 1984, 1600 banks were either closed or received FDIC assistance (FDIC Staff, 1997, p. 3). Figure 1 spectacularly shows that the demands on the FDIC from bank failures in the 1980s were unprecedented in its 50-year history.

Figure 1 Number of U.S. Bank Failures 1934-1995 (FDIC Staff, 1997)



While it is possible with hindsight to suggest likely causes of the crisis, there were few obvious signs in 1980 of the problems soon to emerge. Banks were doing very nicely, with average returns on assets of 1.1 % in 1980 (FDIC Staff, 1997, p. 5), which was higher than it had been in the 1970s. The FDIC, while pointing out that large banks at that time were different from small banks, suggests that a number of banks were unable to cope with the instability generated by volatile interest rates and high inflation in the 1970s. Increased interest rates saw the development of new financial products and services from non-bank financial institutions (NBFIs). Banks (especially small ones) that had previously been dependent on deposit funding were hard hit. As well as competition from NBFIs, interstate banking restrictions were eased, allowing competition in once-protected markets. Substantial change was made to banking legislation in 1980, with the Depository Institutions and Monetary Control Act phasing out interest rate limits while increasing insurance limits to US$100,000. The Garn-St Germain Depository Institutions Act of 1982 further liberalised banking, with banks permitted to introduce money market deposit accounts. Thrifts were also allowed to diversify investment into commercial loans, bank restrictions on real estate lending were lifted, and limits on loans to one borrower were raised. These changes prompted

some to alter their banking model, entering areas they were unfamiliar with and increasing their risk profile.

The US was not alone in the difficulties experienced by banks in the 1980s. An International Monetary Fund (IMF) study in 1996 reports that from 1980, 133 IMF member countries had experienced significant banking sector problems over the period, of which 41 were identified as crises (cited in (C. Goodhart, Hartmann, Llewellyn, Rojas-Suarez, & Weisbrod, 1998, p. 1). Further analysis by Goodhart, Hartmann et al., (1998) showed that problems were not restricted to developing countries, with 17% of developed countries suffering a crisis, compared to 20% of developing countries. When it came to banking problems, the figures were similar, with significant banking problems in 53% of developing countries and 52% of developed countries.

New Zealand did not escape the turmoil unscathed. The IMF classified problems with bad loans at the Bank of New Zealand in 1989-90 as significant, quantifying the cost of the capital injection by the New Zealand government as being almost 1% of GDP (cited in (C. Goodhart, et al., 1998, p. 25). An overview of New Zealand's economic development and its response to the turmoil faced by many countries in the 1970s and the early 1980s is given in section 2.2.2.

2.2.1.5 Basel II

In many economies, it is believed that banks play such an important role that their managements cannot be left entirely to their own devices. In other words, it is sometimes believed that banks must be regulated and supervised. Consequently, banks

in most countries[8] are regulated and supervised, some more than others, with supervision normally being the responsibility of the central bank of each country (Bank for International Settlements, 2006). Globalisation of the banking industry, which occurred in the second half of the 20th century, resulted in individual banks spanning a multitude of countries. There is now a need for the supervision of banks to be co-ordinated on an international basis. To this end, the Basel Committee on Banking Supervision was established by the central bank governors of the G10 countries in 1974. The committee, although not having any legal supervisory authority over individual banks, has evolved into a standard-setting organisation, through its 1988 Capital Accord and the more recent Basel II being adopted by most nations as the basis of their bank regulatory regimes.

The committee believes that the effective supervision of banking organisations is an essential component of a strong economic environment (Basel Committee on Banking Supervision, 1997). Recently, Basel II set out a revised framework for the supervision of internationally active banks, comprising three mutually reinforcing pillars: 1) Minimum capital requirements; 2) A supervisory review process; and 3) Market discipline. The detail of the framework is contained in the 25 Core Principles endorsed by 120 countries at the 2006 International Conference of Banking Supervisors (Bank for International Settlements, 2006). Although the 25 Core Principles are extensive, they are not prescriptive. That is, countries endorsing Basel II must implement banking regulations as they see necessary to comply with Basel II.

[8] At the International Conference of Banking Supervisors held in Mérida, Mexico, on 4–5 October 2006, bank supervisors from central banks and supervisory agencies of 120 countries endorsed the updated version of the Basel Core Principles for Effective Banking Supervision and its Methodology. They declared their continued support for the implementation of international minimum standards for banking supervision in all countries.

It appears that there is consensus, at least among bank regulators, that banks are critical to a healthy economy and should, therefore, be regulated to avoid collateral damage occurring in the event of a bank crisis. There is, however, no consensus as to what regulation is appropriate, therefore prudential regulation varies greatly from one country to another, along with obvious risks and benefits to the country. Much prudential regulation can be classified into three broad topic areas: ownership, risk management and disclosure of information.

Governments control the ownership of banks through licensing criteria (Principles 3 and 4) and dictate permissible activities (Principles 2 and 5) (Basel Committee on Banking Supervision, 2006a). The use of the term *bank* in most countries is restricted to those institutions that have been licensed by the government. In some countries, banking services are still predominantly owned by the state, while in others ownership restrictions have been relaxed, with some even allowing foreign ownership. Likewise, the permitted activities of banks vary greatly between countries, with banks often facing restrictions in their ability to provide other services, such as real estate services, insurance, securities brokering and the ownership of non-financial firms. Regulators claim the provision of these services can add unwarranted risks to the traditional bank model. The counter-argument advanced is that the diversification of income streams reduces overall risk. Banks that face restrictions on their permitted commercial activities are confronted by increased competition from non-bank financial institutions (NBFIs), some of which are banks in all but name, providing core bank services such as transaction and savings accounts. Often, as in the case of NBDTs in New Zealand, this competition faces less stringent regulation.

Banks can be considered experts in the management of risk. It is, after all, how they earn much of their revenue[9]. Much prudential regulation deals, however, with how banks manage their own risk. Foremost is capital adequacy (Principle 6) (Basel Committee on Banking Supervision, 2006a). Put simply, this refers to the amount of equity available to absorb unforeseen loses. Although there can be debate as to how capital adequacy is measured, banks with minimum levels of tier 1 capital of 4% and total capital of 8% have equity considerably lower than most other types of businesses. Banks must also have in place comprehensive risk-management policies covering risk in other areas, such as credit, international, market, liquidity and operating risk (Principles 7 to 17) (Basel Committee on Banking Supervision, 2006a). The degree of prescription varies greatly from country to country, but in the main is considerably greater than in other industries, often even exceeding that of industries involved in public safety.

Banks are extremely complex organisations, and are often difficult to monitor. Current regulations (Principles 19 to 25) (Basel Committee on Banking Supervision, 2006a) require that appropriate information is available and that it has been prepared using acceptable accounting standards. This information must be available in a timely manner to enable supervisors and market analysts to overcome the asymmetric information, which is a factor in determining bank riskiness.

2.2.2 Banking and Banking Supervision in New Zealand

The settlement history of New Zealand is short in comparison to other countries, with the first inhabitants arriving from other Pacific islands somewhere around

[9] Other types of businesses seek to moderate the risks they face, often paying fees to banks to manage their risk.

1280AD[10] (Wilmshurst, Anderson, Higham, & Worthy, 2008, p. 7679). The economic history of New Zealand dates[11] from around the time of the 1840 Treaty of Waitangi, when Maori chiefs were persuaded to cede sovereignty to the British Crown. New Zealand then became part[12] of the territory of New South Wales. At this point in history New Zealand's currency needs were meet by foreign gold and silver coins in circulation, with their value based on their precious metal content. The first bank to operate in New Zealand was the Union Bank of Australia (an English company established in 1837), which opened a branch in Wellington in 1840 (RBNZ Staff, 1963).

Obviously, there was no central bank in the young colony — the current Reserve Bank of New Zealand was not established until 1935. The provision of currency was problematic in the new colony. Matthews (2003) details an attempt in 1844 by the New Zealand government to issue small-denomination debentures which could be used as legal tender, but this was disallowed by imperial authorities the following year. A second attempt was made with the establishment of the Colonial Bank of Issue in 1847. This was more successful, and the bank issued notes until it was wound up in 1856, after the government came to the opinion it was damaging to free enterprise for a government to have the sole right to issue currency (Hargreaves, 1972). At this time, the government passed the Paper Currency Act, which authorised the Union Bank (and other banks authorised by English royal charter) to issue notes.

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[10] Evidence has not been found to support the previously held view of an earlier inhabitation of New Zealand.

[11] The first financial transaction was in January 1770 when Capt. Cook presented the Maori of Queen Charlotte Sound with a silver threepence dated 1763 (Hargreaves, 1972, p. 11).

[12] New Zealand didn't become a colony in its own right until May 1841.

2.2.2.1 Trading Banks 1840-1987

Banks in New Zealand, up until deregulation in 1987, were of two types: Trading (commercial) banks, which met the needs of business customers, and savings banks, which had a purely retail focus. As well as providing bank accounts, the Union Bank of Australia also issued bank notes under English law (K. Matthews, 2003), until the right was withdrawn in 1852 when the Colonial Bank of Issue was given monopoly rights until 1856. The Union Bank of Australia became well established in New Zealand and in 1951 merged with the Bank of Australasia before eventually evolving into the ANZ Bank in 1955. Today, it is the largest banking group in New Zealand. Other early trading banks to operate in New Zealand were the Bank of New Zealand and the Bank of New South Wales (which began in New South Wales in 1817 (Sinclair & Mandle, 1961) and now operates as the Westpac Banking Corporation). Both these banks began operating in New Zealand in 1861 after Parliament passed private acts. They were joined in 1864 by the Bank of Australasia, which had been incorporated by royal charter (K. Matthews, 2003). In 1873, the National Bank of New Zealand was established (130 years later, it was bought by the ANZ bank from Lloyds TSB), followed in 1874 by the Colonial Bank of New Zealand (absorbed into the BNZ in 1895) (K. Matthews, 2003). In 1912, the Commercial Bank of Australia set up in New Zealand (RBNZ Staff, 1963) and operated until its merger with the Bank of New South Wales in 1982 to form Westpac. Less-successful trading banks (surviving only for a few years) at this time were the Oriental Bank (1861), Bank of Otago (1863), Commercial Bank of New Zealand (1864) and the Bank of Auckland (1864) (K. Matthews, 2003). In all, 12 trading banks were set up in New Zealand, although only a handful operated at any one time (C. Matthews & Tripe, 2006). When the Reserve Bank of New Zealand introduced

its current system of bank registration in April 1987, the four banks registered were: the ANZ Bank, National Bank, Bank of New Zealand and Westpac.

2.2.2.2 Saving Banks

The first savings bank in New Zealand was the Auckland Savings Bank (ASB), set up in December 1846. In the following 20 years, eight further saving banks were established (although four subsequently went out of existence) (RBNZ Staff, 1963). In 1863, a report by the Auditor-General recommended that it would be beneficial to the colony for the government to make available accounts at Post Offices for the deposit of small sums of money with interest. In 1865, a bill was passed which modelled the New Zealand Post Office Savings Bank on that of the United Kingdom, and by 1867 the bank had opened in more than 40 Post Offices (RBNZ Staff, 1963). With no limit on its geographic expansion and with its government guarantee of deposits, the POSB grew rapidly, and in 1962 it had 2,193,799 accounts with total deposits of £320 million (RBNZ Staff, 1963, p. 20). The comparable figures for other savings banks in 1962 were 486,000 accounts with total deposits of £39 million (RBNZ Staff, 1963, p. 23).

Following the establishment of the Post Office Savings Bank (POSB) in 1865, other savings banks were at a disadvantage; consequently no new savings banks were set up and four went out of existence. Government policy changed with the Trustee Savings Bank Act of 1948 (RBNZ Staff, 1963). Provisions of this act still prevented savings banks from opening branches more than 25 miles from their head office, required all deposits received in excess of daily cash needs to be placed on deposit at a trading bank, restricted the amount of interest paid by a savings bank to a rate set by the Governor-General and limited their investment activity to NZ Government securities (at least 50% of total investments), mortgages in their provincial district, local authority

investments and deposits with trading banks, POSB and National Savings accounts (RBNZ Staff, 1963). However, the significant feature of the Trustee Savings Bank Act 1948 was its confirmation that all trustee savings bank deposits were protected by government guarantee (Carew, 1987).

2.2.2.3 Early Growth of the New Zealand Economy

The establishment of new banks and a general increase in economic activity occurring in the 1860s were likely a result of the discovery of gold in New Zealand. The opening up of the Taupeka gold field by Gabriel Read in 1861 sparked an influx of miners and others into the country (Hargreaves, 1972). Earlier activity in New Zealand had been characterised by the exploitation of its wildlife (whales and seals) and was undertaken mainly by offshore concerns. Later development was based onshore with exploration for minerals such as gold and coal. Forests were cleared to provide the timber needed in mining and other early industries. Land cleared became farms, allowing the country to become self-sufficient in agricultural products. The land proved fertile, and large sheep farms were developed, providing raw materials to the woollen mills of Britain as well as employment for the increasing immigrant population (Hawke, 1985). The introduction of refrigerated shipping[13] allowed New Zealand to overcome the barrier of being on the other side of the world from its main market, and New Zealand farmers began to export butter and lamb to Britain. New Zealand had at last found its purpose in the world, being a supplier of cheap agricultural products to the "mother country".

[13] The refrigerated ship Dunedin carried the first cargo of frozen product from New Zealand to England in 1882. (Hawke, 1985, p. 84)

Following rapid development of New Zealand, the economy plateaued as many countries entered into economic depression around 1886. Conditions in New Zealand became difficult, and in 1888, for the first time in 28 years, the outflow of settlers exceeded the number arriving. At the Bank of New Zealand, management revealed financial difficulties, with many securities that had been accepted in support of weak accounts losing much of their value. Losses were expected to absorb the bank's reserve fund as well as one-third of its paid-up capital, £800,000 in total (Chappell, 1961, p. 115). The bank had also incurred heavy losses in Australia, where its Sydney manager had been convicted of embezzling funds to support his gambling addiction, and money appeared to have been squandered in Adelaide (Chappell, 1961). A panic occurred in Australia when 15 banks in succession suspended payment between January 29 and May 17, 1893 (Chappell, 1961). Some fear was held that the panic would spread across the Tasman to New Zealand banks. The one New Zealand bank that did find itself subject to a panic was the ASB. It was a well-established operation, with a reserve fund of £30,000, deposits of £591,000, government securities of £125,000 and first-class mortgages and local body debentures worth £400,000. Soon after a run began, the ASB's trustees issued a statement as to the soundness of the bank and saying they intended to remain open on Saturday (with support from the Bank of New Zealand and others) to pay all demands in gold. Consequently — after £42,000 had been withdrawn — the panic was quelled on Saturday morning (Chappell, 1961).

Although most observers believed the position of the BNZ was not satisfactory, the bank had overcome the difficulties it had been facing since 1888. The only evidence of concern was a decline in share price (Chappell, 1961). Therefore it was with some surprise that members of Parliament received notice to be in the House on the evening of Friday, June 29, 1894 to consider an urgent matter relating to finance. Joseph Ward,

the Colonial Treasurer, introduced the Bank of New Zealand Share Guarantee Bill to provide prompt and substantial assistance to the bank from the government (the government had already taken a shareholding in the BNZ in 1885 (C. Matthews & Tripe, 2006)). It was disclosed to the House that, without further assistance, the bank would be unable to maintain its required gold reserves and therefore would not be able to reopen on the following Monday morning. After debate, a bill was passed in which the state guaranteed £2 million worth of "A" preference 4% shares for a 10-year period, during which time the bank was to issue additional shares. In return, the government was permitted to appoint the bank president and auditor, both from outside the BNZ. These two were to have the power of veto, such that upon their confirmation the government could refuse any unsafe or unsatisfactory business at the bank. Dividends to existing shareholders were to be at the discretion of the Colonial Treasurer and limited to 5% on a new issue of shares. These actions saved the bank from collapse and averted a financial crisis in the colony (Chappell, 1961). The condition of the BNZ was further reinforced the following year when, on November 18, 1895 — after talks that had been occurring sporadically since 1889 — it took over the Colonial Bank. The Colonial Bank, based in Otago, was smaller than the Bank of New Zealand, but did share the government's business with it. The difference in the Colonial Bank's assets[14] and liabilities in 1895 was £133,906 and this amount was paid in cash by the BNZ (Chappell, 1961, p. 217). In July 1904, the BNZ repaid £1 million of the £2 million the government had given it under the emergency Bank of New Zealand Share Guarantee Act. The remaining stock was extended for a further 10-year term. At the same time, the government took an additional £500,000 worth of non-redeemable 5% preferred shares

[14] Assets were £2,643,190 and liabilities were £2,509,284 (Chappell, 1961, p. 217)

(Chappell, 1961). In 1914, the government's interests in the BNZ were extended for a further 20 years (Chappell, 1961).

2.2.2.4 Establishment of the Reserve Bank of New Zealand

In the early part of the 20th century, calls for the establishment of a state bank — to be responsible for the issuing of currency, among other things — led the government to commission a report on the matter from a Bank of England expert, Sir Otto Niemeyer. He concluded that, "*a single uniform note-issue is an essential principle of central banking, and, with few exceptions, has been adopted by all modern countries*" (Hargreaves, 1972, p. 164), and recommended that such a bank be established and that it be independent of government control. Niemeyer said the bank should have a monopoly right to issue notes for 25 years, provided it maintained their value (Hargreaves, 1972). Although a bill to this effect was introduced to the House in 1932, it was subsequently withdrawn and replaced in 1933 by the Reserve Bank of New Zealand Bill (K. Matthews, 2003).

The Reserve Bank was initially set up in 1935 as a private company, but the following year the government took full control (C. Matthews & Tripe, 2006), initially it was given sole authority to issue bank notes and exercise monetary policy to maintain their value (K. Matthews, 2003). While the Niemeyer report had originally proposed the Reserve Bank should be an independent central bank, the Reserve Bank Act 1964 removed any semblance of independence, giving the Minister of Finance the power to direct monetary policy, which at that time was defined as social and economic welfare with regard to promoting high levels of production and employment while maintaining stable prices (Walsh, 1995) (Singleton, Grimes, Hawke, & Holmes, 2006).

Initially the trading banks were unconcerned about losing their right to issue currency, but there was controversy as to what value should be assigned to their gold, which was to be transferred to the new Reserve Bank. The Government proposed that gold sovereigns would be paid for at their face value of £1, but the banks argued that the gold in each coin would fetch £1/15s on world markets and that that should be the price (Hargreaves, 1972). The Government responded that since the ordinary man in the street was not permitted to profit from trading in coin, the same should apply to the banks. Since the law making bank notes legal tender was due to expire in 1935, if the Government simply allowed it to lapse, notes would be inconvertible and banks would be forced to use their stockpiles of gold coin to redeem any of their notes (Hargreaves, 1972). As well as being responsible for issuing currency, the Reserve Bank was also required to promote the general wellbeing of New Zealand. This it did by monitoring and influencing the amount of money and credit in the economy and its condition (C. Matthews & Tripe, 2006).

2.2.2.5 The First Labour Government

The election of the first Labour government in 1935 resulted in a change in direction for the New Zealand economy. Principally, Labour's aim was to introduce policies designed to insulate the New Zealand economy and its people from fluctuations in international markets. A planned economy was established, with the state promising to buy all wool, meat and dairy products at prices that would provide farmers with a reasonable standard of living. At the same time, import controls were introduced to protect fledgling New Zealand industries (Condliffe, 1957). Large-scale public works programmes were undertaken, and a cradle-to-grave social welfare policy was introduced, providing housing, education and health care. The reforms of this period

were interrupted by World War II and, generally, the population was prepared to make sacrifices to support the war effort.

At the end of the war the Government used the Bank of New Zealand Act to compulsorily acquire all private shareholdings in the BNZ. The argument advanced was that a state trading bank would facilitate post-war reconstruction and development. Shareholders complained that the price paid by the government was too low as it reflected low profits resulting from government policy during World War II (Chappell, 1961).

2.2.2.6 The Post-war Environment

The general economic situation in New Zealand changed after the war. After years of suppressed prices, and now with full employment, New Zealand was faced with farmers demanding increased returns and unions demanding increased wages. The 1951 waterfront dispute was New Zealand's most significant industrial action, involving 22,000 workers and lasting 151 days. Despite this upheaval and the economy still being subject to the vagaries of international prices, New Zealand was a comfortable place to live in the 1950s and 1960s, with comparatively high living standards. Ranked by per capita GDP, New Zealand was fifth[15] among OECD countries.

In the 1960s, a number of changes occurred in the nature of New Zealand's financial institutions. Firstly, trading banks, which had been watching the growth of retail deposits and lending in savings banks, lobbied the government for a share of this business and in 1964 were given the right to open savings banks as subsidiaries (as part

[15] Behind the United States, Switzerland, Luxembourg and Canada.

of the government's policy of having as many savings outlets as possible). Whereas deposits in the POSB and trustee savings banks were government-guaranteed, deposits in the private savings banks were guaranteed only by the parent trading bank. Secondly, restrictions on the lending activities of trading banks resulted in the development of non-bank financial institutions. In the 1960s, trading banks were not allowed to set a lending rate greater than 6%. As well, they were encouraged to lend to develop industries which were a government priority, especially those in the rural and export sectors. Lending in consumer and investment finance was restricted (Carew, 1987). With limited consumer financing available, a number of firms (especially motor vehicle dealers) established subsidiaries known originally as *instalment credit* or *hire purchase* companies to meet the needs of their customers. Not unsurprisingly, the trading banks and others responded by setting up their own subsidiaries, which were known as finance companies (Carew, 1987).

Banking in New Zealand in the 1950s and 60s was tightly controlled by the Reserve Bank, and monetary policy was applied through direct controls of trading banks (RBNZ Staff, 1981b) by methods such as restricting lending and adjusting the banks' cash reserve requirements. Banks that breached the cash reserve requirements were forced to borrow from the RBNZ at penalty rates of interest. As the New Zealand economy developed, the RBNZ's attempts to regulate credit in the economy became increasingly complex and, despite the increasingly complicated calculations, less accurate (RBNZ Staff, 1981b). In 1971 and 1972, the RBNZ introduced a guideline growth policy. This was intended to limit the rate of increase in low-priority lending, but in 1972 it was used to encourage banks to lend more (RBNZ Staff, 1981b). The policy subsequently adopted by the Reserve Bank was the Reserve Asset Ratio system, in which each trading bank would be required to hold a set percentage of the previous

month's demand and time liabilities in government securities. The percentage would vary depending on how the RBNZ wanted to expand or reduce spending in the private sector. Ratios would also be varied to account for seasonal factors in the economy (RBNZ Staff, 1981b). The Reserve Asset Ratio system was purely focused on the implementation of the monetary policy as at this time. The RBNZ had little concern as to the safety and soundness of New Zealand's five trading banks as their owners were presumed to have deep pockets (Singleton, et al., 2006).

2.2.2.7 Non-bank Financial Institutions

Finance companies established in New Zealand operate under the Companies Act 1955. Those raising funds from the public must also abide by provisions of the Securities Act 1978 which requires them to issue a prospectus and have a trust deed setting out their term, conditions and security (Carew, 1987) (Prior to deregulation in the 1980s, financial institutions were not permitted to borrow overseas). The companies' safety and soundness have never been the responsibility of the RBNZ. In 1970, there were 28 large finance companies (those with assets greater than $200,000) and at least 500 small ones (Carew, 1987, p. 55). Subsequent growth of finance companies was rapid, as they were more aggressive lenders than the trading banks at that time. Carew (1987, p. 56) reported growth in finance companies in excess of 20% in every year (except 1975) between 1969 and 1984. The year 1969 also saw the introduction of the requirement for finance companies and other financial institutions to hold a given ratio of government securities. This move satisfied two aims: ensuring finance companies had greater liquidity, and assisting monetary policy by controlling private-sector lending. The Reserve Asset Ratio for finance companies, which started at a 5% rate in 1970, steadily increased to 25% in 1980 (Deane, Nicholl, & Smith, 1983, p.

338), as the government attempted to control the economy. Controls on the interest rates paid and charged by finance companies were reintroduced in 1972 before being removed again in 1976 when controls on the financial system were relaxed (Carew, 1987).

The other type of financial institution introduced to New Zealand in the 1960s was the merchant bank. The first was the New Zealand United Corporation, finally established in 1960 by Frank Renouf, after he had been prevented in the 1950s when the Governor of the Reserve Bank refused to support merchant banking, believing it to be inflationary (Carew, 1987). The United Corporation enjoyed a virtual monopoly in the provision of merchant bank services until 1972, when Finance Minister Rob Muldoon invited overseas investors to form joint-venture merchant banks in New Zealand. Barclays Bank and the Bank of America each took 20% stakes in United, and South Pacific Merchant Finance was established as a subsidiary of the National Bank (70%) and National Insurance Co (30%). Marac Holdings set up Marac Merchant Bank with Los Angeles-based Security Pacific National Bank, and First New Zealand International was a joint venture of the Bank of New Zealand, Morgan Guaranty and Warburg. The new merchant banks developed the short-term money market in New Zealand and owed much of their success to the controls then in place on trading banks (Carew, 1987).

In seeking to develop the New Zealand economy, the government established three specialist lending organisations: in 1964, the Development Finance Corporation (DFC) and in 1974, the Rural Bank and the Housing Corporation, both of which took over functions of the previous State Advances Corporation, which had been set up in 1890 to provide loans to settlers wishing to develop land. The DFC was to provide advice and loans to new and growing businesses that were unable to source funding

elsewhere. The DFC was set up by an act of Parliament, with 30% of its shares held by the Reserve Bank and the rest by trading banks and insurance companies. In 1973, it was reconstituted and all the shares were taken by the government. Apart from the Crown's equity position, the DFC raised all other financing on its own account either in New Zealand or overseas. Its credit quality was recognised by Standard & Poor's, which in 1985 assigned the corporation's 10-year, $100 million Eurobond issue an AA rating, the highest given to any New Zealand organisation apart from the government (Carew, 1987).

The heavy monetary controls in place on the New Zealand economy ensured the banks and newly developing non-bank financial institutions took few risks. Controls were not limited to reserve ratios and interest rates; the government's control of hire-purchase contracts demonstrates how prescriptive business was in the 1970s. For example, those financing a new car or truck in the period from 1976 to 1980 faced a government-mandated minimum deposit requirement[16] of 60% and a repayment term of only 12 months. The term was relaxed for second-hand vehicles to 18 months but the initial deposit required was the same (RBNZ Staff, 1981a, p. 287). Despite such monetary controls limiting risk-taking, problems still arose in some fringe financial institutions, and the 1970s saw the collapse of JBL, Cornish, Circuit and Securitibank as well as serious problems at the Public Service Investment Society, which required the freezing of deposit accounts for some years (Singleton, et al., 2006). The safety of these organisations was not the responsibility of the RBNZ and the collapse of the four companies were handled by the courts. Their collapse, however, revealed that the

[16] These requirements represented a relaxation of previous monetary policy under which only those with access to overseas funds were permitted to buy a new vehicle.

financial regulation of non-banks was deficient and the government responded with the Securities Act 1978, which required institutions to make greater disclosures to depositors and other investors (Singleton, et al., 2006).

2.2.2.8 The Oil Shocks of the 1970s

Life continued much as usual until the 1970s, when the New Zealand economy was dealt twin blows. Firstly, as with other countries, New Zealand was subject to spiralling oil prices. Secondly, New Zealand lost its main export market when Britain joined the European Economic Community (now the European Union) in 1973. The Labour government's initial reaction to the oil shocks (apart from sharply increasing the price of fuel) was to restrict sales and introduce a system of car-less days designed to reduce non-essential motoring. A change of government in 1975 saw National attempt to cut the balance-of-payments deficit by reducing the Budget deficit, thus lowering the level of economic activity (Robinson, 1994). From 1976, restrictions faced by financial institutions were also relaxed, including raising the maximum deposit rates payable by trading banks, savings banks and the POSB. The Interest on Deposits Regulations, which had controlled deposit rates at all non-bank institutions since 1972, were revoked (RBNZ Staff, 1981a). In other moves to ease restrictions, trading banks were allowed to issue negotiable certificates of deposits (1977) and operate in the commercial bill market, and their customers were allowed credit cards (1979). Government security investment requirements at trustee and private savings banks were substantially reduced and the POSB introduced second-mortgage facilities for homeowners (1977), trustee and private savings banks were encouraged to offer low-start housing mortgages (1978), and overdrafts were allowed at the POSB and trustee savings banks (1979) (RBNZ Staff, 1981a).

The country's balance of payments was a concern, so in 1976 a scheme was designed to deter *speculative* importing. It required importers of certain goods to deposit an amount equal to one-third of the domestic value of the imported goods in a non-interest-bearing Reserve Bank account. At the same time, exports were encouraged through income stabilisation schemes (1976) for meat and wool producers (RBNZ Staff, 1981a). As a result of these and other policy changes, there was a general rise in New Zealand interest rates and the level of unemployment increased to 25,000 in 1978, from 6000 in previous years (Robinson, 1994, p. 7).

In 1980, the National Government, which was tightly controlled by Rob Muldoon in his dual roles as Prime Minister and Minister of Finance, introduced its *Think Big* policy to the electorate in time for the 1981 election. *Think Big*[17] was based on the premise that New Zealand, with abundant rivers and lakes, was comparatively rich in energy. National won the election, albeit with a reduced majority, and went on to invest heavily in projects designed to make New Zealand less reliant on imported energy. The costs of the *Think Big* projects blew out of control, and they failed to deliver the promised results.

In the early 1980s, New Zealand banking was tightly regulated, with controls on the number and type of banks. The government had a considerable investment in bank assets at this time in the form of the Bank of New Zealand, the Post Office Savings

[17] *Think Big* projects included the methanol plant at Waitara, an ammonia/urea plant at Kapuni, a synthetic-petrol plant at Motunui, expansion of the Marsden Point Oil Refinery, expansion of the New Zealand Steel plant at Glenbrook, electrification of part of the North Island Main Trunk Railway, a third reduction line at the Tiwai Point aluminium smelter and construction of the hydro-electric Clyde Dam on the Clutha River.

Bank, the Development Finance Corporation and the Rural Bank[18]. Whilst there was no formal system of banking supervision, New Zealand's compulsory Reserve Asset Ratio system had offered some protections to depositors by forcing banks to hold government stock. Questions of bank supervision came up in the 1970s in response to difficulties in some small UK banks and in Australia at the Bank of Adelaide. New Zealand was a signatory to the 1975 Basel Concordat to develop an international framework for banking supervision (Singleton, et al., 2006). It was accepted by the New Zealand government that the supervision of locally owned banks such as the BNZ would be the responsibility of the Reserve Bank, but the supervision of foreign-incorporated banks, such as Westpac, would rest with the overseas regulator, although the Bank of England had asked the Reserve Bank to supervise the National Bank for it (Singleton, et al., 2006).

In 1982, Lindsay Knight, assistant governor of the Reserve Bank, led a group charged with increasing the efficiency of New Zealand banks while ensuring public confidence in their stability. Knight and his group believed the RBNZ did not have authority to direct the actions of a bank if it got into trouble. The group's recommendation was for an amendment to the Reserve Bank Act to provide the RBNZ with a supervisory framework. As for non-bank financial institutions, Knight's group proposed self-regulation supplemented by full public disclosure (Singleton, et al., 2006). Restrictions on the number of banks in New Zealand, both foreign and domestic, were lifted in 1986 through an amendment to the Reserve Bank Act. This amendment also introduced the first formal approach to banking supervision in New Zealand. While

[18] In 1989, the Development Finance Corporation was placed in statutory management, after earlier having been partially privatised. The Government also sold 15% of the Bank of New Zealand in 1987 and the remainder in 1993. In 1991, the Post Office Savings Bank was sold to ANZ, and the Rural Bank was acquired by Fletchers.

the system was orthodox in the sense of banks' capital adequacy being regulated, there was no government guarantee offered to depositors apart from the one already enjoyed by the customers of the government-owned BNZ, POSB and the 12 regional trustee savings banks (Ledingham, 1995). The guarantee applying to the trustee savings banks was implicit, as it was expected that, if circumstances warranted it, the government would direct the BNZ to lend to them (Grimes, 1998). In the 1980s, banking was considered to be relatively low-risk; one RBNZ staff member described it as "boringly stable" (Ledingham, 1995).

The RBNZ recognised the reluctance of Prime Minister Muldoon to accept any substantive change to the Reserve Bank Act so did not pursue the matter. Instead, continued to develop policy to eventually increase competition, deregulate the financial system and introduce a *light-handed* supervisory system (Singleton, et al., 2006). Dissatisfaction with the Muldoon government's management of the economy increased, especially after June 1982 when a wage and price freeze was introduced. This dissatisfaction was shown in two main ways. Firstly, over the period from 1976 to 1980, dramatic outward migration occurred, with 350,000[19] residents leaving permanently and only 200,000 migrants and returning expatriates arriving (Winkelmann, 2000). Secondly, the National government lost power in the 1984 snap election.

2.2.2.9 The Third Labour Government

When the Labour government of David Lange came to power in 1984, change came quickly, precipitated by a foreign exchange crisis. Prior to the election, there had been increased demand for foreign currency as speculation increased that an overvalued

[19] In 1984, New Zealand's estimated population was 3,260,300 (Statistics New Zealand)

New Zealand dollar would be devalued. The day after the election, the Reserve Bank announced that it was ceasing to convert New Zealand dollars to foreign currency (Evans, Grimes, Wilkinson, & Teece, 1996). After a brief constitutional[20] crisis, the New Zealand dollar was devalued when the outgoing Prime Minister, Muldoon, agreed to follow the instructions of Lange's incoming government.

The government then embarked on a free market agenda designed to improve the competitiveness of New Zealand. They accepted the advice of officials, that the previous administrations interventionist policies should be changed as New Zealand was living beyond its means (Lattimore & Wooding, 1996). Subsequently, the wage and price freeze was ended, interest rate limits were lifted and the exchange rate was allowed to float freely. The government subscribed to the view that business should run businesses and converting government trading departments into state-owned enterprises, which in many cases were then privatised. The proceeds of these privatisations were used to reduce public debt, which had risen from 5% of GDP to 32% in the 10 years to 1984 (Evans, et al., 1996). Little thought was given to the short-term social costs of reform, with the catch cry throughout the period being *let the market decide*.

Dalziel (2002) however finds, that 17 years after the reform program began, the objectives of New Zealand's economic reform had not been achieved, with the country having higher rates of unemployment and lower real incomes than before. The competitiveness of New Zealand is still troubling the minds of New Zealand politicians, with the latest iteration, being the interim report to Rodney Hide of the 2025 Taskforce. The taskforce chaired by Dr Don Brash is charged with closing the *gaps* (improve New

[20] Although New Zealand has no formal constitution, the expected parliamentary convention is for the outgoing Prime Minster to follow the instructions of the new government until they are sworn into office.

Zealand's productivity and income) between Australia and New Zealand by the year 2025 (Hide, 2009). It remains to be seen if anything will come of this report as many of its recommendation may be unpalatable to the Key led government of today.

In 1984, the government had a substantial investment in banking assets such as the BNZ, POSB, DFC, Rural Bank and Housing Corporation, many of which were considered suitable for privatisation. The BNZ was partially privatised in 1987 when 15% was listed on the New Zealand Stock Exchange (NZSX), and the government further reduced its holding to 51% in 1989 (after concern was raised regarding the bank's capital adequacy) by selling a 30% stake to Capital Markets Ltd and 4% to the public. In 1992, the National Australia Bank successfully mounted a full takeover bid for the BNZ (BNZ Staff, 2009). Of other government bank assets, the Rural Bank was first sold to Fletcher Challenge before the National Bank acquired it in 1992, and the POSB was sold to the ANZ Bank in 1989.

Roger Douglas, who was Minister of Finance in the Labour government, was generally receptive to the RBNZ's policy suggestions, which had come from the Knight group in 1982. However, he did not regard the introduction of a formal prudential regulatory system to be as important as establishing monetary control. Therefore it took until 1986 for the Reserve Bank Act to be amended, and a new regulatory regime came into force on April 1, 1987. As well as formalising prudential supervision, the amendment gave the RBNZ the power to register[21] new banks, providing it was satisfied with the applicant after looking at factors such as experience, reputation and capital. With a secondary aim of the new legislation being to encourage entry into the

[21] Prior to this, banks were established under a specific act of Parliament.

banking system, the four existing trading banks (ANZ, BNZ, National and Westpac) were joined by 10 new ones in 1987. Non-banks were free to provide whatever banking services they wished, provided they did not call themselves banks. With the RBNZ now responsible for the integrity of New Zealand's financial system, it began supervising all banks, foreign exchange dealers and some large non-banks, including the DFC (Singleton, et al., 2006).

Although given responsibility for bank supervision, the RBNZ did not immediately develop the necessary procedures. Singleton, Grimes et al., (2006) detail a warning the Reserve Bank of Australia gave to the RBNZ about the Sydney branch of the BNZ, which was pursuing an aggressive lending policy. The RBNZ was not yet requiring institutions to provide information on large exposures to related parties and the BNZ did not consider it was bearing any undue risk.

The RBNZ was forced to change its view that banks in New Zealand were sound following the sharemarket crash in October 1987. Reforms made to the economy since 1984 had allowed many new business opportunities, and banks expanded accordingly. But new opportunities resulted in new risks, and when combined with factors such as the increase in the number of banks, increased foreign bank ownership and the withdrawal of the government from bank ownership, these placed some institutions in jeopardy. Most at risk were those with an exposure to the commercial property market. Serious difficulties arose at the NZI Bank, the BNZ and the DFC.

The NZI Bank in the 1980s was primarily a merchant bank, though it did source deposits from the public. It had a significant exposure to the booming property development sector and other merchant banks, which led to its troubles (Grimes, 1998). One exposure the NZI Bank had at this time was to Euro National Bank and Rod

Petricevic.[22] Following the collapse of Euro National in 1987, the NZI Bank was involved in a protracted, and ultimately unsuccessful, legal dispute with Euro National and Petricevic (Robertson, 1992). Problems at the NZI Bank were serious enough to require its Scottish owner to recapitalise the bank to prevent its collapse (Brash, 1997), though the banking licence was eventually relinquished in 1992.

Although both the DFC and the BNZ had been fully owned by the government and were now only partially privatised, their problems were handled differently. The RBNZ originally became concerned about the DFC in 1988 and began monitoring it more closely. However, the situation deteriorated rapidly and in October 1989, the DFC notified the RBNZ that it was insolvent. Problems at the DFC stemmed from its use of swaps and other off-balance-sheet transactions. At this time, the DFC was New Zealand's seventh-largest financial institution, and concern was expressed that if it failed to honour its commitments, the New Zealand foreign exchange market could be disrupted, with knock-on effects to the wider economy. The DFC's owners, the National Provident Fund (80%) and Salomon Bros (20%), were reluctant to inject additional capital, so the RBNZ offered the Cabinet three options; 1) Do nothing and hope the DFC collapse would not have systemic ramifications; 2) Mount a bail-out of the DFC; or 3) Facilitate an orderly exit by way of statutory management of the institution. In the end, statutory management was the preferred strategy, and contagion was averted when the DFC's swap book ($3.9 billion face value) was sold to another bank. Remaining creditors, who faced a shortfall of $800 million, eventually recouped most of their nominal losses when the National Provident Fund and the Government injected $450

[22] Rod Petricevic would feature as majority owner of Bridgecorp Ltd, an NBFI that failed in 2007 owing NZ$500 million to depositors.

million plus some tax losses and foreign exchange hedges to broker a deal with them in October 1990 (Singleton, et al., 2006). While the DFC was not a registered bank,[23] it was the first failure of a financial institution that the RBNZ had dealt with. Don Brash, who was Governor of the RBNZ at the time, says "*it taught us how crucial it is to be prepared for a crisis*" (Brash, 1991).

When the government, in 1988, decided to sell its remaining 85% holding in the BNZ[24], it became clear the bank would incur a substantial loss in that year, so sale plans were placed on hold. The Reserve Bank warned the government that the BNZ's situation was becoming dangerous and recommended that it offer an unconditional guarantee to BNZ depositors and announce restructuring plans for the bank (Singleton, et al., 2006). When the BNZ announced a loss of $648 million for the 1989 year, the government moved to recapitalise it by way of a rights issue, with 30% of the bank being taken by Capital Markets Ltd and 4% going to the public, leaving the government with 51% (Singleton, et al., 2006). The RBNZ then began to monitor the BNZ closely, sometimes checking liquidity daily. Despite the Reserve Bank initially thinking the BNZ's asset quality had stabilised, additional losses were revealed in Australia in 1990. The Reserve Bank concluded that the BNZ was making inadequate provision for loan losses, but was unable to convince the bank or its auditors of this. The RBNZ and the Treasury were concerned that any adverse news about the BNZ would spark a run on the bank during the election campaign then taking place and warned the government to be prepared to respond to any adverse rumours. Problems at the BNZ were kept from the public and opposition members of Parliament at least until the Sunday after the

[23] The DFC was seeking registration as a registered bank.

[24] In 1987, the Government returned 15% of the BNZ — which had been nationalised in 1945 — to private ownership by way of an oversubscribed public float of 13 million 50c shares (BNZ Staff, 2009).

election, when the RBNZ and Treasury told the just-elected National government of Jim Bolger that the BNZ was technically bankrupt (Bolger, 1996). The government, which still owned a majority stake in the BNZ, was forced to inject an additional NZ$640 million into the bank in order to maintain it as a going concern and protect its franchise value.

The New Zealand economy in the 1990s was completely unrecognisable in comparison to what it had been in the early 1980s. The capabilities of the RBNZ and the existing regulation had been severely tested, and found wanting, by events at the DFC and BNZ. The cost of these events was significant; Honohan and Klingebiel (2003, p. 1556, Table 6) calculated it to be equivalent to 1% of GDP. The RBNZ recognised this and, on its own initiative, began a review of New Zealand's system of banking supervision. Over the next couple of years, a system was designed to address its concerns while still meeting New Zealand's twin objectives of promoting the maintenance of a sound and efficient financial system and avoiding significant damage to it resulting from the failure of a registered bank.

In New Zealand there is still a clear distinction between registered banks (RBs) and non-bank deposit-takers (NBDTs), with different legislation for each. RBs fall under the jurisdiction of the RBNZ, which manages them under an amended 1989 Reserve Bank Act. NBDTs comprise all other deposit-takers, such as credit unions, building societies and finance companies, and operate under the Securities Act 1978. This legislation also established the Securities Commission, which has powers of investigation and enforcement but no responsibility for prudential oversight.

2.2.2.10 Regulation of New Zealand Registered Banks

The new disclosure regime, introduced on January 1, 1996, replaced[25] most existing prudential regulation with market discipline, while increasing incentives for a bank's management and board of directors to manage it in a sound and responsible manner (Geof Mortlock, 1996). Not all of the current regulation was removed, however, with prudential regulation still requiring that locally incorporated banks have a minimum capital of US$15 million and be in line with the Basel Capital Accord. Restrictions on exposure levels and lending to related parties were also retained. The RBNZ gives some discretion for overseas banks, but normally requires them to comply with the Basel standard as a minimum and with all other requirements of their home-country supervisor.

The 1996 disclosure regime requires banks to issue two forms of disclosure statements to the public on a quarterly basis. The first is the Key Information Summary (KIS) for the bank. The KIS is designed primarily for retail depositors and contains information about the bank's credit rating, Basel capital ratios, peak exposure concentrations and exposures to related parties, asset quality, and profitability. This summary must be displayed prominently in every branch and given freely when requested by customers. The RBNZ website also maintains a historical series of all KIS data, which is freely available to the public.

The second statement required to be issued by all banks is the General Disclosure Statement (GDS), which adds considerable detail to the KIS, including

[25] The mechanism for the regime change was the Reserve Bank of New Zealand Amendment Act 1995, which amended the Reserve Bank of New Zealand Act 1989.

corporate information, financial statements such as a five-year summary, detailed information on capital adequacy and risk exposures, as well as fund management, securitisation, management systems and market-risk exposure. The GDS is the subject of a limited audit on a six-monthly basis and a full external audit at balance date. In the other reporting quarters there are no audit requirements and a short-form disclosure statement is issued. Disclosure statements are required to be timely, with audited statements being published within three months of balance date, and other statements within two months. Statements should be available on demand from the bank's head office, or within five days from any branch. In addition, banks are required to publish the current statement on their websites.

A key feature of the system is the requirements placed on bank directors, who must sign all disclosure statements attesting that: they comply with RBNZ prudential regulations, risk-management systems are being properly applied, there are no exposures to related parties that are contrary to the interests of the bank, all required disclosures are contained, and that they are not false or misleading. Directors who sign a false or misleading disclosure statement may be jailed for up to three years or face personal liability for creditors' losses.

Although the New Zealand system of bank supervision relies heavily on the Basel Committee's third pillar of market discipline, consideration is still given to pillar one, since New Zealand-incorporated banks are required to maintain minimum Basel capital adequacy ratios. Foreign-incorporated banks, which are branches of overseas banks, are required to comply with the capital adequacy standards of their home-country supervisor.

When it comes to the second Basel pillar — the supervisory review process — the RBNZ monitors published disclosure statements from individual banks, as well as holding an annual meeting with bank management. There is no onsite inspection of banks, although the RBNZ retains the power to intervene if bank distress, or failure, threatens the soundness of the New Zealand financial system.

The regulation of financial institutions in New Zealand appears to be relatively light-handed, with much reliance on market discipline. A survey undertaken in 1998 by Barth, Caprio et al., (2001) collected detailed information on the regulation and supervision of banks in 107 countries. Survey questions, 175 in total, covered 12 areas: entry into banking, ownership, capital, activities, external auditing requirements, internal management/organisational requirements, liquidity and diversification requirements, depositor protection schemes, provisioning requirements, accounting and disclosure requirements, discipline problems and the exit of institutions, and supervision.

Coming two years after New Zealand's banking reforms, the survey enabled comparisons to be made between New Zealand and international practice at the time. Entry restrictions are relatively relaxed, with the New Zealand market open to foreign banks and others to establish new banks (currently only two New Zealand banks[26] have New Zealand owners). The RBNZ requires information to be supplied on a new bank's shareholders[27], as well as details on the experience of its directors and senior management, before it is registered. This has not been an issue, and all applications

[26] This was recently increased to three when the Southland Building Society registered as a bank.

[27] There is no maximum percentage that can be owned by an individual, or a related party, and no restrictions on ownership of banks by non-bank firms.

have been approved. The minimum entry capital required for registration is NZ$15 million, with banks able to use borrowed funds, or assets other than cash, as capital. New Zealand banks are required to maintain a standard minimum capital asset ratio of 8%, risk-weighted according to Basel guidelines. At the time of the survey (1998), the average risk-weighted capital ratio was 10.6%[28]. New Zealand banks are free to engage in non-bank activities, with no restrictions on activities around securities, insurance, real estate or guidelines given on asset diversification. There are no minimum liquidity requirements, or minimum reserve requirements.

Barth, Caprio et al., (2001) also looked at the monitoring of established banks, firstly by official supervisors (New Zealand has 0.6 supervisors per bank) and then through private monitoring. New Zealand ranks in the bottom third of the index of official supervisory power and scores a zero out of seven in the prompt corrective action index. RBNZ supervisors have little direct contact with banks, apart from an annual off-site meeting. The RBNZ instead relies on the public quarterly disclosure statements and is not privy to any private bank information when undertaking its supervisory function.

In an index of overall bank activities and ownership restrictiveness, Barth, Caprio et al., (2001, p. 55, figure 6) ranks New Zealand equally with the Dutch Caribbean island of Aruba as having the least restriction on bank activities. New Zealand is also unique in that the provision of banking services has effectively been contracted out to other countries and their banks. In 2007, the only New Zealand-owned banks were the TSB and Kiwibank and their assets comprised only 0.9% and 1.8% of total bank assets in New Zealand (Table 1).

[28] There are only 18 countries (including Australia) with lower actual risk-weighted capital ratios (Barth, Caprio et al., 2001).

Table 1 Total Assets of NZ-registered Banks Sept 2007

New Zealand-incorporated Bank	Total assets (NZ$m)	Market Share %	First** Registered	S&P Rating
ANZ National Bank Limited	$ 107,787	33.5%	1/04/87	AA
ASB Bank Limited	$ 53,915	16.7%	11/05/89	AA
Bank of New Zealand	$ 56,375	17.5%	1/04/87	AA
Kiwibank Limited	$ 5,671	1.8%	29/11/01	AA-
Rabobank New Zealand Limited	$ 4,830	1.5%	7/07/99	AAA
TSB Bank Limited	$ 3,005	0.9%	8/06/89	BBB+
Westpac New Zealand Limited	$ 45,995	14.3%	31/10/06	AA
	$ 277,578	86.2%		
Overseas-incorporated Bank NZ Branch				
ABN AMRO Bank NV	$ 1,826	0.6%	2/03/98	AA-
Citibank N A	$ 3,543	1.1%	22/07/87	AA
Commonwealth Bank of Australia*	$ 5,556	1.7%	23/06/00	AA
Deutsche Bank A G	$ 5,950	1.8%	8/11/96	AA
Kookmin Bank	$ 406	0.1%	14/07/97	A
Rabobank Nederland*	$ 1,622	0.5%	1/04/96	AAA
The Bank of Tokyo-Mitsubishi UFJ	$ 608	0.2%	1/03/04	A+
The Hongkong and Shanghai Banking Corp	$ 6,386	2.0%	22/07/87	AA
Westpac Banking Corporation*	$ 18,712	5.8%	1/04/87	AA
	$ 44,609	13.8%		
Bank Total Assets	$ 322,187	100%		

Source: RBNZ Sept 2007 KISs
Sample banks used in later regression analysis are highlighted in grey.
*Adjusted for assets held in NZ-incorporated subsidiary banks.
**April 1987 was when the Registered Bank designation was first introduced.
ANZ, BNZ and Westpac were trading banks prior to this. ASB and TSB were savings banks.

Apart from sovereignty questions around having more than 98% of bank assets under the control of foreigners[29], one could question the relevance of supervision by the RBNZ of banks operating in New Zealand, as most are owned by Australian banks and are therefore subject to supervision by the Australian Prudential Review Authority (APRA).

While banks operating in New Zealand may be subject to supervision by two regulatory authorities, both supervisors have different objectives. The RBNZ is charged

[29] This was often cited by MP Jim Anderton of the NZ Alliance Party as why Kiwibank was needed.

with "*promoting the maintenance of a sound and efficient financial system, and avoiding significant damage to the financial system that could result from the failure of a registered bank*" (RBNZ Staff, 2009) while APRA's mission is "*to establish and enforce prudential standards and practices designed to ensure that, under all reasonable circumstances, financial promises made by institutions we supervise are met within a stable, efficient and competitive financial system*" (APRA Staff, 2009). Although both statements are similar, they are fundamentally different in that APRA is charged with protecting the *Australian* financial system and *Australian* depositors, and Section 13A3c of the Australian Banking Act (1959) gives priority to Australian depositors in the event of the failure of an Authorised Deposit-taking Institution (ADI). If New Zealand depositors believe they can free-ride on Australian bank supervision, they might find themselves at the end of the repayment queue if an Australian- owned bank failed.

Despite differences in their responsibilities, the two supervisors work closely in the supervision of banks operating on both sides of the Tasman, and there have been a number of calls for *harmonisation* of bank supervision in the two countries; in 2005, a Trans-Tasman Council on Banking Supervision was established. An outcome of this move was an amendment to the APRA enabling legislation, requiring the authority to support New Zealand authorities, avoid any detrimental effect on the stability of the New Zealand financial system and consult where practicable before taking action (Parliament of Australia, 1998, Section 8A). (A similar amendment was made to the Reserve Bank of New Zealand Act.) Kane (2006) identifies a fundamental difference in perspective between the then Australian Treasurer, Peter Costello, who saw dual supervision as only generating duplication and cost, and the New Zealand view of two heads being better than one. Kane (2006) further discusses issues arising from dual

regulators having different objectives in resolving banks' problems, with the home-country regulator likely to act more slowly than would be optimal for the host-country regulator. Concerns such as these have led the RBNZ to develop crisis management policies which require systemically important banks to be locally incorporated and place limits on the outsourcing of critical bank functions (Bollard, 2005). Local incorporation gives the RBNZ the legal power to control and direct the board of the New Zealand bank and ensures the institution is able to operate on a stand-alone basis.

An address by Alan Bollard (2004) to the Trans Tasman Business Circle highlights that the differences in the two countries' supervisory needs are due to New Zealand banks being predominantly overseas-owned, whereas Australian banks are mainly Australian-owned. The RBNZ as host-country supervisor faces completely different concerns from those of APRA. However, RBNZ requirements placed on Australian-owned banks in New Zealand are not costly or onerous, Bollard says. '*There is nothing in what we require that APRA would not require of an overseas-owned bank that was systemically important*[30] *to Australia*" and "*the Reserve Bank of New Zealand Act requires that we promote efficiency as well as the soundness of the New Zealand financial system*" (2004, p. 34)

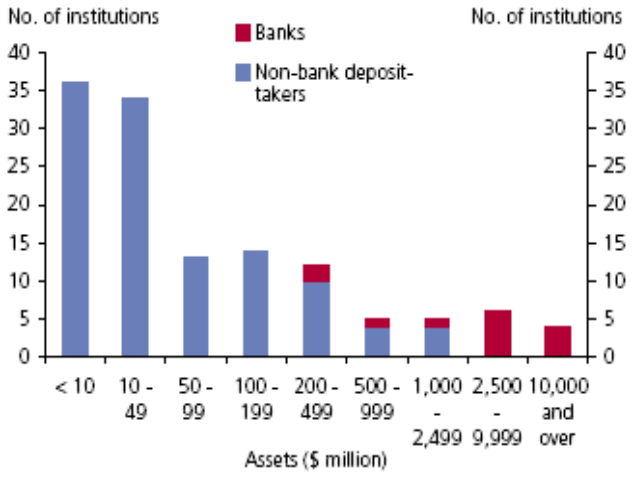
2.2.2.11 Regulation of New Zealand Non-Bank Deposit-takers

There are more than 200 non-bank deposit-takers (NBDTs) in New Zealand. Figure 2 shows most are considerably smaller than New Zealand-registered banks (RBs). The Reserve Bank's interest in NBDTs is limited to the contribution they make to the maintenance of a sound and efficient financial system and the impact they might

[30] Australia's "Four Pillars" policy does not allow systemically important banks to be foreign-owned.

have in the RBNZ's other area of responsibility, the implementation of monetary policy. Currently, no NBDT is considered *systemically important*[31] by the RBNZ; this status is limited to the four largest RBs — ANZ/National, ASB, BNZ and Westpac (Chetwin, 2006). The RBNZ has in the past, however, issued general warnings about the vulnerability of NBDTs to a slowing economy, firstly in its Financial Stability Report of October 2004, where it stated that *"some investors may find, after the fact, that the risks inherent in their investments have not been adequately compensated"* (Allan Bollard, 2004, p. 21), and then in later reports.

Figure 2 2006 Size distribution of Non-Bank Deposit Takers and Registered Banks



Source (Bollard, 2006)

Securities issued to the public by NBDTs must comply with. In general, requirements for issuing a security to the public are that a trustee is appointed to represent investors; investors must be supplied with an investment statement before any money is paid, and a prospectus must be supplied to investors within five days on request. Requirements of the investment statement and prospectus are set out in the 1983 Securities Regulations, with Schedule 2 setting out the requirements of the

[31] Systemically important banks are defined as those having liabilities, net of amounts due to related parties, in excess of NZ$10 billion (Chetwin, 2006).

prospectus and Schedule 3d specifying the information required in the investment statement. The Securities Commission sets out these requirements for the information of investors in a brochure entitled "*Your right to know: Get informed about investing"*, which is available on its website (Securities Commission Staff, 2007b). This brochure (reproduced in Appendix 2) summarises what information must be given prior to investing. This must be set out in a simplified form, understandable by a *prudent, non-expert* investor. The investment statement is required to be provided before any investment is made to enable potential investors to make comparisons among competing investment offers. Typically, the investment statement forms part of the investment application form, or investors must confirm that they have read the investment statement when making an application. Of concern is that the investment statement does not require financial statements to be produced and most retail investments are made without investors having seen the financial statements of the issuing firm. It is difficult to imagine what comparisons could be made about anything other than the promised yield by perusing a range of investment statements.

Requirements of the prospectus are also contained in the Securities Commission brochure (reproduced in Appendix 2) and are, on the other hand, more detailed. The basic provisions of the trust deed are outlined and more detailed financial information is given in annual, independently audited financial statements and notes. New prospectuses must be issued and registered annually with the Companies Office, and are generally required immediately after the annual audit is completed. Section 44 of the Securities Act 1978 requires, however, that if a prospectus becomes false, or

misleading, during the course of the year it may be suspended[32], or cancelled, by the Securities Commission. This normally occurs only after the Securities Commission has been advised by the trustee/s that the prospectus is false or misleading. The institution is then required to refuse all deposits until such time as a new prospectus is registered. The current prospectus must be freely available from the issuing firm, with both current and historical prospectuses available for download from the Companies Office website. One suggestion made by the Securities Commission is that, if the investment is being recommended by a financial adviser or other professional, then he/she should have read the prospectus and be able to explain significant points to potential investors.

The Securities Commission has had concerns about compliance by NBDTs and in September 2004, following a review of a number of finance companies, issued a discussion document on compliance in the sector. The introduction stated: *"The commission is of the view that some finance companies are not meeting the minimum requirements of the legislation. The commission considers that these finance companies need to consider the disclosures that they are making, and make changes where necessary to their disclosure documents to ensure future compliance with the legal requirements of the act and regulations"* (Securities Commission Staff, 2004, p. 2). The role of the Securities Commission is limited to ensuring compliance with the disclosure requirements of the current act and regulations in areas such as advertising, investment statements and prospectuses. In its April 2005 report on disclosure by finance companies, it stated that, *"the commission does not have a role in relation to the prudential supervision of finance companies and does not comment on this"* (Securities

[32] If the Securities Commission suspends an issuer's prospectus, it is not able to publicise the suspension unless it subsequently cancels the prospectus.

Commission Staff, 2004, p. 1). In a news release following the failure of Bridgecorp Ltd, it stated: "*The commission cannot step in to stop a finance company failing, or take action against a finance company that fails, or help investors recover their money. The commission can intervene only if a finance company does not provide the required information for investors to make a decision on whether or not to invest*" (Securities Commission Staff, 2007a). In intervening, the commission is able only to suspend a firm's prospectus[33], for up to 14 days, and is not able even to inform the public of the suspension unless it subsequently cancels the prospectus.

In summary, therefore, there is no prudential oversight of NBDTs in New Zealand. As a result, depositors must rely on their own judgment, aided by limited disclosure which can be difficult for small, unsophisticated investors. Alternatively, many in the past have relied on professional investments advisers to select the most appropriate investment for their needs. In 2006 and 2007, many investors in NBDTs found their investment decisions had been sub-optimal.

2.2.2.12 The 2008 New Zealand Deposit Guarantee

In October 2008, a significant change was made to the prudential regulation of New Zealand deposit-takers (RBs and NBDTs) when the New Zealand Deposit Guarantee Scheme was introduced, without reference to Parliament, using powers the Finance Minister, Dr Michael Cullen, had under the Public Finance Act. Justification given for the scheme was that the global credit crisis was making it difficult for New Zealand banks, despite being low risk, to raise funds in New Zealand and

[33] If a prospectus is suspended, any new investments must be held in trust until a new one is registered. If the prospectus is subsequently cancelled, any such new investments must be returned to the investors.

internationally. Furthermore, the Australian government was expected to introduce a similar scheme and if New Zealand did not do likewise, its banks would be in an untenable position.

It is difficult to believe the RBNZ was in favour of the deposit guarantee scheme, because as recently as the previous month it had published on its website a discussion on why it believed deposit insurance was not appropriate in New Zealand. The RBNZ (2008a) accepted deposit insurance could assist in the promotion of a safe and efficient financial system, and avoid damage which could result from a bank failure, by lowering the risk of contagion and bank runs. However, it would also reduce market discipline, increase moral hazard, incur administration and compliance costs, require more intrusive prudential supervision and result in a cross-subsidy to higher-risk deposit-takers. Finally, the RBNZ argued that the viability of a deposit insurance scheme was questionable in a small, highly concentrated financial system as it might not be possible, without significant government contributions, to cover losses arising from the failure of a large bank.

The original deposit guarantee scheme introduced by Dr Cullen appeared to have been conceived in haste as it incorporated features which ran counter to the RBNZ philosophy of disclosure and market discipline. Foremost among these was that it was not truly a risk-based scheme, because while premiums were to be paid by deposit-takers, these were at a set rate of 10 basis points and were to be paid only by institutions with deposits greater than NZ$5 billion (Cullen, 2008). Effectively, all premiums were

to be paid by the large banks, while demonstrably[34] riskier non-bank deposit-takers essentially enjoyed a free ride.

The Government and Reserve Bank appear committed to weaning deposit-takers and their depositors off the scheme. Although it has been extended until December 2011, this was done to align its end date to that of the Australian guarantee scheme. Significantly, the premium has been altered to a *risk-based* one based on each institution's credit rating. Those with a credit rating of AA or better pay 15 basis points. The premiums are then graduated down to the point where a finance company NBDT with a BB rating pays 150 basis points while a non-finance company institution[35] also rated BB pays only 60 basis points. Firms are able to choose to have coverage for all or only some of their deposits, the guarantee status must be made clear to depositors, and deposit-takers unable to obtain a credit rating of BB or better by October 2010 will be ineligible for deposit cover under the extended scheme. The decision of the government to require an extra 90-basis-point premium to be paid by finance companies appears arbitrary, but could either indicate a lack of confidence in the ability of rating agencies to assess the risk of finance companies or be a deliberate attempt to force depositors to accept there is no guarantee.

2.3 Rationale, Structure and Forms of Banking Supervision

Governments attempt, through the application of regulations, to moderate excessive risk-taking by banks. This is necessary because few governments are prepared to risk the destabilising effects of the failure of a significantly large bank. These effects

[34] More than 20 NBDTs had failed in the preceding two years.
[35] RB's, building societies and credit unions etc.

could include not only the loss of the savings of individual citizens, but also the collapse of other financial institutions. Mishkin (2001) further argues that the role of banks in directing funds from savers to those with the most productive investment opportunities for a given level of risk (financial intermediation) is critical to economic growth; however, a significant impediment to this process is the asymmetric information present in banking contracts. Asymmetric information simply means one party to a financial contract (the borrower) has better risk information than the other party (the lender). Similarly, depositors must also overcome asymmetric information in directing their savings to the most productive banks (for a given level of risk). Just as banks assess competing investment opportunities, savers must assess the risk-return characteristics of competing banks — a task made more difficult if the public has low levels of financial literacy, as indicated in surveys undertaken by the government's Retirement Commission (Colmar Brunton, 2006) and Reserve Bank (Widdowson & Hailwood, 2007).

Asymmetric information also gives rise to two related problems: adverse selection and moral hazard. If a lender is unable to determine the true risk of a borrower, a solution is to accept an average rate of interest, which would apply to all borrowers. However, if low-risk borrowers are not prepared to borrow at an average interest rate, lenders are left with only higher-risk borrowers in the market, so the average interest rate is no longer appropriate. Moral hazard occurs after a loan has been made and is when a borrower changes their behaviour and engages in a high-risk activity, one the lender is not aware of. Asymmetric information, adverse selection and moral hazard are problematic when banks are lending to households and businesses, but are even more difficult to address when it is households and businesses lending to banks. Depositors

do not have the required financial expertise to challenge institutions which occupy a respected position in the economy.

When a bank is the lender, it is able to use its professional expertise in evaluating potential borrowers to mitigate the effects of asymmetric information. As well, banks are engaging in many similar loan contracts on a regular basis, which enables them to more easily determine an appropriate interest rate. Because of the large number of loans made by a bank, the total risk is reduced through diversification. If the lender (or depositor) is an individual or business, they do not have the same advantages; typically they are a non-expert engaging in a one-off transaction representing a considerable portion of their wealth. Banks have a dominant position in the relationship with customers. Stiglitz and Weiss (1983) argue that banks are able to use the threat of cutting off credit to a customer as a means of moderating risk-taking by borrowers. As a result of the imbalanced relationship, customers are price-takers rather than price-setters in banking transactions.

Due to the importance of banks to economic development and in an attempt to overcome the imbalance in the relationship between banks and their depositors, governments have over time developed prudential regulations with the aim of enhancing the safety and soundness of the banking system. Mishkin (2001) has identified nine basic forms of prudential regulation: a) Restrictions on asset holdings and activities; b) Separation of banking and other financial services; c) Restriction on competition; d) Capital requirements; e) Risk-based deposit insurance; f) Disclosure requirements; g)

Bank chartering; h) Bank examination; and i) Bank supervision[36]. Most countries have adopted all of the above in some form or another.

New Zealand, as indicated by Barth, Caprio et al., (2004), has one of the least restrictive banking regulatory regimes of any country and fully adopts only d) Capital requirements; f) Disclosure requirements; g) Bank chartering; and i) Bank supervision. All New Zealand banks must maintain Basel capital requirements and in December 2008, they moved reporting to a Basel II framework. The supervisory-versus-regulatory approach discussed by Mishkin (2000) reflects a change in prudential regulation towards the oversight of management decision-making rather than a traditional rules-based approach. The RBNZ favours this approach and has little direct contact with banks apart from reviewing quarterly public disclosure statements and an annual off-site meeting with senior management. The RBNZ does not engage in the on-site bank examinations that are common in other jurisdictions; instead it relies on bank-appointed auditors to verify the accuracy of disclosure statements.

The RBNZ sees no need for the rules commonly put in place by other regulators that: a) Restrict asset holdings and activities; b) Separate banking and other financial services; and c) Restrict competition. The rules governing the type of assets held and bank activities, particularly the provision of other financial services by banks, are put in place to restrict banks from engaging in risky activities. Rules regarding bank involvement in the underwriting of securities were put in place in the US by the Glass-Steagall Act following the Great Depression and were not removed until the 1999

[36] Many countries are now tending towards a supervisory rather than a regulatory approach to controlling their banking system.

Gramm-Leach-Bililey Financial Services Modernisation Act was passed (Frederic S. Mishkin, 2001).

Perhaps as compensation for restricting bank expansion into non-bank activities, some overseas regulators restrict competition in banking markets by preventing new entrants from both other industries and other geographic areas. This has the effect of increasing the franchise value of incumbent banks. Keeley (1990) argues this reduces bank risk because if banks face competition they might increase their investment in risky assets and reduce the capital held to compensate for any resultant loss of franchise value. An alternate hypothesis is that sheltered banks will still invest in risky assets supported with minimum capital, and reduced competition only allows the incumbents to charge monopoly prices. Free-market doctrines argue that increased competition leads to lower prices and increased efficiency within an industry to the benefit of all.

New Zealand banks face no restrictions on non-bank activities and are free to invest in stock, engage in real estate services, the insurance industry and securities brokering [37]. In New Zealand, there is essentially open access to the banking market and New Zealand banks appear to compete aggressively. Recent new entrants to the market, registered by the Reserve Bank, have been JPMorgan Chase Bank (2007), Southland Building Society (2008) and Bank of Baroda (NZ) Ltd (2009).

The other reason given by Mishkin (2001) for restricting bank activities is that the *safety-net* provided to bank depositors could be extended to other industries. This would potentially incur a greater cost for the state and give banks an unfair advantage

[37] At least two New Zealand banks are active in securities brokering through subsidiaries they own. ASB Bank owns ASB Securities Ltd and ANZ/National Bank own Direct Broking Ltd.

over non-bank firms providing similar products. In New Zealand, this was not an issue until the introduction in October 2008 of the temporary opt-in deposit guarantee for all New Zealand deposit-takers (banks and non-banks).

Upon introducing the amended scheme, Bill English, the Minister of Finance in the new National administration, told the *New Zealand Herald* that to date, the government had collected $64 million in fees, mainly from banks, and paid out $68 million to depositors in Mascot Finance (Bennett, 2009). Effectively, banks have subsidised risky NBDTs who may not have survived without the deposit guarantee. So rather than banks gaining an unfair advantage from the deposit guarantee scheme, they have been forced to carry the cost of failure in poorly managed NBDTs. While changes to the scheme incorporated a risk element in setting the required premiums, Mishkin (2001) reports that risk-based premiums have not worked well in practice because of the difficulty in accurately assessing the riskiness of an individual deposit-taker. Credit ratings of individual New Zealand deposit-takers may not prove any more reliable than other methods such as the capital adequacy and supervisory classification scheme used in the US to set insurance premiums.

As a response to the introduction of the deposit guarantee scheme, NBDTs which were struggling to manage their liquidity have been able to attract deposits up to October 2010 as depositors have recognised their risk-free status. No risk assessment was undertaken by the RBNZ or Treasury officials[38] of firms going into the guarantee scheme. Consequently, firms are free to continue much as they did in the past, except

[38] The only requirement for entry was that each firm's trustee must attest that it is in compliance with its trust deed.

that because of the deposit guarantee, they are now able to attract lower-cost deposits because of their risk-free status.

The future viability for these institutions is uncertain after October 2010, as most are unrated and have little prospect of being able to achieve the rating of BB or better required in the revised guarantee scheme. Many exhibit a significant mismatch between their assets and liabilities, with for example longer-term property development loans financed from deposits due to mature prior to October 2010. The government may face more failures before the end of the original guarantee in 2010 as institutions exhaust their liquidity.

The voluntary nature of the scheme may also require the government to shoulder a greater share of the cost of these failures, with the scheme subject to adverse selection as low-risk deposit-takers opt out. It is likely that banks which do not need the support of the guarantee will opt out of the scheme before it finishes in December 2011. They will not want to incur an unnecessary expense and certainly will not want to cross-subsidise weaker institutions.

Despite the provision of a government safety net in most countries which would allow insured banks to fail in an orderly manner, many governments have decided that the destabilising effect of even an orderly failure would be too great. As a result, many apply some sort of *Too-Big-To-Fail* (TBTF) policy when it comes to bank regulation, with the nation's central bank acting as a *Lender of Last Resort* (LOLR). The concept of LOLR is well established. The early British banker Walter Bagehot (1873) (as cited in Freixas, Rochet et al., (2004, p. 1086)) maintained that central banks should lend without limit — although at penalty interest rates to discourage banks from using the funds for normal operations — only to solvent institutions with good collateral.

Goodhart (1987) points out, though, that banks requiring LOLR assistance are likely to be already insolvent anyway. Modelling by Freixas, Rochet et al., (2004) reveals that the role of LOLRs in modern economies depends on macroeconomic conditions and bank moral hazard problems. With adequate disclosure and an efficient interbank market, there is less need for LOLR intervention.

Unfortunately, like deposit insurance, TBTF and LOLR policies are features of many modern economies. Mishkin (2000) argues that these policies increase moral hazard incentives in banks, encouraging even greater risk-taking. This could explain the survey findings of Barth, Caprio et al., (2004) of increased bank fragility in countries with generous deposit insurance schemes and a greater degree of bank regulation and restrictions.

Market discipline is seen as a solution to the perverse moral hazard incentives caused when traditional regulations and regulator discipline have resulted in bank managements making suboptimal decisions. Market discipline penalises either unwarranted risk-taking or simply poor management in ways that government regulation is unable to (Calomiris, 1999). De Ceuster and Masschelein (2003, p. 753) define market discipline as "*a regulatory mechanism that delegates the monitoring and disciplining task not only to the national and international regulator but also to the market participants whose wealth is affected by the banks' conduct. Consequently the continuous 'curse' of disciplinary measures by these market participants creates strong incentives for management to run their banks in a safe and sound way.*" In its simplest form, market discipline in banks is the absence of interference in banking of non-market participants.

2.4 Market Discipline in Prudential Regulation

Market discipline is not unique to banks, being present in all marketplaces, and simply involves buyers making an assessment of the quality and price of products or services offered by market sellers. In most markets this process works well, as buyers are easily able to discriminate among multiple sellers; when a trade is completed, it is at an appropriate price and both parties to the trade are satisfied. Problems arise either when buyers are unable to accurately assess the offers of sellers or the outcome of an incorrect decision is so catastrophic the buyers are unable to recover from the incorrect decision. In the case of banks and other deposit-takers, depositors must overcome asymmetric information in making an investment decision and the failure of one institution can result in a contagious lack of confidence in all others. In such circumstances, governments see they have a role to intervene by requiring minimum prudential standards and the provision of a safety net to ensure confidence, thus avoiding bank runs and the economic distress of a bank failure while reducing the cost of providing deposit insurance (G. Benston & Kaufman, 1996). Unfortunately, the presence of government agencies between buyer and seller can result in an increase in risk as a result of moral hazard. Instead, to overcome moral hazard, governments should adopt policies designed to enhance the private monitoring of banks, whilst minimising distortions created by government regulation.

2.4.1 Forms of Market Discipline

Flannery (2001) identifies two distinct components in the market discipline process: market monitoring and market influence. Market influence can be applied by both shareholders and debt-holders. The role of shareholders in monitoring and influencing the behaviour of company management has been recognised in all

industries. For instance, Shleifer and Vishny (1986) report large shareholders can instigate the ultimate sanction on management by instigating a takeover of the firm. However, while De Ceuster and Masschelein (2003) accept the role of monitoring by shareholders, they suggest the interests of shareholders may not align with those of depositors. If shareholders view their equity stake as a put option on the firm's assets, as modelled by Merton (1977, 1978), they might be less risk-averse than depositors. In extreme circumstances, such as when a bank is on the brink of collapse, shareholders might prefer a high-risk gamble over a low-risk (from the depositors' perspective) liquidation, in which the likelihood of a payout to shareholders is slight.

Debt-holders normally have a greater stake in banks and therefore have an incentive to monitor and influence bank management in order to ensure optimal outcomes; debt in various forms often comprises more than 90% of bank funding. Unlike shareholders, who are at least able to vote for bank directors, debt-holders have no avenue for direct influence over bank management. However, they are able to exert influence on management via the various markets for bank debt, requiring a higher interest rate from riskier banks or restricting the volume of funds deposited with them. While individual depositors have little power, the combined actions of many can result in considerable pressure on bank management, who must eventually respond. Management at a risky bank have few options. Either they address the concerns of the market by reducing risk or they face increased interest expense and reduced deposits. An increase in interest expense will quickly impact on profitability, while a reduction in deposits will force the bank to shed assets to maintain liquidity or raise additional capital with either more expensive purchased funds or equity capital.

However, before depositors can influence bank management, they must be able to monitor bank risk. Government regulation of banks should therefore strive to overcome the asymmetric information problems between bank and depositors by facilitating the free flow of information to depositors. Without adequate risk information, the difficult task of making a risk assessment of a bank becomes impossible and banks can only be looked upon as *black boxes* by depositors. If a bank is a *black box,* depositors are not able to adequately monitor it. It follows that if they are unable to monitor it, they are also unable to influence its behaviour, in which case market discipline cannot work and professional bank supervisors should perform the risk-monitoring function for them, providing them with a safety net. Armed with adequate information about bank risk, depositors are able to assess the riskiness of banks vying for their deposits, rewarding those that most closely match their risk-return preference with their business.

2.4.2 The Role of Debt-holder Discipline

Bank debt can be classified as either wholesale or retail. Both wholesale and retail debt can be at call, but in general wholesale debt is only available in larger denominations than retail debt, facilitating its trading in secondary markets. Additionally, often a portion of a bank's wholesale debt is subordinate to retail depositors and other creditors regarding repayment in bank receiverships. These differences in wholesale debt make it ideal for the application of market discipline. Wholesale debt-holders with professional expertise are motivated to monitor banks because their subordinate status puts them at a greater risk of being unpaid (just ahead of equity-holders), and the larger denominations involved make the effort of continuous monitoring more cost-effective. Ellis and Flannery (1992) find that even in the US

market, where market-discipline could be limited as a result of TBTF policies applying to large banks, there is a statistical and economically significant relationship between rates for large CDs and changes in bank risk.

Because wholesale debt is often traded on secondary markets, it makes the application of market discipline transparent. Wholesale investors who observe an increase in a bank's risk should re-evaluate if the investment's yield is still adequate compensation for the risk they are taking. If it is not, logically they should sell the debt and invest in debt which does. While one investor selling their debt may not move the market price significantly, similar sales from others will. An increase in market volume or a drop in market price may prompt others to also re-evaluate the risk-return trade-off from their holding, thus creating a snowball effect. The price of a particular issue of bank debt should fall until a point where its yield matches the market's risk-return trade-off. The buying and selling of bank debt in a free market will result in an explicit relationship between the risk of the debt and its price.

Retail depositors are at a disadvantage compared to wholesale investors in that they may not have the expertise to monitor bank risk-taking, are dealing with smaller amounts of money and have no access to secondary debt markets, and have limited options available if they do detect an increase in bank risk. However, retail depositors still provide a significant portion of bank funding and will react negatively if there is a suggestion of bank risk. Retail depositors, on detecting an increase in bank risk, should still demand an increase in bank interest rates as compensation. However, as retail depositors are *price-takers,* they may simply shift their funds to a competing institution. The ultimate evidence of market discipline at work is a run on bank funds. Deposit insurance designed to prevent bank runs is therefore an anathema to proponents of

private monitoring and market discipline as it reduces incentives for depositors to take care with their investment decision-making. Ioannidou and Dreu (2006) for instance show the linkage between different levels of deposit insurance coverage and market-discipline, finding at 60% coverage it is significantly reduced and at 100% coverage market-discipline is non-existent.

2.4.3 Mechanisms Through Which Debt-holders Impose Discipline

The action of many depositors imposes a penalty on any bank engaged in unwarranted risk-taking and/or which is poorly managed. The penalty imposed by the market can take various forms; a price penalty is common where riskier banks face an increase in the cost of funds (M. J. Flannery & Sorescu, 1996; Hannan & Hanweck, 1988); a volume penalty occurs when existing depositors withdraw deposits or new deposits are not made (Barajas & Steiner, 2000; Goldberg & Hudgins, 1996, 2002); and, in some case depositors may shorten the maturity of their deposits if they are concerned about a banks long term viability (Murata & Hori, 2006). Risky banks could face any or all of these market penalties, which would continue to be applied until the bank either addressed its risk position to the satisfaction of depositors or failed.

2.4.4 Empirical Studies Testing for Depositor Discipline

Empirical market discipline research commonly has either of two objectives: firstly, to reveal a relationship between bank risk and the return to investors, or secondly, to predict or measure the probability of a deposit-taker experiencing a crisis event. To address these two objectives, market discipline research has been undertaken in equity markets, wholesale debt markets and retail markets in many different countries under differing regulatory regimes. Results to date generally support the existence of

market discipline; consequently there have been calls for greater use to be made of market discipline, with the Basel Committee on Banking Supervision including disclosure requirements as the third pillar of Basel II (Basel Committee on Banking Supervision, 2006b).

Equity-holders, as the ultimate owners of banks, have the most at risk in the event of a bank crisis. Any suggestion of an increase in risk should result, almost immediately,[39] in a reduction in share price. Gropp, Vesala et al., (2006) find both subordinated debt and equity markets are predictors of the distance to default in European Union banks. Furthermore, subordinated debt and equity signals[40] provide additional risk information to that contained in traditional accounting information models, reducing type II, or false negative, errors. As to which is more useful, they suggest that the equity-market signal occurs approximately six months before the subordinated-debt-market signal. The disadvantage, though, is that the equity-market signal is more difficult to interpret, whilst the subordinated-debt-market signals get stronger as time to default reduces.

Cannata and Quagliariello (2005), in studying Italian banks, suggest that the four equity variables of daily prices, daily returns, historical volatility and distance to default[41] found abnormal returns of bank stocks seem to anticipate the PATROL[42] ratings assigned annually by the Bank of Italy and provide supplementary information

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[39] Adjustment in stock price should occur more rapidly than an adjustment in bond price and yield, because bank stocks are more widely and frequently traded than bank debt instruments.

[40] The distance-to-default measure was developed by Crosbie and Bohn (2003) at Moody's KMV as a single measure of default risk based on a combination of asset value, business risk and leverage to give the number of standard deviations away from default.

[41] The same Moody's KMV methodology as above was used to calculate the distance to default.

[42] The PATROL rating system is similar to that of the US CAMEL rating system in focusing on five components of the bank performance: capital adequacy (PATrimonio), profitability (Redditivita`), credit risk (Rischiosita`), management (Organizzazione) and liquidity (Liquidita`).

to supervisors, although they do concede that interpretation is difficult. In a study of European banks, Distinguin, Rous et al., (2006), using a logit model, suggest that accounting data and market indicators can improve the prediction of bank financial distress (as evidenced by a credit-rating downgrade). This result, though, was dependent on the frequency of trading of the bank's assets.

Many significant changes have occurred in banking markets over the past 40 years; as a result of some of the changes, banks have come to place a greater reliance on wholesale sources of funding. Market discipline should be stronger in wholesale markets because they are made up of professional investors and institutions who are experienced in the analysis of complex financial information. As the average investment size is considerably larger, the cost of monitoring the investment is proportionately less, and in general the explicit protections of deposit insurance and government guarantees commonly offered to retail depositors are not as prevalent in wholesale markets, with the exception of TBTF policies, which also lead to moral hazard problems.

Studies have found that movements from uninsured deposits to insured deposits in stressed banks are a result of wholesale investors withholding funds, with a consequential shift by the bank to retail sources of funding. There is an argument advanced by some that this is beneficial as it results in the bank closure decision being made by regulators rather than the market. However it does delay the closure decision, which could allow a troubled bank to take additional risk with a greater eventual cost to the state. Jordan (2000) finds that while there is evidence of this occurring in US savings and loans crisis of the 1980s, this did not occur in the banking crisis in New England in the early 1990s. Jordan (2000) attributes this partially to close regulatory scrutiny of the New England banks.

Numerous studies have focused on the price penalty imposed on risky institutions by wholesale market participants. A common methodology employed by researchers of market discipline at the wholesale level is to apply cross-sectional regression of large certificate-of-deposit (CD) rates or subordinated debt yields on accounting data or credit ratings. Flannery and Sorescu (1996) find that, for US banks over the 1983-1991 period, accounting measures of risk impact on subordinated debentures yields. Flannery (1998) also reports that most researchers find a plausible relationship between CD rates and risk indicators which is supportive of a market discipline hypothesis. Evidence from McDill, Maechler et al., (2003) of the price penalty in large CDs suggests the effect becomes stronger as bank equity levels fall. US evidence of market discipline, such as that of Flannery and Sorescu (1996), has been confirmed by other researchers using credit ratings. Pop (2005) reports a statistically significant relationship between spread and credit rating between large European and North American banks, as does Imai (2007) in Japan. The analysis is not without criticism, with some researchers suggesting the relationship is not as straightforward as initially suggested. Hassan, Karels et al., (1993), for instance, argue that CD and subordinated debt risk premiums are not linear or monotonic functions of bank risk. Krishnan, Ritchken et al., (2003) warn that previous studies have not considered the term structure of credit spreads as they suggest that credit spreads of different maturities may move in opposing directions.

Despite methodological arguments, evidence of the risk-return relationship in the subordinated debt market has been sufficient for some, such as the U.S. Shadow Financial Regulatory Committee (2000), to call for banks' examiners to use subordinated debt yields in determining supervisory ratings. A report by the Board of Governors of the Federal Reserve System and the Secretary of the U.S. Department of

the Treasury (2000) finds value in the call but suggests more work is needed. Analysis by Evanoff and Wall (2001, p. 24) suggests subordinated debt yields do as good a job as any capitalisation ratio in predicting next-quarter supervisory CAMEL[43] and BOPEC[44] ratings, although this is limited because "*most of the capital measures, including the risk-based measures, were poor predictors of future supervisory ratings*". As most large banks already issue considerable subordinated debt, it could be argued they are already subject to sufficient discipline and regulators should not interfere unnecessarily. But Pop (2003) argues that subordinated debt is mainly issued by the most profitable banks and often as a substitute for Tier 1 capital. The value of subordinated debt would be greatest when the risk profile of a bank is deteriorating. Forcing banks to regularly issue subordinated debt would ensure market discipline is active when it is most needed, because they would be unable to avoid market discipline by relying more on insured deposits during times of stress.

Examples of market discipline research in retail markets are more limited as it is difficult to find retail markets that are not distorted by deposit insurance or some other safety net. A commonly held view, and one used to justify deposit insurance and regulator supervision, is that retail depositors are unable to apply market discipline. Dewatripont and Tirole (1994) claim retail depositors[45] are incapable of processing highly complex financial information. A further disincentive to retail market discipline is the high cost of monitoring relative to the small size of deposits typically held by

[43] The acronym CAMEL represents areas of interest for bank examiners – Capital, Asset quality, Management, Earnings and Liquidity. Recently an S has been added to the acronym to represent Sensitivity to market risk.

[44] The acronym BOPEC is similar to the CAMEL acronym and is used by those examining bank holding companies (BHC) – the letters stand for the condition of the BHC's Bank subsidiaries, other non-bank subsidiaries, Parent company, Earnings, and Capital adequacy.

[45] Retail depositors are not alone in finding it difficult to analyse banking institutions. Morgan (2002) suggests that disagreement between rating agencies in assessing bank bond issues is an indication of banks being less transparent than other bond issuers.

retail investors, which aggravates the asymmetric information problem faced by retail depositors and gives justification to continued government supervision and/or deposit insurance.

However, Kane (1987) rebuts the claim that retail depositors are unable to apply market discipline, pointing to the actions of depositors in Ohio who started a run on Ohio thrift institutions after becoming concerned about the ability of the Ohio Deposit Guarantee Fund to support failing thrifts. Park and Peristiani (1998) test the hypothesis that riskier thrifts will have higher interest rates and a lesser proportion of un-insured deposits. Not only is this so, but there qualitative results are similar for fully insured deposits, though statistical significance is reduced. Park and Peristiani (1998) were successful in constructing a logit model to predict the probability of failure, with significant relationships then found between interests rates, un-insured deposit and insured deposits.

Testing of market-discipline has more recently been undertaken in many markets other than the US, with evidence provided of both price and volume penalties. Martinez Peria and Schmukler (2001) confirm the ability of small depositors to apply market discipline, with both large and small depositors disciplining *bad* banks in the Chilean, Argentine and Mexican banking crises of the 1980s and 1990s. While Goday, Gruss, and Ponce (2005) find not only is discipline applied through funds being withdrawn, but also banks appear to respond to this discipline. In contrast to the general evidence in South American countries of increased market-discipline after a financial crisis Hosono, Iwaki, and Tsuru (2005) find that in the four countries which were at the centre of the crisis, market-discipline only increased in Indonesia with no evidence of an increase in depositor responsiveness found in Korea, Malaysia or Thailand.

In India, Ghosh and Das (2006) find depositors punish banks for risky behaviour by both withdrawing funds and extracting higher interest rates on deposits. Stronger evidence is provided by Murata and Hori (2006), who originally suspected that depositors in their sample of small Japanese banks and two credit co-operates would not be well informed as to bank risks. But the investors in fact applied depositor discipline despite being protected by deposit insurance. In Switzerland, Birchler and Maechler (2002), in their analysis of quantity indicators rather than price indicators, find that even savings depositors, whom they consider the least sophisticated of all bank depositors, exert discipline on Swiss banks. The government of Russia introduced a deposit insurance scheme for retail bank customers[46] at the end of 2003, and Semenova (2007) provides evidence of it having only a limited impact, with customers exercising quantity-based discipline by rewarding larger state and domestic private banks with increased market share before and after the introduction of deposit insurance. In a similar vein, larger banks and some very small banks were able to increase their use of longer-dated deposits. Semenova (2007) provides no evidence of price-based market discipline either before or after the introduction of the deposit insurance.

2.4.5 Limitations of the Previous Market Discipline Research

There are two main limitations applying to most previous market discipline research that also limit the effectiveness of market discipline itself. Firstly, prudential regulation already in place is designed to moderate risk-taking in banks. As discussed previously, this leads to moral hazard and limits the value of market discipline. In researching market discipline, it is difficult to separate the application of market

[46] Customers with deposits of less than 100,000 roubles were covered by the state guarantee.

discipline from other prudential measures such as regulator discipline. Secondly, in order to apply market discipline, the market needs access to appropriate data; market discipline research is hampered by the unavailability of such data. Risk assessment is fundamental to market discipline; however, there is no single measure of risk. Instead, a number of quantitative accounting measures and some qualitative bank features are used to proxy bank risk. Credit ratings provided by international rating agencies appear to give a single measure of risk but they are only the rating agencies' quantitative and qualitative assessment of a firm. If primary data, commonly used to proxy risk, is available to depositors and researchers, it is on a delayed basis, which limits its value.

Although evidence has been produced of the application of market discipline in markets subject to deposit insurance protection, most analysts would agree deposit insurance and government guarantees lower the incentives for market discipline to work (Llewellyn & Mayes, 2003). The presence of deposit insurance or other explicit government guarantees in retail markets insulates them from risk, thus removing the need for market discipline.

Without a sample of failed institutions, much market discipline research looks at the relationship between risk indicators and return. The underlying assumption is of a relationship between risk and return that should hold in both retail and wholesale markets providing it is not confounded by externalities such as deposit insurance or explicit government guarantees. The market must also have access to timely and relevant risk indicators. Although all banks produce financial statements, they are not always released to the market or researchers in a timely manner. Often financial statements are produced only annually or six-monthly, and even then there is normally a delay of up to a year before they are published. Data which is six months out of date is

of limited value in assessing the risk of a financial institution and is unlikely to demonstrate a risk-return relationship.

The other side of the relationship is the return data. An increase in deposit risk should result in an increase in required return as depositors demand an increased risk premium. Alternatively, an increase in risk could result in a decrease in deposit volume, as depositors go elsewhere; or a decrease in deposit maturity as depositors show greater reluctance to commit funds for the longer term in the face of a perceived increase in risk. The key to the market discipline relationship is that it must be market data that is used to measure discipline. Often this data is not available in a form researchers can use. This may have prompted Semenova (2007) to resort to using accounting data to measure the cost of retail deposits[47]. Her result of no price evidence of retail market discipline is flawed because any changes in interest rates are spread over a number of months, depending on the maturity structure of deposits, thus substantially reducing any evidence of market discipline.

Market discipline researchers must work within the limitations imposed by the availability of data. The only measure of risk available to researchers and the market is the failure of a financial institution. Research such as that by Gropp, Vesala et al. (2006), who used data from both the subordinated debt and equity markets to predict defaults, provides indisputable evidence of the application of market discipline. However, it relies on the researchers having a large sample of institutions, some of which had failed and some which hadn't. As an alternative, researchers have looked at

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[47] $\left(\frac{\text{Total interest paid to individuals}}{\text{Total personal deposits}}\right)$. (Semenova, 2007, p. 15 Table 12)

predicting rating downgrades, either by official bank examiners or by rating agencies. Research by Cannata and Quagliariello (2005), in which they find market data anticipates PATROL ratings, relies on PATROL ratings being accepted as accurate indicators of risk. Results of research by Distinguin, Rous et al., (2006), who use a logit model derived from accounting data and market indicators to predict rating-agency downgrades, are not surprising because the rating agencies are likely to be using the same data for their assessment.

2.4.6 Prerequisites for Effective Depositor Discipline

Lane (1993) lists four general market discipline conditions necessary for the market discipline process of market monitoring and market influence identified by Flannery (2001). Firstly, financial markets must be free and open. Secondly, adequate information must be available about existing debts and the prospects of repayment. Thirdly, there must be no possibility of a bail-out in the event of a default. Lastly, the financial institution must respond to market signals before being excluded from the market.

Work by Llewellyn and Mayes (2003) extends the four general conditions of Lane (1993) to eight prerequisites: 1) Relevant and accurate information is available to public stakeholders' monitors; 2) There needs to be a sufficient number of stakeholders' monitors; 3) Stakeholders' monitors need to have clear incentives to incur the costs of monitoring; 4) Sufficient stakeholders' monitors need to adjust their behaviour in response to disclosure information; 5) Stakeholders' monitors need to respond rationally; 6) Such rational responses must lead to equilibrating changes in market quantities and/or prices; 7) Bank management need to have incentives and the ability to

respond to market forces; and 8) Following from the above 7 prerequisites, the market should efficiently incorporate risk information into prices.

Simply put, market participants must recognise they are at risk and act appropriately. Additionally, bank management need to have incentives and the ability to respond to market signals which have efficiently incorporated risk into prices. In such cases, market discipline will work as intended, with banks not being rewarded for imprudently taking unwarranted risks, and ultimately we will be left with a more efficient financial system.

2.4.7 Depositor Discipline Prerequisites Existing in New Zealand Institutions

Of Lane's (1993) four conditions for market discipline, there can be little argument that the first is present in New Zealand, as financial markets have been very open to new entrants since deregulation in the 1980s. Those wishing to use the term "bank" in their name must register with the RBNZ, which has quantitative requirements of a minimum US$15 million of capital and standard capital adequacy of 8% of total capital and 4% of tier 1 capital. Qualitatively, the RBNZ looks for adequate controls and systems, as well as at the reputation of the owners, directors and senior management. There is little in the way of barriers to entry in the NBDTs market, where the only requirements, apart from those already applicable to any company, seem to be the ability to produce an investment statement and prospectus that comply with the requirements of the Securities Act 1978 and the 1983 Securities Regulations and the ability to find a registered trustee prepared to accept the prospective institution as a client.

Lane's (1993) second condition and prerequisite one of Llewellyn and Mayes (2003) — the availability of adequate information — is debatable. Registered banks are likely to satisfy this condition with quarterly disclosure statements (KIS and GDS) produced within the next quarter, combined with ongoing credit ratings provided by internationally respected agencies such as Standard & Poor's or Moody's. Information is also freely available about NBDTs from their investment statements and prospectuses. However, a limitation of the value of information contained in these documents is that they are subject to only an annual audit[48]. Prospectuses produced and audited on an annual basis do not provide timely information for investors, as they are anywhere from six to 18 months old when the investment decision is being made. Additionally, few NBDTs in New Zealand have credit ratings issued by recognised international rating agencies.

Regarding the third condition of Lane (1993) — the lack of a financial bail-out in the event of a crisis — the RBNZ was quite explicit when it introduced the new disclosure regime in 1996 that it would shoulder no responsibility in the event of the collapse of a registered bank. There is, however, the possibility that it might intervene if the RB was considered to be systemically important. How this intervention would work is obviously unknown, but one would suspect that it would possibly involve only the guaranteeing of transactions that are in process, with existing creditors taking a "haircut". In the case of the recent NBDT failures, there has been no suggestion at all of a government bailout prior to the introduction of the temporary deposit guarantee in October 2008.

[48] While most register prospectus extension certificates at six months, these contain unaudited financial statements.

Lane's (1993) final condition and prerequisite seven of Llewellyn and Mayes (2003) — financial institutions and their management responding to market discipline signals — is the subject of empirical testing. This should hold if investors have adequate information, though this will be the case only if investors recognise they are at risk and act appropriately, thus fulfilling prerequisites two to six of Llewellyn and Mayes (2003).

2.4.8 Limitations to Market Discipline

One of the biggest factors limiting the application of market discipline is pre-existing prudential regulation. Regulations designed over time to address specific concerns have distorted financial markets, making them less efficient and often more risky. A good example of this is the regulation requiring banks to be chartered or registered. Rather than ensuring safety and soundness, this protects incumbent banks from competition, resulting in increased costs to their customers. An argument advanced by Marcus (1984) for restrictive chartering is that banks' risk-taking increases as their charter values decline. Deregulation in the 1980s which allowed in new entrants effectively lowered the value of existing bank charters and made high-risk strategies relatively more attractive, thus giving the potential for an increase in bank failures. It is difficult to conceive under what circumstances bank management would forgo monopoly profits, and Lane (1993) argues that financial markets should be free and open to allow the application of market discipline.

Of great concern are regulations which relieve depositors of their duty of care when making their investment decision. Provision of a government-sponsored safety net means depositors do not face the consequences of inappropriate investment decisions. While it may be appropriate to provide a safety net for small depositors, it should be by

way of explicit insurance with risk-based premiums that they pay[49]. If deposit insurance is provided by private insurers, they will be motivated to ensure premiums are correctly priced and provide ongoing monitoring of deposit-takers.

Although most deposit insurance schemes do not cover large or wholesale depositors, these have often in the past been compensated for losses. Despite the lack of an explicit guarantee, most uninsured depositors in US failed banks were fully compensated by the FDIC from the 1930s to the 1970s (Kaufman, 2003). In 1980, the First Pennsylvania Bank (the 23rd largest in the US) failed. As the collapse was too large for the FDIC to manage alone, First Pennsylvania was recapitalised with the support of the Federal Reserve and other large banks, and its shareholders were left in place (Kaufman, 2003). The bail-out was in the form of a five-year loan of US$325 million from the FDIC and US$175 million from the other banks (I. H. Sprague, 1986, p. 94).

The treatment of First Pennsylvania provided a template for the management of the failure in 1984 of the Continental Bank based in Chicago, in which US$15.3 billion was made available by the FDIC, Federal Reserve and a consortium of large banks, although only US$13.7 billion was called upon (I. H. Sprague, 1986, p. 9). The resolution of the Continental collapse resulted in the acknowledgement of a *Too Big To Fail* (TBTF) policy when the Comptroller of Currency reported to Congress that the 11 largest US banks, including Continental, were with too large to be allowed to fold. Although the Comptroller did not name them, the *Wall Street Journal* identified the banks most likely to qualify, resulting in nine[50] earning abnormal stock returns that day

[49] Either directly or by way of an institutional levy based on the value of deposits held.

[50] Continental was one of two banks not to earn an abnormal stock return, due to the market already knowing the TBTF policy had been applied to it.

(O'Hara & Shaw, 1990). Extensions to the TBTF policy after the Continental crisis resulted in more and smaller banks being bailed out, with an increasing cost to the state. This prompted the Federal Deposit Insurance Corporation Improvement Act of 1991, which introduced *prompt corrective action* and *least-cost resolution* (Kaufman, 2003). Exemptions under this legislation allowed for the continuation of a TBTF policy until 1993, when the rules were tightened with the definition of a *systemic risk exemption* detailing the circumstances under which a bank could be bailed out.

TBTF policies have continued in the US and have been adopted by many other developed economies. The latest metamorphosis of TBTF policies is the US$700 billion *Troubled Asset Relief Program* (TARP) of 2008, extending TBTF to non-finance industries such as automakers (details of TARP funding are given in the table reproduced in Figure 3). In the US, TBTF policies appear to have been applied selectively. One of the larger financial institutions, Lehman Brothers, was allowed to fail while others such as Bears Stern and AIG appear to have been considered TBTF. Of the US$303 billion of TARP funding disbursed up to March 2009, US$199 billion went to purchase preferred shares in 532 financial institutions under a capital purchase plan (United States Government Accountability Office, 2009, p. 9). TARP and similar policy responses in Europe will limit the application of market discipline for many years.

Figure 3 TARP Funds as of March 27, 2009

Table 1: Status of TARP Funds as of March 27, 2009

Dollars in billions

Program	Maximum announced program funding level[a]	Projected use of funds	Apportioned	Asset purchase price[b]	Disbursed
Capital Purchase Program	$250.0	$218.0	$230.0	$198.8	$198.8
Systemically Significant Failing Institutions	70.0	70.0	70.0	40.0	40.0
Targeted Investment Program	40.0	40.0	40.0	40.0	40.0
Automotive Industry Financing Program	24.9	24.9	24.9	24.8	24.5
Citigroup Asset Guarantee	5.0	5.0	5.0	5.0	0.0
Bank of America Asset Guarantee	7.5	7.5	0.0	0.0	0.0
Homeowner Affordability & Stability Plan	50.0	50.0	32.5	0.0	0.0
Term Asset-Backed Securities Loan Facility (TALF)[c]	100.0	55.0	20.0	20.0	0.1
Unlocking Credit for Small Business	15.0	15.0	0.0	0.0	0.0
Auto Supplier Support Program	5.0	5.0	0.0	0.0	0.0
Public-Private Investment Program	100.0	100.0	0.0	0.0	0.0
Capital Assistance Program	TBD[d]	TBD	0.0	0.0	0.0
Total	**$667.4**	**$590.4**	**$422.4**	**$328.6**	**$303.4**

Source: Treasury OFS, unaudited.

[a]Some of Treasury's announced transactions are not yet legal obligations and actual amounts will depend on participation.

[b]The Asset Purchase Price reflects the aggregate purchase price amount of outstanding troubled assets purchased by Treasury that are subject to the $700 billion purchase limit in section 115 of the act. It also includes the aggregate amount of outstanding guaranteed obligations subject to the limit, but before subtracting the balance in the Troubled Assets Insurance Financing Fund required by section 102.

[c]Treasury considers this program part of its Consumer & Business Lending Initiative.

[d]Treasury has announced CAP but has not yet announced its funding level.

Source: (United States Government Accountability Office, 2009, p. 9)

2.5 Chapter Summary

Over the past 400 years, banks have evolved to the point where they are pivotal to our economic wellbeing. The key and defining functions of banks are the provision of a payment system and financial intermediation. It is inconceivable that our modern economies would function without some form of institution providing these functions. Our dependence on banking institutions has increased significantly over the past 40 years as globalisation and advances in technology have resulted in interconnected banking networks encircling the globe. Banking crises are no longer restricted to one bank, town or country. The Asian financial crisis of 1997, which began in Thailand,

spread rapidly to other South East Asian economies and was felt in countries such as Australia and New Zealand. The International Monetary Fund expected the Asian crisis to halve the rate of world growth in 1998 and 1999 (International Monetary Fund, 1999). In 2008, global economies were brought to the brink of collapse by an inability of investors, non-bank financial institutions and banks to accurately assess the risk of financial instruments they were passionately investing in.

Governments have recognised the important role played by banks and have over time developed prudential regulations designed to ensure the safety and soundness of banks. These generally require banks to maintain minimum prudential standards, such as capital adequacy[51]. After setting minimum prudential standards, governments have taken a supervisory role in ensuring they are maintained. In order to discourage destabilising *bank-runs*, which are often contagious if one bank gets into difficulty, deposit insurance has been introduced in most[52] developed economies. Prudential regulation introduced haphazardly and often in response to a particular bank crisis has sometimes resulted in unintended consequences. Government supervision of banks and deposit insurance have provided a safety net, giving rise to moral hazard where depositors need no longer worry about risk when investing in financial institutions because the state will compensate them for losses incurred as a result of a bank failure. Instead, they can focus solely on return. Risky banks also benefit from the safety net as they are able to raise funds at a discount to what their deposit rates or the price of their securities would be if their risk was correctly priced in. As seen in 2008, prudential

[51] Most regulations require tier 1 capital (equivalent to ordinary equity) of 4% and total capital of 8%, which includes long- term debt. Under BASEL II, a risk-weighted method is used to calculate capital adequacy.

[52] Prior to 2008, Australia and New Zealand were two notable exceptions to developed countries with deposit insurance.

regulation, government supervision and deposit insurance are not able to prevent even the largest banks from failing and thus putting the global economy in peril.

In 1996, New Zealand took an alternative approach to the prudential regulation of banks. While still maintaining minimum prudential standards, in line with the BASEL accord, the Reserve Bank largely abandoned the direct supervision of banks in favour of supervision by the market (and competitors). The introduction of a disclosure-based regime was designed to overcome asymmetric information problems commonly presented as insurmountable in banking contracts. Under the disclosure regime, all banks are required to produce within two or three months of the end of each quarter a Key Information Summary (KIS), designed to assist retail depositors, and a more detailed General Disclosure Statement (GDS), which is targeted towards experienced investors. Bank directors are required to attest to the accuracy of all disclosure statements, and face personal liability if any are found to be false. The RBNZ has no on-site inspection of banks; instead, it supervises by way of the GDS, relying on professional auditors to independently audit this on a six-monthly basis.

The RBNZ takes responsibility only for the registration and regulation of banks. There are also a comparatively large number[53] of small non-bank deposit-takers (NBDTs), which must meet the requirements of the Securities Act 1978 and subsequent Securities Regulations. There is no official oversight of NBDTs. Instead, an independent trustee company represents the interests of individual investors and ensures the NBDT meets the terms of its trust deed. The trust deed is individually negotiated between the NBDT and the trustee and while some trustee companies use a standard

[53] New Zealand has 16 to 18 banks but more than 200 NBDTs.

trust deed, the two parties are free to agree to whatever terms they consider necessary. In order to raise deposits from the public, NBDTs must issue an investment statement, given to all investors, and register a prospectus with the NZ Companies Office. The prospectus must be provided on request to investors.

Before October 2008[54] there was no safety net for depositors. New Zealand had no deposit insurance and the New Zealand government did not guarantee the safety of deposits in any financial institution, bank or NBDT. Furthermore, there is no official agency charged with the onsite inspection of banks and other financial institutions. Instead, the Reserve Bank relies on the audited published disclosure statements of New Zealand banks to ensure their compliance with prudential standards. New Zealand between 1996 and 2008, therefore, is a unique and ideal market in which to test the effectiveness of a disclosure and market discipline in a market free from many of the distortions present in other markets. Ultimately it should be possible to observe if disclosure results in deposit-takers moderating their risk-taking and compare the effectiveness of the 1996 disclosure regime for banks with the less onerous 1978 Securities Act under which NBDTs are regulated.

Fundamental to the effectiveness of New Zealand's disclosure regime is the assumption that depositors will act appropriately and in unison. The combined actions of many constitute market discipline. Their actions in response to a perceived increase in bank risk may take the form of any or all of the following: an increase in the interest rate demanded, a reduction in the supply of deposits, or a reduction in the term of

[54] That month, however, global liquidity concerns prompted the New Zealand government to introduce a temporary two-year deposit guarantee scheme covering both banks and NBDTs. This has now been modified and extended for a further year.

deposits offered. However, disclosure cannot be effective and market discipline cannot be applied if no one examines the disclosure and acts on it. A prerequisite of Llewellyn and Mayes (2003) is that there be a sufficient number of stakeholders with clear incentives to rationally monitor banks. Simply put, market participants must recognise they are at risk and act appropriately in order for market discipline to work as intended. To assess this factor, the financial literacy of New Zealanders is surveyed, with results and conclusions reported in chapter 3.

3 Testing of New Zealanders' Attitude Towards Deposit Risk

The prudential safety of deposit-taking institutions in New Zealand, be they banks or non-banks, relies heavily on the market as there is usually no deposit insurance[55] and little in the way of supervision by official agencies. Instead, depositors are expected to balance the riskiness of deposit-taking institutions against the returns they promise. Depositors who *get it wrong* must bear sole responsibility for their decisions and suffer the consequences.

To facilitate decision-making by registered banks' depositors, the Reserve Bank Amendment Act 1995 requires public disclosure of financial information regarding bank risk on a quarterly basis. The Key Information Summary (KIS) provides a brief overview of each bank's financial condition while the General Disclosure Statement (GDS) offers more comprehensive information. Both are designed to assist depositors in making well-informed investment decisions. The Reserve Bank expects that bank depositors will act prudently and that the resultant market discipline will moderate excessive risk-taking in banks.

In New Zealand, however, there was a clear distinction between non-bank deposit-takers (NBDTs) and registered banks (RBs), with NBDTs subject to the requirements of the Securities Act 1978. Under this act, all NBDTs are required to supply an investment statement before taking a deposit and make available a registered prospectus. The investment statement provides little financial information other than detailing expected charges and returns, but does alert investors to the existence of the

[55] In October 2008, in response to worsening international credit markets, a temporary deposit guarantee was made available to RBs and NBDTs.

prospectus, which they can ask for. The prospectus should provide detailed information about the people promoting the investment, the issuer's most recent financial information, any commitments the issuer may have and the key points of the trust deed. NBDTs register a new prospectus annually, because under the Financial Reporting Act 1993 they are required to produce audited financial statements within five months of balance date. The investment statement and prospectus are the only protections offered to depositors in NBDTs as the Securities Commission monitors only compliance with the Securities Act 1978 and the trustee monitors the issuer's compliance with the terms of the issuer's trust deed. There is no government body charged with the prudential supervision of New Zealand NBDTs and depositors in NBDTs should proceed with caution.

Consequently, financial literacy is thought to be especially important in New Zealand, with a report commissioned by the Retirement Commission pointing to New Zealand's "*relatively light-handed approach to banking and insurance market regulation and a voluntary approach to private provision for retirement*" requiring a financially literate population (Colmar Brunton, 2006, p. 4). Before empirically testing the effectiveness of disclosure, New Zealand depositors are surveyed, primarily to determine if they appreciate the risk they incur when depositing funds in New Zealand institutions and, secondly, if they are aware of their entitlement, under current legislation, to relevant information. This chapter reports the results of the survey of New Zealanders' attitude to deposit risk.

3.1 The Role of Financial Literacy in Effective Prudential Supervision

For market discipline to be effective in moderating excessive risk-taking by deposit-takers, Llewellyn and Mayes (2003) argue there needs to be a sufficient number

of stakeholders with clear incentives to rationally monitor institutions. The combined actions of many depositors impose a penalty on unwarranted risk-taking and/or poor management. The penalty imposed by the market can take the form of a price penalty, in which an institution faces an increase in the cost of its funds, as in Hannan and Hanweck (1988) and Flannery and Sorescu (1996), or a volume penalty, in which the supply (or maturity term) of funds available to the institution is restricted, or a combination of both, as in Goldberg and Hudgins (1996, 2002). Ultimately, this is more severe than any penalty imposed by a government regulator; as it will lower profitability and/or forces a reduction in the institution's size.

Market discipline can only be effective in an economy where the population is financially literate; if it is not, an argument can be advanced for the government to assume a role in which it supervises financial institutions more closely, as a public good, in order to protect unsophisticated depositors. Market participants must recognise they are at risk and act appropriately in order for market discipline to work as intended. If market participants do not recognise they are at risk, there will be no market signals sent for financial institutions to respond to.

3.2 Previous Surveys of Financial Literacy and Findings

Policymakers internationally have concerns about the financial literacy of their citizens because deficiencies can have dire consequences for individuals and families. The need for greater financial literacy has risen as the complexities of modern economies have increased. Citizens are not only faced with an array of financial products not even conceived of a generation ago, but in many countries are now also expected to take a more active role in providing for their housing and retirement needs. Braunstein and Welch (2002) argue that poor money-management skills leave

individuals in a financial predicament, but well-informed participants help create a more competitive and efficient market. To these ends, government agencies such as the U.S. Federal Reserve actively provide economic literacy materials to help students and the public better understand the economy.

In New Zealand, similar initiatives have been put in place by the Retirement Commission, which actively encourages financial literacy through research, advertising campaigns and extensive online tools. A survey undertaken for the commission by Colmar Brunton (2006) found, that while New Zealanders have a reasonable overall level of personal financial knowledge, a number of concepts such as compound interest, mortgages and investments are not well understood. This survey was repeated in 2009 and an improvement in financial literacy was highlighted (Colmar Brunton, 2009). However, the report cautions that the improvement is due to a significant increase in the financial knowledge of the survey's "high knowledge" group, with no significant change in the lowest knowledge group.

The Reserve Bank in 2007 commissioned its own survey of the public's understanding of financial information, credit ratings and risk perceptions in the financial sector. This revealed a poor understanding of disclosure and of the government's role, with 60% of those surveyed expecting a failing bank would be bailed out by either the Crown or the Reserve Bank (Widdowson & Hailwood, 2007). When questioned about bank disclosure, more than 80% of respondents were either unaware of disclosures or did not make use of them (Widdowson & Hailwood, 2007). Widdowson & Hailwood (2007) were also concerned that financial literacy levels may become much worse, because 87% of the under-30-year-olds expected the government to bail out a failing bank. The government therefore has a challenge to enhance the

financial literacy of this age group as its members get older and play a more active role in the economy.

As part of an assessment of the effectiveness of market supervision in New Zealand banks, McIntyre, Tripe et al., (2009) looked at the availability of bank disclosure statements and the ability of retail depositors to act as stakeholder monitors. A researcher, posing as a bank customer, visited 40 bank branches[56] to test the availability of disclosure statements. In 28, the KIS was displayed as required by law. Of the remaining 12, only five were able to produce the statement on request. However, the GDS was not as readily available. Only eight of the 40 branches were able to either supply it on request or arrange for it to be sent within the required seven days. At 21 of the other branches, the staff members the researcher approached appeared unfamiliar with the term "disclosure statement" and required assistance from colleagues. Bank workers at six other branches indicated the GDS was not available and were unresponsive to prompting that it could be ordered from head office. The remaining five branches failed to supply the disclosure statement as requested. Overall, the researchers concluded that the requesting of disclosure statements was an infrequent occurrence.

McIntyre, Tripe et al., (2009) assessed the ability of retail depositors to act as stakeholder monitors firstly by asking a group of nine individuals to interpret information in a KIS and secondly through a random postal survey, which drew 311 returns from a sample of 2,000. Questions asked of the sample of nine related to credit ratings, bank capital, impaired assets and credit exposure concentrations, among other things. Despite the nine people being relatively well educated, with five possessing a

[56] Branches visited were all in the North Island but outside the major cities of Auckland, Hamilton and Wellington as it was thought they were unlikely to have been visited by Reserve Bank staff or other researchers.

post-graduate qualification and three having other tertiary qualifications, the sample was not able to correctly interpret the information supplied in a KIS. McIntyre, Tripe et al., (2009) suggest the respondents would not be able to provide effective monitoring.

In the postal survey undertaken by McIntyre, Tripe et al., (2009, pp. 32-33) 47.5% of respondents indicated price was the most important consideration in their choice of bank. Only 22.4% gave bank soundness as their key criterion, followed by service (16.6%) and convenience (13.5%). When questioned about disclosure statements, 57.8% of respondents claimed to be aware of disclosure, but only 17.4% had actually looked at one. When asked what their most important source of information to judge bank soundness, 42.7% said they relied on the news media, 27% the recommendation of family and friends, 10.7% financial planners/advisers and 11.3% bank advertising. Only 8.3% relied on formal disclosure statements. The final question asked if bank deposits were government-guaranteed (the survey was held prior to the introduction in 2008 of the New Zealand deposit guarantee) — 48.4% were very clear that there was no guarantee, 12.8% were unsure but *felt* the government fully guaranteed deposits, 2.7% believed there was a full guarantee and the rest thought there was a partial guarantee. In a similar survey in Australia (Reserve Bank of Australia, 2006, p. 46), 60% wrongly believed there was a government guarantee (22%) or else the government would step in to ensure a partial or full repayment of funds (38%).

Many New Zealanders have a preference for property investment over other investment alternatives, according to a recent study by Braithwaite and Kemp (2007). They found on average participants showed a clear preference to residential property investment (48%) and residential property syndicates (13.75%). Term deposits (21.5%) came in second place to property investing, while investment categories least favoured

were the stock market (9%) and unit trusts (7.5%). The predisposition for property investing in New Zealand has posed problems for the Reserve Bank's implementation of monetary policy, with the bank having to contend with domestic consumption fuelled by a property boom while also balancing the impact of exchange rates and interest rates on the export sector.

Results obtained by McIntyre, Tripe et al., (2009) appear to be consistent with those obtained from both the Colmar Brunton Retirement Commission Surveys in 2006 and 2009 and the RBNZ survey in 2007. An OECD (2005) report also said that the level of financial literacy in New Zealand may be lower than desirable. However, the OECD, after examining financial literacy surveys in 12 member countries, concludes the financial literacy levels of consumers in all 12 to be very low.

One of the earliest surveys of depositor awareness was undertaken in the aftermath of the failure of Cincinnati's Home State Savings Bank in March 1985. The closure of the bank put pressure on its deposit insurer, the Ohio Deposit Guarantee Fund (ODGF), a private company. As a result of this pressure, which came through the actions of depositors and which Kane (1987) points to as evidence of retail market discipline, Ohio Governor Richard Celeste declared a bank holiday for 70 savings and loan associations covered by the ODGF. The Cincinnati survey was conducted at a meeting of Home State depositors in the middle of April and asked if they knew the bank's deposits were insured. In response to a subsequent question as to who was actually insuring the deposits[57], 88.6% thought it was the State of Ohio, 7.6% the federal government, 15.5% Home State Savings and only 14.8% said it was a private

[57] Results sum to more than 100% as respondents were able to select more than one option.

Ohio corporation (Bowyer, Thompson, & Srinivasan, 1986, p. 297). However, as Bowyer, Thompson et al., (1986) suggest, this result may be biased as those present were attempting to convince the State of Ohio to accept responsibility. Regardless of their motivations, depositors appear to have been ill-informed. In what was a well-educated group, only 13.1% had received a Home State annual report (Bowyer, et al., 1986, p. 297), and many had failed to practise the basic financial planning principles of safety and diversification. Home State was eventually acquired by another Cincinnati savings bank, with no loss of depositors' principal, although interest was paid at only the lower federally insured rate (Bowyer, et al., 1986).

Marketing research provides extensive literature on choice criteria in retail bank markets, with Anderson, Cox and Fulcher (1976) suggesting customers fall into two approximately equal clusters, described as either convenience-oriented or service-oriented. Cluster 1 customers (55%) appear to regard bank services as a convenience good and money as an undifferentiated good, while cluster 2 customers (45%) are able to perceive significant differences between banks, and select banking services on the availability of credit, bank reputation, recommendations from friends, friendliness, and interest charges on loans[58]. The highest score for cluster 1 was recommendations from friends (5.504), which was a lower score than for each of the top 12 criteria of cluster 2 (Anderson, et al., 1976, p. 41).

Analysis of an Andersen Consulting interactive survey across six major U.S. cities by Elliott and Shatto (1996) concludes depositors are more interested in price and speed and place little value on their relationship with their bank. This finding is disputed

[58] Respondents were asked to indicate on a five-point scale selection criteria importance (5 most important) and on a four-point scale bank difference (4 very different). The final score was the product of the two scales.

by Reeves and Bednar (1996), who in a survey of Arkansas bank customers find that although price is important, customer service is more important. Reeves and Bednar (1996) suggest the differences between the two studies are due to differences in the samples; the Andersen sample comprises only large cities whereas the Arkansas study is of predominantly small urban centres, and the choice and wording of questions differ between the surveys. A British study by Devlin (2002) suggests the importance of various criteria is related to financial knowledge, with low-knowledge groups being influenced by bank location and customers' recommendations, while high-knowledge groups take into account intrinsic features such as service, returns and fees in deciding on financial products.

Missing from this marketing literature is the question of bank risk, though this is understandable when most retail bank customers are protected by deposit insurance. A common argument advanced is that the presence of deposit insurance relieves retail depositors of the need to consider the risk of their investments; instead they need only consider factors such as return and convenience. A study by Semenova, Yudkevich et al., (2008) after the introduction of a deposit insurance scheme in Russia in 2003 looks at how it impacted on depositor investment decision-making. Moscow depositors are different from those in other markets; for instance, 39% have accounts which were opened by their employer to pay wages into. When asked what their preference would be, 35% said a large bank and 21% a state bank. A question on foreign bank ownership resulted in an interesting discrepancy: customers of Banque Societe Generale often named foreign ownership as an indicator of their bank's reliability, whereas almost none of the clients of Investsberbank did. This would suggest few customers of Investsberbank actually realise it is foreign owned, which one would expect knowledgeable customers to be aware of.

When Moscow depositors were questioned on the monitoring of bank reliability, their responses were significantly dependent on the size of their deposits. In the group with deposits under the deposit insurance maximum of 100,000 roubles[59], only 35% regularly monitored bank information, compared to 72% of those with deposits greater than 400,000 roubles (Semenova, et al., 2008, p. 9). Semenova, Yudkevich et al., (2008) attribute the high level of monitoring by retail customers to a lack of confidence in the state guarantee and its low maximum coverage. A further factor could be the short history of deposit insurance in Russia.

Another country which introduced a deposit insurance scheme was the Turkish Republic of Northern Cyprus (TRNC), in 1991. The level of insurance was originally set at GB£2000 but a blanket guarantee was introduced in 2000, then reduced to the European Union-mandated minimum of 20,000 euros in 2004, before being increased again to 50,000 euros. A small survey of bank staff and customers by Şafakli and Güryay (2007) found only one staff member (out of 81) who felt they had sufficient information on the scheme, and only 14% of employees knew that the maximum amount guaranteed was 50,000 euros. The rest were misinforming depositors, including 12% who believed there was still a blanket guarantee and 4% who thought the limit was 100,000 euros. Among depositors, 60% (out of 100) said they had knowledge of the scheme although only 9% knew the maximum limit was 50,000 euros. Şafakli and Güryay (2007) attribute the confusion in TRNC to the previous changes in policies and practices of the state and a lack of guidance from the central bank.

[59] 100,000 roubles converts to US$3136 or NZ$5000. Exchange rates as at 9 July 2009.

In Germany, Strater, Corneli et al., (2008) surveyed depositors' attitudes to deposit insurance. Germany has a privately administered and funded deposit insurance scheme and all banks are required to have insurance up to the European Union-mandated minimum of 20,000 euros. Most also take additional insurance, so virtually all private depositors are fully covered. Strater, Corneli et al., (2008) find only 40% of depositors realise they are covered by deposit insurance and this group are older, more risk-averse and more involved with banking services. The lack of knowledge of a large group of German depositors is surprising, given that in answer to another question, respondents rate security of deposits as highly important (Strater, et al., 2008). Strater, Corneli et al., (2008) conclude by suggesting German banks should promote the safety of their deposits so as to be able to attract additional funds at a lower cost.

3.3 2006 Depositor Risk Survey

As market participants are meant to play an important role in the prudential safety of New Zealand's deposit-taking institutions, it is necessary to determine if they realise what is expected of them. In 2006, the Reserve Bank survey had not yet been published and although an early version of the McIntyre, Tripe et al., (2009) paper, was sighted, it did not cover non-banks. For this reason it is necessary to survey a wider group of New Zealanders to determine if they appreciate the risk they incur when depositing funds in New Zealand institutions and secondly to learn if they are aware of their entitlement, under the disclosure regime, to relevant information. This survey had specific questions targeting registered bank (RB) depositors and non-bank deposit-taker (NBDT) depositors. (See Appendix 1 for a copy of pertinent survey questions) These questions were part of a larger survey undertaken by Professor Richard Brookes of Auckland University and Associate Professor Andrew Parsons of Massey University,

who annually surveyed customer satisfaction levels in New Zealand banks. The survey was sent out in November 2006 as a random postal poll to 10,000 households throughout New Zealand. The 2006 survey was multi-disciplinary, including questions by Brookes and Parsons on bank customer satisfaction levels, a section of questions by Dr Ellen Rose, also from Massey University, on the use and acceptance of mobile phone banking, and my questions concerning depositors' risk attitudes.

3.3.1 Design of the Survey Instrument

Questions of interest are sections A and B, which ask demographic questions, identifying the respondents' main bank, age, gender, education and income levels. Brookes and Parsons had previously tested the New Zealand Post sampling methodology to ensure it resulted in a representative sample of the New Zealand population. Section C asks five questions concerning bank risk, where respondents sought financial advice, their use of disclosure statements and what they believed would happen in the event of a bank collapse. Section C questions were based on the earlier[60] survey by McIntyre, Tripe et al., (2009) of depositor knowledge and the use of disclosure statements. Section D asks three questions about deposits in NBFIs as opposed to RBs. Section E asks respondents to list their investments (to the nearest $1000) and then indicate the riskiness of those types of investments.

3.3.2 The Survey Sample and Sampling Procedure

The survey was sent out in early November 2006 by New Zealand Post to 10,000 households. Each survey was printed on an A3 sheet of paper, folded to give

[60] This was undertaken originally as a research report by Zhuang when he was a postgraduate student at Massey University.

four pages; this was inserted with a reply-paid envelope in an envelope addressed to "The Householder". Survey envelopes were then bundled into lots of 100 and delivered to New Zealand Post, which arranged their random delivery. New Zealand Post despatched bundles of 1000 surveys to 10 different mail distribution centres throughout the country. At each centre, a bundle of 100 surveys was given to 10 different delivery persons to deliver to the first 100 houses on their delivery route.

Of the 10,000 surveys sent out, 910 were returned, giving an overall response rate of 9.1%. Sixty-three per cent of the responses (shown in Table 2) came from the North Island (population 76%) and 37% from the South Island (population 24%). The breakdown of responses is also given by province in Table 2. Because of the way the survey was randomised by New Zealand Post, some provinces were not sampled, notably Manawatu-Wanganui, Otago, Northland and Hawke's Bay. There was also an over-representative response from Tasman (13% of respondents, whereas the province makes up 1% of the New Zealand population) and Taranaki (13%, population 3%). This was a result of 1000 surveys being delivered in what are small-population[61] provinces, 44,628 and 104,127 respectively.

[61] Statistics NZ – 2006 Census Table 1 Population by Regional Council.

Table 2 Deposit Risk Survey Responses by Province

Survey Responses		NZ Provinces	Population	
568	63%	Total, North Island	3,059,427	76%
328	37%	Total, South Island	968,520	24%
		Northland	148,470	4%
250	28%	Auckland	1,303,068	32%
71	8%	Waikato	382,713	10%
55	6%	Bay of Plenty	257,379	6%
		Gisborne	44,499	1%
		Hawke's Bay	147,783	4%
114	13%	Taranaki	104,127	3%
		Manawatu-Wanganui	222,423	6%
78	9%	Wellington	448,956	11%
23	3%	Tasman	44,628	1%
119	13%	Nelson	42,888	1%
		Marlborough	42,558	1%
		West Coast	31,329	1%
186	21%	Canterbury	521,832	13%
		Otago	193,803	5%
		Southland	90,876	2%
896		Total, New Zealand	4,027,947	

Note: Of the 910 replies received, 14 did not indicate the respondents' province.
Population statistics are from the New Zealand 2006 Census.

Women made up 63.2% of respondents and men 34.8%[62]. They were well distributed across all age ranges (Table 3). When asked about their education (Table 4), 28.4% said they had studied at a university, 11.1% had received vocational training and the rest had had no formal education apart from that received at school. Responses to questions about income distribution (Table 5) showed that 27.6% of respondents lived in households with a household income of less than $30,000 a year. It was presumed the bulk of this group were older people living mainly on New Zealand Superannuation, which in 2006 was paid at a level of around $16,000 per person.

[62] Percentage do not sum to 100 as some respondents did not answer all questions.

Table 3 Age Distribution of Respondents

Age range	Frequency	
Under 20	62	6.8%
20-29	70	7.7%
30-39	145	15.9%
40-49	158	17.4%
50-59	169	18.6%
60-69	145	15.9%
70 & over	146	16.0%
Unanswered	15	1.6%

Table 4 Respondents' Education

Highest Qualification	Frequency	
No Qualification	60	6.6%
5th Form	101	11.1%
6th Form	98	10.9%
Higher School	85	9.3%
Other NZ School	52	5.7%
Overseas School	55	6.0%
Vocational	101	11.1%
Bachelors Degree	148	16.3%
Postgraduate Degree	110	12.1%
Unanswered	20	2.2%

Table 5 Respondents' Household Income Range

Income Range	Frequency	
Under $20,000	69	7.6%
$20,001-$25,000	69	7.6%
$25,001-$30,000	113	12.4%
$30,001-$40,000	104	11.4%
$40,001-$50,000	110	12.1%
$50,001-$70,000	140	15.4%
$70,001-$100,000	137	15.1%
Over $100,001	142	15.6%
Unanswered	26	2.9%

Note: The June 2006 NZ Income survey reports the average household income to be $68,692. In April 2006 NZ Superannuation and the Veterans' Pension were $16,646 for a single person and $15,307 per person for a couple living together.

As part of the bank customer satisfaction survey, respondents were asked to identify their main bank (Table 6). The sample was representative of the New Zealand banking sector apart from TSB and Other categories, which were substantially over-represented in the survey. The response rate for TSB was 7.4%, against reported total assets of 0.9% in September 2007 (Table 1). The higher-than-expected value for TSB was a result of the disproportionate number of responses from the Taranaki province, where TSB is based. The disparity between survey responses and total assets in the "Other" category is due to the retail target of the survey, with most other banks being business bankers.

Table 6 Respondents' Main Bank

Main Bank	Frequency		Total Assets (Sept 2007 KIS)
ANZ	143	15.7%	33.5%
ASB	169	18.6%	16.7%
BNZ	153	16.8%	17.5%
Kiwibank	27	3.0%	1.8%
NBNZ	142	15.6%	Included in ANZ
TSB	67	7.4%	0.9%
Westpac	197	21.6%	14.3%
Other	12	1.3%	15.3%

Note: In comparison TSB and Kiwibank reported Total Assets of 0.9% and 1.8% of Total NZ Bank Assets respectively in September 2007. The higher-than-expected value for TSB is a result of the disproportionate number of responses from the Taranaki province. The disparity between survey responses and total assets in the "Other" category is due to the retail target of the survey, with most other banks being business bankers.

3.4 Presentation of Survey Results

After basic demographic data was collected in the first seven questions of the 2006 survey, the following three sections dealt with deposit risk. Five questions in Section C dealt with RB risk and information disclosure, and Section D had three questions concerning NBFI risk and information disclosure, while in Section E

respondents were asked the amount of their investments and the risk they assigned to them.

3.4.1 Registered Bank Survey Responses

Question 8 measured respondents' level of agreement with the following statement: "*In general, regardless of which bank it is, there isn't much risk involved in banking with any of them.*" On a scale of 1 (strongly disagree) to 7 (strongly agree), the mean of all responses was 4.08, with a standard deviation of 1.71. Having the mean in the centre of the scale and a standard deviation of nearly 2 places suggests that New Zealanders are uncertain as to the riskiness of individual banks. Analysis of responses shown in Table 7 suggests the size of a depositor's exposure to a bank does not play a part in how they judge the riskiness of the banking system, with group means close to the overall mean.

Table 7 Question 8 Bank Risk * Depositor Size

Depositor Size (000)	Mean	N	Std. Deviation
Very Large >$100	3.90	61	1.777
Large $20-$99	4.12	113	1.731
Medium $5-$19	3.93	132	1.607
Small <$5	4.00	329	1.751
Deposits not disclosed	4.26	264	1.646
Total	4.07	899	1.701

Note: Q8 In general, regardless of which bank it is, there isn't much risk involved in banking with any of them. Likert Scale 1= Strongly Agree to 7= Strongly Disagree

A prompted question (Table 8) then asked about the most likely source of information on bank risk. The largest percentage of respondents (32%) selected news media commentary, although a larger combined group (49%) relied directly on the bank. Other sources selected were bank branch staff (17%), bank websites (16%) and

advertising (16%). A significant group (15%) thought that they would get information about bank risk and the possibility of losing funds from the RBNZ.

Table 8 Question 9 Information about Bank Risk

Q 9. Where would you most likely expect to find information about bank risk?

Percentage	Response
1.43%	Unanswered
16.92%	Branch bank staff
16.26%	Bank website
15.71%	Bank advertising
31.65%	News media commentary
15.05%	RBNZ
0.66%	Other

Question 10 (Table 9) asked respondents about the source they relied on to judge risk at their bank. Again, a large number (32%) relied on the bank itself, with 19% looking to formal disclosure statements and 13% to bank advertising. The media were relied upon by 28%, 18% turned to family and friends and another 18% sought advice from financial advisers.

Table 9 Question 10 Most Important Source about Bank Risk

Q 10. What is the most important source that you rely on to judge your main bank's risk?

Percentage	Response
1.43%	Unanswered
17.91%	Recommendations from family & friends
18.79%	Formal disclosure statements provided by bank
17.69%	Advice from financial adviser
28.24%	Reports/reviews in the media
13.19%	Bank advertising
1.21%	Other

Question 11 (Table 10) specifically asked about the awareness and use of disclosure statements. Twenty-nine per cent of respondents were unaware of disclosure

statements, 33% had looked at them, and 36%, while aware of them, had never read them. That 33% claimed to have looked at disclosure statements is quite an encouraging result, as a large proportion of the population would not have meaningful deposits at banks, with most householders being net borrowers rather than net savers.

Table 10 Question 11 Bank Disclosure Statements

Q 11. All banks operating in NZ are required to publish disclosure statements that are supposed to provide you with information with which you can judge bank risk. Which of the following best describes your situation?

Percentage	Response
1.43%	Unanswered
29.23%	I was not aware of the availability of disclosure statements
15.49%	People at my bank told me about them, but I have not looked at them
16.15%	People at my bank told me about them, and I have looked at them
21.10%	I have heard about them from another source, but I have not looked at them
16.59%	I have heard about them from another source, and I have looked at them

The final bank-specific question (Table 11) asked respondents to complete the statement, "*In the event of a bank collapse, I would expect that…*". The correct completion of this statement, "*I could lose all or part of my deposit*", was chosen by only 23%. It could be argued by some[63], however, that the completion statement, "*The risk of a bank collapse is so small it is not worth worrying about*", (19%) may also have some validity. There is also a section of the community (16%) who believe that "*the government has a moral obligation to protect depositors from losses*". While the government and the RBNZ have stated that this is not the case, the government did intervene when Air New Zealand was on the verge of collapse, investing NZ$885

[63] Particularly those with small deposits or who consider bank management have systems robust enough to prevent a collapse.

million to keep the airline flying[64] (AIR NZ, 2001). The 14% of the respondents who were relying on deposit insurance were clearly incorrect in their thinking as there had never been a deposit insurance scheme[65] in New Zealand at the time the survey was taken. Finally, while 12% of depositors felt they could, in the case of an overseas-incorporated bank with a New Zealand branch[66], make a claim on the balance sheet of the parent bank, this would be unsuccessful if the Australian parent bank was also in crisis, because Australian banks must give preference to Australian depositors in the event of a liquidation. Finally, owners of locally incorporated banks, regardless of where they are domiciled, enjoy the same protection of limited liability from creditor claims as do other owners of limited-liability companies.

Table 11 Question 12 Outcome of Bank Collapse

Q 12. In the event of a bank collapse I would expect that:

Percentage	Response
1.76%	Unanswered
18.90%	The risk of a bank collapse is so small it is not worth worrying about
14.18%	I would not lose any money as bank deposits are guaranteed by the government/Reserve Bank
15.71%	The government has a moral obligation to protect depositors from losses
13.96%	I would not lose any money as all bank deposits are insured
12.53%	I would not lose any money as all bank deposits are guaranteed by bank owners
22.97%	I could lose all or part of my deposits*

* Correct response

[64] The rationale at the time for government assistance of Air New Zealand was that New Zealand's export and tourism industries could be damaged if the national flag-carrier was allowed to fail. A similar argument could be advanced if a systemically important bank was failing, although a government rescue package might not benefit existing depositors and other creditors. A previous Governor of the RBNZ, Don Brash, has spoken on a number of occasions of depositor "haircuts" as a possibility if the RBNZ was required to recapitalise a failing bank.

[65] The survey was conducted prior to the introduction of the 2008 Temporary Deposit Guarantee Scheme.

[66] At the time of the survey the only such significant retail branch bank was Westpac, which had an Australian parent. This is no longer the case, following the local incorporation of Westpac.

The Reserve Bank may be disappointed that only 23% of respondents recognise that their funds are at risk in a registered bank, but this is consistent with the RBNZ poll taken in 2007. In answer to a similar question, 60% of those surveyed expected the government, or the RBNZ, to bail out a failing bank, with a further 13% either unsure or believing a bail-out would depend on the circumstances (Widdowson & Hailwood, 2007). The results obtained in these two surveys suggest a lack of awareness amongst the population of a fundamental point in the regulation of New Zealand banks. This could be a reflection of the benign banking environment in New Zealand — with no bank experiencing significant difficulties since those of the BNZ in the late 1980's and early 1990s — or it could show that the RBNZ has not given sufficient publicity to this facet of the 1996 bank disclosure regime.

Question 12 is fundamental to the application of market discipline, as a prerequisite of Llewellyn and Mayes (2003) is for there to be clear incentives for a sufficient number of stakeholders to rationally monitor banks. Results in Table 11 indicate this may not be the case in the general population. However, within the survey sample, only respondents with deposits in RBs have a clear incentive to monitor banks. Using data from Section E, in which respondents were asked to list their investments, a variable was created to differentiate between respondents with bank accounts totalling at least $5000 (depositor) and those without (non-depositor). Responses to Question 12 are reported in Table 12 for these two groups. Although fewer depositors (20.3%) are

aware they could lose deposits in a bank collapse, the difference is not statistically significant[67].

Table 12 Cross-tabulation – Bank Depositor ($5000) * Q12 Outcome of Bank Collapse

		Customer $5000 Cheque/Saving/Term Deposit		
Q 12 - Responses		Non Depositor	Depositor	Total
1	Count	116	56	172
	Expected Count	113.3	58.7	172.0
	% within Bank Depositor	19.7%	18.4%	19.2%
2	Count	87	42	129
	Expected Count	85.0	44.0	129.0
	% within Bank Depositor	14.8%	13.8%	14.4%
3	Count	97	46	143
	Expected Count	94.2	48.8	143.0
	% within Bank Depositor	16.5%	15.1%	16.0%
4	Count	78	49	127
	Expected Count	83.7	43.3	127.0
	% within Bank Depositor	13.2%	16.1%	14.2%
5	Count	64	50	114
	Expected Count	75.1	38.9	114.0
	% within Bank Depositor	10.9%	16.4%	12.8%
6	Count	147	62	209
	Expected Count	137.7	71.3	209.0
	% within Bank Depositor	25.0%	20.3%	23.4%
	Count	589	305	894
	Expected Count	589.0	305.0	894.0
	% within Bank Depositor	100.0%	100.0%	100.0%
Q-12 In the event of a bank collapse, I would expect that - Response Code 1-The risk of a bank collapse is so small it is not worth worrying about 2-I would not lose any money as bank deposits are guaranteed by the government/Reserve Bank 3-The government has a moral obligation to protect depositors from losses 4-I would not lose any money as all bank deposits are insured 5-I would not lose any money as all bank deposits are guaranteed by bank owners 6-I could lose all or part of my deposits (Response 6 is the only correct response).				
Pearson Chi-Square 8.351 Asymp.Sig (2-sided) 0.138				

[67] In Question 12, the difference between response 6 and all other responses was also tested, with no statistically significant difference found between non-depositors' and depositors' responses.

However, splitting responses into six groups (Table 13), five based on the respondents' level of deposits and one being those who did not indicate their investment in Section E, revealed those who did not declare any bank deposits did better than other groups, with 40% selecting the correct response 6.

Table 13 Cross-tabulation – Depositor Size * Q12 Outcome of Bank Collapse

Q- 12 Responses		Customer with $x Cheque/Saving/Term Deposit					
		Non Depositor	Small <5k	Med 5-19k	Large 20-99k	V-Large >100k	Total
1	Count	71	45	24	21	11	172
	Expected Count	50.0	63.3	25.2	21.7	11.7	172.0
	% within Deposit Size	27.3%	13.7%	18.3%	18.6%	18.0%	19.2%
2	Count	28	59	18	13	11	129
	Expected Count	37.5	47.5	18.9	16.3	8.8	129.0
	% within Deposit Size	10.8%	17.9%	13.7%	11.5%	18.0%	14.4%
3	Count	36	61	14	19	13	143
	Expected Count	41.6	52.6	21.0	18.1	9.8	143.0
	% within Deposit Size	13.8%	18.5%	10.7%	16.8%	21.3%	16.0%
4	Count	14	64	23	18	8	127
	Expected Count	36.9	46.7	18.6	16.1	8.7	127.0
	% within Deposit Size	5.4%	19.5%	17.6%	15.9%	13.1%	14.2%
5	Count	7	57	23	21	6	114
	Expected Count	33.2	42.0	16.7	14.4	7.8	114.0
	% within Deposit Size	2.7%	17.3%	17.6%	18.6%	9.8%	12.8%
6	Count	104	43	29	21	12	209
	Expected Count	60.8	76.9	30.6	26.4	14.3	209.0
	% within Deposit Size	40.0%	13.1%	22.1%	18.6%	19.7%	23.4%
	Count	260	329	131	113	61	894
	Expected Count	260.0	329.0	131.0	113.0	61.0	894.0
	% within Deposit Size	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Q-12 Responses In the event of a bank collapse, I would expect that - Response Code 1-The risk of a bank collapse is so small it is not worth worrying about 2-I would not lose any money as bank deposits are guaranteed by the government/Reserve Bank 3-The government has a moral obligation to protect depositors from losses 4-I would not lose any money as all bank deposits are insured 5-I would not lose any money as all bank deposits are guaranteed by bank owners 6-I could lose all or part of my deposits (Response 6 is the only correct response).							
Pearson Chi-Square 127.207 Asymp.Sig (2-sided) 0.000							

This group also selected what was probably the next best alternative, which was response 1, "*The risk of a bank collapse is so small it is not worth worrying about*". Differences between groups in Table 13 were statistically significant (Pearson Chi-Square 8.351 Asymp.Sig (2-sided) 0.138), indicating the result was not due to chance, although it is difficult to conceive a creditable explanation.

Results found do not appear to depend on the bank used by individual respondents as when differences in Question 12 were tested based on respondents' main bank results were statistically insignificant (Table 14). Of interest though were the high response for option 6 at Kiwi Bank, TSB Bank and other (40%, 33% and 45% respectively) as it is likely many customers at these banks have conscious decision to choose these smaller banks and may have become aware of lack of a guarantee as part of the change process.

Table 14 Cross-tabulation – Q1 Respondents' Main Bank * Q12 Outcome of Bank Collapse

		Q1 –Respondents' Main Bank								
Q-	12 Responses	ANZ	ASB	BNZ	Kiwi	NBNZ	TSB	WBC	Other	Total
1	Count	22	32	28	4	28	15	40	3	172
	Expect Count	26.7	32.1	29.1	5.2	27.3	12.1	37.3	2.1	172.0
	% within Q-1	15.8%	19.2%	18.5%	14.8%	19.7%	23.8%	20.6%	27.3%	19.2%
2	Count	20	27	21	4	21	3	33	0	129
	Expect Count	20.1	24.1	21.8	3.9	20.5	9.1	28.0	1.6	129.0
	% within Q-1	14.4%	16.2%	13.9%	14.8%	14.8%	4.8%	17.0%	.0%	14.4%
3	Count	20	21	31	4	27	13	25	2	143
	Expect Count	22.2	26.7	24.2	4.3	22.7	10.1	31.0	1.8	143.0
	% within Q-1	14.4%	12.6%	20.5%	14.8%	19.0%	20.6%	12.9%	18.2%	16.0%
4	Count	26	26	20	2	14	7	31	1	127
	Expect Count	19.7	23.7	21.5	3.8	20.2	8.9	27.6	1.6	127.0
	% within Q-1	18.7%	15.6%	13.2%	7.4%	9.9%	11.1%	16.0%	9.1%	14.2%
5	Count	21	17	19	2	18	4	33	0	114
	Expect Count	17.7	21.3	19.3	3.4	18.1	8.0	24.7	1.4	114.0
	% within Q-1	15.1%	10.2%	12.6%	7.4%	12.7%	6.3%	17.0%	.0%	12.8%
6	Count	30	44	32	11	34	21	32	5	209
	Expect Count	32.5	39.0	35.3	6.3	33.2	14.7	45.4	2.6	209.0
	% within Q-1	21.6%	26.3%	21.2%	40.7%	23.9%	33.3%	16.5%	45.5%	23.4%
	Count	139	167	151	27	142	63	194	11	894
	Expect Count	139.0	167.0	151.0	27.0	142.0	63.0	194.0	11.0	894.0
	% within Q-1	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Q-12 Responses In the event of a bank collapse, I would expect that - Response Code
1-The risk of a bank collapse is so small it is not worth worrying about
2-I would not lose any money as bank deposits are guaranteed by the government/Reserve Bank
3-The government has a moral obligation to protect depositors from losses
4-I would not lose any money as all bank deposits are insured
5-I would not lose any money as all bank deposits are guaranteed by bank owners
6-I could lose all or part of my deposits (Response 6 is the only correct response).

Pearson Chi-Square 43.561 Asymp.Sig (2-sided) 0.152

The other factor resulting in between-group differences in responses to Question 12 was age, as reported in (Table 15) with a Pearson Chi-Square of 55.378 and Asymp.Sig (2-sided) 0.003. In this cross-tabulation, 30.4 % of respondents between 40 and 49 years of age selected response 6 (*"I could lose all or part of my deposits"*) compared to the overall percentage of 23.4%. The lowest correct response rates were from those aged under 20 and over 70 (both 15.7%), suggesting financial literacy is

lowest among the young and elderly. The low number of depositors recognising the risk they face is likely to impact negatively on the effectiveness of market discipline in New Zealand.

Table 15 Cross-tabulation – Q1 Respondents' Age * Q12 Outcome of Bank Collapse

		Respondents' Age Distribution							
Q- 12 Responses		< 20	20-29	30-39	40-49	50-59	60-70	>70	Total
1	Count	14	22	31	32	24	35	14	169
	Expected Count	13.4	27.7	30.0	32.3	27.1	26.7	13.4	169.0
	% within Q-1	20.0%	15.3%	19.9%	19.0%	17.0%	25.2%	20.0%	19.2%
2	Count	18	22	27	22	13	17	18	129
	Expected Count	10.3	21.1	22.9	24.6	20.7	20.4	10.3	129.0
	% within Q-1	25.7%	15.3%	17.3%	13.1%	9.2%	12.2%	25.7%	14.7%
3	Count	11	25	12	25	21	33	11	141
	Expected Count	11.2	23.1	25.0	26.9	22.6	22.3	11.2	141.0
	% within Q-1	15.7%	17.4%	7.7%	14.9%	14.9%	23.7%	15.7%	16.0%
4	Count	6	25	21	25	25	16	6	125
	Expected Count	9.9	20.5	22.2	23.9	20.0	19.7	9.9	125.0
	% within Q-1	8.6%	17.4%	13.5%	14.9%	17.7%	11.5%	8.6%	14.2%
5	Count	10	14	21	13	22	19	10	110
	Expected Count	8.8	18.0	19.5	21.0	17.6	17.4	8.8	110.0
	% within Q-1	14.3%	9.7%	13.5%	7.7%	15.6%	13.7%	14.3%	12.5%
6	Count	11	36	44	51	36	19	11	206
	Expected Count	16.4	33.7	36.5	39.3	33.0	32.5	16.4	206.0
	% within Q-1	15.7%	25.0%	28.2%	30.4%	25.5%	13.7%	15.7%	23.4%
	Count	70	144	156	168	141	139	70	880
	Expected Count	70.0	144.0	156.0	168.0	141.0	139.0	70.0	880.0
	% within Q-1	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Q-12 Responses In the event of a bank collapse, I would expect that - Response Code
1-The risk of a bank collapse is so small it is not worth worrying about
2-I would not lose any money as bank deposits are guaranteed by the government/Reserve Bank
3-The government has a moral obligation to protect depositors from losses
4-I would not lose any money as all bank deposits are insured
5-I would not lose any money as all bank deposits are guaranteed by bank owners
6-I could lose all or part of my deposits (Response 6 is the only correct response).

Pearson Chi-Square 55.378 Asymp.Sig (2-sided) 0.003

Responses to Q 12 were also cross-tabulated with depositors' income, reported in (Table 16). Those with better knowledge of their disclosure entitlement were those with incomes above $50,000 per year, with over 30% of these respondents selecting the

correct option 6. Low income respondents (income under $25,000) chose option 6 less than 16% of the time.

Table 16 Cross-tabulation – Q 6 Depositor Income * Q12 Outcome of Bank Collapse

		Respondents' Income Distribution ($000)								
Q- 12 Responses		< 20	20-24	25-29	30-39	40-49	50-69	70-100	>100	Total
1	Count	17	11	16	17	19	32	27	28	167
	Expected Count	12.8	13.0	21.1	19.7	20.1	26.8	26.1	27.2	167.0
	% within Income	25.4%	16.2%	14.5%	16.5%	18.1%	22.9%	19.9%	19.7%	19.2%
2	Count	11	13	15	17	16	24	19	14	129
	Expected Count	9.9	10.1	16.3	15.3	15.6	20.7	20.1	21.0	129.0
	% within Income	16.4%	19.1%	13.6%	16.5%	15.2%	17.1%	14.0%	9.9%	14.8%
3	Count	10	9	31	19	18	16	24	12	139
	Expected Count	10.7	10.9	17.6	16.4	16.8	22.3	21.7	22.7	139.0
	% within Income	14.9%	13.2%	28.2%	18.4%	17.1%	11.4%	17.6%	8.5%	16.0%
4	Count	12	9	20	14	14	16	23	17	125
	Expected Count	9.6	9.8	15.8	14.8	15.1	20.1	19.5	20.4	125.0
	% within Income	17.9%	13.2%	18.2%	13.6%	13.3%	11.4%	16.9%	12.0%	14.4%
5	Count	9	8	15	12	17	18	7	23	109
	Expected Count	8.4	8.5	13.8	12.9	13.1	17.5	17.0	17.8	109.0
	% within Income	13.4%	11.8%	13.6%	11.7%	16.2%	12.9%	5.1%	16.2%	12.5%
6	Count	8	18	13	24	21	34	36	48	202
	Expected Count	15.5	15.8	25.5	23.9	24.4	32.5	31.5	32.9	202.0
	% within Income	11.9%	26.5%	11.8%	23.3%	20.0%	24.3%	26.5%	33.8%	23.2%
	Count	67	68	110	103	105	140	136	142	871
	Expected Count	67.0	68.0	110.0	103.0	105.0	140.0	136.0	142.0	871.0
	% within Income	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Q-12 Responses In the event of a bank collapse, I would expect that - Response Code
1-The risk of a bank collapse is so small it is not worth worrying about
2-I would not lose any money as bank deposits are guaranteed by the Government/Reserve Bank
3-The Government has a moral obligation to protect depositors from losses
4-I would not lose any money as all bank deposits are insured
5-I would not lose any money as all bank deposits are guaranteed by bank owners
6-I could lose all or part of my deposits (Response 6 is the only correct response).

Pearson Chi-Square 57.711 Asymp.Sig (2-sided) 0.009

Results in Table 16 would suggest respondents' financial literacy is related to income; possibly low income respondents would not have significant funds invested so have no concern about bank risk or disclosure. As a further check Q12 was cross-tabulated with Q11 which asked respondents awareness of disclosure entitlements (the 5

responses in Q11 were re-coded to give three groups shown in Table 17). Interestingly the group which claimed to be unaware of their disclosure entitlements chose the correct option 6 more often than the other 2 groups.

Table 17 Cross-tabulation - Q 11 Disclosure awareness * Q12 Outcome of Bank Collapse

Q- 12 Responses		Q- 11 Knowledge of entitlement to disclosure statements			Total
		Unaware of disclosure	Aware of disclosure	Aware and examined disclosure	
1	Count	59	54	33	146
	Expected Count	52.0	65.6	28.4	146.0
	% within Q- 11	22.4%	16.3%	22.9%	19.8%
2	Count	32	55	18	105
	Expected Count	37.4	47.2	20.5	105.0
	% within Q- 11	12.2%	16.6%	12.5%	14.2%
3	Count	37	63	16	116
	Expected Count	41.3	52.1	22.6	116.0
	% within Q- 11	14.1%	19.0%	11.1%	15.7%
4	Count	32	51	27	110
	Expected Count	39.1	49.4	21.4	110.0
	% within Q- 11	12.2%	15.4%	18.8%	14.9%
5	Count	28	41	19	88
	Expected Count	31.3	39.5	17.1	88.0
	% within Q- 11	10.6%	12.3%	13.2%	11.9%
6	Count	75	68	31	174
	Expected Count	61.9	78.2	33.9	174.0
	% within Q- 11	28.5%	20.5%	21.5%	23.5%
	Count	263	332	144	739
	Expected Count	263.0	332.0	144.0	739.0
	% within Q- 11	100.0%	100.0%	100.0%	100.0%

Q-12 Responses In the event of a bank collapse, I would expect that - Response Code
1-The risk of a bank collapse is so small it is not worth worrying about
2-I would not lose any money as bank deposits are guaranteed by the Government/Reserve Bank
3-The Government has a moral obligation to protect depositors from losses
4-I would not lose any money as all bank deposits are insured
5-I would not lose any money as all bank deposits are guaranteed by bank owners
6-I could lose all or part of my deposits (Response 6 is the only correct response).

Pearson Chi-Square 18.484 Asymp.Sig (2-sided) 0.047

While the result in Table 17 at first appears unlikely it may be due to disclosure statements not being required to highlight the fact that deposits in New Zealand banks are not guaranteed.

3.4.2 Non-Bank Financial Institutions Survey Responses

A similar set of questions was asked about finance company[68] disclosure information. As the survey was conducted after the collapse of National Finance 2000 Ltd, Western Bay Finance Ltd and Provincial Finance Ltd, no question was asked about likely outcomes for depositors in the event of a finance company collapse.

Question 13 (Table 18) asked respondents where they would most likely find information about finance company risk[69]. Responses were similar to the corresponding question asked about banks, with the highest number of respondents (48%) looking to the firm itself to provide risk information, either through staff, financial statements, advertising or websites. The Securities Commission was picked by 10.2% and the RBNZ by 14.4%, though neither of these organisations has ever spoken about individual firms' risks. Interestingly, only 22.5% selected the news media (in the similar question for RBs, that figure was 32.3%). Given that the survey was conducted at the end of a year in which three finance companies collapsed, with much ensuing commentary by the media, this is surprisingly low.

[68] Finance companies are by far the largest group of NBFIs in New Zealand who take deposits from the public.
[69] Again, risk was defined as, "the risk that you could lose all or part of the funds you have on deposit".

Table 18 Question 13 Information about Finance Company Risk

Q 13. Where would you most likely expect to find information about finance company risk?

Percentage	Response
3.08%	Unanswered
13.41%	Their branch staff
10.33%	Their website
14.84%	Their financial statements
9.45%	Their advertising
10.22%	RBNZ
14.40%	Securities Commission
22.31%	News media commentary
1.98%	Other

The next question (Table 19) asked for the most important source of information used to assess finance company risk. Responses were similar to the corresponding question (q10) asked of bank depositors. In this case, 20% rely on a firm's investment statement and prospectus, the documents provided for in the Securities Act and designed to support investment decision-making. The source considered most important by 24.5% of respondents was the news media, and a further 19.5% would seek advice from a financial adviser. Finance company advertising was relied on by 14.6% of respondents even though it provides little information about the risk of the investments other than stating they are secured by the assets of the firm. (It is, however, required to be truthful and not misleading.)

Table 19 Question 14 Most Important Source about Finance Company Risk

Q 14.What is the most important source that you rely on to judge finance company risk?

Percentage	Response
2.97%	Unanswered
16.26%	Recommendations from family/friends
20.11%	Investment statement and prospectus from the company
19.34%	Advice from financial adviser
24.18%	Reports/reviews in media
14.62%	Finance company advertising
1.10%	Other

Question 15 (Table 20) asked respondents about their use of the investment statements and registered prospectuses. They were reminded that finance companies operating in NZ are required to supply these, then asked to describe their situation. Of the sample, 31% had never considered investing in finance company debt, which implies that 66% had. As 17% were unaware of investment statements or prospectuses, this would suggest, however, that they had not proceeded with the investment, as the investment statement is required to be supplied before the investment is made[70]. Of the rest of the respondents, 48% had been given an investment statement to look at, 21% had also looked at the prospectus, and 27.4% were either unaware of the prospectus (13.4%) or had not asked for it (14%). Of the 21% who said they had looked at the prospectus, only a portion would have proceeded with analysis of Section E, indicating those with current finance company investments totalled around 6%. Using data from Section E of the survey, responses were checked for those who claimed to have finance company deposits, with 40% responding they had looked at the investment statement and prospectus before investing, leaving 60% who had presumably invested with little

[70] To ensure compliance with this requirement, the investment statement normally forms part of the investment application form.

thought. However, the small number of active finance company investors reporting in Section E made analysis of differences between them and non-investors unreliable, so results have not been fully reported.

Table 20 Question 15 Finance Company Disclosure Statements

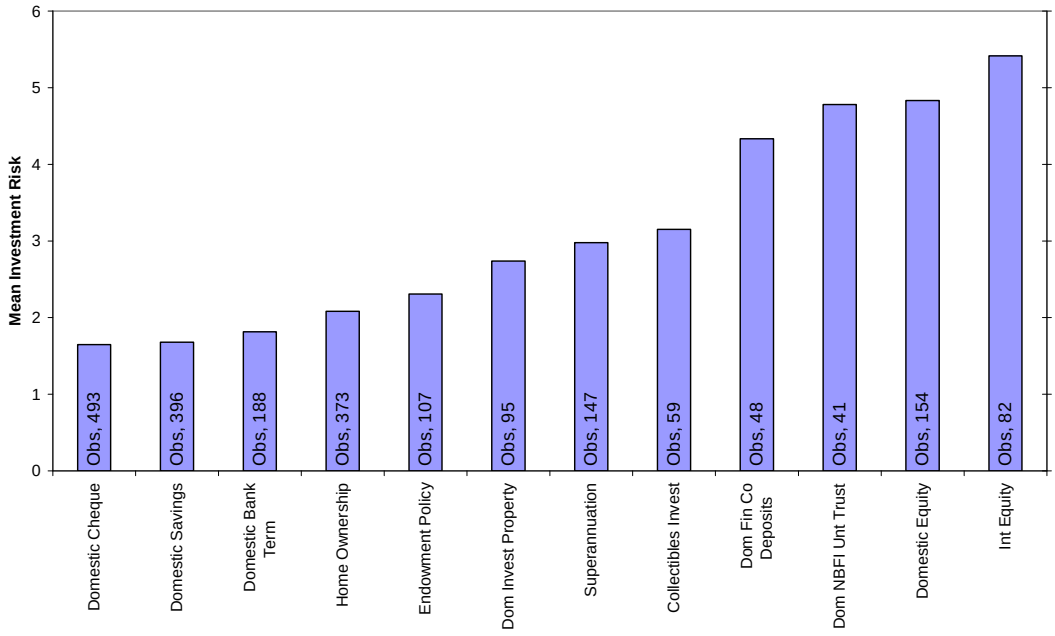
Q 15. All finance companies operating in NZ are required to supply an investment statement and make available a registered prospectus that an investor needs to make an informed decision on whether or not to invest. Which of the following best describes your situation?

Percentage	Response
2.86%	Unanswered
17.47%	I was not aware of the investment statement or prospectus
13.41%	I was given the investment statement but was not aware of the prospectus
13.96%	I was given the investment statement but did not ask for the prospectus
21.32%	I looked at the investment statement and prospectus before making an investing decision
30.99%	I have never considered investing in a finance company

3.4.3 Ability to Risk-Rank Investments

In Section E of the survey, respondents were asked for details of their investments, and then to assign a risk ranking to them, with 1 being no risk at all and 10 being extremely risky. To ensure results are robust, only those investments which received more than 40 responses are reported. Figure 4 reports the mean investment risk along with the number of responses. The most responses (493) were received for domestic bank cheque accounts. All forms of bank deposits were considered to be low risk, with mean scores under 2 for bank cheque accounts, savings, and term deposits. The risk of home ownership was only marginally above bank deposits at 2.08, and investment property came in at 2.74. Finance company debt had a mean score of 4.33, while equity investment was considered to be the most risky investment category, with domestic shares at 4.83 and international shares at 5.41.

Figure 4 Investment Risk Rankings by New Zealanders



The risk ranking of investment alternatives is a difficult exercise. Not only is it a difficult concept to explain within a postal survey, but different people have different perceptions of risk. From the above, the old maxim of *safe as money in the bank* still holds, with bank deposits considered low risk. Home ownership is also considered low risk, though this could be a result of respondents judging it low risk because of their understanding of, or familiarity with, property (and, of course, New Zealand property owners had enjoyed growth well above rates of inflation for a number of years prior to the survey). Domestic investment property was judged to be of greater risk than home ownership, possibly reflecting the higher levels of leverage common in property investing. Investment in finance company debt and equities is considered to be high risk. However, given the limitations inherent in the survey, the overall risk ranking of investment options appears realistic, with New Zealanders recognising bank deposits are low risk when compared to alternatives.

3.5 Comparison with International Surveys

Results obtained for New Zealand appear to be consistent with those obtained from both the Colmar Brunton Retirement Commission Surveys in 2006 and 2009 and the RBNZ survey in 2007. While the level of financial literacy in New Zealand may be lower than desirable, the OECD (2005), after examining financial literacy surveys in 12 OECD countries, concludes the financial literacy levels of consumers in all 12 countries with recent studies to be very low.

3.6 Implications and Conclusions

Results obtained in the survey of the decision-making of New Zealanders and their use of disclosure information are consistent with the findings of surveys in New Zealand by the RBNZ and the Retirement Commission and with similar surveys conducted overseas. In general, most bank customers, in overseas surveys, appear to choose their bank based on how convenient it is to them, and price factors. Risk does not feature in responses, although many cite bank reputation as a consideration, and presumably a risky bank would not have a good reputation.

Surveys conducted in New Zealand provide little evidence of New Zealanders being aware of their entitlement to disclosure information and few are aware they could lose all or part of their deposits in a bank collapse. This lack of specific knowledge is similar to that found in other countries such as Germany where, despite there being almost full deposit insurance cover, only 40% of depositors realise they are covered. When asked what was the most important source they relied upon to judge deposit risk, most respondents picked media reports and reviews, followed by the institutions themselves and then friends and family.

The low level of financial literacy amongst New Zealanders has implications for the effectiveness of market discipline in moderating excessive risk-taking by New Zealand financial institutions. Investors can hardly apply market discipline to risky deposit-takers if they are either unaware of the disclosure information available to them or are lacking in the skills necessary to make use of it. At the time of the survey, New Zealand's disclosure regime for RBs had been in place for 10 years, at which point more than 75% of survey respondents were unaware they could conceivably lose some or all of their deposits in a RB. This high percentage would suggest the RBNZ has been unsuccessful in communicating even this basic feature of the scheme to bank depositors.

The *temporary* two-year[71] blanket guarantee of depositor funds, introduced in October 2008 by the government, may prove difficult to rescind. The Reserve Bank will need to accept there will be a period of confusion for a number of years, with depositors unsure if the deposit guarantee is in place. An extensive education campaign will be needed to inform the depositing public that the government guarantee has been rescinded, and to again sell the idea of market discipline to depositors. If this is not done, New Zealand might find itself in a situation similar to that in the Turkish Republic of Northern Cyprus, where even bank employees do not know the status of deposit insurance.

A significant limitation of the survey, and most other surveys, was that it was undertaken on the population as a whole. As the only investors who can apply market discipline are those with substantial funds, a better option may be to survey only this population group. An interesting study could be undertaken comparing the attitudes to

[71] The scheme has since been modified and extended until the end of 2011.

risk and financial literacy of large retail depositors in both registered banks and non-bank deposit-takers now deposits are guaranteed and after the guarantee is removed.

In 2006, the New Zealand public was apathetic about deposit risk in registered banks and non-bank deposit-takers. As a result, it must be concluded, as did McIntyre and Tripe et al., (2009), that Llewellyn and Mayes' (2003) second condition of "*there needs to be a sufficient number of stakeholders' monitors*" does not hold. The reason for apathy at the time of the survey may have been due to the benign economic conditions enjoyed by New Zealand since the 1997 Asian financial crisis. These conditions contributed to the attitude that deposits in any financial institution were at little risk. This attitude likely changed after the first NBDT collapses in 2006, and there was anecdotal evidence of NBDTs having increased difficulty in raising funds in 2007 to confirm this. If a survey had been held at this time, the results might possibly have been very different.

Results found suggest the empirical testing of market discipline in New Zealand deposit-takers is unlikely to yield evidence of market discipline. However, this does not mean New Zealand deposit-takers are unsound or risky, rather that depositors see no need to actively monitor and discipline deposit-takers and instead are comfortable in relying on management to act prudently. In supporting this, the 1996 registered bank disclosure regime places significant responsibilities on bank directors surrounding disclosure and compliance with prudential standards, and directors face criminal penalties if a disclosure statement is held to be false or misleading. The Securities Act 1978 requires the management of all other deposit-takers to issue investment statements, register a prospectus and have in place a trust deed with a trustee monitoring each deposit- taker's compliance with the trust deed on behalf of depositors.

Therefore, the empirical testing of market discipline in New Zealand deposit-takers should also reveal if these institutions are being managed prudently. Even if there is no market discipline of New Zealand deposit-takers, there should still be a relationship between disclosure risk indicators and deposit rates paid. Chapter 4 tests the risk-return relationship in registered banks, while chapter 5 tests the relationship in non-bank deposit-takers. A significant risk-return relationship will indicate New Zealand prudential regulation is working as intended.

4 Testing of Discipline in New Zealand Registered Banks

The objective of this chapter is to determine if the New Zealand Registered Bank disclosure regime is effective in moderating excessive risk-taking in registered banks (RBs). Don Brash, the architect of New Zealand's disclosure regime, claims the provision of timely information on individual banks' condition "*should allow the market to react to developments affecting a bank's financial condition – rewarding those banks which are well managed and penalising those which appear to be less well managed*" (Brash, 2001, p. 47). If disclosure is effective, there should be an observable and statistically significant relationship between RB risk indicators, extracted from disclosure statements, and the risk premium required of RBs (Research Question 1) and/ or RB deposit market shares (Research Question 2). If the answer to one or both of these questions is yes, then this will be taken as an indication of the effectiveness of New Zealand's disclosure regime in moderating excessive risk-taking in RBs.

4.1 Introduction

A unique feature of the New Zealand banking system is that it is almost entirely owned by foreign banks. Of the 16 banks operating in 2007, only TSB Bank and Kiwibank are New Zealand-owned, and they held only 0.9% and 1.8% respectively of total bank assets (Table 21). The market is also split between banks which are incorporated in New Zealand and those operating as a branch of their overseas parent. The RBNZ has a policy of local incorporation for all banks judged to be *systemically important*[72]. In 2006, it required Westpac Bank to locally incorporate its New Zealand

[72] Systemically important banks are those whose New Zealand liabilities, net of amounts due to related parties, exceed NZ$15 billion (RBNZ Staff, 2007b).

branch. Local incorporation is required for systemically important banks to ensure the RBNZ has jurisdiction to manage them in a failure (RBNZ Staff, 2007b). A further division in the bank market can also be made between retail and wholesale activity. Generally, those banks operating as branches of an overseas parent bank do not have retail branch networks and confine their activities to business customers.

Table 21 Total Assets NZ Registered Banks

New Zealand Incorporated Bank	Total assets (NZ$m)	%	First** Registered	S&P Rating
ANZ National Bank Limited	$ 107,787	33.5%	1/04/87	AA
ASB Bank Limited	$ 53,915	16.7%	11/05/89	AA
Bank of New Zealand	$ 56,375	17.5%	1/04/87	AA
Kiwibank Limited	$ 5,671	1.8%	29/11/01	AA-
Rabobank New Zealand Limited	$ 4,830	1.5%	7/07/99	AAA
TSB Bank Limited	$ 3,005	0.9%	8/06/89	BBB+
Westpac New Zealand Limited	$ 45,995	14.3%	31/10/06	AA
	$ 277,578	86.2%		
Overseas Incorporated Bank NZ Branch				
ABN AMRO Bank NV	$ 1,826	0.6%	2/03/98	AA-
Citibank N A	$ 3,543	1.1%	22/07/87	AA
Commonwealth Bank of Australia*	$ 5,556	1.7%	23/06/00	AA
Deutsche Bank A G	$ 5,950	1.8%	8/11/96	AA
Kookmin Bank	$ 406	0.1%	14/07/97	A
Rabobank Nederland*	$ 1,622	0.5%	1/04/96	AAA
The Bank of Tokyo-Mitsubishi UFJ	$ 608	0.2%	1/03/04	A+
The Hongkong and Shanghai Banking Corp	$ 6,386	2.0%	22/07/87	AA
Westpac Banking Corporation*	$ 18,712	5.8%	1/04/87	AA
	$ 44,609	13.8%		
Bank Total Assets	$ 322,187	100%		

Sample banks are highlighted in grey.
*Adjusted for assets held in NZ-incorporated subsidiary bank
**April 1987 was when the Registered Bank designation was first introduced
ANZ, BNZ, Westpac were trading banks prior to this. ASB and TSB were savings banks
Source: RBNZ Sept 2007 KISs

4.2 Sample Banks

As the objective of this thesis is to examine the prudential regulation of New Zealand deposit-takers to determine if the country has been well served by its disclosure regulation model, analysis is restricted to RBs which are systemically important to New

Zealand. Analysis is based on the four large Australian-owned banks, ANZ National Ltd (ANZNat), ASB Bank Ltd (ASB), Bank of New Zealand (BNZ) and Westpac New Zealand Ltd (WBC). This group, holding more than 80% of total bank assets in 2007, are all locally incorporated and have extensive retail branch networks. While the TSB and Kiwibank do not fit into the RBNZ definition of systemically important banks, many New Zealanders would consider them to be so as they are both locally owned and predominantly retail in focus. For the sake of completeness, consideration was also given to including Rabobank New Zealand Ltd (Rabo) in the sample as it has retail customers.

However, preliminary analysis revealed some difficulties in including TSB, Kiwibank and Rabo in the analysis. Analysis of TSB indicates significant differences in a number of areas between it and ANZNat, ASB, BNZ and WBC. In addition to its small size, these differences include its ownership structure (TSB is owned by a community trust) and its level of equity, which is greater, with Tier 1 capital of around 15%. Despite these problems, it was decided to include TSB in the sample and control for any differences in later analysis by incorporating a TSB dummy variable to determine if these differences are important. Analysis of Kiwibank revealed two problems. Firstly, as it was a new-start bank in 2001, its financial ratios are extremely skewed; for example, Tier 1 capital in 2001 was 558% and profit was -19%. By September 2007, Tier 1 capital had fallen to 7.6% and profit had risen to 0.7%. Secondly, as Kiwibank is owned and operated by New Zealand Post, a state-owned enterprise, it could be reasonably inferred that deposits are government-guaranteed. Examination of Rabo revealed that unlike other New Zealand-incorporated banks, it had a limited reliance on New Zealand funding. Its General Disclosure Statement revealed that at September 2007, there were New Zealand deposits of only $1.819 billion from

unrelated parties, compared with related-party deposits of $2.729 billion (Rabo Staff, 2008, p. 14). A further complication was the guarantee given to all Rabo creditors by the bank's ultimate parent bank, Rabobank Nederland (Rabo Staff, 2008). As both Kiwibank and Rabo effectively have their liabilities guaranteed by their credit-worthy owners, the risk faced by depositors is the same as the risk faced if they are lending directly to the banks' owners, therefore both Kiwibank and Rabo are excluded from the sample.

The sale by TSB Lloyds of the National Bank of New Zealand to ANZ Banking Group in 2004 also necessitated a data adjustment. Since this sale, the National Bank has been merged financially with the ANZ Bank, although it still operates a separate brand and branch network in competition with the ANZ. In New Zealand, the RBNZ registers the ANZ National Bank as one bank and a consolidated set of financial statements and disclosure statements is produced. As they were separate banks prior to 2004 they are treated as separate banks in the analysis. Therefore the final sample of banks comprises both ANZ and NBNZ prior to the 2004 merger, after which they are treated as one bank, ANZNat, alongside ASB, BNZ, WBC and TSB.

4.3 Registered Bank Data

Three separate sets of data — risk premium data, deposit level data and risk indicator data — are required to empirically test for a statistically significant relationship between bank disclosure risk indicators and the required risk premium of New Zealand banks (research question 1) and changes in deposits of New Zealand banks (research question 2). If a statistically significant relationship is found between disclosure risk indicator data and either risk premium data or deposit level data, it will be taken as an indication of the effectiveness of the New Zealand disclosure regime.

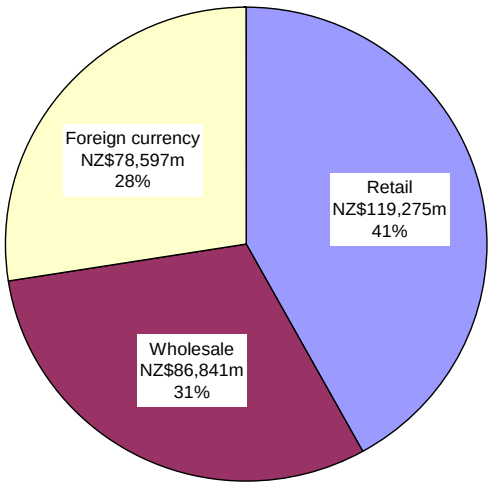
4.3.1 Risk Premium Data

Previous literature indicates market discipline can be applied at different levels by different groups of investors. Market discipline applied by equity investors will manifest itself in a declining share price, as investors discount a bank's share price to account for its increased risk. Debt investors, at both the wholesale and retail level, can apply market discipline to banks by requiring an increase in the premium for risk embedded in all interest paid by their bank. Initial consideration given to the testing of both equity and wholesale debt risk premiums indicated it would not be feasible to undertake in the New Zealand market. There are no publicly listed New Zealand banks (ANZ and Westpac shares listed on the NZX are for the Australian parent bank, not the New Zealand subsidiary), so there is no equity data available in which to observe the application of market discipline. Wholesale deposit data is also of limited use; bank-issued bonds listed on the NZDX are seldom traded, as most are held as long-term investments by other financial institutions and superannuation funds. While New Zealand banks raise debt internationally and would be subject to wholesale market discipline, the variety of offerings, combined with guarantees by parent banks, makes construction of a reliable bond-yield-to-maturity series impossible. To overcome the lack of equity and wholesale data, an alternative is to test for market discipline using retail deposit data. With no deposit insurance or bank guarantees offered by the New Zealand government prior to 2008, retail depositors in New Zealand banks should be motivated to apply appropriate market discipline to banks.

Retail depositors supply a significant portion of total funding used by New Zealand RBs, as shown in Figure 5. As at September 2007, New Zealand banks in their Standard Statistical Returns (SSR) reported total funding of NZ$285 billion, of which

NZ$119 billion, or 41%, was from retail customers, with the remaining wholesale funding split between NZ$ (31%) and foreign currency[73] funding (28%). This compares with the NZ$16 billion directly invested by households in New Zealand-listed companies as at December 2006 (RBNZ Staff, 2006). Therefore, New Zealand bank depositors clearly have a vested interest in monitoring the condition of the banks in which they invest.

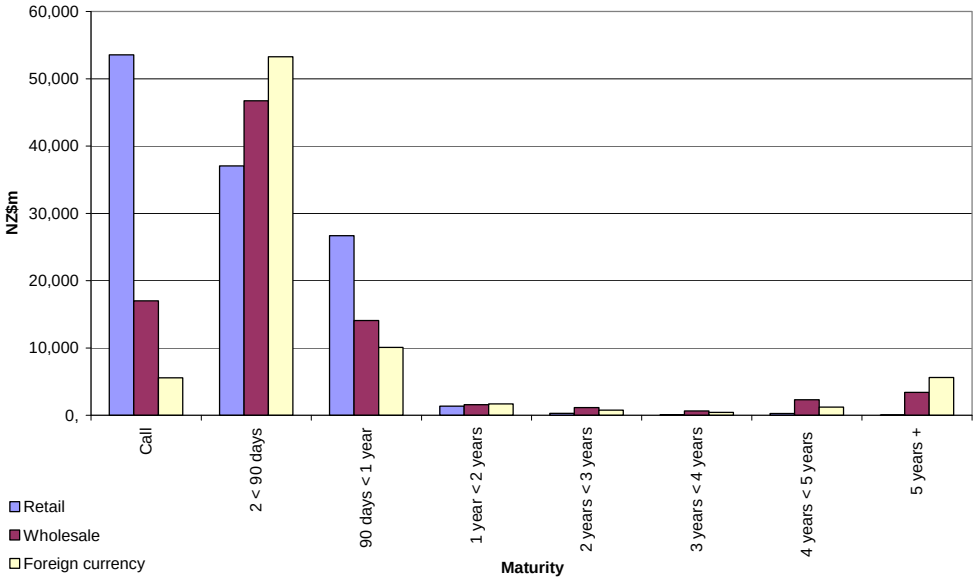
Figure 5 NZ Registered Bank Funding Sept 2007 SSR B1-B10 (RBNZ Staff, 2008b)



The IRG database provides retail term-deposit rates for the period June 2001 to June 2006[74]. New Zealand newspapers publish this data weekly, in tables of New Zealand retail deposit and mortgage rates. The three-month deposit rate was used, as New Zealand banks (shown in Figure 6) rely heavily on short-term funding, with NZ$37 billion in retail deposits of maturities between two days and 90 days suggesting there is strong competition amongst banks for three-month term deposits.

[73] Banks typically swap their foreign currency funding into NZ$ to avoid carrying the currency risk.
[74] In 2006, IRG was sold, and the new owner stopped the collection of interest rate data.

Figure 6 NZ Registered Bank Funding by Maturity Sept 2007 (RBNZ Staff, 2007a)



A risk premium series was generated, in a similar manner to Hannan and Hanweck (1988) and Flannery and Sorescu (1996), with the risk premium calculated by subtracting the three-month bank bill (NZBB) rate from each bank's deposit rate data. The bank bill rate was used in place of other rates such as the three-month Treasury bill rate as it is more actively traded; it is also preferable to the official cash rate (OCR) as it is a market rate rather than a managed[75] one. Although the bank bill rate already includes a risk premium, this is the same for all banks so will not alter results other than changing the constant value in the regression equation. The mean risk premium obtained for three-month deposits was -0.79% (Table 22). Although it appears to be a contradiction in terms to have a negative risk premium, this is a result of retail investors being unable to invest in the bank bill market. Effectively, banks are able to attract funds at a discount to the risk-free rate, which depositors are prepared to accept for the convenience of ready access to bank deposits. There is no way of knowing the

[75] The RBNZ, in applying monetary policy, sets the OCR on an approximately six-weekly basis to ensure the maintenance of price stability. Price stability is currently defined as annual increases in CPI of between 1% and 3%.

magnitude of this discount, and as it is likely to be the same for all banks, it does not influence results. The risk premium extracted will be the dependent variable in equation (1), used to answer research question 1.

Table 22 Sample Banks' Risk Premium Data RP (RB 3mDep Bal) Statistics

Sample Banks	Mean	Minimum	Maximum	Std Dev
ANZ	-0.55	-0.81	-0.27	0.2023
ANZNat	-1.01	-1.30	-0.61	0.2421
ASB	-0.83	-1.84	0.12	0.5141
BNZ	-0.91	-1.65	-0.03	0.4379
NBNZ	-0.47	-0.76	0.12	0.2657
TSB	-0.71	-1.30	-0.34	0.3136
WBC	-0.95	-2.05	0.07	0.5983
Total	-0.79	-2.05	0.12	0.4489

Note: RP (RB 3mDep Bal) is the dependent variable in equation (1). It is calculated at balance date by subtracting each bank's three-month deposit rate (obtained from the IRG interest rate database) from the three-month NZBB rate (as published by the RBNZ).

4.3.2 Deposit Level Data

Hannan and Hanweck (1996, 2002) also argue that depositors can apply market discipline by either not making new deposits or by withdrawing existing deposits from risky banks. Rather than directly using raw deposit data, a deposit market share variable was created which was the change in quarterly deposit market share[76] (first difference of deposit share) for each bank. This variable then became the dependent variable in regression equation (2), used to answer research question 2.

Maximum, minimum and mean statistics for each sample bank are reported in Table 23. The merger of ANZ with NBNZ in 2004 resulted in ANZNat having the

[76] Each bank's deposit market share was calculated using the figure for deposits from customers in its quarterly GDS over RBNZ total bank deposits extracted from SSR data (RBNZ Staff, 2007a). The NZ$ deposits were used as the denominator as it is a finite market in comparison to an infinite international bank deposit market.

largest deposit share (37.6%) immediately post merger, before this slowly declined to 34.03% at period end in June 2006. ASB enjoyed a substantial growth in market share, going from a low of 11.53% in March 2002 to a high of 19.9% at the end of the testing period. Examination of other banks in the sample reveal quarterly changes in deposit market share ranging from plus 1% to minus 1%, with the range of the TSB being considerably smaller due to its small deposit market share of 1.3%.

Table 23 Sample Banks' Deposit Level Data Statistics

Deposit Market Share							
	ANZNat	ANZ	NBNZ	ASB	BNZ	WBC	TSB
Max	0.3760	0.1987	0.1540	0.1990	0.1923	0.1760	0.0134
Min	0.3403	0.1623	0.1337	0.1153	0.1674	0.1555	0.0108
Mean	0.3587	0.1744	0.1428	0.1616	0.1754	0.1649	0.0123
Change in Deposit Market Share							
	ANZNat	ANZ	NBNZ	ASB	BNZ	WBC	TSB
Max	0.0310	0.1296	0.0529	0.1715	0.0979	0.0465	0.1036
Min	-0.0396	-0.0794	-0.0316	-0.1062	-0.0723	-0.0798	-0.0398
Mean	-0.0087	0.0102	0.0091	0.0181	-0.0007	-0.0004	0.0128

Note: Each bank's deposit market share was calculated using the figure for deposits from customers in its quarterly GDS over RBNZ total NZ$ bank deposits extracted from SSR data (RBNZ Staff, 2007a). The NZ$ deposits are used as the denominator as it is a finite market in comparison to an infinite international bank deposit market.
The change in deposit market share is the first difference of the deposit market share and is the dependent variable in equation (2).

The deposit market share calculation is for all NZ$ deposits regardless of their maturity. While some researchers, such as Semenova (2007), have suggested market discipline could result in a change to the maturity structure of deposits, with riskier banks having a shorter average deposit maturity, it was not possible to measure this from the GDS deposit data available. The GDS typically reports the maturity structure of deposits only in the six-monthly audited GDS and not in the off quarters, when only a short-form disclosure statement is produced. Also, Figure 6 shows New Zealand banks tend to rely heavily on short-term funding, with the bulk of funding having a maturity of

less than 90 days. As there are essentially no deposits with a maturity of more than one year, market discipline cannot be exerted through decreasing maturity as suggested in studies by Semenova (2007) and others.

4.3.3 Risk Indicator Data

Independent Risk Indicator (RI) variables in equations (1) and (2) are KIS data obtained from the RBNZ website, apart from liquidity, which was calculated from GDS data. To assist in understanding their likely impact on bank risk premiums, they are fitted into a CAMEL framework. A similar approach was used by Semenova (2007). The first CAMEL component, capital, is represented by Tier 1 capital and total capital. Although Tier 1 is risk-weighted, its use as a risk indicator is analogous to ordinary equity, with lower levels of equity considered an indicator of increased risk, a conclusion reached by Cole and Gunther (1998), confirmed by Koetter, Bos et al., (2007) and Ghosh and Das (2006). Murata and Hori (2006) argue that tier 1 is understood by the public to be an indicator of bank health, and a higher level of capital should enable a bank to attract deposits whilst paying lower interest (Martinez Peria & Schmukler, 2001). As tier 1 comprises a substantial portion of total capital, total capital was excluded from further analysis to avoid multi-collinearity in the regression model.

A fundamental reason for bank failures is the writing of bad loans. This is represented in the KIS disclosure by the asset-quality variables impaired asset provision and specific provision expense. Higher levels indicate a bank is having difficulty with its loan portfolio. Therefore, its risk level is greater, with Cole and Gunther (1998) expecting a positive relationship with the likelihood of bank failure. To avoid problems with multi-collinearity impaired asset provision was also excluded from analysis. Clair

(1992) finds increased lending, above what would be considered normal, lowers lagged loan quality, so growth could also be classified as an asset quality variable.

The impact of management is difficult to quantify. US bank examiners assess management and board directors on a range of qualitative factors, such as the level and quality of oversight, ability in respective roles, conformance with internal policies and the adequacy of internal audit trails (Federal Financial Institutions Examination Council, 1996). Academic research has often used key performance indicators, such as the cost-to-income ratio, to proxy management quality. Koetter, Bos et al., (2007) argue that this indicator is a poor proxy, as it is affected by market circumstances and external shocks. Regardless of its reliability, this information is not readily available to depositors in New Zealand.

The variable size affects more than one CAMEL component, playing a part in asset quality, managerial effectiveness, and earnings. While there can be negative effects from size, particularly when banks get into a *Too Big to Fail* category — at which time their cost of funds is no longer tied to their riskiness, as suggested by O'Hara and Shaw (1990)[77] — the overall effect is expected to be positive. Increased size leads to greater diversification of loans, with these spread over more customers and business sectors. Diversification reduces risk at little cost once an organisation is over a certain size. Therefore, size should increase asset quality, with larger banks having a lower risk premium.

[77] Although *systemically important* banks may be *Too Big to Fail* in New Zealand, the RBNZ has indicated it is likely to guarantee only new transactions or those in process, with existing depositor funds subject to a *haircut* (Brash, 2001).

Size could proxy managerial quality because it is expected that larger banks are better managed as they have improved reporting and other management systems in place and are likely to attract higher-calibre staff. The cost of quality management is spread over a larger asset base, giving economies of scale and leading to increased efficiency. A counterview is that large size leads, instead, to a reduction in management effectiveness and efficiency because of increased bureaucracy, the prevalence of management perks and the remoteness of the head office. Research employing efficiency techniques (DeYoung, 1998) has yielded mixed results as to which viewpoint is correct.

The biggest impact of size is likely to be on the earnings component. Large banks exert market power because they have the ability to maintain earnings while offering lower interest rates to depositors. The second earnings component variable is profitability — net profit after tax for the previous year, as a percentage of assets is used to represent profitability. The expectation is that higher profitability allows banks to meet debt repayments (Murata & Hori, 2006). In order to normalise the size variable total assets prior to regression analysis, a log transformation is applied, to result in the new variable LnSize.

The final variable included is liquidity. A normative expectation is that banks with higher levels of liquidity should be able to cope with unexpected withdrawals and, therefore, be less risky. Martinez Peria and Schmukler (2001) and Ungan, Caner et al., (2008) provide support for this view, with depositors asserting market discipline in response to reduced liquidity. Although Murata and Hori (2006) in general support the risk-reducing benefits of increased liquidity, they do suggest increased liquidity may be a precautionary measure by risky banks. Several studies have found liquidity does not

serve well as an early warning indicator, with Martin (1977) reporting that liquidity has predicted US bank failures in some periods (1971-72) but not in others (1975-76).

A summary of the CAMEL framework is shown in Table 24 and mean values for each bank are reported in Table 25. Pearson correlations reported in Table 26 for all sample banks reveal a significant negative correlation (-0.900***) between Tier 1 and LnSize and a positive correlation (0.762***) between Tier 1 and Liquidity. Recalculating the correlations after excluding the TSB from the sample, results in a more acceptable correlation matrix (Table 27), confirming the significant differences which exist between the TSB bank and other banks in the sample.

Table 24 Registered Bank Risk Indicators Fitted into a CAMEL Framework

Category	Risk Indicator	Expected Sign	Intuition behind expected relationship
Capital	Tier 1	-ve	Capital offers an alternative repayment source in a crisis, providing a buffer to debt investors (Cole & Gunther, 1998), (Murata & Hori, 2006) and (Koetter, et al., 2007).
Asset Quality	SpecProv	+ve	Indicate doubtful debts and bad debts, with higher levels suggesting low asset quality (Cole & Gunther, 1998).
	Growth	-ve	Financial institutions are expected to grow steadily. However, increased lending above the normal level lowers loan quality (Clair, 1992).
	LnSize	-ve	Greater diversification lowers risk (Murata & Hori, 2006)
Management	LnSize	-ve	Larger banks are expected to be better managed, with personnel of a higher calibre and improved reporting.
Earnings	Profit	-ve	Higher earnings mean the bank is more able to make debt repayments.
Liquidity	Liq	-ve	Higher liquidity indicates the ability to meet obligations (Martinez Peria & Schmukler, 2001), Murata and Hori (Murata & Hori, 2006) and (Ungan, et al., 2008). However, other studies (Martin, 1977) find liquidity does not serve well as an early warning indicator.

Note: The expected coefficient sign given is for when the dependent variable is the bank risk premium. The expected coefficient sign will be reversed when the dependent variable is Δ Deposit Market Share as market share should increase if depositors consider the bank less risky.

Table 25 Registered Banks Sample Mean Risk Indicator Values

Bank	Tier 1	SpecProv%	Growth%	LnSize	Profit%	Liq%
ANZ	7.25	0.000850	3.50	10.40	1.46	0.1478
ANZNat	8.07	0.000967	9.74	11.33	1.03	0.1008
ASB	8.52	0.000248	17.58	10.32	1.04	0.1507
BNZ	7.57	0.000500	5.93	10.60	1.34	0.1393
NBNZ	8.52	0.001933	9.39	10.56	1.19	0.1271
TSB	14.19	0.000024	13.47	7.59	1.23	0.3329
WBC	6.77	0.000445	6.81	10.64	1.38	0.1792
All Banks	8.91	0.000577	9.94	10.03	1.25	0.1812

Note: Tier 1 is risk-weighted, SpecProv% is calculated as over total assets, Growth% and Profit% are annualised and Liq% is (Cash + Govt Stock + Bank + Public Sector Debt)/Total Assets. All values are derived from bank KISs except Liq%, which is derived from GDS data.

Table 26 Pearson Correlations — All Registered Banks

	Tier 1	SpecProv%	Growth%	LnSize	Profit%	Liquidity%
Tier 1	1					
SpecProv%	-.377***	1				
Growth%	.339***	-.221**	1			
LnSize	-.900***	.460***	-.256***	1		
Profit%	-0.113	-0.024	-.545***	0.007	1	
Liquidity%	.762***	-.490***	.215**	-.908***	0.055	1

Note : *, **, *** indicates significance at the 90%, 95%, and 99% level, respectively.

Table 27 Pearson Correlations – Registered Bank (TSB Excluded)

	Tier 1	SpecProv%	Growth%	LnSize	Profit%	Liquidity%
Tier 1	1					
SpecProv%	0.144	1				
Growth%	.315***	-0.127	1			
LnSize	0.069	0.137	0.012	1		
Profit%	-.270***	-0.047	-.568***	-0.144	1	
Liquidity%	-.510***	-.265***	-0.091	-.435***	.212**	1

Note : *, **, *** indicates significance at the 90%, 95%, and 99% level, respectively.

4.4 Methodology

We answer research question 1 by applying ordinary least squares (OLS) regression to model the risk-return relationship in equation (1), and answer research question 2 with equation (2). To control for bank-specific biases, a dummy variable taking the value of (1,0) to indicate individual banks, is included in the regression equation.

To guard against regression results being affected by economic factors external to the bank, a vector of macroeconomic variables is added to the regression analysis to control for a possible bias. Macroeconomic variables selected include the quarterly change in the gross domestic product (ΔGDP), the quarterly change in the consumer price index (ΔCPI) and the New Zealand trade-weighted index (TWI). As both GDP and CPI are announced on a quarterly basis and published in the middle of the month following quarter end, the lagged percentage change was used in robustness checks[78]. In recent studies of market discipline, Ioannidou and Dreu (2006) used control variables for GDP and US inflation[79] in testing Bolivian banks, while in Russian banks, Semenova (2007) included control variables for income, inflation and exchange rates[80]. A priori, one cannot be sure of is the expected signs for the variables included in the macro vector. Increases in GDP, for instance, could have a positive impact on bank deposits as individuals feel richer, as suggested by Semenova (2007). Alternatively, wealthier individuals may favour consumption over saving, in which case the effect would be negative. A similar argument could conceivably be advanced for the increases

[78] TWI is directly observable from foreign exchange markets so there is no need to lag the value.

[79] Ioannidou and Dreu (2006) tests used US$ deposits in Bolivian banks, so they wanted to control for US inflation in their tests.

[80] EUR/RUB and USD/RUB exchange rates.

in CPI having positive or negative effects on RBs. Exchange rates may also have a significant impact on New Zealand RBs because, with the exception of TSB, all sample banks are foreign-owned and raise substantial funding in international debt markets in currencies important to New Zealand. The TWI should capture any bias arising from changes in the value of the NZ$.

Equation (1) and equation (2) have been expanded and rewritten as equation (5) & (6) and equation (7) & (8) to show the expected sign of the risk indicator coefficients and detail the macroeconomic control variables. In these equations the subscript *t* represents variables at *publication* date, while subscript *t-1* represents variables one quarter earlier at *balance* date.

$$RP_t = \mathrm{C}\text{-}\beta_1\mathrm{Tier1}_t + \beta_2\mathrm{SpecProv}_t - \beta_3\mathrm{Growth}_t\text{-}\beta_4\mathrm{LnSize}_t\text{-}\beta_5\mathrm{Profit}_t\text{-}\beta_6\mathrm{Liq}_t + \beta_{Bank}\mathrm{Bank} + \beta_{GDP}\Delta\mathrm{GDP}_{t-1} + \beta_{CPI}\Delta\mathrm{CPI}_{t-1} + \beta_{TWI}\mathrm{TWI}_t + \varepsilon. \quad (5)$$

or

$$RP_{t-1} = \mathrm{C}\text{-}\beta_1\mathrm{Tier1}_t + \beta_2\mathrm{SpecProv}_t - \beta_3\mathrm{Growth}_t\text{-}\beta_4\mathrm{LnSize}_t\text{-}\beta_5\mathrm{Profit}_t\text{-}\beta_6\mathrm{Liq}_t + \beta_{Bank}\mathrm{Bank} + \beta_{GDP}\Delta\mathrm{GDP}_{t-1} + \beta_{CPI}\Delta\mathrm{CPI}_{t-1} + \beta_{TWI}\mathrm{TWI}_t + \varepsilon. \quad (6)$$

Note: RP_t is the risk premium for individual registered banks at disclosure *publication* date calculated by subtracting the NZ 90-day bank NZBB from each bank's advertised 90-day term-deposit rate, C is a constant term, $\beta_{1\text{-}6}$ are regression coefficients for risk indicators extracted from published disclosure statements (detailed in Table 24), Bank is a dummy variable taking the value of (1,0) to indicate individual banks, macroeconomic control variables are change in the lagged gross domestic product ($\Delta GDP_{t\text{-}1}$), the lagged consumers price index ($\Delta CPI_{t\text{-}1}$) and the New Zealand trade-weighted index (TWI), and ε is an error term.
$RP_{t\text{-}1}$ is the risk premium for individual registered banks at disclosure *balance* date.

The reason for testing the dependent variables at both publication date and disclosure balance date is that whereas a significant relationship at publication date will obviously indicate market discipline at work, a significant relationship at balance date would suggest discipline is applied prior to publication. As the only party with access to risk indicators prior to publication is bank management, this would suggest self-

discipline rather than market discipline is at work. The RBNZ has a three-pronged approach to promoting a sound banking system in which market discipline will enhance self-discipline and supervisor discipline will not dilute the responsibilities of bank directors to act prudently (Geof Mortlock, 2002).

Ordinary least squares (OLS) regression analysis will be undertaken on each of the above equations, with independent variables tested in groups (risk indicators, bank dummies and macroeconomic variables) to determine the most appropriate equation to model the risk premium and change in deposit market share at publication date and balance date.

$$\Delta DMS_t = C+\beta_1 \text{Tier1}_t - \beta_2 \text{SpecProv}_t + \beta_3 \text{Growth}_t + \beta_4 \text{LnSize}_t + \beta_5 \text{Profit}_t + \beta_6 \text{Liq}_t + \beta_{Bank} \text{Bank} + \beta_{GDP} \Delta \text{GDP}_{t-1} + \beta_{CPI} \Delta \text{CPI}_{t-1} + \beta_{TWI} \text{TWI}_t + \varepsilon. \quad (7)$$

or

$$\Delta DMS_{t-1} = C+\beta_1 \text{Tier1}_t - \beta_2 \text{SpecProv}_t + \beta_3 \text{Growth}_t + \beta_4 \text{LnSize}_t + \beta_5 \text{Profit}_t + \beta_6 \text{Liq}_t + \beta_{Bank} \text{Bank} + \beta_{GDP} \Delta \text{GDP}_{t-1} + \beta_{CPI} \Delta \text{CPI}_{t-1} + \beta_{TWI} \text{TWI}_t + \varepsilon. \quad (8)$$

Note: ΔDMS_t is the deposit market share for individual registered banks at disclosure *publication* date calculated using the figure for deposits from customers in their quarterly GDS over RBNZ total bank deposits extracted from SSR data. C is a constant term, $\beta_{1\text{-}6}$ are regression coefficients for risk indicators extracted from published disclosure statements (detailed in Table 24), Bank is a dummy variable taking the value of (1,0) to indicate individual banks, macroeconomic control variables are change in the lagged gross domestic product (ΔGDP_{t-1}), the lagged consumers price index (ΔCPI_{t-1}) and the New Zealand trade-weighted index (TWI), and ε is an error term.
ΔDMS_{t-1} is the deposit market share for individual registered banks at disclosure *balance* date.

4.5 Risk Premium Regression Results at Disclosure Publication

Regression results for the risk premium extracted from the registered bank three-month deposit rate at publication date (RP_t) are presented in Table 28. Results from four models are reported and numbered 1 (pub) to 4 (pub) with (pub) indicating the dependent variable is at publication date. Residuals as shown in Figure 7 are normally distributed.

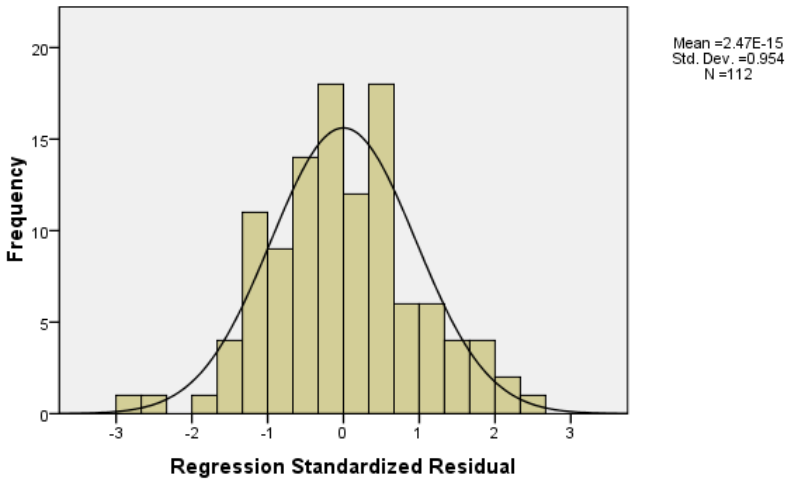
Table 28 Equation (5) – Risk Premium at Disclosure Publication (RP_t)

Model	1 (pub)		2 (pub)		3 (pub)		4 (pub)	
	β	Sig	β	Sig	β	Sig	β	Sig
(Constant)	3.615	**	6.276	***	4.053	**	5.144	***
	(2.372)		(4.004)		(2.334)		(3.563)	
Tier 1	-0.156	***	-0.044		-0.148	***	-0.037	
	-(4.780)		-(1.084)		-(2.835)		-(1.022)	
SpecProv%	382.201	***	351.825	***	116.497		195.414	**
	(5.537)		(5.421)		(0.807)		(2.537)	
Growth%	-0.006		-0.017	***	-0.014	*	-0.014	**
	-(1.039)		-(2.741)		-(1.923)		-(2.588)	
LnSize	-0.319	***	-0.637	***	-0.51	**	-0.349	**
	-(2.944)		-(4.974)		-(2.579)		-(2.393)	
Profit%	-0.392	*	-0.57	***	-0.201		-0.585	***
	-(1.886)		-(2.867)		-(0.782)		-(3.340)	
Liquidity%	2.741	**	3.958	***	4.948	***	1.247	
	(2.605)		(3.853)		(4.641)		(1.053)	
TSB			-1.917	***			-0.732	
			-(4.050)				-(1.360)	
ANZ					1.217			
					(1.566)			
ANZNat					1.493	*		
					(1.733)			
ASB					1.301	*		
					(2.012)			
BNZ					1.155			
					(1.515)			
NBNZ					1.675	**		
					(2.157)			
WBC					0.842			
					(1.051)			
ΔCPI_{t-1}							-58.445	***
							-(5.505)	
ΔGDP_{t-1}							4.64	
							(1.194)	
TWI							-0.019	**
							-(2.398)	
R Square	0.394		0.476		0.544		0.619	
Adj R Square	0.359		0.441		0.489		0.581	
F Statistic	11.356	***	13.504	***	9.862	***	16.422	***

Note: Dependent variable RP_t is the bank's risk premium at disclosure publication calculated by subtracting the NZBB three-month rate from each bank's three-month deposit rate.
T-Statistics are reported in parentheses.
*, **, *** indicates significance at the 90%, 95%, and 99% level, respectively.

Model 1 (pub) shows the six risk indicators (RIs) taken from bank disclosure statements as reported in Table 24. This model had an F-statistic of 11.356*** and an adjusted R Square of 0.359, suggesting it does a reasonable job of explaining the variability in bank RPs. Regression analysis was repeated in Model 2 (pub) with the inclusion of a single dummy variable to indicate the TSB Bank. The TSB dummy is significant at a 1% level. In Model 3 (pub) the TSB dummy is replaced with dummy variables representing all other sample banks. Although the adjusted R square of this model increases, only three bank dummies (ANZNat, ASB and NBNZ) are significant at a 5% or 10% level.

Figure 7 Residual Distribution Model 4 (pub) Dependent Variable: (RP_t)



The final model reported is Model 4 (pub), comprised of all six disclosure RIs, the TSB dummy and the macroeconomic variables. Including the TSB dummy and macroeconomic variables has resulted in a substantial increase in explanatory power. With an adjusted R square of 0.581 in comparison to the 0.359 in Model 1 (pub), the significance of the RI variables is reduced.

Examination of RI coefficients shows that although Liquidity is consistently significant in Models 1-3 (pub), its sign is opposite to original expectations, in Table 24, suggesting an explanation other than risk is required. All other RIs are of the expected sign, though the presence of the TSB dummy changes the significance of Tier 1 and Profit RIs. Tier 1 was negative and highly significant in Model 1 (pub) but loses all statistical significance in models containing the TSB dummy, whereas the Profit RI, which was significant only at a 10%, became highly significant on inclusion of the TSB dummy.

Inclusion of the macroeconomic variables in Model 4 (pub) reduced the importance of disclosure RIs with just Profit% significant at a 1% level while SpecProv%, Growth% and LnSize remained significant at a 5% level. However, lagged change in the CPI was highly significant and while the TWI was significant at 5% in Model 4 (pub), the lagged change in GDP made little contribution. The rationale for the inclusion of macroeconomic variables was their possible impact on interest rates. Expectations are of a positive relationship between inflation (change in CPI) and interest rates, though it was considered there would be little impact on the risk premium as the inflation premium should be a component of the risk-free rate, in which case it should not impact significantly on the risk premium. The negative and highly significant coefficient obtained suggests the impact of inflation is greater or more direct on the bank bill rate[81] than individual bank deposit rates. In the case of the TWI, it was thought exchange rate movements could impact on interest rates, but uncertainty exists as to the coefficients sign due to the complexities of international bank ownership and funding. A

[81] Analysis in Model 4 (pub) was repeated using as the dependent variable the risk premium calculated from subtracting three-month deposit rates from the three- month Treasury bill rate and obtained similar results.

plausible interpretation of the negative coefficient obtained is that bank risk premiums increase as the New Zealand dollar falls or, alternatively, the falling dollar could result in deposit rates increasing to remain in sync with international interest rates.

Overall results presented in Table 28 confirm the information content of disclosure RIs, though an explanation other than risk is required for the significant and positive liquidity coefficient obtained. A plausible explanation, for example, as advanced by Murata and Hori (2006), is that riskier banks increase their liquidity as a precautionary measure. Inclusion of the TSB dummy confirms the TSB Bank is different from other sample banks; these differences are most apparent in Tier 1 capital levels and profitability. Finally, inclusion of macroeconomic variables, representing inflation and exchange rates, considerably improves the model's explanatory power, but this improvement is at the expense of the significance of disclosure risk indicators.

4.6 Risk Premium Regression Results at Disclosure Balance

The preceding analysis was repeated with regression results for the risk premium extracted from the registered bank three-month deposit rate at balance date (RP_{t-1}), and is presented in Table 29. Results presented as Models 1 (bal) to 4 (bal) are comparable to Models 1 (pub) to 4 (pup) presented in Table 28, apart from the dependent variable now lagged by one quarter. The explanatory powers of all models at balance date are greater, with adjusted R squares increasing by around 3%, suggesting they better explained RP variability than the comparable models at publication.

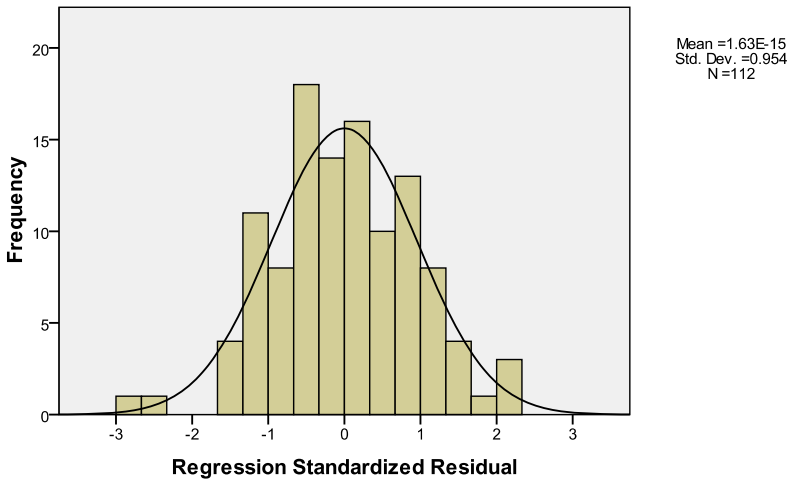
Table 29 Equation (6) — Risk Premium at Disclosure Balance (RP_{t-1})

Model	1 (bal)		2 (bal)		3 (bal)		4 (bal)	
	β	Sig	β	Sig	β	Sig	β	Sig
(Constant)	4.479	***	7.008	***	3.97	**	5.848	***
	(3.067)		(4.805)		(2.384)		(4.329)	
Tier 1	-0.159	***	-0.041		-0.165	***	-0.026	
	-(5.104)		-(1.044)		-(3.220)		-(0.761)	
SpecProv%	349.948	***	315.566	***	190.113		237.527	***
	(4.986)		(4.851)		(1.321)		(3.420)	
Growth%	-0.015	***	-0.025	***	-0.029	***	-0.024	***
	-(2.606)		-(4.364)		-(4.293)		-(4.604)	
LnSize	-0.359	***	-0.672	***	-0.412	**	-0.482	***
	-(3.426)		-(5.639)		-(2.129)		-(3.758)	
Profit%	-0.573	***	-0.728	***	-0.259		-0.743	***
	-(3.054)		-(4.133)		-(1.161)		-(4.764)	
Liquidity%	2.31	**	3.561	***	4.611	***	2.691	**
	(2.178)		(3.507)		(4.266)		(2.444)	
TSB			-1.961	***			-1.389	***
			-(4.469)				-(2.920)	
ANZ					0.518			
					(0.671)			
ANZNat					0.732			
					(0.861)			
ASB					0.93			
					(1.459)			
BNZ					0.556			
					(0.738)			
NBNZ					0.943			
					(1.245)			
WBC					0.234			
					(0.295)			
ΔCPI_{t-1}							-58.539	***
							-(5.689)	
ΔGDP_{t-1}							5.368	
							(1.400)	
TWI							-0.008	
							-(1.136)	
R Square	0.434		0.525		0.589		0.647	
Adj R Square	0.401		0.493		0.539		0.611	
F Statistic	13.409	***	16.423	***	11.806	***	18.297	***

Note: Dependent variable RP_{t-1} is the bank's risk premium at disclosure balance date calculated by subtracting the NZBB three-month rate from each bank's three-month deposit rate. Depositors do not have access to disclosure information at this date, but it is conceivable private disclosure information would be available to management at this time.
T-Statistics are reported in parentheses.
*, **, *** indicates significance at the 90%, 95%, and 99% level, respectively.

Examining the regression coefficients of each model, they appear very similar to those previously reported in Table 28, with no changes in coefficient sign between the two tables. All variables in Model 1 (pub) are significant at a 1% level apart from liquidity, which was at 5% level. In Model 2 (bal), which included the TSB dummy, all variables are significant at a 1% level with the exception of Tier 1, which was no longer statistically significant. In Model 3b Growth% increased in significance to the 1% level. Previously dummy variables for ANZNat, ASB and NBNZ, which had been marginally significant at the 5% or 10% level, are no longer significant in Model 3 (bal). Residuals are once again normally distributed as shown in Figure 8.

Figure 8 Residual Distribution Model 4 (bal) Dependent Variable: (RP_{t-1})



While results are similar in the first three models to those previously presented, the significance of disclosure RIs in Model 4 (bal) increased substantially, with all except Tier 1 highly significant. Of the three macroeconomic variables included, only the lagged change in the CPI was still significant at a 1% level; the lagged change in GDP and the TWI lost statistical significance. The explanatory power of Model 4 (bal)

with an adjusted R square of 0.611 was higher than any other bank model tested. It is apparent from the analysis that the relationship between bank risk indicators and the deposit risk premium is stronger prior to their publication. Not only are adjusted R squares greater in comparable publication date and balance date models in Table 28 and Table 29 but in Model 4 (bal), four out of six risk indicators are significant at a 1% level[82].

As a further check on the appropriateness of Model 4 (bal), TSB data was removed completely from the sample and the regression re-run as 5 (bal) (reported in Table 30 along with Models 1, 2 and 4 (bal) to facilitate comparison of the regression coefficients across all four models). Very similar results are obtained for SpecProv%, Growth% and Profit% as in Model 4(bal), the significance of the LnSize coefficient dropped to 10%. Of the three macroeconomic variables, only the lagged change in the CPI remained significant at the 1% level. The models' adjusted R square and F Statistic are comparable to previous values obtained in Model 4 (bal).

[82] Liquidity% was significant at a 5% level but the coefficient was opposite in sign to original expectations.

Table 30 Equation (6) — Risk Premium at Disclosure Balance (RP_{t-1}) TSB Removed in 5 (bal)

Model	1 (bal)		2 (bal)		4 (bal)		5 (bal)	
	β	Sig	β	Sig	β	Sig	β	Sig
(Constant)	4.479	***	7.008	***	5.848	***	4.874	***
	(3.067)		(4.805)		(4.329)		(3.235)	
Tier 1	-0.159	***	-0.041		-0.026		-0.011	
	-(5.104)		-(1.044)		-(0.761)		-(0.256)	
SpecProv%	349.948	***	315.566	***	237.527	***	223.344	***
	(4.986)		(4.851)		(3.420)		(3.016)	
Growth%	-0.015	***	-0.025	***	-0.024	***	-0.024	***
	-(2.606)		-(4.364)		-(4.604)		-(4.297)	
LnSize	-0.359	***	-0.672	***	-0.482	***	-0.402	***
	-(3.426)		-(5.639)		-(3.758)		-(2.878)	
Profit%	-0.573	***	-0.728	***	-0.743	***	-0.741	***
	-(3.054)		-(4.133)		-(4.764)		-(4.443)	
Liquidity%	2.31	**	3.561	***	2.691	**	3.498	***
	(2.178)		(3.507)		(2.444)		(2.772)	
TSB			-1.961	***	-1.389	***		
			-4.469		-2.920			
ΔCPI_{t-1}					-58.539	***	-61.772	***
					-(5.689)		-(5.056)	
ΔGDP_{t-1}					5.368		4.823	
					(1.400)		(1.079)	
TWI					-0.008		-0.012	
					-(1.136)		-(1.551)	
Dependent V	RP_{t-1}		RP_{t-1}		RP_{t-1}		RP_{t-1}	
R Square	0.434		0.525		0.647		0.652	
Adj R Square	0.401		0.493		0.611		0.614	
F Statistic	13.409	***	16.423	***	18.297	***	16.895	***

Note: Dependent variable RP_{t-1} is the bank's risk premium at disclosure balance date calculated by subtracting the NZBB three-month rate from each bank's three-month deposit rate. Depositors do not have access to disclosure information at this date, but it is conceivable private disclosure information would be available to management at this time.
T-Statistics are reported in parentheses.
*, **, *** indicates significance at the 90%, 95%, and 99% level, respectively.
In Model 5 (bal) TSB has been completely removed from the bank sample set.

4.7 Deposit Market Share Regression Results

Regression results for changes in deposit market share at registered banks are reported in Table 31 at both publication and balance dates, presented as Models 6 and 7 (pub) and 6 and 7 (bal).

The regression models with the dependent variable change in deposit market share at publication based solely on disclosure RIs resulted in an adjusted R square of 0.322. Including the TSB (significant at 1% level) and macroeconomic variables (insignificant) lowered the adjusted R square to 0.309. Coefficients for Growth% are significant at the 1% level in both publication date models reported, Profit% was significant at the 5% level in Model 6 (pub), and in Model 7 (pub) Liquidity% was significant at a 5% level. The original expectation was for RIs coefficients for Growth%, Profit% and Liquidity% to be positive. It is not possible to mount a convincing argument for their negative coefficient using a risk framework. The strong negative relationship between growth and deposit market share may be a result of a growing bank being more concerned about growth in mortgage market share than deposit market share. With the growth in the mortgage market funded from offshore markets.

The two balance date models 6 and 7 (bal) are also reported in Table 31. These two models did not do a good job of modelling change in deposit market share, both having adjusted R squares of about 0.05. The F statistic for Model 7 (bal) was not significant, while that of Model 6 (bal) was only significant at a 10% level.

Table 31 Equation (7) and (8) - Dependent Variable: ΔDMS_t (pub) and ΔDMS_{t-1} (bal)

Model	6 (pub)		7 (pub)		6 (bal)		7 (bal)	
	β	Sig	β	Sig	β	Sig	β	Sig
(Constant)	3.826		-1.964		-116.18		-180.095	
	(0.287)		-(0.123)		-(1.005)		-(1.417)	
Tier 1	0.327		-0.003		2.782		-2.430	
	(1.153)		-(0.008)		(1.133)		-(0.747)	
SpecProv%	205.482		-442.328		-1539.93		-103.826	
	(0.330)		-(0.538)		-(0.285)		-(0.016)	
Growth%	-0.352	***	-0.304	***	-1.264	***	-0.670	
	-(6.683)		-(4.978)		-(2.768)		-(1.380)	
LnSize	0.418		2.072		11.382		19.992	
	(0.436)		(1.364)		(1.371)		(1.656)	
Profit%	-3.852	**	-2.881		-12.286		0.629	
	-(2.182)		-(1.562)		-(0.803)		(0.043)	
Liquidity%	-6.869		-25.984	**	60.82		10.649	
	-(0.720)		-(1.994)		(0.737)		(0.103)	
TSB			10.117	*			70.024	
			(1.797)				(1.564)	
ΔCPI_{t-1}			29.559				-1629.455	*
			(0.243)				-(1.683)	
ΔGDP_{t-1}			-49.004				-107.138	
			-(1.080)				-(0.297)	
TWI			-0.12				0.125	
			-(1.510)				(0.198)	
Dependent V	ΔDMS_t		ΔDMS_t		ΔDMS_{t-1}		ΔDMS_{t-1}	
R Square	0.366		0.371		0.103		0.136	
Adj R Square	0.332		0.309		0.055		0.049	
F Statistic	10.684	***	5.908	***	2.129	*	1.571	

Note: ΔDMS_t is the deposit market share for individual registered banks at disclosure *publication* date calculated using the figure for deposits from customers in their quarterly GDS over RBNZ total bank deposits extracted from SSR data. C is a constant term, β_{1-6} are regression coefficients for risk indicators extracted from published disclosure statements (detailed in Table 24), Bank is a dummy variable taking the value of (1,0) to indicate individual banks, macroeconomic control variables are change in the lagged gross domestic product (ΔGDP_{t-1}), the lagged consumers price index (ΔCPI_{t-1}) and the New Zealand trade-weighted index (TWI), and ε is an error term.
ΔDMS_{t-1} is the deposit market share for individual registered banks at disclosure *balance* date
T-Statistics are reported in parentheses.
*, **, *** indicates significance at the 90%, 95%, and 99% level, respectively.

4.8 Discussion

Significant RI regression coefficients obtained in models based on equations (5) and (6) indicate there is a relationship between publicly disclosed risk indicators and bank risk as measured by bank risk premiums. This was not the case with models based on equation (7) and (8) where the dependent variable was the quarterly change in bank deposit market share, which resulted in low adjusted R Squares and few significant regression coefficients.

Although results for equation (5) confirm a market discipline hypothesis of disclosure in moderating bank risk-taking, further interesting questions are raised. The increased explanatory power of models at balance date (equation (6)) compared to publication date (equation (5)) cannot be explained by market discipline exercised by depositors. Similarly, the positive and significant liquidity coefficient, in all models except Model 4 (pub), is counter-intuitive from a market discipline perspective.

It is simply impossible for market participants to be responsible for the significant relationship between risk indicators and risk premiums at balance date as disclosure information is not available to the market then. The market has no access to the risk indicators at this time. The only party with access to this information prior to publication is bank management. The most credible explanation for the increased explanatory power is that it is as a result of management action rather than market action. Management would be aware of the risk indicator values used in the regression models prior to publication and it is highly likely they would be privy to the trends in these risk indicators even prior to balance date as it is the same information they use in their day-to-day decision-making. Management aware of a deteriorating situation in a bank's accounts would not wait until these are audited and disclosure statements

published before taking corrective action. The relationship revealed by modelling equation (6) at balance date is evidence of self-discipline rather than market discipline. The significant RI coefficients in equation (5) may simply be coefficients from the previous quarter decaying slowly.

Further confirmation of the presence of bank self-discipline is provided by the significant relationship between the Liquidity% coefficient and bank risk premiums. This is also due to the actions of bank management rather than risk, as it is unrealistic to suggest banks increase their deposit rates as a result of increased liquidity. However, rather than accepting the *precautionary* explanation of Murata & Hori (2006), a more likely explanation is for the relationship between risk premium and liquidity to be due to banks simply managing their liquidity (cash) needs by altering their deposit rates. The measure of Liquidity% calculated in equation (9) is sensitive to changes in the bank cash levels in the numerator.

$$\text{Liquidity\%} = \frac{\text{Cash} + \text{Govt Stock} + \text{Bank Bills} + \text{Public Sector Debt}}{\text{Total Assets}} \qquad (9)$$

Note: Information on a bank's holdings of cash, Govt Stock, bank bills and public sector debt is not available in its KIS and must be obtained from the more detailed GDS.

The positive relationship between liquidity and the risk premium is a result of banks managing their liquidity by manipulating their deposit interest rates. For example, a bank which considers its liquidity to be too high could reduce deposit rates (lowering the risk premium). As deposit growth falls (or slows) it would consume existing liquid assets in place of deposits. The relationship is therefore a result of banks managing their liquidity by manipulating their interest rates. A bank managing its liquidity position would do so by adjusting its three-month term deposit rate as it is apparent, from

examination of Figure 6, that retail three-month funding is an attractive option for New Zealand RBs. If a lack of liquidity is a risk indicator, then it is suspected to be only at extremely low levels. When bank viability is threatened by a lack of liquidity, risk premiums and deposit rates must increase. This is not the case with New Zealand RBs.

Early univariate analysis of bank RIs raised concerns as to apparent differences in the TSB which might impact on the regression relationship between RIs and the RP. The dummy variable identifying the TSB in Models 2 (pub) and 2 (bal) demonstrated a clear difference between the TSB and other sample banks. In the balance-date models, only TSB resulted in a significant coefficient, while in the publication-date models only one bank was significant at a 5% level and two at a 10% level.

The TSB effect appears greatest in the Tier 1 coefficient, which in Models 2 (bal) and (pub) lost all statistical significance, indicating Tier 1 and the TSB dummy variable are capturing the same effect. The TSB Bank's Tier 1 capital of 15% is considerably higher than other banks'; the TSB is also arguably riskier than other banks, given its Standard & Poor's credit rating of BBB+. Once the TSB is controlled for, the lack of significance of the Tier 1 variable may be a result of New Zealand banks operating with an appropriate level of Tier 1 for their individual risk. The relationship between risk and Tier 1 capital may only become significant if a bank moves well outside its normal level. In other words, the relationship is not strictly linear but rather has an exponential function and would only become apparent as banks approached the mandated minimum 4% Tier 1 capital level.

Inclusion of macroeconomic variables, lagged change in the CPI, lagged change in GDP and the TWI resulted in a substantial increase in the explanatory power of the regression model (the adjusted R square in Model 2 (bal) was 0.493 and rose to 0.611 in

Model 4 (bal)). This increase was driven by the inflation coefficient (lagged change in the CPI). In New Zealand, the government has set the RBNZ a sole monetary policy goal of maintaining inflation between 1% and 3%. The tool used by the RBNZ is the official cash rate (OCR), which is used to settle overnight obligations between RBs, with the RBNZ prepared to borrow or lend to them at 25 basis points either side of the OCR. As a result, there is a linkage between all New Zealand interest rates, the OCR and CPI, with the expectation being for increases in interest rates in response to increased inflation. The pass-through of the OCR to other interest rates is confirmed by Liu, Margaritis et al., (2008) and Petro, McDermott et al., (2001), who both found the transmission of monetary policy improved after the OCR was introduced in 2009. However, as the OCR is expected to impact positively on interest rates, the negative coefficient found in 9 (pub) and 4 (bal) suggests the pass-through is more rapid to the bank bill rate than retail deposit rates. Flannery and James (1984) found retail deposit rates to be *sticky* in relation to other interest rates, while in New Zealand Liu, Margaritis et al., (2008) find the OCR pass-through to retail rates to be incomplete. Petro, McDermott et al., (2001) find a similar situation in the mortgage rates they study, suggesting it may be a result of factors such as bank competition, bank market share targets, the state of the economic cycle, credit risk and rate volatility. Regardless of the causes, if increases in the OCR (as a result of changes in the CPI) result in the 90-day bank bill rate rising before the three-month deposit rate, the risk premium (which is the difference between the two rates) will fall.

4.9 Conclusion

The objective of this chapter is to answer research question 1: Is there a statistically significant relationship between New Zealand registered bank risk

premiums and their disclosure risk indicators? and, research question 2: Is there a statistically significant relationship between the share of available deposits to each New Zealand registered bank and its disclosure risk indicators? The statistically significant relationship found in the regression models based on equation (5) and (6) allow us to answer research question 1 in the affirmative. As the relationship was strongest at balance date (equation (6)), it is concluded discipline is due to self-discipline by banks rather than discipline by depositors. No similar relationship is found for models based on equation (7) and (8), so no evidence of market discipline being applied in New Zealand RBs via reductions in available deposits can be offered.

Results found in this analysis confirm the effectiveness of New Zealand's disclosure-based regime in moderating excessive risk-taking in registered banks. Although little evidence of discipline by depositors is found, this cannot be taken as a criticism of the registered bank disclosure regime; simply there is no need for depositors to demand increased interest rates or restrict the supply of deposits. It is suggested self-discipline is more effective than either market or regulator discipline. Market and regulator discipline is redundant if management are effectively managing their bank. Management are best placed to supervise and apply discipline as they have ready access to timely and accurate information, enabling them to apply prompt corrective action.

If evidence of market discipline were found, it could indicate prudential regulation of New Zealand banks was ineffective and bank management were not acting as expected by the architects of the disclosure regime. New Zealanders can have confidence as to the safety and soundness provided by the country's bank disclosure regime. This finding is a significant and valuable contribution, especially in a time of financial turmoil when many are calling for greater regulation and official supervision

of banks. Regulation and official supervision of banks have not prevented them from failing in the past, and are unlikely to be successful in the future.

In Chapter 5, the risk-return relationship in NBDTs is tested. Deposits in NBDTs are taken under provisions of the Securities Act 1978 and its subsequent regulations. This act is clearly not working, as a large number of NBDTs have failed in recent years. With more than $6 billion of depositors' funds placed at risk (see Appendix 3 for a list of failures) depositors cannot rely on management to have the interests of depositors at the front of their minds. From analysis of the NBDT sector, comparisons can be made with the registered bank sector, thus guiding future reform of the industry.

5 Testing of Discipline in New Zealand Non-Bank Deposit-takers

This chapter examines the recent crisis in New Zealand finance companies, a group of non-bank deposit-takers (NBDTs), testing the risk-return relationship for evidence of discipline. While depositors in RBs, as shown in Chapter 4, appear to be comfortable in relying on bank management to act prudently, the large number of recent failures among NBDTs suggests this would be an unwise strategy for investors in this sector. Depositors in NBDTs should take an active role in assessing the riskiness of potential deposit-takers as the cost of getting it wrong could be a 100% loss of capital. This should prove sufficient justification for the effort required on their part, and as a result market-discipline should be apparent.

Deposits in finance companies have proved popular with New Zealand retail investors, many of whom have considered it an easy way to earn 1%, or 2% over rates offered by registered banks. The bulk of finance company funding comes from retail investors —statistics reported by the RBNZ in its annual survey of household assets and liabilities (RBNZ Staff, 2006) show deposits in NBDTs (excluding building societies and credit unions) rose from NZ$1.955 billion in 1998 to NZ$8.898 billion at year end 2006. Whilst relatively small in comparison to total household financial assets of NZ$114 billion and NZ$185 billion over the same period, deposits in NBDTs were popular with retired investors, who looked to their attractive income stream as a supplement to government superannuation and other income.

NBDTs attracted depositors, either directly by way of print and television advertisements or indirectly through financial advisers, who are paid commissions ranging from 0.5% to 3% of clients' funds placed as a result of their advice. Deposits

took the form of fixed-term debentures[83], for one to three years, secured over the assets of the firm. An important feature of the New Zealand finance company model was the willingness of holders to roll their debentures over at the end of the term. Reinvestment rates commonly ranged from 70% to 90%. Despite general warnings, such as those of Alan Bollard (2004) in the RBNZ Financial Stability Report of 2004, as to the adequacy of return for the risk taken by depositors, funds continued to flow into the sector. Firms prospered, with a ready market for loans (at higher than bank rates[84]) to consumers, businesses and property developers, funded from debentures issued to the public at interest rates only a little higher than bank rates.

5.1 NBDT Sample

In mid-2006, problems surfaced in three firms active in the financing of used cars. During a short period of time, receivers were appointed at National Finance 2000 Ltd (NF2K), which had total assets of NZ$25m[85], Provincial Finance Ltd (PF), which had total assets of NZ$346m, and Western Bay Finance Ltd (WBF), whose assets were valued at NZ$55m. This initially dampened the flow of new funds into NBDTs. The quarterly RBNZ NBFI standard statistical return (SSR)[86] (Figure 9) of household deposits in NBFIs reported a decline of NZ$140 million in the September 2006 quarter to NZ$6.815 billion. This drop, from NZ$6.955 billion three months before, was the first since the survey began in December 2004.

[83] In New Zealand a debenture is a name given to a fixed and floating charge secured over the assets and undertakings of a company. In the US the term has the opposite meaning, with a debenture being an unsecured loan.

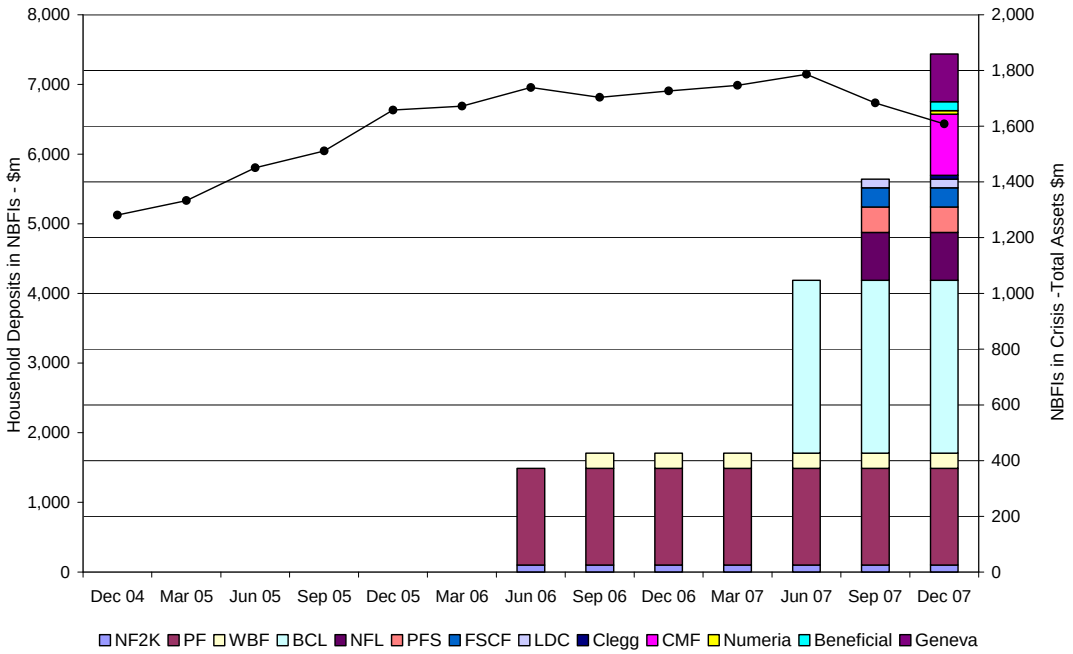
[84] NBFI lending rates range from 14% up to 25%.

[85] Total assets as reported in the last registered prospectus.

[86] The RBNZ NBFI SSR includes NBFIs with a prospectus on issue and with total assets over NZ$100 million. Savings institutions and non-deposit-takers are excluded.

Deposits began to recover, reaching NZ$7.146 billion in the June quarter 2007, at which point property financier Bridgecorp Finance Ltd (BCL), with total assets of NZ$620 million, was placed in the hands of the receiver. Over the September 2007 quarter, four more NBDTs were placed in receivership: Nathans Finance Ltd (NFL), with total assets of NZ$172 million, Property Finance Securities (PFS), with total assets of NZ$91 million, Five Star Consumer Finance (FSCF), with total assets of NZ$69 million, and LDC Finance Ltd (LDC), with total assets of NZ$31 million. Not surprisingly, the RBNZ NBFI SSR survey for September 2007 found that household deposits had fallen again, to NZ$6.870 billion. In the 2007 December quarter, receiverships were announced for Clegg & Co (CCL), with total assets of NZ$14 million, Capital + Merchant Finance Ltd (CMF), with total assets of NZ$219 million, and Numeria Finance (NumF), with total assets of NZ$13 million. As well, two NBDTs — Beneficial Finance Ltd (BFL), with total assets of NZ$32 million, and Geneva Finance Ltd (GFL), with total assets of NZ$171 million — were granted moratoriums on repayments of deposits of 18 months and three years, respectively. In total, over an 18-month period, 13 firms with total assets of NZ$1.861 billion failed or were in crisis. An unknown number of other firms were under immense liquidity strain, as they attempted to match the maturity of deposits and loans. In all, retail deposits in NBDTs ended the year at NZ$6.434 billion, down NZ$521 million from their June 2006 high.

Figure 9 NBDTs' Funding and NBDTs in Crisis



Those facing the most liquidity pressure are smaller finance firms without access to wholesale sources of funding, so they are mainly reliant on depositors rolling over their debentures as they matured, or attracting new debenture holders. This strain is not fully reflected in Figure 9, as the RBNZ survey includes only larger firms with assets in excess of NZ$100 million. Within this group, results are varied, with the largest deposit-taking[87] NBFI, UDC Finance, owned by the ANZ National Bank, reducing in size from NZ$2.384 billion in 2006 to NZ$2.073 billion in 2007 (-13%). Examination of its financial statements (UDC Staff 2007) reveal that in the preceding year, it sold its wholly owned subsidiary Truck Leasing Ltd for NZ$584 million. The statement of cash flows shows that the proceeds of this sale were used to decrease borrowing by NZ$291 million, while NZ$230 million was used to increase loans, so its decline in size is not due to the same liquidity pressures that others faced. The only other firms with total

[87] The largest NBFI is GE Finance, with total assets of NZ$2.629 billion (Dec 2006 Financial Statements). It sources all funding through its parent company, GE Capital Global Financial Holdings Inc.

assets over the NZ$1 billion mark, South Canterbury Finance and Marac Finance, have both grown steadily over the past several years. South Canterbury Finance grew from NZ$1.021 billion in 2005 to NZ$1.286 billion in 2006 (26%), and then to NZ$1.586 billion (23%) in 2007. Likewise, Marac Finance grew from NZ$957 million in 2005 to NZ$1.080 billion in 2006, and then to NZ$1.246 billion in 2007. These two firms and UDC had deposits of NZ$4.248 billion in 2007, up 2% from NZ$4.168 billion in 2006.

New Zealand NBDTs offer a unique opportunity to test the application of market discipline in a retail market which is relatively un-regulated. Analysis uses financial statements and interest rates from the 2004 to 2006 years, years in which NBDTs enjoyed rapid growth. In this period, NBDTs were subject to little in the way of prudential regulation, being largely free to set their own prudential standards with no official prudential oversight. No protections existed for depositors, who are expected to make investment decisions based on published investment statements and registered prospectuses. The remainder of this chapter addresses the third and fourth research questions: Is there a statistically significant relationship between New Zealand non-bank deposit-takers' risk premiums and their disclosure risk indicators? Was it possible to use New Zealand non-bank deposit-takers' disclosure to determine the probability of an institution suffering a future crisis event?

5.2 NBDT Data

To answer research questions 3 and 4, financial statements data was collected from NBDTs on an annual basis and matched to deposit interest rate data from the IRG database. Using risk indicators extracted from their financial statements and the risk premium derived from their deposit rates, the risk-return relationship in NBDTs is modelled using equation (3).

$$RP_{NBDT} = C + \beta_1 RI_1 + \beta_2 RI_2 + \beta_3 RI_3 + \ldots + \beta_n RI_n + \beta_i Industry + \varepsilon \quad (3)$$

Note: RP_{NBDT} is the risk premium for individual NBDTs at balance date calculated by subtracting the NZ 1-year government bond rate from each bank's advertised 1-year secured debenture rate, C is a constant term, $\beta_{1..,n}$ are regression coefficients, $RI_{1...n}$ are risk indicators extracted from published disclosure statements, RI variables are detailed in **Table 35**, Industry is a dummy variable taking the value of (1,0) to indicate individual industries NBDTs commonly lent to, and ε is an error term.

As the sample used includes a significant number of NBDTs who subsequently failed, an attempt is made to predict those likely to suffer a crisis event using logit analysis in equation (4). If a statistically significant relationship is revealed in these two regressions models, this will provide evidence of the application of market discipline and the value of disclosure information to depositors.

$$Crisis_{NBDT} = C + \beta_1 RI_1 + \beta_2 RI_2 + \beta_3 RI_3 + \ldots + \beta_n RI_n + \varepsilon \quad (4)$$

Note: $Crisis_{NBDT}$ is a dummy variable taking the value of (1,0) to indicate individual NBDTs which suffered a crisis event in 2006 or 2007, C is a constant term, $\beta_{1..,n}$ are regression coefficients, $RI_{1...n}$ are risk indicators extracted from published disclosure statements, RI variables are detailed in **Table 35**, and ε is an error term.

5.2.1 Crisis Dummy Variable

A dummy crisis variable was created to allow for comparisons to be made between failed NBDTs and surviving NBDTs. Table 32 reports total assets for those NBDTs that have suffered a crisis event.

Table 33 reports total assets of non-crisis firms. A crisis event is defined as the appointment of a receiver by the trustee, or allowance by the trustee for the firm to put a debt moratorium proposal to depositors in place of appointing a receiver. The cut off point for this was July 2008. Apart from this date allowing analysis to be completed and

written up it ties in with the investment term of depositors. In most cases the investment term for depositors were fixed at 1 to 3 years, as the interest rate data available from the IRG database ended in mid 2006. Though as interest rate data used in this analysis is for 1-year deposits this would limit the investment horizon to the 2007 year. Extending the cut-off date to July 2008 allows some margin for comfort in this decision.

Table 32 Crisis NBDTs' Total Assets NZ$m

Crisis (1)	2004	2005	2006
Beneficial Finance Ltd	14.002	20.364	31.144
Bridgecorp Ltd	522.829	556.092	652.287
Capital + Merchant Finance Ltd	163.187	191.060	192.694
Clegg & Co	7.790	11.026	16.147
Dominion Finance Group Ltd	113.423	151.156	226.983
Dorchester Finance Ltd	306.100	340.781	410.484
Five Star Finance Ltd	32.345	54.977	69.362
Geneva Finance Ltd	31.369	63.519	141.684
Hanover Finance Ltd	.	897.994	1024.857
LDC Finance	.	.	36.864
Lombard Finance & Investments Ltd	99.005	165.552	194.715
Mascot Finance Ltd	99.860	127.371	170.319
MFS Pacific Finance Ltd	48.488	135.690	259.118
Nathans Finance Ltd	83.421	137.047	172.323
National Finance 2000 Ltd	17.144	25.209	.
North South Finance Ltd	46.076	76.736	112.922
Numeria Finance Ltd	8.066	22.855	27.326
Property Finance Ltd	.	76.035	102.627
Provincial Finance Ltd	147.695	277.091	.
St Laurence Ltd	125.573	147.480	226.541
Western Bay Finance Ltd	47.425	54.921	.
Sum of Total Assets	1913.798	3532.957	4068.397
N	18	20	18

Table 33 Non-crisis NBDTs' Total Assets NZ$ m

Crisis (0)	2004	2005	2006
All Purpose Finance Ltd	.	8.530	16.437
Allenby Group New Zealand Ltd	.	4.165	4.280
Allied Nationwide Finance Ltd	.	165.549	172.365
Asset Finance Ltd	.	19.119	22.213
Belgrave Finance Ltd	5.846	7.924	18.221
Boston Finance Ltd	.	.	38.577
Broadlands Finance Ltd	27.233	41.643	48.061
Citywide Capital Ltd	.	8.541	7.650
Equitable Mortgages Ltd	126.136	135.140	158.877
Evia Rural Finance Ltd	.	11.906	10.554
F.E. Investments Ltd	.	.	9.876
FAI Finance Ltd	54.474	.	61.128
Fairfield Finance Ltd	.	36.992	36.054
Farmers' Mutual Finance Ltd	49.006	.	.
Finance Direct Ltd	.	1.691	5.835
Fisher & Paykel Finance Ltd	272.494	308.598	345.544
General Finance Ltd	.	2.668	8.122
Gold Band Finance Ltd	18.831	25.589	27.221
Instant Finance NZ Ltd	.	68.176	90.902
Loan Society	115.295	.	.
MARAC Finance Ltd	806.200	957.019	1080.893
Medical Securities Ltd	.	.	201.925
Mutual Finance Ltd	5.668	9.252	11.542
New Zealand Finance Ltd	40.698	64.524	76.775
Orange Finance Ltd	.	.	68.681
Oxford Finance Corporation Ltd	51.189	53.303	47.163
PGG Wrightson Finance Ltd	92.974	68.444	334.154
Rockforte Finance Ltd	.	.	5.833
Savings & Loans Ltd	.	7.915	8.092
South Canterbury Finance	738.685	1021.024	1286.905
Southland Finance Ltd	.	.	68.615
Speirs Group Ltd	308.072	201.065	191.831
Strata Finance Ltd	.	.	1.434
Strategic Finance Ltd	318.761	397.379	498.722
U D C Finance Ltd	2528.412	2640.413	2384.853
United Finance Ltd	172.952	195.481	228.770
Sum of Total Assets	5732.926	6462.050	7578.105
N	18	26	34

While some firms, such as Strategic Finance, which failed after the cut-off date are included in the survivors' sample they would presumably have repaid most of the deposits taken in the 2004 to 2006 period. The other danger of moving the cut-off date further is the danger that a NBDTs crisis may have been triggered to an event which could not conceivably been considered by depositors in 2004 to 2006 period for which interest rates and risk indicators are available for.

5.2.2 Risk Premium Data

The financial statement data was then matched to an IRG archive giving deposit rates for financial institutions in New Zealand. A risk premium (RP) was calculated for each institution by subtracting the 12-month NZ Government Bond rate from the institution's 12-month (secured) deposit rate. The mean RP for the crisis group was 2.04%, compared with the surviving group's mean of 1.63%. The difference of 41 basis points was statistically significant with a t-statistic of -3.138*** (Table 34). Further analysis revealed the difference in mean RPs was driven by the 2004 year when the RP of the surviving group was 1.30% in comparison to the mean RP of the crisis group of 2.39%, a difference of 109 basis points with a t-statistic of -4.223***. In 2005 and 2006, the difference in mean RPs between the two groups was more modest, at 12 and 14 basis points respectively, neither of which was significant.

Table 34 NBDT Sample Means

	Crisis	Mean	Std. Dev	Std. Error Mean	Difference in Mean	t-stat of diff	
RP	0	0.0163	0.0088	0.0010			
	1	0.0204	0.0064	0.0009	-0.0041	-3.1380	***
Equity	0	0.1598	0.1139	0.0129			
	1	0.0937	0.0410	0.0055	0.0661	4.7150	*
DoubtDebts	0	0.0178	0.0190	0.0022			
	1	0.0150	0.0141	0.0019	0.0029	0.9950	
ImpAsset	0	0.0154	0.0215	0.0024			
	1	0.0147	0.0204	0.0028	0.0008	0.2090	
Growth	0	0.5389	0.8472	0.0965			
	1	0.6445	0.6346	0.0848	-0.1056	-0.8220	
LnSize	0	4.0525	1.8089	0.2048			
	1	4.5348	1.1653	0.1557	-0.4823	-1.8740	*
ROA	0	0.0285	0.0301	0.0034			
	1	0.0319	0.0262	0.0035	-0.0034	-0.6980	
Liq	0	0.1179	0.1306	0.0148			
	1	0.0648	0.0780	0.0104	0.0531	2.9330	***

Note: Crisis (1) indicates NBDTs suffered a crisis event
*, **, *** indicates significance at the 90%, 95%, and 99% level, respectively.

5.2.3 Risk Indicator Data

Annual financial statement data from NBDTs was collected from various sources for the period from 2004 to 2006. Data was standardised as either ratios or percentages, where appropriate. Variables are then selected for inclusion as risk proxies in a five-factor CAMEL model[88] in a similar manner to previously done for RBs.

Capital, represented by equity as a percentage of total assets, is analogous to Tier 1 capital in banks. Higher levels of equity are seen to act as a cushion during adverse times, thus protecting debt-holders. A negative relationship is, therefore, expected between capital and risk.

[88] The five factors were capital, asset quality, management, earnings, and liquidity.

Proxies for asset quality are doubtful debts as a percentage of gross loans/advances, and impaired asset expense. Higher provisions for doubtful debts and impaired asset expense indicate a lower-quality loan portfolio, which suggests a greater risk premium would be appropriate.

Another risk indicator is rapid growth. While it is expected that financial institutions will grow steadily, Clair (1992) finds that increased lending, above what would be considered normal, lowers lagged loan quality. Confirmation of this is provided by Foos, Norden et al., (2007) in their cross-country study of banks in 14 countries between 1997 and 2005. In an earlier New Zealand study of NBFIs , Hess and Feng (2007) use the squared difference from average loan growth in institutions[89] as a risk indicator. We expect a positive relationship between growth in total assets and risk.

The impact of management is quantified by size (the log of total assets). The intuition behind this choice is that larger firms, who have survived for a number of years, would have more-experienced management, leading to an overall lower level of risk.

There are a number of earnings variables available. After consideration, it was decided to employ net profit before tax as a percentage of total assets, which gives the return on assets. The advantage of this variable over the others available, such as return on equity as used by Poskitt (2008), is that it avoids any interaction with existing variables, such as equity (the degree of leverage employed), or tax. Higher earnings

[89] While it is agreed that shrinking loan portfolios could be of concern, examination of the sample showed that none of the crisis group shrank in size prior to a crisis and that only four of the surviving group shrank (all less than 10%).

demonstrate that a firm should be able to meet its future obligations, so this variable is expected to have a negative relationship with risk.

For the final factor, liquidity, we use cash as a percentage of total liabilities. Poskitt (2008) uses a simplified duration of assets and liabilities, but this is considered unreliable due to large-scale related-party lending in some NBDTs, which is nominally recorded as being at call. A negative relationship between risk and liquidity is expected. Table 35 summarises the risk indicator variables along with the sign of their expected relationship, either positive (+ve) or negative (-ve), to the NBDTs' risk premium, or the probability of them suffering a future crisis event if they are related.

Table 35 NBDTCAMEL Risk Indicators

Category	Risk Indicator	Expect Sign	Intuition behind expected relationship
Capital	Equity	-ve	Equity offers an alternative repayment source in a crisis, providing a buffer to debt investors (Cole & Gunther, 1998), (Murata & Hori, 2006) and (Koetter, et al., 2007).
Asset Quality	DoubtDebt ImpAsset	+ve	Higher levels of Doubtful Debts and Impaired Asset Expense suggest low asset quality (Cole & Gunther, 1998).
	Growth	-ve	Although financial institutions are expected to grow steadily, growth from increased lending above the normal level lowers loan quality (Clair, 1992). (Hess & Feng, 2007)use the squared difference from average loan growth in New Zealand banks as a risk indicator
	LnSize	-ve	Greater diversification lowers risk (Murata & Hori, 2006).
Management	LnSize	-ve	Larger banks are expected to be better managed, with personnel of a higher calibre and improved reporting.
Earnings	ROA	-ve	Higher earnings mean the bank is more able to make debt repayments.
Liquidity	Liq	-ve	Higher liquidity indicates the ability to meet obligations (Martinez Peria and Schmukler (Martinez Peria & Schmukler, 2001), Murata and Hori (Murata & Hori, 2006) and (Ungan, et al., 2008). However, other studies (Martin, 1977) find liquidity does not serve well as an early warning indicator.

Note: The expected coefficient sign given is for when the dependent variable is the NBDT's Risk Premium
DoubtDebt= Doubtful Debts/Gross Loans & Advances, ImpAsset= Bad Debt Expense/Total Assets and Liq= Cash/Total Liabilities

Risk indicator means are given in Table 34 for the crisis group and surviving group. The liquidity risk indicator for the crisis group is 5.31% less than for the surviving group, with the difference in the means statistically significant with a t-statistic of 2.9330***. The only other risk indicator variables which are statistically significant are equity and LnSize, which are both significant at a 90% level.

Correlations are calculated for the RP and each CAMEL variable (Table 36) to judge their suitability for regression analysis. As suspected doubtful debts and impaired asset expense are highly correlated, at 0.770***. LnSize was also correlated with the RP at -0.596***, and less so with equity at -0.428***. To check if these correlations are likely to result in multi-collinearity problems, collinearity statistics are calculated as shown in Table 37. As results are within acceptable levels, with variance inflation factors well below 10 and tolerances above 0.10 (O'Brien, 2007), multi-collinearity should not be of concern.

Table 36 NBDTs Sample Pearson Correlations

	RP	Equity	Doubt Debt	Imp Asset	Growth	LnSize	ROA
Equity	.173**						
DoubtDebts	0.085	0.122					
ImpAsset	0.126	0.108	.770***				
Growth	.264***	0.091	-.186**	-0.117			
LnSize	-.596***	-.428***	-.213**	-.198**	-.294***		
ROA	0.141	0.147	-0.08	-.239**	-.230***	0.054	
Liq	0.079	.438***	0.011	-0.034	0.128	-.192**	-0.056

Note: *, **, *** indicates correlation is significant at the 90%, 95%, and 99% level, respectively.

Table 37 Collinearity Statistics

	Tolerance	VIF
Equity	0.639	1.565
DoubtDebts	0.384	2.603
ImpAsset	0.38	2.631
Growth	0.759	1.317
LnSize	0.688	1.453
ROA	0.797	1.254
Liq	0.78	1.282

5.3 Methodology

We answer research question 3 by applying ordinary least square (OLS) regression to model the risk-return relationship in equation (3). Initial analysis will be of equation (10), with RIs as detailed in Table 35 but without the industry dummy variable as shown in equation (3). Research question 4 is answered using equation (11) based on equation (4). This equation has been rewritten to incorporate RIs as detailed in Table 35.

$$RP_{NBDT} = C - \beta_1 Equity + \beta_2 DoutDebt_2 + \beta_3 ImpAsset\text{-}\beta_4 Growth - \beta_5 LnSize - \beta_6 ROA - \beta_7 Liq + \varepsilon \quad (10)$$

Note: RP_{NBDT} is the risk premium for individual NBDTs at balance date calculated by subtracting the NZ 1-year government bond rate from each bank's advertised 1-year secured debenture rate, C is a constant term, $\beta_{1...n}$ are regression coefficients, $RI_{1...n}$ are risk indicators extracted from published disclosure statements, RI variables are detailed in Table 35 and ε is an error term. This equation does not include the industry dummy shown in Equation (3).

$$Crisis_{NBDT} = C - \beta_1 Equity + \beta_2 DoutDebt_2 + \beta_3 ImpAsset - \beta_4 Growth - \beta_5 LnSize - \beta_6 ROA - \beta_7 Liq + \varepsilon \quad (11)$$

Note: $Crisis_{NBDT}$ is a dummy variable taking the value of (1,0) to indicate individual NBDTs which suffered a crisis event in 2006 or 2007, C is a constant term, $\beta_{1..n}$ are regression coefficients, $RI_{1...n}$ are risk indicators extracted from published disclosure statements, RI variables are detailed in Table 35, and ε is an error term.

Equation (11) then forms the basis of a binary logistic model from which the probability of crisis can be extracted. The model's ability to correctly predict a crisis firm will be tested and the probability of crisis variable regressed against the RP variable to determine if there is a statistically significant relationship present.

5.4 Regression Analysis

Regression results for equation (10) are reported in Table 38. The first model tested was a pooled model of all NBDTs over the period 2004 to 2006. Significant coefficients at the 1% level are obtained for the constant, LnSize and ROA and the model yielded an adjusted R-square of 0.399. The negative coefficient obtained for LnSize was consistent with prior expectations of larger banks having a lower RP due to the risk-reducing benefits of diversification as well as the possibility of higher-quality management and better reporting systems. The positive coefficient for the earnings ratio ROA was opposite to original expectations of firms with higher earnings having a lower required RP. Instead, it appears profitable firms offer an increased RP or deposit rate, possibly to grow the deposit base and loan book.

Table 38 Equation (10) – NBDTs' RP Regression Analysis

Year	2004-2006		2004		2005		2006	
	β	Sig	β	Sig	β	Sig	β	Sig
(Constant)	0.030		0.027		0.029		0.030	
	(10.551)	***	(3.921)	***	(5.455)	***	(7.157)	***
Equity	-0.014		0.001		-0.008		-0.007	
	(-1.916)		(0.021)		(-0.624)		(-0.629)	
DoubtDebts	-0.072		0.014		-0.131		-0.049	
	(-1.374)		(0.085)		(-1.188)		(-0.716)	
ImpAsset	0.084		-0.021		0.139		0.057	
	(1.931)		(-0.182)		(1.393)		(0.973)	
Growth	0.002		0.006		-0.001		0.001	
	(1.890)		(2.942)	***	(-0.571)		(0.796)	
LnSize	-0.003		-0.003		-0.003		-0.003	
	(-7.481)	***	(-3.535)	***	(-3.560)	***	(-5.022)	***
ROA	0.073		0.033		0.073		0.059	
	(3.199)	***	(0.706)		(1.742)	*	(1.479)	
Liq	0.003		0.028		0.005		0.000	
	(0.496)		(1.285)		(0.419)		(-0.007)	
Dependent Variable	RP		RP		RP		RP	
R Square	0.431		0.696		0.406		0.442	
Adjust R Square	0.399		0.611		0.291		0.353	
F-stat	13.118	***	8.172	***	3.517	***	4.969	***

Note: T-Statistics are reported in parentheses.
*, **, *** indicates significance at the 90%, 95%, and 99% level, respectively.

When equation (10) was modelled for individual years (2004, 2005 and 2006) the LnSize coefficient (-0.003) was the same for each year and significant at the 1% level. The ROA coefficient, however, lost statistical significance (significant only at a 10% level in 2005 year). The coefficient for growth was significant at the 1% level only in the 2004 year. Its positive sign could be an indication of depositors being unaware of the risk of investing in higher-growth financial institutions, and institutions being able to fund growth in their loan book by offering higher deposit rates.

Although the adjusted R-squares for models based on equation (10) range from a low of 0.291 in the 2005 year to 0.611 in the 2004 year, the lack of consistently significant risk indicators restricts the models' reliability. While size is an obvious determinant of the NBDT risk premium, a lack of significance in traditional risk indicators such as equity levels, doubtful debts, impaired assets and liquidity suggests disclosure is of little value to depositors.

The lack of significant regression coefficients was surprising given results shown in Table 34 of risk indicator means for crisis and non-crisis NBDTs. In the analysis of means, crisis NBDTs had a significantly (at a 1% level) higher risk premium and significantly less liquidity (also at a 1% level). Crisis NBDTs also have less equity, higher growth and are larger and more profitable than non-crisis NBDTs, though these differences are not statistically significant.

5.5 Logistic analysis

As univariate analysis revealed obvious differences between crisis and non-crisis NBDTs, research question 4 asked if NBDT disclosure information could be used to determine the probability of an NBDT suffering a future crisis event. To answer this question, disclosure risk indicators are used to estimate a binary logistic model from which the probability of crisis could be extracted for subsequent testing.

The binary logistic model was able to correctly classify 74% of the non-crisis NBDTs and produced only 20 false negative classifications (Table 39). However, when it came to crisis NBDTs, the model's ability to correctly classify crisis firms was little better than chance, correctly classifying only 56%. Of the 52 crisis firm years in the sample, the binary logistic model returned 23 false positives. When the probability of

crisis was regressed against the risk premium of sample NBDTs, in Table 41, no relationship was found, with the model having an F-statistic of 0.008. This result confirms the result of Poskitt (2008), who found no evidence of market discipline in New Zealand finance companies.

Table 39 Classification Table — NBDT Logit Analysis

Observed		Predicted		Percentage Correct
		Crisis	Non-Crisis	
		0	1	
Crisis	0	57	20	74.0
	1	23	29	55.8
Overall Percentage				66.7

Note: Variables entered on step 1, Equity, DoubtDebts, ImpAsset, Growth, LnSize, ROA, Liq and constant.

Table 40 Variables in Equation — NBDT Logit Analysis

	β	S.E.	Wald	df	Sig.	Exp(B)
Equity	-23.921	6.663	12.891	1	.000	.000
DoubtfulDebts	-21.003	23.469	.801	1	.371	.000
ImpAsset	19.205	20.239	.900	1	.343	2.191E8
Growth	.449	.362	1.539	1	.215	1.566
LnSize	-.098	.174	.320	1	.571	.906
ROA	22.311	10.336	4.660	1	.031	4.894E9
Liq	-4.582	2.626	3.046	1	.081	.010
(Constant)	2.309	1.332	3.004	1	.083	10.065

Table 41 NBDT Regression RP vs. Predicted Probability

	β	Sig
Constant	.018	
	(12.932)	***
Predicted Probability	.000	
	(-.090)	
Dependent Variable	RP	
R Square	0.000	
Adjust R Square	-.008	
F-stat	.008	

5.6 Discussion

Overall, the results of industry-wide[90] analysis of NBDTs have been less than compelling. While there is a difference in risk premium between the crisis group and the non-crisis group, any suggestion that this is a result of the application of market discipline is questionable. A further question to consider is the magnitude of the risk premium. Is a difference of 40 basis points between NBDT groups or 150 basis points between the non-crisis group and the return on government stock an adequate premium for risk? With hindsight, those who have lost money in NBDTs would not consider it to be so. Finally, if risk premium reflects the application of market discipline, what is it based upon? The only reliable predictor is size, whilst other traditional indicators of risk in banking (equity, asset quality, management, earnings and liquidity) are shown to be insignificant in the prediction of the risk premium (Table 38). If financial statements in the prospectuses of NBDTs contain information on which investors can make risk-return decisions, then these traditional risk indicators should be significant, as a large number of NBDTs subsequently failed.

[90] Regression analysis was undertaken

A prerequisite of market disclosure is that adequate information must be available about existing debts and the prospects of repayment (Lane, 1993). Given the number of NBDTs which have recently failed in New Zealand, we must conclude that adequate information was not provided to depositors. NBDTs are required to issue two documents prior to taking deposits from the public, an investment statement and a prospectus. The investment statement is typically brief and often contains no financial information, while the prospectus is more voluminous and *should* contain all necessary information required to make a risk assessment of the issuer. Unfortunately, much of the information provided in the prospectus is of poor quality.

Foremost in limiting the value of disclosure is its lack of timeliness, because when the prospectus is published it is already out of date. Prospectuses are normally published six months after balance date. Therefore, at best, information contained in them is six months old, but could be anywhere up to 18 months out of date when used by investors. Secondly, although financial statements are independently audited, many critical values, such as the value of the loan book, are determined by management, based on their experience and judgement. Last, it is difficult to make comparisons between different NBDTs as there is no standardised format, or official centralised repository of data, as there is for RBs.[91] For financial information to be of real value to investors it must be timely, reliable and comparable.

[91] RBNZ has available on its website all KIS statements in two excel spreadsheets, for New Zealand-registered, and overseas-registered, banks.

5.7 Conclusion

The objective of this chapter was to answer research question 3, is there a statistically significant relationship between New Zealand non-bank deposit-takers' risk premiums and their disclosure risk indicators? and, research question 4, is it possible to use New Zealand non-bank deposit-takers' disclosure to determine the probability of an institution suffering a future crisis event? Results obtained suggest there is no relationship between the RP required of NBDTs and their disclosure risk indicators. Furthermore, there is little to be gained from analysis of disclosure financial statements as much of the information is of poor quality. Therefore it is only possible to answer research questions 3 and 4 in the negative.

With poor-quality disclosure and no official oversight, no discipline was provided in the management of New Zealand NBDTs. As a result of a lack of discipline a large number of NBDTs have failed, putting at risk the savings of many New Zealanders. The failure of New Zealand NBDTs is not a failure of market discipline; rather it is a failure of the regulatory regime in place. NBDTs failed because the Securities Act 1978 and subsequent Securities Regulations did not require adequate disclosure. Market mechanisms are not always perfect, Stiglitz (1981) is able to demonstrate there will be periods of time in credit markets where there is either an over-supply or under-supply of funds, and the market will not clear at an appropriate price (interest rate). Such periods are a result of imperfect information. NBDTs enjoyed such a period from 2000 to 2006, the rapid occurring in NBDTs is evidence of little credit rationing being applied to NBDTs.

In Appendix 4 the results of case study analyses of four significant NBDTs are reported. Questions are raised as to the adequacy of corporate governance in these

institutions. In most cases they are managed by the founding shareholder(s), who completely dominated the firm. Extensive related-party transactions, often in violation of trust deeds, were common, and some NBDTs appeared to be the *private* banks of the owners, who used them to fund high-risk projects. In failed institutions which have been liquidated, liquidators and the Securities Commission have found it difficult to hold directors to account. Prosecutions, for example, against the directors of Bridgecorp have been long winded and expensive, with little likelihood of financial recompense to depositors as its principal, Rod Petricevic, is now a bankrupt and all his assets appear to have been transferred to family trusts. In other institutions which have been granted a moratorium by depositors, there is little likelihood of holding directors to account for their misdeeds as moratorium agreements have effectively given them a clean slate.

In Chapter 6 the various conclusions are brought together in addressing the overall research objective and answering specific research questions. The policy implications of this thesis are detailed, particularly with regard to the redesign of the regulatory framework for NBDTs. Areas for future research are also suggested.

6 Conclusion

This research has been inspired by the decision, in the early 1990s, of the Reserve Bank of New Zealand to design a new regulatory model for New Zealand banks. The system when introduced in 1996 placed a greater emphasis on self-discipline and market discipline than was common in most other developed banking markets, which at that time favoured prescriptive rules and regulator discipline. The New Zealand model required regular and timely public disclosure of comprehensive financial information so depositors and others could determine the riskiness of individual banks. The Reserve Bank as sole regulator of New Zealand banks has as its sole focus the protection of the financial system as a whole, with the new regime aimed at lowering compliance costs, reducing moral hazard and promoting market discipline, thereby alleviating the risk to taxpayers of bearing the cost of a bank crisis (Brash, 1995).

6.1 Introduction

The Reserve Bank was formally given responsibility for the registration and supervision of banks in 1987 following amendment of the Reserve Bank Act. The RBNZ was now responsible for the integrity of New Zealand's financial system, and the supervision of all banks, foreign exchange dealers and some large non-banks, including the DFC (Singleton, et al., 2006). Initially the Reserve Bank appeared to take its new duties lightly but was forced to change its attitude when problems arose twice at the BNZ, as well as at NZI Bank and the DFC. The BNZ, in which the Crown still retained an equity stake, required additional investment by the Crown, NZI Bank was similarly recapitalised by its Scottish owners, and the previously Crown-owned DFC was allowed to fail. The failure of the DFC was a learning experience for the Reserve Bank and

forced it to update and improve its procedures for the management of a failing financial institution (1991), prompting the review of bank regulation in New Zealand.

In many ways the Reserve Bank's redesign of New Zealand's banking system was ahead of its time. The Basel Committee on Banking Supervision's (2001) new capital accord (BASEL II) suggests greater prominence be given to market discipline as a third pillar, reinforcing the other two pillars of capital regulation and supervisory review. Barth, Caprio et al., (2001, 2004) after surveying banking systems in 107 countries in 1998, find traditional systems of prudential regulation of banks to be ineffective and ask if there are better ways of controlling banking activities. They suggest that in order to promote bank development, performance and stability, governments should design regulations and supervisory practices that "1) Force accurate information disclosure; 2) Empower private-sector corporate control of banks; and 3) Foster incentives for private agents to exert corporate control" (Barth, et al., 2004, pp. 245-246). Such a system to a large degree was already in place in the prudential regulation of New Zealand banks.

However, while the Reserve Bank, with the 1996 disclosure regime, took responsibility for and remedied problems in the banking system, nothing was put in place for non-bank deposit-takers. NBDTs take deposits from the public under provisions of the Securities Act 1978 and subsequent Securities Regulations. Deposit-takers are required to have in place a trust deed with a registered trustee company and produce disclosure in the form of investment statements and prospectuses. While the Securities Act 1978 established the New Zealand Securities Commission, the commission does not have a traditional supervisory role; instead it merely monitors the compliance of NBDTs with the Securities Act. Individual trustee companies act on

behalf of depositors and supervise NBDTs against the provisions of their negotiated trust deed.

This small, but important, subset of the financial system was left with no government agency specifically taking responsibility for prudential regulation and supervision. As well as offering depositors higher interest rates than those offered by registered banks, New Zealand NBDTs are an important source of funding for individuals and businesses, providing much of the consumer credit, small business lending and development funding. These are areas which are not well served by banks, yet are still important for economic development in New Zealand, which has a large number of small and medium-sized enterprises.

After a period of rapid growth, three NBDTs failed in 2006. The number of failures snowballed over the next two years, with one industry commentator listing 48 failed financial institutions[92], with more than $6 billion of primarily retail deposits frozen (Hickey, 2009). As result of what was now a crisis of confidence in the entire industry, many questioned the adequacy of the prudential regulation of these institutions. In addressing these concerns, the government in September 2007 announced its intention to make the Reserve Bank the sole regulator of NBDTs, charged with reviewing their prudential regulation (Black, 2007).

However, while the Reserve Bank was consulting stakeholders over the introduction of a simplified disclosure system supplemented with credit ratings, the situation was overtaken by the 2008 global financial crisis. In response to a worsening international credit situation, the then Minister of Finance, Dr Michael Cullen,

[92] See Appendix 3 for a full list of failed financial institutions as at November 2009.

announced in October 2008 the introduction of a temporary two-year opt-in retail deposit guarantee, open and immediately available to all banks and other deposit-takers.

6.2 Review of Research Objective, Methodology, Questions

The New Zealand economy in the period up to 2006 provides an opportunity to assess an alternative approach to the prudential regulation of deposit-takers, in a market free of many of the distortions which arise from traditional regulatory schemes. The overall objective of this research has been to assess the effectiveness of the prudential regulation of New Zealand financial institutions and judge if the country is well served by it. As there are significantly different regulations governing registered banks and non-bank deposit-takers, they must be tested separately. Despite their differences, a common feature of both is the extensive use of public disclosure and the expectation of market discipline in moderating excessive risk in deposit-taking. In banks, this was by design; in non-banks it occurred as there was no alternative. New Zealand depositors, regardless of their financial acumen, must shoulder a great deal of responsibility, being required to assess the riskiness of individual deposit-takers and determine if the returns offered are commensurate with the risk they are undertaking. Additionally, prior to 2008, there was no *safety-net* for depositors who might make an unwise investment decision.

The objective of this thesis has been to judge the effectiveness of disclosure when moderating the risk-taking behaviour of financial institutions. Ordinary least squares regression is used to test the hypothesis of there being be a statistically significant relationship between recognised disclosure risk indicators and an institution's required risk premium and/or changes in deposit levels. A depositor, after assessing the riskiness of various deposit-takers, should select those financial products

which most closely match their risk-return preference; in much the same way as an equity investor picks stocks. Riskier institutions have limited options available to themselves; either they must offer higher interest rates in compensation for their higher risk or else, when they attract fewer depositors than they want, they must raise funding elsewhere to maintain their size. Market discipline occurs as a result of many depositors acting in unison in response to unwarranted risk-taking. Alternatively, institutions can move in anticipation of market discipline, managing their risk in order to maintain their place in the market. Such active management of risk is a key task of management and a demonstration of self-discipline.

A review of existing literature on the prudential regulation of banks revealed the importance of financial literacy amongst depositors. This was particularly so in the application of market discipline by retail depositors (Lane, 1993; Llewellyn & Mayes, 2003). As New Zealand banks rely heavily on the retail market for funding (Figure 5) and the bulk of NBDTs funds are also from retail depositors, New Zealand households are surveyed. The objective of this survey (reported in Chapter3) was to gauge the attitudes of New Zealanders towards deposit risk and to determine their knowledge of disclosure entitlements. Overall we conclude that the New Zealand public has an apathetic attitude towards deposit risk and a poor knowledge of disclosure, which largely confirms earlier work by McIntyre, Tripe et al., (2009) on bank disclosure in New Zealand.

6.2.1 Research Question 1

Although the above survey findings suggest market discipline is unlikely to work, they do not preclude the possibility of a significant relationship between interest rates and disclosure risk indicators being present. This would certainly be the case if

management are discharging their duties prudently. After modelling the risk-return relationship in registered banks, the existence of a statistically significant relationship is confirmed. As the relationship is strongest at balance date (equation (6)), it is concluded discipline is due to self-discipline by bank management rather than discipline by depositors. This is the most realistic explanation of the result, as the only party privy to disclosure information at balance date is bank management.

Significant disclosure variables found in Model 2 (bal) (Table 29) are specific provisions as a percentage of assets, annual percentage growth, size as measured by the natural log of total assets and annual profit. It was also found when controlling for the inclusion of the TSB Bank (which in many ways is very different from other retail banks) that Tier 1 capital as a risk indicator lost all significance. Although liquidity was also shown to be significant, its positive coefficient ruled it out as a risk indicator. Instead it is suggested the relationship is due to banks adjusting deposit rates in order to manage their liquidity needs. It is thought likely that liquidity and Tier 1 capital are only indicators of risk if they are below *normal* levels. Barajas and Steiner (2000) for instance in providing evidence of bank management responding to market discipline indicate it is not the case in banks with the weakest fundamentals. These banks tended to perpetuate their problems rather than trying to correct them. Model 2 (bal) explained around 50% of the variability in bank risk premiums (3-month term deposit rate less the 3-month bank bill rate).

In testing the robustness of this model, macroeconomic variables are included to control for changes in inflation (ΔCPI_{t-1}), changes in productivity (ΔGDP_{t-1}) and exchange rates (TWI). The inclusion of these variables increased the model's explanatory power to over 61%, shown in Model 4 (bal) with a highly significant

inflation variable. Originally it was thought the interest rate inflation premium would be controlled for by using a risk premium which had the bank bill interest rate subtracted from it. However, on reflection it was decided that the significant inflation coefficient obtained for the inflation variable was due to the pass-through of changes in the Official Cash Rate (OCR) (the rate managed by the Reserve Bank to control inflation) to deposit rates being less direct in comparison to the bank bill rate, which is a true market rate. Research in New Zealand by Liu, Margaritis et al., (2008) has found the OCR pass-through to retail rates to be incomplete, while Petro, McDermott et al., (2001) confirm a similar situation occurs with mortgage rates.

However, inflation has little impact on previous findings in Model 2 (bal) as there is little change in the risk indicator coefficients in Model 4 (bal) when this macroeconomic variable is included. Overall, research question 1 can be answered in the affirmative: there is a statistically significant relationship between New Zealand-registered banks' risk premiums and their disclosure risk indicators.

6.2.2 Research Question 2

Research question 2 looked at the relationship between the change in deposit market share and disclosure risk indicators at both balance and publication date. Underlying this research question is the work of Goldberg and Hudgins (1996, 2002), who found depositors could also apply market discipline by limiting the volume of deposits. Results reported in Table 31 show a negative relationship between the coefficients for growth (1% significance) and Profit (5% significance) to deposit market share at publication date. This model explained 33% of variability in deposit market share of sample banks. Including other explanatory variables such as the TSB dummy and macroeconomic variables did not improve the explanatory power of the model at

all. When analysis of changes in deposit market share was moved to balance date risk indicators the resultant model had very low explanatory powers which are not statistically significant.

Given the evidence found in analysis for research question 1 suggests the existence of self-discipline rather than market discipline, the results of research question 2 analysis are not surprising. As growth is the only highly significant risk indicator found, it is hard to argue that depositors are exercising discipline. There is more likely to be a simple relationship linking past growth to present changes in deposit market share which does not depend on risk. Research question 2 is therefore answered in the negative as there is no evidence found of depositors withholding deposits from riskier banks.

6.2.3 Research Question 3

Research question 3 models the risk-return relationship of NBDTs. Given comments by the Reserve Bank as to the adequacy of returns to depositors in NBDTs (Allan Bollard, 2004) and concerns raised by the Securities Commission regarding non-compliance of disclosure (Securities Commission Staff, 2004), a significant relationship was expected. As a number of NBDTs failed from 2006 it was possible to divide the sample into two groups on this basis. Initial univariate analysis revealed significant differences between risk premiums and liquidity in failed NBDTs and surviving NBDTs (Table 34).

Regression analysis over the period 2004 to 2006 using equation (10) produced highly significant coefficients for size and profit, resulting in a model with an explanatory power of 40% (Table 38). However, when the relationship was modelled

for individual years, the result appeared to be due to the year 2004 in which the model had an explanatory power of 61%. In the 2005 and 2006 years the only significant coefficient was size and the explanatory power of the model was 35% and 29% respectively. A lack of significance in traditional risk indicators such as equity levels, doubtful debts, impaired assets and liquidity suggest disclosure is of little value to depositors wishing to assess the riskiness of NBDTs; so, research question 3 is also answered in the negative.

6.2.4 Research Question 4

Despite the failure to a risk return relationship in NBDTs, the large number of failures in the industry justified further analysis. Logistic analysis was therefore used in an attempt to answer research question 4. This question asked if it was possible to use past disclosures to determine the probability of an institution suffering a crisis event. Using NBDT disclosure risk indicator variables, a binary logistic model was constructed, from which the probability of crisis could be extracted for subsequent tests was developed. This model was able to correctly classify 74% of surviving NBDTs. However, its ability to correctly classify crisis firms was little better than chance, correctly classifying only 56%. When the probability of failure was modelled against each institution's risk premium, no significant relationship was found. From these results it appears research question 4 can also be answered in the negative.

6.2.5 Summary

Analysis of New Zealand's registered banks sector suggests public disclosure adds value to New Zealand's financial system. However, the significant relationship found between disclosure risk indicators and bank risk premiums was not as a result of

market discipline, rather it is argued self-discipline was the mechanism, with banks moving in anticipation of market-discipline. This demonstrates that bank management and directors are discharging their duties in a prudent manner, as expected by the disclosure regime. This was in contrast to non-bank deposit-takers, where disclosure was judged to be ineffective, and of no practical use due to its poor quality. Management of NBDT appeared to receive very little oversight from depositors, their trustees or official agencies. As a result, many seem to have managed their institution in their own interests, with little consideration given to other stakeholders. Failures which occurred in NBDTs from 2006 resulted from deficiencies in the prudential regulation of these deposit-takers, demonstrating the severity of asymmetric information and moral hazard problems which can arise if prudential regulation is not correctly designed.

6.3 Contributions of the Thesis

The New Zealand economy prior to 2008 period provides a unique opportunity to assess prudential regulation in a market free of the distortions arising from the safety nets of deposit insurance and government guarantees. In that context, this study makes important contributions to research into the prudential regulation of deposit-taking institutions in a number of areas.

While it is agreed that a financially literate and motivated depositor base is necessary for the application of market discipline, the findings in Chapter 4 demonstrate that despite apathetic retail depositors, public disclosure of financial information is still effective in moderating excessive risk-taking in registered banks. A significant feature of the New Zealand bank disclosure regime is the responsibilities placed on bank directors, who are ultimately held personably accountable for the accuracy of disclosures and the maintenance of all other prudential standards. We argue this is how

it should be, as bank management are best placed to manage bank risk. They have access to the best-quality information regarding bank conditions and are therefore able to apply prompt corrective action more directly, it their interests are correctly aligned. Regulatory systems which rely on regulators to apply *prompt* corrective action entail significant delays and lack responsiveness due to the very limitations of financial information supplied to external parties.

Reporting and publishing disclosure information on a quarterly basis requires bank boards to continually keep risk and performance metrics on their agenda. Although few retail depositors avail themselves of this disclosure information, it is expected wholesale investors, in both New Zealand and overseas markets, would continually monitor disclosure information. Banks largely sell intangible services; it is often difficult for bank customers to perceive differences between the many competing banks. The most valuable asset a bank has is its brand or reputation and banks have always gone to great lengths to protect their image. Banks should expect disclosure statements to be read by their competitors and the media, with deficiencies being highlighted and reported upon.

This paper makes a contribution to what is a growing body of literature linking bank interest rates to specific risk indicators. Confirmation is provided of important risk indicators like the asset quality variable specific provisions along with growth, size and profitability. Of interest is the lack of significance of Tier 1 capital, once the TSB Bank is considered. Somewhat confounding was the coefficient for liquidity, which was highly significant but of an opposite sign to what a risk intuition would suggest. The results obtained for both Tier 1 capital and liquidity imply they are not indicators of risk at normal levels, However it cannot be assumed they may not assume critical

importance in times of stress. This hypothesis needs to be explored further in other markets.

The New Zealand bank disclosure regime provides support for the suggestions of Barth, Caprio et al., (2001 & 2004) that, in order to promote bank development, performance and stability, governments should design regulations and supervisory practices that "1) Force accurate information disclosure; 2) Empower private-sector corporate control of banks; and 3) Foster incentives for private agents to exert corporate control" (Barth, et al., 2004, pp. 245-246). It is contended that such a system is in place in New Zealand. Policy makers who are reviewing bank regulations in the aftermath of the global credit crisis would do well to examine the New Zealand disclosure model if they want to address adverse moral hazards arising from poorly designed deposit insurance and other protections and/or restrictions imposed on banks in the name of prudential safety. Reinhart and Rogoff (2008) in their analysis of the 2007 US subprime crisis suggest, in most financial crises a contributing factor is financial liberalisation. In the 2007 US case, there was no de jure liberalisation rather it was de facto liberalisation, resulting from rapid change in the industry with new markets, investment products and business structures which were not even considered by earlier regulators. Comprehensive disclosure should be required and market discipline encouraged, supporting prudential regulation, which it can be argued, will always lag change.

In contrast to the banking sector, analysis of New Zealand NBDTs reveals the Crown has failed in its duty to depositors. The lack of a risk-return relationship and the numerous failures which occurred in this industry from 2006 are ultimately a result of deficiencies in the outdated legislation under which they operate. Disclosure in NBDTs was inadequate, management had carte blanche to set their own rules and there was no

government body charged with their oversight. The Crown has a duty to provide the framework necessary to ensure an efficient financial system can operate. Following review of bank regulation in 1996, the Crown should have reviewed the operation of NBDTs. This research should be of immediate benefit to those New Zealand agencies charged with designing a new regulatory framework for this important sector of the New Zealand financial market.

Finally, we commend the Reserve Bank for its foresight, in the early 1990s, in designing a new regulatory model for New Zealand banks. They were fortunate in that they were working with a blank canvas and were able to look at what did and did not work in other economies and take innovative ideas from the best research of the day. In one of the first reviews of the effectiveness of New Zealand's disclosure regime Tripe (2001, p. 11) said, "*The lack of* [bank] *failures is more likely a reflection of a benign operating environment for banks, rather than a reflection of the effectiveness of the disclosure regime*" It has now been 13 years since the disclosure regime was introduced and no registered bank has come close to failing. In the 13 years prior to the introduction of the disclosure regime, a number of banks and the DFC (which was supervised by the Reserve Bank) either failed or required significant recapitalisation to survive.

New Zealand banks weathered the global credit crisis well, although the government in 2008 introduced a deposit guarantee scheme. It is debatable if the guarantee was necessary at the time, but the government should now remove the guarantee as quickly as possible; to allow the market to operate freely encouraging market-discipline and self discipline once again. The New Zealand disclosure regime

will never guarantee a bank will not fail, nor should it try to do so, but it should assist the functioning of a sound and efficient financial system.

6.4 Specific Policy Recommendations

New Zealand has a banking regulatory system which caters well to the needs of the country and its banks. At present its most significant deficiency is the temporary deposit guarantee, which is due to expire at the end of 2011. Given the previous findings as to the financial knowledge of the general population, it may prove difficult to convince the public bank deposits are no longer guaranteed by the Crown after 2011. While the Reserve Bank should not undermine public confidence in banks, it should ensure the financial literacy of the New Zealand public is lifted. Failure to do so will result in the replacement of an explicit deposit guarantee with an implicit one, placing a contingent liability on future taxpayers.

The Crown has already instigated a complete revision of the regulation of non-bank deposit-takers and has given the Reserve Bank responsibility for the prudential regulation of them (Black, 2007). The review process is currently under way and it is hoped a new regulatory framework is in place prior to the end of the temporary deposit guarantee. There are many advantages to be had from key features of the registered bank regulation being applied to the regulation of NBDTs. Any NBDT regime should ensure directors and management are held accountable and require regular public disclosure of financial information with which risk can be judged.

The soundness of New Zealand banks is in a large part due to the quality of their senior management and directors. Importantly they are held accountable, with the Reserve Bank on first registering a bank requiring bank directors and key executives

required to satisfy a *fit and proper* test. Separation is required between directors and management to ensure management is provided with effective oversight and, importantly, bank directors must attest in disclosure statements that all necessary systems are in place with minimum standards maintained. Directors are required to sign all disclosure statements, becoming civilly liable for the content of all disclosure statements. These features should be incorporated in the regulation of NBDTs to ensure they are soundly managed.

If depositors are to be responsible for their own investment decisions they should have access to quality information on which to judge risk. Currently, NBDTs publish prospectuses and financial statements on either an annual or six-monthly basis, with a delay of five to six months between balance date and publication. This disclosure is too infrequent and out-dated to add value to the investment decision. An important technique used to make investment decisions is the making of comparisons between the offerings of competing deposit-takers. To facilitate this process, disclosure must be standardised and readily available. The Reserve Bank should require NBDT disclosure to be on a quarterly basis (with a six-month audit) and published within three months of balance date. A simplified disclosure statement, comparable to a bank Key Information Summary (KIS), should be available on demand from all deposit-takers and all should be published on the Reserve Bank's website.

Finally, minimum prudential standards should be set for all NBDTs, replacing current trust deeds with a standard model; to have NBDTs set their own standards is completely unacceptable. The trust deed should include minimum capital standards using a simplified risk-weighted approach, and set restrictions on related-party transactions (including management contracts and the sale and purchase of related-party

assets as well as related-party lending) and credit concentrations. If trustees are to have an ongoing role in the supervision of NBDTs, as currently suggested by the Reserve Bank, their fiduciary duty must be broadened to include potential investors. Trustees could assist the independence of NBDT boards of directors by being responsible for the appointment of independent directors as well as the appointment, remuneration and receiving of reports from auditors and rating agencies.

Undoubtedly, any upgrading of the regulatory regime for NBDTs will impose compliance costs on institutions. Larger institutions will be able to minimise the cost of compliance by spreading it over a wide asset base. Small institutions should not be allowed to avoid meeting their minimum regulatory requirements simply on the basis that they cannot afford them; one would not buy a flight on a small aircraft if one knew the owner could not undertake required minimum safety maintenance. If NBDTs are unable to comply, they should not be taking deposits from the public. The Crown has no obligation to support small deposit-takers at the expense of taxpayers.

6.5 Critical Review of Thesis and Suggestions for Future Work

This thesis was subject to a number of limitations. The financial literacy survey in Chapter 3 was designed to reveal if the New Zealand public was significantly knowledgeable enough to apply market discipline. As the only investors who can apply market discipline are those with substantial funds, a better option may have been to survey only this population group. An interesting study could be undertaken comparing the attitudes to risk and financial literacy of large retail depositors in both registered banks and non-bank deposit-takers now given deposits are now guaranteed and after the guarantee is removed. Rather than employing a self-administered survey, either personal interviews or focus group discussions may yield more insightful results.

The empirical testing of the risk-return relationship in registered banks (Chapter 4) and non-bank deposit-takers (Chapter 5) occurred towards the end of what was a relatively benign period (2004-2006) for the New Zealand economy. By its nature prudential regulation assumes critical importance only when the economy is undergoing significant shocks. A comparative study should therefore be undertaken of the risk-return relationship in New Zealand deposit-takers after the temporary deposit guarantee has expired and when changes to the prudential regulation of non-bank deposit-takers have been introduced. Presumably by then international credit markets will have resumed some semblance of normality, but hopefully memories of the failure of New Zealand NBDTs and the global credit crisis will motivate depositors to consider risk as well as return when they are investing their precious savings.

While it is suggested that the disclosure regime applied to registered banks is effective in moderating excessive risk taking, a comparative study should be undertaken to determine if risk indicators in New Zealand banks are lower than in similar sized banks in other countries, which are subject to different regulatory regimes. A safe and sound banking system is considered a public good which should be provided by the state; a question which could also be addressed is the cost to taxpayers of providing this public good; presumably it would be greater in countries which rely on extensive regulator supervision. A cross country study such as this could also measure the impact of the recent global credit crisis on banks. If effective bank regulation contributes to efficiency of a country's financial system external shocks should have less impact than in countries with less efficient financial systems.

7 Appendices

Appendix 1 2006 Depositor Risk Survey (Massey/Auckland Universities)

Section A: Your Bank

1. Please tick the one bank you consider to be your **MAIN** bank – that is the bank where your salary/wages are paid into and/or where most of your banking transactions take place

☐ ANZ ☐ ASB ☐ BNZ ☐ KiwiBank ☐ National
☐ TSB ☐ Westpac ☐ Other (please specify)

2. Approximately how long have you been with your **MAIN** bank? (Please tick)

☐ Less than 1 year ☐ 1-2 years ☐ 3-5 years ☐ 6-10 years ☐ 11-15 years
☐ More than 15 years

Section B: Your Characteristics

So that we can see if others, who have similar characteristics to you, have the same experiences with banks and opinions about their banking, we have five demographic questions we would like to ask.

3. What is your **age**?

❑ Under 20 ❑ 20-29 ❑ 30-39 ❑ 40-49 ❑ 50-59 ❑ 60-69 ❑ 70 and over

4. What is your **sex**? ❑ Male ❑ Female

5. What is the last level you completed in your **formal education**?

❑ No Qualification ❑ Overseas Secondary School Qualification
❑ Fifth Form Qualification ❑ Vocational Qualification
❑ Sixth Form Qualification ❑ Bachelor Degree (university)
❑ Higher School Qualification ❑ Higher Degree (university)
❑ Other NZ Secondary School Qualification ❑ Other Tertiary Qualification

6. Which of the following best describes your **combined annual household income** (before tax)?

❑ $20,000 and under ❑ $20,001-$25,000 ❑ $25,001-$30,000 ❑ $30,001-$40,000
❑ $40,001-$50,000 ❑ $50,001-$70,000 ❑ $70,001-$100,000 ❑ $100,001 or more

7. Which PROVINCE do you live in? (e.g.Otago, Manawatu, Northland etc)

Section C: Bank Risk

The following question is about bank **risk.** Please circle the number which best describes your level of agreement or disagreement with the following statement.

8. In general, regardless of which bank it is, there isn't much risk involved in banking with any of them

Strongly Agree						Strongly Disagree
1	2	3	4	5	6	7

9. Where would you most likely expect to find information about bank risk (the risk that you could lose all or part of the funds you have on deposit)? (Please tick ONE only)

☐ Bank branch staff ☐ Bank web site ☐ Bank advertising ☐ News media
☐ Reserve Bank of NZ ☐ Other (please specify)

10. What is the most important source that you rely on to judge your main bank's risk? (Please tick ONE only)

☐ Recommendations from family/friends
☐ Advice from my financial advisor
☐ Bank advertising
☐ Formal disclosure statements by the bank
☐ Reports/reviews in the media
☐ Other (please specify)

11. All banks operating in NZ are required to publish disclosure statements that are supposed to provide you with information with which you can judge bank risk. Which of the following best describes your situation? (please tick ONE only)

☐ I was not aware of the availability of bank disclosure statements
☐ People at my bank told me about them and I have looked at them
☐ I have heard about them from another source and I have looked at them
☐ People at my bank told me about them, but I have not looked at them
☐ I have heard about them from another source, but I have not looked at them

12. In the event of a bank collapse, I would expect that (please tick the ONE statement that you believe is most correct)

☐ The risk of a bank collapse is so small it bank deposits is not worth worrying about
☐ The Government has a moral obligation all bank protect depositors from losses
☐ I would not lose any money as all bank deposits are guaranteed by the bank owners
☐ I would not lose any money as are guaranteed by the Govt/RBNZ
☐ I would not lose any money as deposits are insured
☐ I could lose all or part of my deposits

Section D: Finance Company Risk

The next three questions are concerned only with finance companies as opposed to registered banks.

13. Where would you most likely expect to find information about finance company risk (the risk that you could lose all or part of the funds you have on deposit)? (Please tick ONE only)

☐ Their branch staff ☐ Their web site ☐ Their financial statements
☐ Their advertising ☐ Reserve Bank of NZ ☐ Securities Commission
☐ News media comment ☐ Other (please specify)

14. What is the most important source you rely on to judge finance company risk? (Please tick ONE only)

☐ Recommendations from family/friends
☐ Investment statement and prospectus from the company
☐ Advice from my financial advisor
☐ Reports/reviews in the media
☐ Finance company advertising
☐ Other (please specify)

15. All finance companies operating in NZ are required to supply an investment statement and make available a registered prospectus that an investor needs to make an informed decision on whether or not to invest. Which of the following best describes your situation? (please tick ONE only)

☐ I was not aware of the investment statement or prospectus
☐ I was given the investment statement but did not ask for the prospectus
☐ I have never considered investing in a finance company
☐ I was given the investment statement but was not aware of the prospectus
☐ I looked at the investment statement and prospectus before making an investing decision

Section E: Your Investments

As part of our study we would like to understand the type and level of investments New Zealanders are making and whether you see banks as riskier or less riskier places to invest your money. The following question asks you to identify which, if any, investments you have. We are asking you to indicate to the nearest $1000 your general investments – e.g. $5000 in shares. The last part is asking you your perception of how risky you believe this type of investment to be. So, if you had $750 in a domestic bank cheque account, which you thought had only a little risk, you would tick Yes, put in $1000 for Value, and maybe put in a 2 or 3 for Risk. If you are unsure about any investment simply leave it blank and go to the next one. And, as with any of the questions in this survey, if you do not want to, or are unable to answer the whole question, please simply leave it blank.

Investment Have you a …	yes	Value to nearest $1000,	Risk 1 = no risk at all 10 = extremely risky
Domestic Bank cheque account	☐		
Domestic Bank savings account	☐		
Domestic Bank term deposit	☐		
International Bank cheque account	☐		
International Bank savings account	☐		
International Bank term deposit	☐		
Shareholding in own business			
Home ownership (market value less outstanding mortgage)	☐		
Domestic Stock market shares	☐		
International Stock market shares	☐		
Personal pension/superannuation	☐		
Endowment policy (life insurance paying benefit on reaching certain age, or early death)	☐		
Personal investment property (e.g. antiques, artworks, collectibles)	☐		
NZ Government bonds	☐		
International Government bonds	☐		
Domestic Finance company bonds/term deposits	☐		
International Finance company bonds/term deposits			
Domestic Unit trusts – operated by a bank	☐		
Domestic Unit trusts – operated by a non-bank financial institution	☐		
International Unit trusts – operated by a bank	☐		
International Unit trusts– operated by a non-bank financial institution	☐		
Foreign currency (cash)	☐		
Domestic Investment trust shares	☐		
International Investment trust shares	☐		
Domestic Investment property (not the family home)	☐		
International Investment property (not the family home)	☐		

Appendix 2 Your Right to Know Brochure

YOUR RIGHT TO KNOW

GET INFORMED ABOUT INVESTING

SECURITIES COMMISSION NEW ZEALAND
Helping people make better investment decisions

Print this page

Do you know the single biggest difference between people who make money investing and those who lose their shirts? It's information.

People who succeed at investing do their homework before they hand over any money.

Most people who become victims of scams have invested on the basis of someone's word and have not properly checked out the investment.

GETTING INFORMED

It's not hard to get information about genuine investments. In fact, the law gives you the right to this information. What's more, the most important information must be given to you in a simplified form that won't take long to read. This includes crucial information about:

- the risks involved in the investment,
- the expected returns,
- the fees you will pay, and
- how easily you can cash it in.

You are entitled to this information. You should ask for it and use it when making your investment decisions. Absence of the legally required information is a sign of a scam.

KEEP ASKING QUESTIONS

If you are unsure about any aspects of an investment, keep asking questions or seek a second opinion. In the investment world asking questions is not being dumb – it is the sign of an astute investor. If your question is about an important issue (e.g. fees you will pay, or the security of your money) get the answer in writing.

SAYING "NO" IS OKAY

If you can't understand the answers to your questions, don't invest. It's your money. Why hand it over to someone who can't, or won't, fully explain what will happen to it?

KEY INFORMATION YOU ARE ENTITLED TO

Most investments offered to people in New Zealand require two offer documents – the investment statement and the prospectus.* These documents are prepared by the "issuer" i.e. the company or organisation offering the investment.

THE INVESTMENT STATEMENT

The investment statement must be given to you before you pay any money. The investment statement should answer these questions:

- What sort of investment is this? What am I actually buying?
- Who is involved in providing it to me?
- How much do I pay?
- What are the charges?
- What returns will I get?
- What are my risks?
- Can the investment be altered?
- How do I cash in my investment?
- Who do I contact with inquiries about my investment?

- Is there anyone I can complain to if I have a problem with the investment?
- What other information is available about this investment?

All investment statements must answer these questions. This enables people to compare one investment with another.

Read the investment statement. If you don't you may not be aware of important factors that could strongly affect your decision on whether or not to invest.

THE PROSPECTUS

The prospectus has detailed information about an investment, including specific financial and legal information. Some of this may be easy for ordinary investors to understand, but some of it will be complex.

The prospectus has information that is not in the investment statement. For example:

- what the people promoting the investment stand to gain from it, and any conflicts of interest they may have;
- important commitments the company may have (e.g. long term leases on buildings, key contracts, and any court proceedings it is involved in);
- the company's most recent financial information, and in some cases, financial information for the previous five years;
- the key points in any trust deed or participation deed. These deeds are important legal documents. They cover things like how the trustee or statutory supervisor can protect investors, any financial limits imposed on the trust, and whether other people could be ahead of you in the line up of creditors - meaning they'd be paid out before you, should the company go bust.

THE PROSPECTUS *(Continued)*

If the investment is recommended by a financial adviser he or she should have read the prospectus. Ask the adviser to explain any important points in the prospectus.

You can ask the issuer (the person or company offering the investment) to send you a prospectus free of charge. They must send it within 5 days of receiving your request. The prospectus must be registered with the Companies Office, where the public can view it. Prospectuses can be viewed at www.companies.govt.nz.

DEEDS AND CONSITUTIONS

Deeds are legal documents that set out what the manager of an investment can do with investors' money. They also explain investors' rights, such as the trustees' powers to look after investors' interests.

Bonds and debentures (except debentures offered by registered banks), superannuation schemes, and unit trusts must have a trust deed. Other New Zealand based collective investment schemes must have a deed of participation.

There is no deed for shares. Instead, the company must have a constitution which sets out the rules for running the company.

Deeds and constitutions can be complex and hard for ordinary investors to understand. An investment adviser should be familiar with them for any investment they recommend to you. Ask them to explain any important points. The key terms of a deed must be summarised in the prospectus.

You can ask for the trust deed or deed of participation. Most deeds must also be registered with the Companies Office, where people can see them.

INFORMATION YOU SHOULD GET AFTER YOU INVEST

CONFIRMATION OF INVESTMENT

You are entitled to written confirmation of your investment. For one-off investments (e.g. buying a debenture) a certificate will be sent for each investment. If you make regular payments into one investment scheme (e.g. a unit trust) the managers are generally required to send a six monthly statement showing investments made in that period. However, you can ask for an updated statement at any time.

FINANCIAL STATEMENTS

Annual financial statements are required for almost all investments. These must be audited and registered with the Companies Office. Investors can ask for a copy of the financial statements.

ANNUAL REPORTS

Companies and superannuation scheme trustees must produce annual reports which explain how the company or the scheme performed over the year.

Important information in an annual report includes:

- financial statements for the previous financial year, including whether the investment made a profit or a loss, what happened to the value of its assets or debts, and payments to investors;
- notes to the financial statements to help investors understand the accounts;
- an audit report confirming that the financial statements meet required accounting standards;

- the names of the directors, and payments made to directors and senior managers; and
- for share investments, the names and shareholdings of the largest shareholders.

Investors are entitled to be sent the annual report. It will give you pointers on the future prospects of the investment and help you decide whether to keep your money in the investment, or sell up and invest somewhere else.

GUARANTEES

Some investments have guarantees, where someone offers to protect you from losing money on an investment.

How useful the guarantee is depends on:

- the terms of the guarantee (e.g. does it cover all or part of your money, and when the money will be paid out);
- the financial strength of the person or organisation who offers it. If the guarantor is financially weak it may not mean much.

If the guarantor is financially linked to the company you are investing in, you may find that both go bust at the same time.

Investors are entitled to a copy of the guarantee and of the most recent annual and half-year financial statements of the guarantor. These will help you decide if the guarantor has enough assets to meet their obligations.

This leaflet is for general guidance only. If you are in doubt or would like definitive information you should seek professional advice.

*Some investments don't require these documents, but they do have to have other documents that explain the investment (e.g. a product disclosure document or a key features document).

Appendix 3 Deep Freeze List - Finance Industry Failures (Hickey, 2009)

	Deposit-taker			Deposits $m	Depositors	Expected Recovery
1	National Finance 2000	May 06	receivership	25.5	2026	48%
2	Provincial Finance	Jun 06	receivership	296	14000	92%
3	Western Bays Finance	Jul 06	receivership	48	2500	82%
4	Bridgecorp	Jul 07	receivership	458.7	18000	10%
5	Nathans Finance	Aug 07	receivership	174	7082	max. 10%
6	Chancery Finance	Aug 07	liquidation	17.5	1374	0%
7	Property Finance Securities	Aug 07	in and out	170	4000	10%
8	Five Star Consumer Fin	Aug 07	receivership	51.1	2145	22.5-25%
9	Antares	Aug 07	liquidation	3.2	100	~0%
10	LDC Finance	Sep 07	receivership	19.3	995	100%
11	Finance & Investments	Sep 07	receivership	16	370	
12	Clegg & Co	Oct 07	receivership	15.1	496	50-60%
13	Beneficial Finance	Oct 07	moratorium	24.2	750	
14	Geneva Finance	Oct 07	moratorium	138	3000	85%
15	Capital+Merchant	Nov 07	receivership	190	7000	0-2%
16	C+M Inv (ex Blue Chip Fin)	Nov 07	receivership	1.5	60	0%
17	Numeria Finance	Dec 07	receivership	6.7	480	40-44%
18	MFS Pacific Fin (OPI)	Mar 08	liquidation	335	12000	23%
19	Boston Finance	Mar 08	moratorium	39.5	1500	21%
20	ING funds x2	Mar 08	suspended	520	8000	56-63%
21	Lombard Finance	Apr 08	receivership	127	4400	17-29%
22	Kiwi Finance	Apr 08	receivership	1.7	42	15%+
23	Tower Mortgage Fund	Apr 08	closed	242	5000	
24	Cymbis NZ (Fairview)*	May 08	receivership	6.9	797	20%
25	Belgrave Finance	May 08	receivership	20.5	1000	24-36%
26	IMP Diversified Fund	Jun 08	moratorium	15.8	1015	< 100%
27	Dominion Finance	Jun 08	receivership	224	6055	10-25%
28	North South Finance	Jun 08	moratorium	85.5	6925	
29	St Laurence	Jun 08	moratorium	240	9000	
30	Dorchester	Jun 08	moratorium	176	7800	
31	Canterbury Mortgage Trust	Jul 08	closed	250	5000	
32	Hanover Finance	Jul 08	moratorium	465	13000	
33	Hanover Capital	Jul 08	moratorium	24	1100	
34	United Finance	Jul 08	moratorium	65	2400	
35	Guardian Mortgage Fund	Jul 08	closed	249	3700	
36	Totara Mortgage Fund	Jul 08	closed	60	2400	
37	AMP NZ Property Fund	Aug 08	suspended	419	2900	
38	AXA Mortgage bonds	Aug 08	closed	117	90	
39	Strategic Finance	Aug 08	moratorium	330	15000	85-93%
40	St Kilda (All Purpose)	Aug 08	receivership	6.9	419	50-72%
41	Compass Capital	Aug 08	suspended	20.2	800	
42	AXA 3x mortgage funds	Oct 08	suspended	225	5000	
43	Guardian mortgage units	Nov 08	suspended	56	4500	
44	Orange Finance	Dec 08	moratorium	23.2	2500	?? 15%
45	Mascot Finance	Mar 09	receivership	70	2558	
46	Compass Capital	Mar 09	receivership	13	500	100%
47	Strata Finance	Apr 09	default	0.5	21	
48	Structured Finance	May 09	suspended	33	172	
	Total			$6,114	189772	

Although it may not be possible to build a reliable prediction model of the failure of NBDTs based solely on the financial data available to depositors, we must, in order to avoid a repeat of the current crisis, understand its causes. To this aim, a case study analysis of four significant failures in 2006 and 2007 was undertaken, looking for causes and patterns. The failures chosen are those of Provincial Finance Ltd (PFL), Bridgecorp Ltd (BCL), Five Star Consumer Finance Ltd (FSCF), and Geneva Finance Ltd (GF). These four firms, while representing different sectors of the NBDT industry, are thought to illustrate problems common to other firms in the industry. We report significant findings from this analysis below.

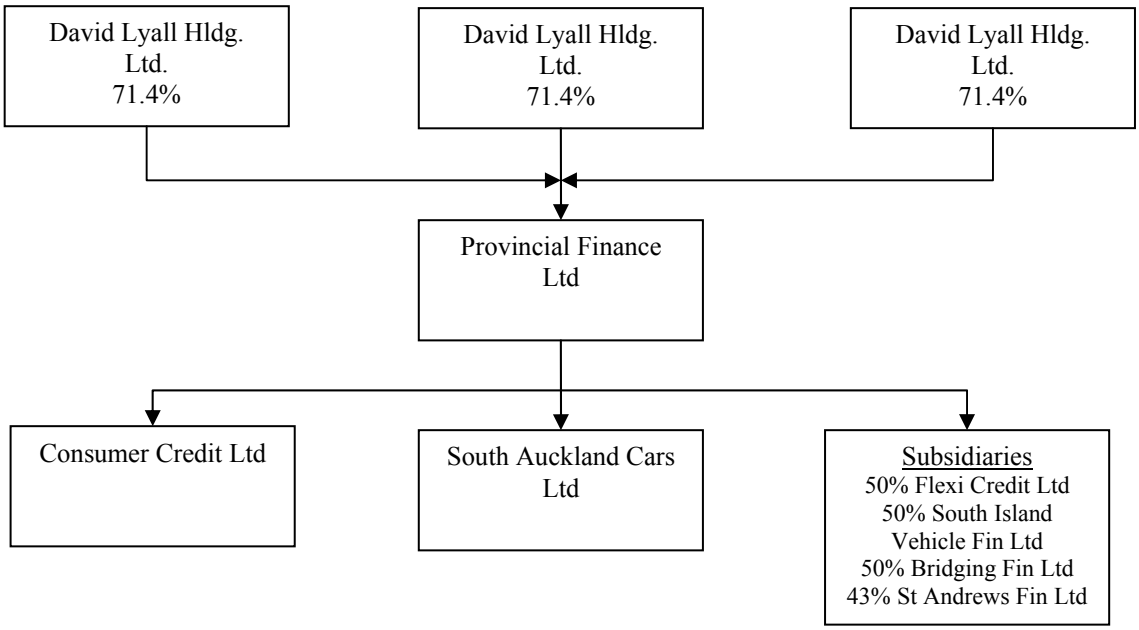
Provincial Finance Ltd

Provincial Finance Ltd (PFL) was the second firm to collapse in 2006. Originally established in 1987 in Christchurch as a provider of mortgages to first-home buyers, it had enjoyed rapid growth[93] from 2001, when it began to provide financing to secondhand-car dealers and their customers in South Auckland, many of whom had been unable to obtain financing from other sources. The PFL business was further expanded with the establishment of a car sales yard in South Auckland (selling repossessed cars), a consumer credit division, and a 50% equity position in Australian St Andrews Finance (SAF) (Figure 10). As PFL was based in Christchurch, it relied on

[93] PFL reported total assets of NZ$351 million in March 2006, compared to NZ$28 million in March 2001, representing a 65% annual growth in assets over a five-year period.

others to process loan applications for it. In most cases this was undertaken by car sales people, supported with a credit assessment of the borrower by Veda Advantage[94].

Figure 10 PFL Structure reported in its December 2006 Prospectus.

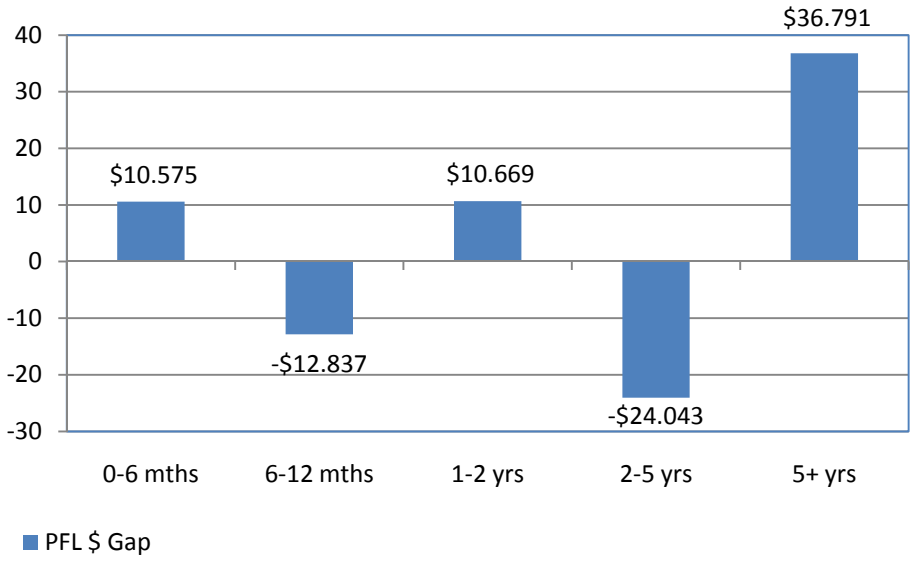


Although the quality of the loan book at PFL was not good, possibly due to the decision to delegate the lending decisions, it was only the indirect reason for the collapse of the firm. Questions as to the adequacy of the firm's bad debt provision, raised in January 2006, resulted in a drop in deposits from both new and existing investors, placing immense liquidity pressure on the firm. Where in the past it had been able to raise virtually unlimited amounts of capital to fund new growth and repay those few investors who did not roll over their deposits on maturity, this was no longer the case. Figure 11 shows the dollar gap for PFL as at September 2006 and, while the firm had approximately NZ$10 million in surplus assets maturing in the six-month maturity bracket, it had a deficit of NZ$13 million in the six- to 12-month maturity bracket.

[94] Inquiries by the receivers have uncovered some irregularities in this procedure and they have instituted legal proceedings against Veda Advantage.

While, on the face of it, one would largely offset the other, it is likely that the NZ$10 million in the six-month maturity bracket (plus any new deposits) would be used to fund growth, leaving insufficient funds to repay deposits maturing in 2006, if investment rates fell.

Figure 11 PFL $Gap ($m) Assets-Liabilities Sept 2005



In March 2006, PFL's liquidity situation became desperate when directors took NZ$20 million out of the business in a series of related-party transactions. This involved PFL purchasing Tasman Pacific Insurance for NZ$25.4 million from PFL owners David Lyall and John Edilson. Lyall and Edilson then purchased PFL's position in St Andrews Finance for NZ$3.3 million. Ultimately this transaction spurred PFL's trustee, Permanent Trustees Ltd, to appoint a liquidator at PFL to try to protect the interests of debenture-holders. The funds taken out of the business, combined with some additional equity capital, may have been sufficient to allow the firm to trade its way out of its immediate difficulties.

PFL receivers Noone and Hollis in their July 2009 receiver's report informed creditors, legal action against Veda Advantage had been successfully concluded and a final distribution made to secured debenture holders, bringing pro-rata principal repayments to $0.922. As no funds remained, accrued interest would not be paid to debenture holders and holders of redeemable preference share would not recover any funds. Financial statements issued by the Receiver show repayments to debenture holders totalled $273.013 million and Receivership fees $3.266 million (Noone & Hollis, 2009).

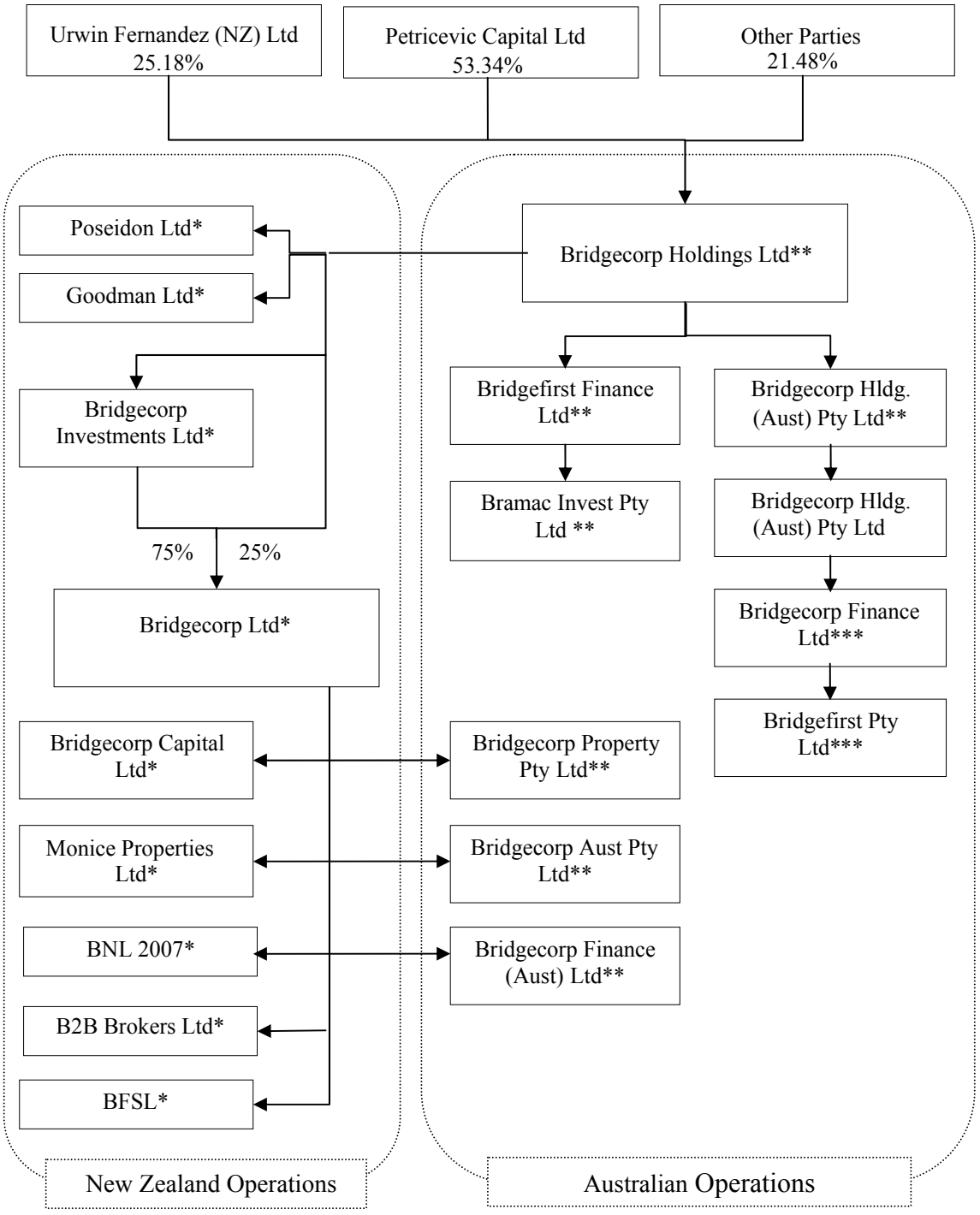
Bridgecorp Ltd

The second NBDT analysed is Bridgecorp Ltd (BCL), primarily a property financier with assets at June 2006 of NZ$595 million in New Zealand, Australia and Fiji. As shown in Figure 12 was owned by the Australian firm Bridgecorp Holdings Ltd, whose majority owner was Petricevic Capital.[95] Its activities in Australia were curtailed when the Australian Securities and Investments Commission (ASIC) stopped it from raising new funds or rolling over existing funds as the regulator had concerns as to the accuracy of the firm's Australian prospectus. In response, BCL began funding the Australian operation from funds raised in New Zealand through a series of related-party transactions[96] with its parent and the parent's subsidiaries. In total, related-party loans exceeded the level of the owners' equity in BCL.

[95] Petricevic Capital was owned by Rod Petricevic, who had been the principal behind the failed investment bank EuroNational following the 1987 stock market crash.

[96] The BCL trust deed limited related-party transactions to 5% of total tangible assets, but the trust deed definition of a related party was limited to the immediate owner of BCL. Effectively, there was no limit on transactions with the parent's subsidiaries.

Figure 12 Bridgecorp Group Structure[97]



Note: *PWC NZ Receiver, **PWC Aust. Administrator, ***Ferrier Receiver

[97] *PWC NZ Receiver, **PWC Aust. Administrator, ***Ferrier Receiver

A further series of transactions not reported as related-party transactions were the sale of BCL loans to Compass Capital Ltd (CCL). CCL was set up in mid-2006 to issue NZ$100 million of secured bonds to the public, the proceeds of which were to be used to purchase better-quality[98] BCL loans. CCL was owned by Compass Capital Trust Ltd, the trustee of which was NZ Guardian Trust Ltd, which was also trustee of the secured bonds. The beneficiary of the trust was Bridgecorp Holdings Ltd and it was managed by Compass Management Ltd, which was owned by Bridgecorp Holdings Ltd. As a result of this structure, CCL was not considered a related party to BCL. Although funds from CCL improved the liquidity position of BCL, the sale of loans to CCL would have lowered the overall asset quality of BCL if funds received funded lower-quality loans than those sold.

The other area of concern at BCL was its exposure to a resort development in Fiji. BCL financed a development at Moni Bay, involving a 250-bed resort and a 400-lot residential subdivision. However, the development was delayed due to political uncertainty surrounding the most recent Fijian coup. Through a complex arrangement, BCL's loan was transformed into an accounts receivable. This involved BCL selling the loan to Barcroft Holdings, which issued a promissory note to BCL, due in 2008 or 2009. Barcroft then sold the loan back to BCL at a 2% premium (McNabb, 2007). Barcroft Holdings is owned by Corporate Trustee Services Ltd, with the ultimate trust beneficiary unknown.

On June 27, 2007, BCL directors advised the trustee, Covenant, that they had defaulted on principal repayments to debenture-holders. PricewaterhouseCoopers were

[98] Defined as loans qualifying for Lloyd's insurance cover.

appointed as receivers to Bridgecorp Ltd (BCL) on July 2, 2007. Investigations by receivers John Waller and Colin McCloy determined that BCL CEO Petricevic was in receipt of payments he was not entitled to. They instigated legal action against Petricevic and a summary judgment was awarded against him for NZ$650,000[99]. Petricevic has since been adjudged bankrupt. The receivers also advised Government authorities of concerns they had regarding the management of BCL. On behalf of the Securities Commission, the enforcement unit of the Companies Office has laid charges under the Securities Act against Petricevic and fellow BCL director Robert Roest for making false or misleading statements in a BCL prospectus and directors' statement (Waller & McCloy, 2008).

Although many BCL investors are pleased to see directors being called to account, it has not resulted in any financial benefit to them. In their fifth receivers report, issued in September 2009, Noone and McCloy (2009) warned secured investors that the potential payout may be less than ten cents on the dollar.

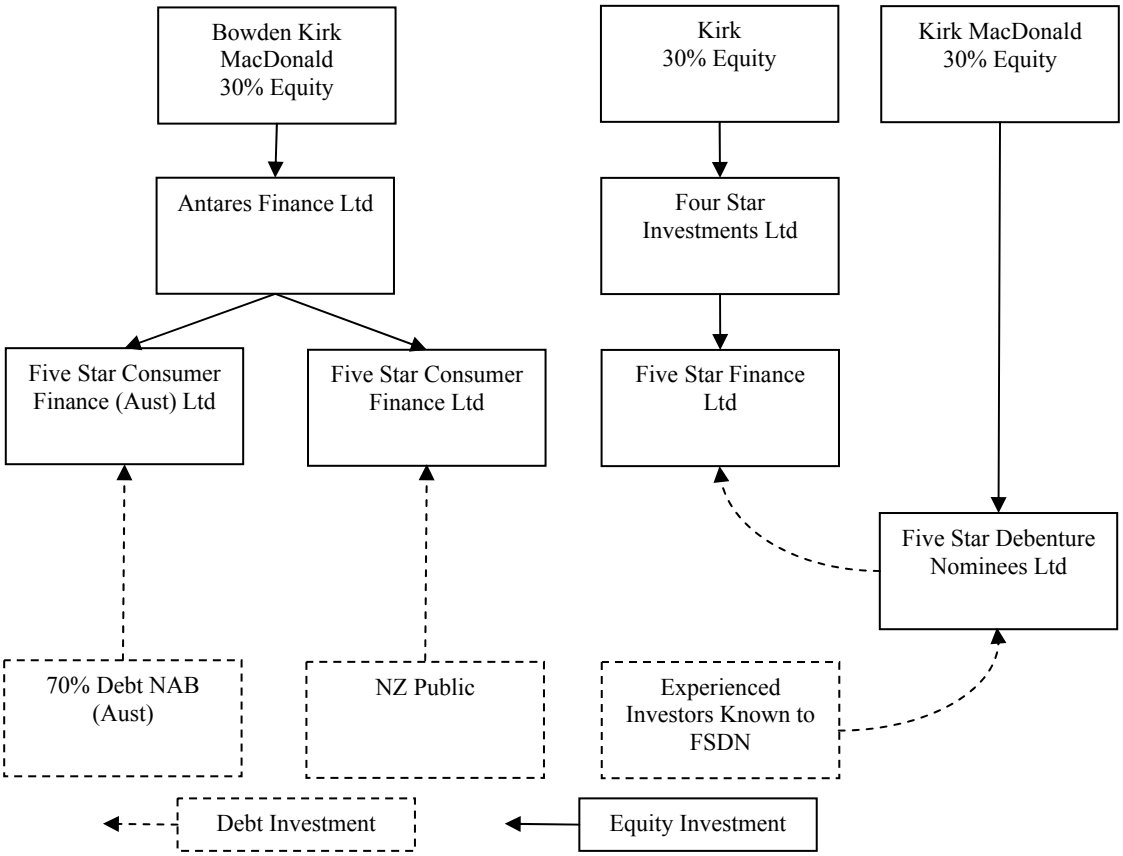
Five Star Consumer Finance Ltd

Five Star Consumer Finance Ltd (FSCF), further illustrates the complex corporate structure often employed by firms in this industry. FSCF, with total assets at receivership of NZ$73 million, was relatively small in comparison to BCL, but was part of a group of financial institutions (Figure 13) operating from one office, with a common group of directors, Anthony Bowden, Nicholas Kirk and Marcus MacDonald, who had varying equity positions in each firm. The complicated corporate structure required funds to be transferred around the group. Deposits were, in the main, made

[99] The receivers have a further claim exceeding NZ$3 million against Petricevic before the courts.

either directly to FSCF or to Five Star Debenture Nominees Ltd (FSDN). FSDN then passed funds on to either FSCF, Five Star Finance (FSF) or the Australian firm Five Star Consumer Finance Pty Ltd (FSCF (Aust.)).

Figure 13 Five Star Group Structure



FSDN was not required to issue an investment statement, or register a prospectus, as it purportedly received funds only from experienced investors known to the management and directors of the firm. This may not have been the actual case, as the New Zealand Companies Office has now laid charges against FSCF and FSDN directors Bowden, Kirk and MacDonald, claiming they offered and allotted debenture stock to members of the public without having a registered prospectus, or investment statement (Camp, 2008). If convicted, they face fines of up to NZ$300,000 under the Securities Act.

It is also likely that a number of investors in the Five Star Group of companies were also mistaken as to who loans were being made to. Although FSCF had the wording *Consumer Finance* in its name, suggesting that the firm's lending was diversified across a large number of small-value consumer loans, careful reading of the prospectus reveals that, although consumer loans were by number the largest group, the value of commercial loans was far greater. Furthermore, contrary to suggestions in the prospectus that commercial and property loans were made only when backed with adequate security, PwC receivers Richard Agnew and Anthony Boswell (2008) found that the majority of these loans were outside normal lending practices and in contravention of guidelines given in the trust deed and prospectus.

As a result, there is no doubt that due to poor lending practices, and dependent on actions being taken to recover some commercial loans, Agnew and Boswell (2009) pro-rata payments to secured creditors will be less than $0.25. To date secured creditors have received 22.5 cents in the dollar.

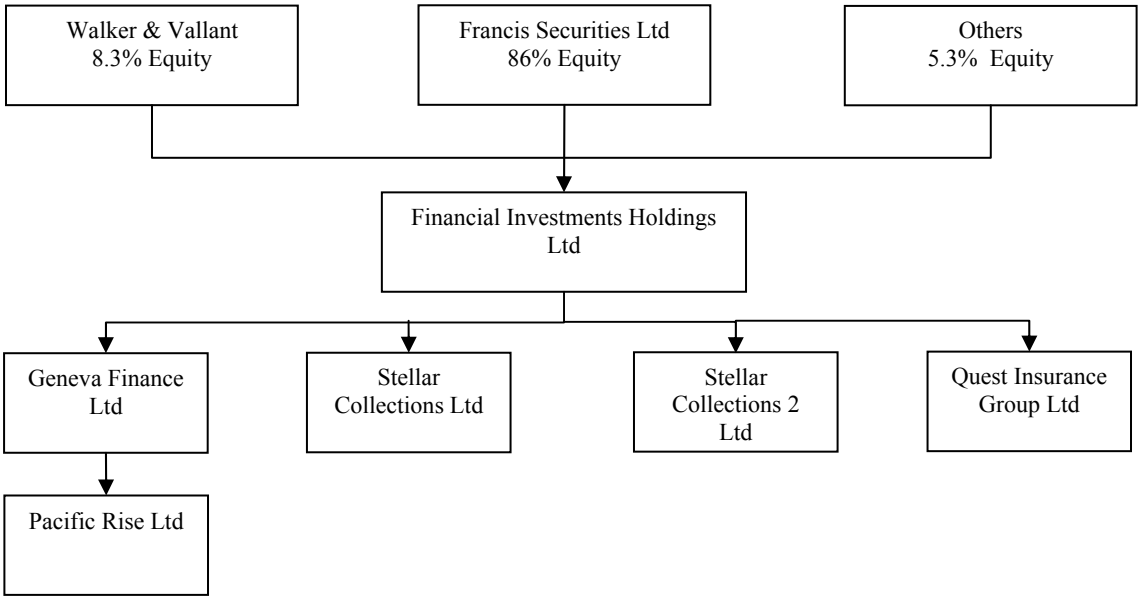
Geneva Finance Ltd

The final case presented is that of Geneva Finance Ltd (GF) (Figure 15). GF is unique in the crisis sample, being the only NBDT with a credit rating[100] from a reputable credit-rating agency. The firm is also unique among the cases studied, as trustee Covenant Trustees did not immediately place the firm in the hands of receivers when it defaulted on payments. Instead, it allowed time for management to present a

[100] Prior to September 10, 2007, this rating by Standard & Poor's was B+ Stable, after which it was reduced to B- Watch negative, due to concerns Standard & Poor's had regarding the industry as a whole, as well as specific concerns about ongoing funding support (NZ$50 million) of the Bank of Scotland (Aust.) (BOS). The credit rating was, on September 17, subsequently lowered to D, when GF advised Standard & Poor's it had defaulted on payments.

moratorium proposal to depositors. The moratorium would allow the firm to remedy its liquidity problem by raising additional equity, as management were of the opinion that as GF was profitable and had a significant excess of secured assets over liabilities (Geneva Finance, 2007) their financial problems were temporary and a result of other NBDT collapses leading to contagion in the industry.

Figure 14 Geneva Finance Structure

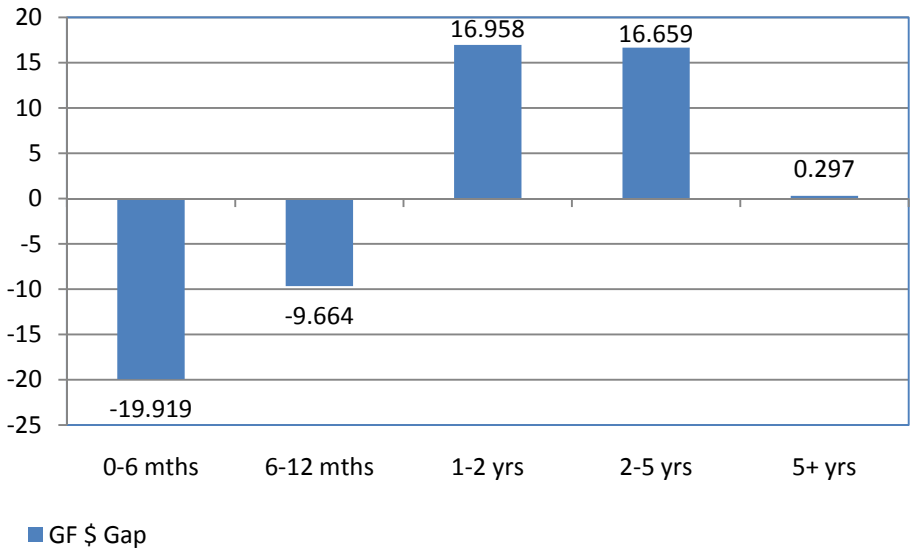


Despite the claims by management of contagion, analysis of its prospectus show that GF had a significant liquidity problem (Figure 15) in March 2007, when it had a negative $Gap of NZ$30 million in the less-than-one-year maturity bracket. The March 2007 prospectus also shows that related party transactions at GF were in excess of the 2% trust deed restriction and management were required to obtain prior trustee approval before these transactions were allowed[101]. Depositors in GF would have been unaware

[101] The GF trust deed had a restriction on related-party transactions, limiting them to 2% of total tangible assets, which at the end of March 2007 would have limited related-party transactions to less than NZ$3.423 million (2006 NZ$2.807 million). The trust deed was amended on 24 July to exclude from the limit on related-party transactions the

the firm's related party transactions were so much in excess of the 2% limit prior to the publication of the emended trust deed and March 2007 balance date prospectus in July 2007 .

Figure 15 Geneva Finance $Gap ($m) Asset-Liabilities March 2007



The moratorium gave GF management time to come up with a restructuring proposal, which was accepted by depositors in April 2008. Under the proposal, investors would convert 15% of their debenture holdings and 55% of their subordinated debt holdings to equity, at a share price of NZ$0.36, with shares listed on the NZX. Recapitalisation allowed GF to begin paying interest to debenture holders at 11% on the outstanding 85% balance, of which 70% is due for return prior to March 2011 and the remainder prior to September 2012. However, in October 2008 GF announced to the market, under NZX continuous disclosure requirements, they were in breach of Bank of Scotland covenants established under the recapitalisation plan (Geneva Finance, 2008).

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sale of: receivables to a related party for cash at not less than their current book value; provision of debt collection and other services; and the securitisation of assets (Geneva Finance, 2007a). The 2007 transactions were allowed because the trustee considered they were in the best interests of investors and the amendment to the trust regularised the situation. Related-party transactions for the 2007 financial year, as displayed in the prospectus (Geneva Finance, 2007c), totalled NZ$18.012 million.

Since listing, GF shares have been thinly traded on the NZSX from a high of NZ$0.15 to a low of NZ$0.04 per share.

Case Study Discussion

The four institutions whose cases are reported share many common characteristics. These characteristics also appear in most of the other NBDTs who failed in 2006, 2007 and early 2008[102], to a greater or lesser degree. All were engaged in high-risk lending, with inadequate provision for bad loans. The liquidity situation was often made worse as a result of a mismatch between maturities of liabilities and assets, with firms relying on deposit growth to fund deposit redemptions. There were significant asymmetric information and moral hazard problems, with, for instance, complex firm structures and trust deeds obscuring related-party transactions rather than illuminating them. Whereas the management of registered banks exercised self-discipline in the operation of their banks, this has not always the case in NBDTs. Most failed NBDTs appear to have engaged in excessive risk-taking and, in some cases, management and boards of directors may have been guilty of deliberate fraud. This situation arose because, unlike registered banks, there has been little independence in NBDT boards, which are commonly run by founding shareholders who have appeared to consider the institutions to be their own private banks. Once failure became imminent, founding shareholders, heavily indebted to their companies, had little incentive to act prudently in the interests of depositors.

[102] The failure, after March 2008, of several NBDTs that were active in the property development sector may have been a result of the global downturn in property and credit markets.

The regulatory regime under which NBDTs have been governed is inadequate, with no clear rules regarding prudential standards set by the government. Instead, NBDTs have written their own trust deeds, in which they have set their own standards. The only check on this process is the requirement for the NBDTs to find a trustee company willing to supervise them under the terms of the trust deed. Trustees then monitor NBDTs only on their compliance with the trust deed, which in most cases is not designed to protect the interests of depositors. Deficiencies in NBDT disclosure requirements mean that these were of little use to depositors attempting to determine the riskiness of the multitude of NBDTs raising funds from unsophisticated investors.

In order to apply market discipline on New Zealand NBDTs, depositors must evaluate the creditworthiness of available institutions before deciding if they are offering an appropriate rate of return. Depositors face the same difficulty that institutions do in making loans to customers. That is, asymmetric information occurs, in which the borrower (the NBDT) has superior information as to its creditworthiness. Asymmetric information, which is common in all lending relations, is made worse in this situation, as the depositor is a non-expert dealing with an expert.

The only aid investors (or financial advisers) have in selecting a financial institution is the financial statements contained in the firm's prospectus. Their value is severely limited in that the information contained within them is out of date when the investment decision is being made. Financial statements are normally published annually, about six months after balance date, meaning that at best the information is

already six months[103] out of date and at worst 18 months. Retail investors appear quite willing to accept limited information, as evidenced by the GF moratorium. Investors, when asked to approve the moratorium, did so without updated financial information. Instead, they based their decision on financial information which was already seven months old, despite the economy and the situation at GF having clearly changed. If a similar set of circumstances were faced by equity investors in a listed company, they would have the benefit of an independent report containing more recent financial information to support their decision.

The other factor limiting the value of the financial information contained in the prospectus for making investment decisions is that it is historical accounting information. Investors are using this for a purpose other than that for which it was initially intended, which is to report on past performance. When making an investment decision, it is future performance which is important, because past performance is not always an indication of future performance. Additionally, accounting statements are prepared following Generally Accepted Accounting Practice (GAAP). Whilst some GAAPs are clearly defined, much is left to the interpretation of the accounting professional preparing the accounts. Critical values, such as those relating to the quality of the loan book, the treatment of bad debts, and loan loss provisions, are often determined by management. Although accounts are audited on an annual basis, the auditor, and the auditor's remuneration, is decided by management, who may not have the correct incentives to invest in the most rigorous audit process.

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[103] Under the Financial Reporting Act 1993, the directors of every reporting entity must ensure that financial statements are prepared within five months of the end of the last accounting period. Issuing companies must then register them with the Companies Office within 20 working days.

Investors could be put off reading a firm's prospectus just because of the sheer volume of information presented. For example, the Bridgecorp prospectus issued in December 2006 was not unusual in being 96 pages long. It is difficult for a non-expert reader to sort out the relevant information and, with accounts presented in differing formats, comparison between NBDTs is not facilitated. Trust deed restrictions and definitions of accounting terms (such as related-party transactions) vary from institution to institution. If the New Zealand government and the RBNZ are intending to persist with requiring retail investors to apply market discipline, they should require that critical financial information for investors is presented in a standard format and maintained in an easily accessible central repository. Likewise, the trust deeds under which investors and trustees are expected to monitor NBDTs should be standardised, with common definitions applied to all institutions. The limitations of the accounting information provided could be one of the reasons for not finding compelling evidence of a risk-return relationship in the quantitative assessments of New Zealand NBDTs undertaken by ourselves and Poskitt (2008).

The proposed regulations for NBDTs require the trustee to be the primary supervisor of institutions, with a reporting role to the RBNZ.[104] The trustee currently has a responsibility only to existing depositors. For it to be the primary supervisor, this responsibility will have to be broadened to include potential depositors. In the past, trustees have been reluctant to take any action, or make any criticism of management, for fear of limiting the firm's ability to raise funds, thus placing existing depositors at increased risk.

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[104] The 2008 Deposit Guarantee Scheme gives the RBNZ power to require institutions to engage nominated experts to report to the RBNZ, as necessary.

The proposed requirements for all deposit-takers with assets over NZ$10 million to have a credit rating from a reputable credit-rating agency will further reduce the asymmetric information that is a feature of the industry. Rating agencies will have the power, expertise and experience to independently evaluate different institutions. For the rating exercise to be effective, the full rating agency report, not just its final rating, should be a required inclusion in the prospectus and published on the central repository of NBDT information. The credit rating, mandatory in advertisements for funds, should enable investors to rank competing investments based on risk, facilitating risk-return decision-making. It will certainly prevent financial advisers[105] from pushing investments for which they receive a higher commission, in situations where there are other investments with a demonstrably similar risk profile offering a greater return. While some investments with investment-grade ratings will fail, the current default rate from S&P (2007) is 0.11%[106] on a one-year time horizon. The availability of credit ratings will focus investors' minds on the risk-return trade-off. Currently, the credit-risk spread for S&P-rated debt (Table 42) ranges from South Canterbury Finance Ltd[107], rated BBB- and offering debentures at 9.75%, to AA-rated UDC Finance Ltd, which offers 8.90% — a spread of less than 1% for a difference of five steps on the S&P rating scale.

[105] Legislation governing financial advisers has recently been strengthened to require them to more fully disclose commissions received from their product providers.

[106] BBB-, which is the bottom investment grade, has a default rate on a one-year time horizon of 0.33%; BB-, which a number of NZ NBDTs would likely achieve, has a rate of 1.54%; B- has a rate of 10.11% and C has a rate of 26.29%.

[107] Marac Finance Ltd is also rated BBB-, but only offers 9.00% for debentures, while credit union PSIS, which is sub-investment grade at BB+, offers debentures at 8.10%.

Table 42 Standard & Poor's Credit Rating NBDT

Institution	L-T rating	Outlook	S-T rating	Interest Rate
ASB Finance Ltd	AA	Stable	A-1+	Int Debt*
Equitable Mortgage Ltd	BB+	Stable	B	9.75
Geneva Finance Ltd	CC	Watch Dev	—	Moratorium
MARAC Finance Ltd	BBB-	Stable	A-3	9.00
Medical Securities Ltd	A-	Stable	—	9.00
PSIS Ltd	BB+	Stable	B	8.10
South Canterbury Finance Ltd	BBB-	Stable	A-3	9.75
UDC Finance Ltd	AA	Stable	A-1+	8.90

Current as at 24/1/2008
*International debt only

The Government, through the RBNZ and the Securities Commission, will need to invest in a public education campaign to ensure that New Zealand investors better understand credit ratings and their implications. The danger inherent in the public not understanding the ratings system is that the country will end up with a few investment-grade NBDTs offering deposits at around 9%, and a long tail of firms rated sub-investment grade all offering around 1% more. The credit ratings will be effective only if those firms without a good credit rating are required to pay a significant risk premium to attract funds. Those who do not pay a suitable risk premium should be forced out of the industry as their funding sources dry up. High-risk firms will find it difficult to compete with low-risk firms who have a lower funding cost. Good firms will drive bad firms out, rather than the current situation where bad firms drive good firms out.

Most of what immediately precedes this is to do with the investment decision, and the making of appropriate risk-return trade-offs, given the asymmetric information inherent in the relationship. Another serious problem occurs after the investment has been made. That is moral hazard, which is when the borrower (the NBDT) uses the funds gained for a purpose other than that which the depositor originally expected or

anticipated. Debenture-holders are powerless to do anything about this, as they are locked into their investment for the entire term. Those investors who have asked to break the term of their investments are normally refused by the NBDTs, most of which will break the term of a debenture only on the death of an investor, or sometimes in cases of serious health problems. Unlike equity investments, there is no secondary market in place for NBDT debt instruments. A secondary debt market, if it were liquid, would allow potential investors to observe a market price for individual debentures, in contrast to the price set by the issuer. This would result in the NBDT, rather than the investor, becoming the price-taker as rational investors would not deal in the primary market with the NBDT if it was more advantageous to deal in the secondary market.

In Chapter 4, it was suggested that self-discipline, as exercised by bank management, resulted in the moderation of excessive risk-taking. In NBDTs, there is no evidence of self-discipline, with moral hazard problems compounded due to most being managed by the founding shareholder(s). This was certainly the case with PFL, BCL, FSCF and GF. The most blatant examples of moral hazard occurred in FSCF, where investors had gained the impression that their funds were being spread across many small consumer loans, when in reality most (56% of total assets) were in commercial loans, with many made outside of normal commercial lending practice.

The other area in which moral hazard is an issue is the treatment of related-party transactions. NBDT trust deeds set limits for related-party transactions, with trustees responsible for seeing that these are adhered to. In the case of GF, the limit was 2% of total tangible assets. When this was breached, the trustee agreed to a change of definition of what a related-party transaction was. The limit at BCL was higher, at 5% of total tangible assets, but was applied only to transactions with BCL's immediate

owner, BHL, and did not cover subsidiaries of BHL. When BCL was put into receivership, it was found to have made not only loans to BHL equivalent to 3.4% of total tangible assets, but also related-party loans to others that were either subsidiaries of BHL or related in some other way to BCL. These other related-party loans amounted to an additional 11.3% of total tangible assets. These didn't include the suspicious transactions involving Real Estate Assets Ltd (primarily the Fijian development), Barcroft Holdings Ltd (owned by Corporate Trustee Services Ltd) or Compass Capital Ltd (owned by a discretionary trust, the ultimate beneficiary of which was BHL), which purchased many of the better-quality loans issued by BCL.

The obvious risk to investors from related-party transactions is that wealth can be transferred to the related party if the transaction is not truly an arm's length one. In other words, the assets or services are not correctly valued. Even when assets are correctly valued, their sale can still lower the overall quality of the loan portfolio and, thus, its collateral value, which is the only real security investors have. This occurs when an NBDT sells loans in order to make new loans. If the loans made are not of the same quality as the loans sold, the overall quality of the loan portfolio will be lowered.

The only provision in the proposed regulations for deposit-takers that would significantly address the moral hazard problem is the RBNZ's application of a *fit and proper test* on senior management and directors of NBDTs. This would prevent those with serious criminal convictions and, possibly, those who have failed in past businesses from having positions of responsibility in the industry. This may, however, be difficult for the RBNZ to apply effectively, given the variety of people already in the industry. As an alternative, the Government could look at requiring truly independent directors on NBDT boards. Currently, those independent board members at NBDTs are

appointed by existing directors and shareholders. Thus, their independence is questionable. An alternative may be for either the trustee or a trustee's appointee to serve as an independent board member.

The other question of independence is in the appointment of the auditor. If the trustee is to be the primary supervisor of the NBDT, then it needs to have confidence in the independence of the auditor. At present, this is not always the case, because management appoint the auditor and set the remuneration. An option would be for the trustee to take responsibility for the appointment of the auditor and for the auditor to report directly to, and be available for questioning by, the trustee.

A further matter that should be addressed in the proposed regulation of NBDTs is the need for the standardisation of trust deeds. Current practice is for the trust deed (or amendment) to be drafted by the NBDT, which then seeks agreement from the trustee.[108] As a result, all trust deeds are different, further complicating supervision and limiting comparison. Trust deeds, including definitions and ratio limits, should all be the same. Likewise, there should be a standardised format for financial statements and their accompanying notes. These important documents should all be freely available to investors, through a central repository.

In mid-2006, when Bridgecorp collapsed, it became apparent that problems were not restricted to a few NBDTs, and many in New Zealand sought to apportion blame. Depositors began questioning why so much of their savings was lost. Candidates for blame were the financial planners and financial advisers who recommended the

[108] In the four NBDTs analysed, it was found that even though management drafted the trust deeds, they seemed able to ignore them with impunity.

investment; the management who had betrayed their trust; the auditors who didn't uncover the true quality of the loan book; the trustees who allowed management to do as they pleased; and finally the government and the Securities Commission who allowed it to happen.

Many investors, believing they lacked the required time or skill, delegated the investment decision to professionals, and acted on the advice of financial advisers and financial planners. Subsequently, many found this advice to be less than professional,[109] resulting in some investors losing most of their savings. Contributing to the problem was the way in which advisers and planners were remunerated. With retail clients often reluctant to pay for advice, advisers and planners were largely reliant on commissions for the bulk of their income. Consequently, some were not working for their clients, in that they did not provide independent financial advice. Instead, they were commission-based salespeople, working for whichever NBDT paid the highest commissions.

Management sought to excuse their failings, a popular assertion being that their firm was well run and profitable and was only in its current predicament because earlier NBDT failings had resulted in lower reinvestment rates, the global sub-prime crisis had prevented them from securitising their loan portfolios, and falling property prices and a tighter credit market had meant that their loan customers were unable to repay loans as previously scheduled.

Auditors took shelter under GAAPs, in that they did what was required under current accounting standards. To date, the only evidence of auditors doing less than

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[109] While there are many very good financial advisers, advice by some is difficult to excuse, such as client funds being undiversified, or diversified over six NBDTs, all of which subsequently failed.

required has been in the case of National Finance 2000 Ltd, the first NBDT to fail. In this case, auditors Michael Wood and Bruce Mincham of accounting firm O'Halloran HMT pleaded guilty to breaching the Institute of Chartered Accountants' code of ethics by failing to take due care and diligence when auditing the 2005 accounts (J. Andrew, 2008). The institute censured them and ordered them to jointly pay the hearing costs of NZ$133,000 (J. Andrew, 2008). One would suspect that some auditors are nervously reviewing work previously undertaken. Future audits may be more rigorous and some auditors may also find it is too risky to audit some NBDTs.

Similarly, trustees claim to have been required to act under existing trust deeds, saying they were often not aware of a problem until it was too late. Whilst there is a basis of truth in this, with the restructuring of PFL in March 2006 providing a good example of a trustee being kept in the dark until after the event, trustees must remember that the trust deed was originally negotiated between the NBDT and themselves. If the trust deed did not allow for them to be sufficiently informed, they should have insisted on the requisite provisions being included in the deed. If it was not, then their better option was to refuse the NBDT as a client. The role of the trustees is further complicated in that their sole fiduciary duty is owed to the existing investors of the NBDT. They have no responsibility to potential investors in an NBDT until after they have actually made an investment. If they were to warn prospective investors of potential risks, thus damaging the reputation of the firm, this would be contrary to the interests of existing investors, to whom they do owe a fiduciary duty.

Case Study Conclusion

It is easy to point blame at the government. Did its management of the economy contribute to the crisis? Was it at fault in allowing such a laissez-faire system to

operate? Should it have intervened to prevent retail investors from investing in NBDTs? In defence of the government, both the Securities Commission and the RBNZ warned of the dangers of investing in NBDTs prior to the first collapse. Figure 16, Figure 17, Figure 18 and Figure 19 suggest no one listened to these warnings, as the risk premium in PFL, BCL, FSCF and GF reduced leading up to 2006.

Ultimately, it must be remembered the government and its agencies cannot make investment decisions for its citizens; it can only level the playing field a little by ensuring investors are supported with relevant information. If the government is to face blame, it is for not moving to reform regulations controlling NBDTs at the same time as it addressed the prudential regulation of registered banks. The actual investment decision is, however, the responsibility of individual investors, and should always remain so. The individual investor is the only one who can decide if they are being adequately compensated for the risk they are accepting.

In conclusion, prudential regulation controlling NBDTs in New Zealand is clearly deficient. It was only a benign economy that sheltered NBDTs and their investors from poor investment decisions for so long. However, NBDTs are important to the New Zealand economy; there is a place in the economy for some lending which does not meet traditional bank criteria. NBDTs provide credit to many non-home-owning consumers, small and medium businesses, and property developers. Withholding capital from these borrowers could unduly constrict economic development in New Zealand.

The current situation of NBDTs (particularly with their government guarantee) is unsustainable, and urgent government action is required. Either the government (or its agent) becomes the official regulator and supervisor of NBDTs or regulations similar to

those in place for RBs, designed to foster market discipline and restore investor confidence, should be introduced.

Figure 16 Provincial Finance Ltd 12-Month Deposit Rate

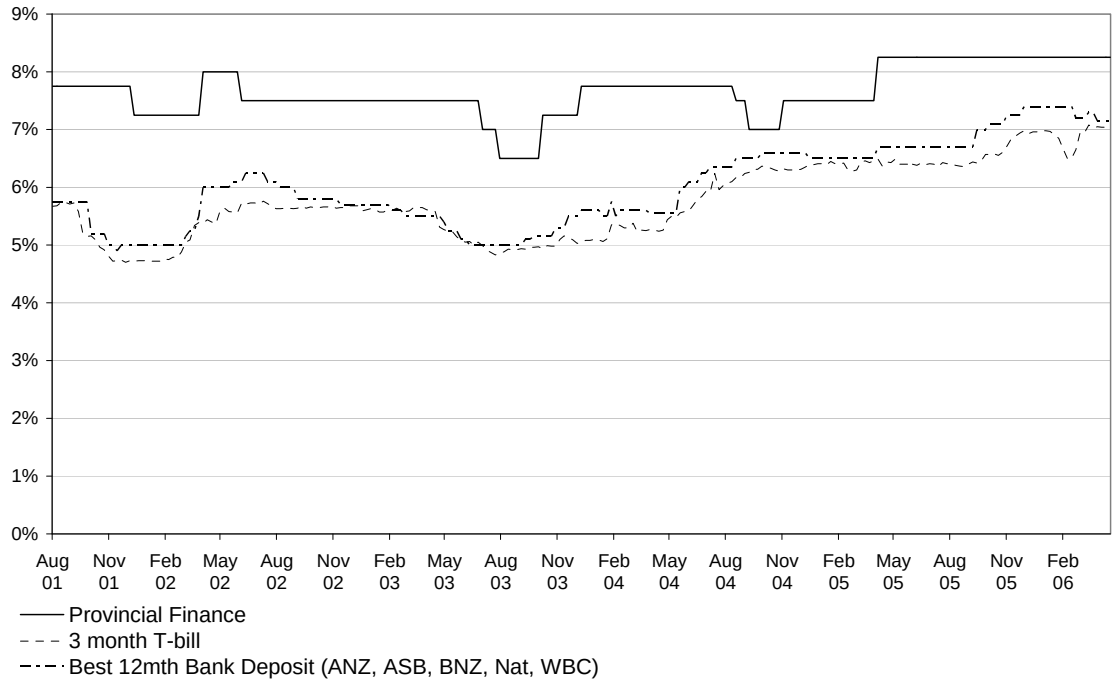


Figure 17 Bridgecorp Ltd 12-month Deposit Rate

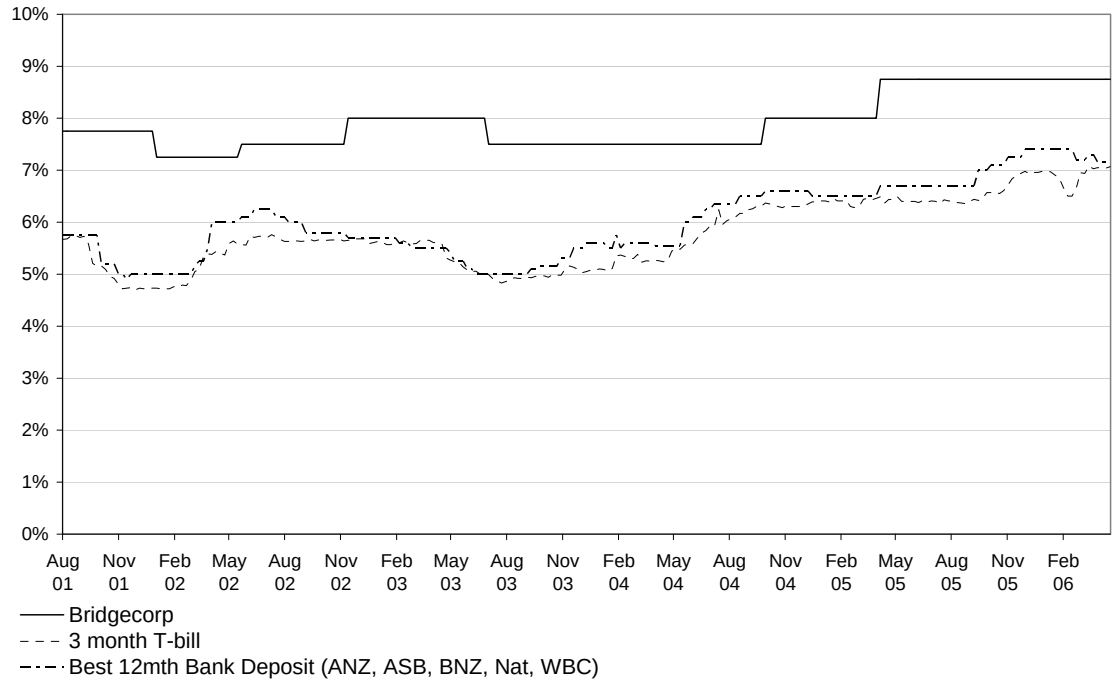


Figure 18 Five Star Consumer Finance Ltd 12-month Deposit Rate

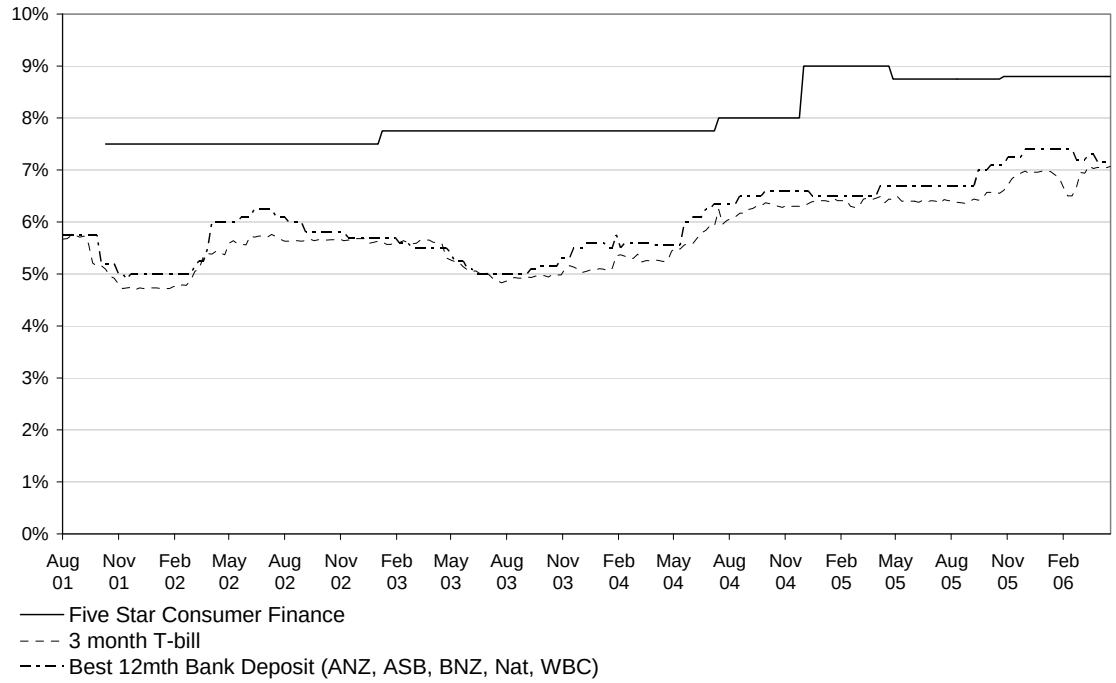
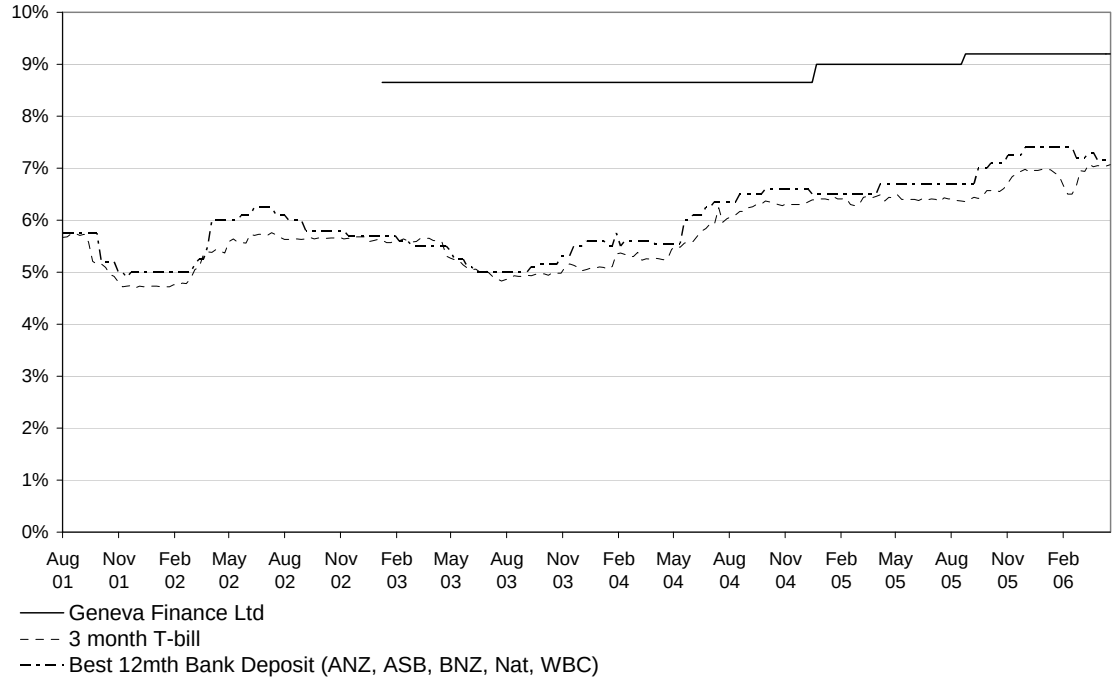


Figure 19 Geneva Finance Ltd 12-month Deposit Rate



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