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**What do New Zealand bank customers
understand about the risks of dealing
with foreign and New Zealand owned
retail banks?**

Thesis in Partial Fulfilment of the Requirements
for the degree of

Master of Management
(Banking)

at Massey University, Palmerston North,
New Zealand

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Abstract

This research has sought to develop an in-depth awareness of what New Zealand banking customers understand about the potential risks of dealing with foreign-owned retail banks, relative to those that are New Zealand owned. For the purpose of this study, a mail-out questionnaire was developed in joint collaboration with Xiaojie Zhuang, a Master's research student in the Department of Finance, Banking and Property at Massey University (Palmerston North). Using assistance by way of a Reserve Bank of New Zealand grant, the questionnaire was distributed to 2250 randomly selected persons throughout New Zealand. Overall, the key results showed that most respondents have a reasonable understanding of which institutions are foreign or locally owned. It also found that the most important risks facing banks at present are foreign exchange risk (a bank's inability to hedge its foreign currency exposure) and credit risk, (a bank's inability to provide sound grounds for lending). It found that banking ownership, whether it is foreign or local, does not change the way in which New Zealand banking customers perceive these risks. This study found that the majority of respondents felt that, while foreign-owned banks may reduce market profitability, they do not detract from the stability of the New Zealand financial system.

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CHAPTER 1

INTRODUCTION

1: Introduction

1.1 Background to the Research

The opening up of financial marketplaces through deregulation, particularly since the 1970s, has been followed by the growth of multinational financial organisations. These developments have given rise to a need to investigate and further understand the implications of foreign banking involvement on the stability of domestic financial marketplaces.

In New Zealand, the issue of foreign bank ownership is particularly significant; with 98% of the total banking system assets being foreign-owned (Mortlock, 2003). Embedded within this level of foreign ownership, is the fact that Australian banks own all of New Zealand's major retail banks and 85% of New Zealand's financial marketplace (Hull, 2002). Although research into the impacts of foreign-owned banks on the New Zealand financial system is very limited, previous results have highlighted a number of important factors.

New Zealand based research by Hull (2002), Evans and Quigley (2002), and Mortlock (2003), showed that because of New Zealand's high level of foreign-bank ownership and interdependency with Australia, the New Zealand financial system could be susceptible to financial contagion spreading from Australia into New Zealand. There is also the major issue that if trouble did arise offshore, funds may be transferred out of New Zealand to support a foreign parent. Or, from an alternative perspective, a lack of financial support by a foreign parent should its New Zealand branch or subsidiary face financial failure. Despite these fears, Hull (2002), Evans and Quigley (2002), and Mortlock (2003), have all acknowledged that a high level of foreign-bank ownership is good for New Zealand, and that foreign-owned banks have enhanced the efficiency of the New Zealand financial system and its ability to manage in a crisis. The key reason behind these improvements is the fact that these foreign-owned firms

were able to access international capital markets at a lower cost than the smaller locally-owned banking organisations (To and Tripe, 2002).

From an international perspective, previous research has shown that foreign-owned banks can impact the local financial system in a number of ways; some of which differ from previous New Zealand based findings. Studies by Claessens *et al*, (2001); Crystal *et al*, (2002), Dages *et al*, (2000), and Goldberg *et al*, (2000), showed that during the Argentinean financial crisis, foreign-owned banks provided a stabilising effect on the financial marketplace, by providing more effective risk management practices and better access to foreign capital markets. From a negative perspective, studies by Miller and Parkhe (2002), Rittippant (2004), and Zaheer and Mosakowski (1997), have found that foreign-owned banks incur a number of costs (referred to as the theory 'liability of foreignness') that domestic firms do not, and that as a result, foreign firms have lower cost and profit efficiencies than domestic banking institutions. Research by Peek and Rosengren (1997) into risk dimensions of financial trading rooms in Japan and the United States, found that financial risks can spread from the parent bank's home market into the local markets of its subsidiary branches.

Overall, the results of both the international and New Zealand based studies have demonstrated the need for the Reserve Bank of New Zealand (Reserve Bank)¹ to ensure that the foreign-owned banks that operate in this country act prudently, have sound risk management practices and conduct their business in a manner that reflects the best interests of their New Zealand banking customers; not just those in their home marketplace (Bollard, 2004a; Mortlock, 2003).

Because of the potential ramifications of foreign ownership of banks, and the limited New Zealand material available, it is imperative that more is done to understand the potential impact of foreign-owned banks on the New Zealand financial system. In this research, this has been achieved by examining the way in which New Zealand banking customers perceive the risks and relative implications of dealing with foreign-owned retail banking organisations. As part of this, the researcher also examined the role of the Reserve Bank in monitoring the behaviour of banking

¹ Unless otherwise stated, the term "Reserve Bank" refers to the Reserve Bank of New Zealand.

institutions in New Zealand, and the level of knowledge that banking customers have on the issue of deposit insurance.

This research has therefore attempted to fill a gap in the published body of knowledge on the perceived risks of foreign-bank ownership in New Zealand, and the level of understanding that New Zealand banking customers have about the safety of their banking deposits.

1.2 The Research Problem

1.2.1 Problem Statement

Given the paucity of empirical evidence regarding the perception of foreign bank ownership in New Zealand, this research has sought to contribute to the body of knowledge, by exploring New Zealand banking customers' perception of the risks and relative impacts of foreign-owned retail banks.

1.2.2 Aim of this Research

The aim of the study was to develop an in-depth awareness of what New Zealand banking customers understand about the potential risks of dealing with foreign-owned retail banks, relative to those that are New Zealand owned.

1.2.3 Objectives of this Research

To achieve this aim, this research has the following objectives:

1. To ascertain the extent to which New Zealand banking customers know which banks are foreign and locally owned.

2. To determine the perception of the risks that foreign and locally owned banks face in New Zealand.
3. To ascertain the effect that bank ownership has on the perception of banking related risks.
4. To ascertain what factors affect the perceived risk of a locally or foreign-owned bank.
5. To determine the perceived impact of foreign bank ownership on the stability and profitability of the New Zealand financial system.
6. To determine what New Zealand banking customers know about the issue of Government policy and its involvement within the New Zealand banking system.

1.3 Structure of the Thesis

This thesis is composed of seven chapters. Following this introductory chapter is a background discussion of the New Zealand banking system. The chapter discusses a number of issues, including: what is meant by the term 'bank'; the history, structure, and the regulatory provisions that govern the New Zealand banking system; and the different types of risks that banks face.

Chapter three reviews a range of prior empirical studies relevant to the issues covered in this thesis. The review synthesises and evaluates literature, from an international (generally emerging market) and New Zealand perspective, the costs and implications of foreign banking ownership on domestic banking systems.

Chapter four outlines the methodology used to address and justify the type of research technique included in this research. It also outlines who the participants were, how they were selected, and the reasons behind their selection. The methodology is quantitative and incorporates a mail-out questionnaire to further investigate the issues identified in chapter two. Chapter five reports the findings of the primary research. Chapter six discusses the findings and, where relevant, draws comparisons with previously published research. Chapter seven summarises, and draws conclusions

from the key issues discussed in previous chapters. It also identifies issues for further research and discusses some of the limitations of this thesis.

1.4 Limitations

There are a number of limitations to the generalisability of the findings from research undertaken in this thesis. These are as follows:

1. The primary research is geographically limited to New Zealand and findings may not be reflective of what might be found in other countries.
2. The study's focus is aimed specifically at retail banks and does not take into consideration the risks present in wholesale banks.
3. Those that responded to the mail-out questionnaire may have a special interest or knowledge of the topic being researched. This may increase this research's susceptibility to bias.
4. The use of a mail-out questionnaire may increase the response error of the research. This is because the respondent, with no researcher control, may misinterpret a question's instruction and/or meaning, which could lead to an invalid response.
5. As there will be no researcher control during the completion of the questionnaires, there is also the risk that respondents may take the time to find the 'correct' answers, rather than give an honest perception of their own understanding or interpretation of the issue.
6. The sample size of the research may mean that the results will only provide a general indication of what wider behaviours could be.

Despite these limitations, it is expected that the findings will be a valuable addition to the level of knowledge that exists about these issues in New Zealand and will suggest worthwhile directions for further inquiry into the subject being discussed.

1.5 Chapter Summary

This chapter laid the foundations for the thesis by explaining the importance of the topic and why it is worthy of research. It introduced, by means of a brief literature review: New Zealand's interdependent relationship with Australia; the liability of foreignness theory; the implications of foreign bank ownership in emerging nations and New Zealand; and the role the Reserve Bank plays in safeguarding the New Zealand financial system. This chapter also introduced the research problem, the primary aim of the research, and the objectives that have been established to achieve this aim. An outline of the proposed course for the thesis was given which included the proposed research methodology and its anticipated limitations. The thesis now moves on to examine, in chapter two, the New Zealand banking system.

CHAPTER 2

THE NEW ZEALAND BANKING SYSTEM

2: The New Zealand Banking System

2.1 Introduction

The literature review segment provides a detailed illustration of sources that are relevant to this research. The review plays a pivotal role in establishing the underlying constructs, and scope of this research; as well as its place within, and contribution to, the community of banking research.

For the purpose of this study, the review will be divided into two parts. In this chapter, a descriptive analysis of the New Zealand banking system is offered. It details what is meant by the term 'bank'; the history, structure, and the regulatory provisions that govern the New Zealand banking system; and the different types of risks that banks face.

This is followed by chapter three, which details the findings of previous international (generally emerging market) and New Zealand based studies on the implications of foreign bank ownership.

2.2 What is a Bank?

For the purpose of this research, a '*bank*' is defined as an intermediary figure in the collection, distribution, and management of financial resources (Koch and MacDonald, 2003; Rose, 2002; Sinkey, 2002). The primary functions of a '*bank*' according to (Meyer, 1996; Rose, 2002; Sinkey, 2002) include:

- the provision of deposit and loan services;
- the clearing and settling of payments;

- the transferring of funds;
- the processing, storage, and dissemination of financial information;
- the measuring and management of risk, and the selling of risk management services;
- the monitoring and management of agency problems that could arise whilst negotiating financial contracts; and
- being a mechanism through which government socio-economic policy can be channelled.

In this research, the term 'foreign-owned bank' will be defined as 'an institution registered as a bank in New Zealand which is either a branch of an overseas bank, or, if locally incorporated, where the shareholding of the locally incorporated company is majority-owned so as to give control to a non-New Zealand bank' (Tripe, 2005a).

2.3 The History and Structure of the New Zealand Banking System

The New Zealand banking sector has a long history of foreign ownership (Hull, 2002; Tripe, 2004). The first bank to enter New Zealand was the British-owned Union Bank of Australia, which arrived in 1840. A number of other Australian and British banks followed. By the beginning of World War I, there were three British banks, two Australian banks, one locally-owned bank, and a significant number of smaller, locally-owned, community savings institutions operating in the New Zealand banking system (To and Tripe, 2002).

By the time of deregulation during the mid 1980's, the number of trading banks had decreased to four: two Australian, one British and one New Zealand (Grimes, 1998). There were also a number of locally-owned building societies and finance companies

still operating in New Zealand (Tripe, 2004).² An amendment to the *Reserve Bank of New Zealand Act* in 1986, allowed for the entry of new banks and the requirement that there would only be 'one type of bank in New Zealand – the registered bank' (To and Tripe, 2002, p. 2).³ Since then, the Reserve Bank of New Zealand has implemented a more 'welcoming attitude to foreign banks' (Orr, 1998, p. 111), whereby 'foreign banks may enter as New Zealand incorporated banks (subsidiaries) or overseas incorporated banks (branches)' (To and Tripe, 2002, p. 2).

Since deregulation, there has been a rapid increase in the number of foreign-owned banks entering the New Zealand banking system (Grimes, 1998). Many New Zealand-owned financial organisations converted to bank status, only to find that it was too difficult to compete (To and Tripe, 2002). This inability to compete resulted in 'most of the major remaining locally-owned financial institutions being absorbed by a succession of foreign owners' (Tripe, 2004, p. 2). According to Liu and Tripe (2001) and Tripe (2004), the absorption of locally-owned banks by foreign owners included:

- The purchasing of a significant share of the Countrywide Building Society by the Bank of Scotland and General Accident (a Scottish insurance company) in 1987. The Bank of Scotland bought out the other shareholders in 1992.
- The selling of the Government owned Post Office Bank to the (Australian-owned) ANZ Banking Group in 1988.
- The acquisition of the Auckland Savings Bank (which became the ASB) by the Commonwealth Bank of Australia (a 75% share was purchased in 1989, while the remaining 25% was acquired in October 2000).
- The acquisition of Westland Bank by ASB Bank in 1992 (was fully amalgamated in 1994) (ASB, 2005b).
- The selling of the Government-owned Rural Bank to Fletcher Challenge in 1989. The bank was then on-sold to the then British-owned National Bank in 1992.

² New Zealand's financial system at the time could basically be broken into three segments, with financial institutions either being a trading bank, savings bank, or non-bank (Grimes, 1998).

³ Prior to this, banks could only be established in New Zealand by a specific act of parliament (Grimes, 1998; Tripe, 2000).

- The selling of the Government-owned Bank of New Zealand to the National Australia Bank Group in 1992.
- The acquisition of the United Building Society by the State Bank of South Australia (who in turn sold the bank to Countrywide Bank).
- The acquisition of Trust Bank New Zealand by the Westpac Banking Corporation in 1996.
- The acquisition of Countrywide Bank by the National Bank of New Zealand in 1998.

The last major acquisition in the New Zealand financial system occurred in October 2003, when the Australian-owned ANZ Bank purchased the National Bank of New Zealand from its British parent, the Lloyds TSB Group for \$5.4 billion (ABC, 2003). In all, these acquisitions and mergers have created an environment whereby foreign banks control approximately 99% of the assets of the New Zealand banking system; an anomaly in the developed world (Bollard, 2005; Hull, 2002; KPMG, 2004; Mortlock, 2003; Tripe, 2004).⁴

From a retail banking perspective, the New Zealand market is heavily dominated by four Australian-owned banks (ANZ National Bank, ASB, BNZ, and Westpac), which together control 85% of banking system assets (Bollard, 2005; Charles River Associates, 2005; KPMG, 2004; Van Den Bergh, 2005). The locally-owned registered banks that operate in New Zealand are TSB Bank, a retail bank with a geographically limited branch network, and Kiwibank, a retail bank owned by the Government through New Zealand Post (Tripe, 2004).⁵ At the time of writing, the New Zealand financial marketplace contained 16 registered banks,⁶ nine of which operate as branches of overseas incorporated banks, while the other seven are incorporated in New Zealand (RBNZ, 2005a). Of the major foreign-owned retail banks (ANZ National Bank, ASB, BNZ, and Westpac), all but Westpac have been incorporated in New Zealand.⁷

⁴ A study by Demirgüç-Kunt *et al.*, (1998), showed that the average proportion of foreign-owned banks for industrialised countries was fewer than 35%.

⁵ Refer to Appendix 6 for a list of the relative asset size of the retail banks operating in New Zealand.

⁶ Refer to Appendix 5 for the list of registered banks operating in New Zealand as at 22nd June 2005.

⁷ Westpac New Zealand operates as a branch of its Australian parent, although agreement has been reached for it to incorporate in New Zealand.

2.4 Regulatory Policy of the New Zealand Banking System

2.4.1 Background and Objectives of Regulatory Policy

The New Zealand financial system is regulated by New Zealand's central banking body, the Reserve Bank of New Zealand (RBNZ, 2005b; The Treasury, 2005). The primary legislation that impacts on banks is the *Reserve Bank of New Zealand Act 1989* (RBNZ, 2001; RBNZ, 2005b). RBNZ (2001) states that the Act 'provides the policy parameters for the registration and supervision of banks, as well as the various powers that the RBNZ can use in the event that bank distress or failure threatens the soundness of the financial system' (p. 1). The Reserve Bank conducts its bank registration and supervision functions with the objectives of:

- promoting the maintenance of a sound and efficient financial system; and
- avoiding significant damage to the financial system which could result from the failure of a registered bank (RBNZ, 2001, p. 1).

2.4.2 The Role of the Basel Committee in Regulatory Policy in New Zealand

The Basel Committee, as part of the Bank for International Settlements (BIS), provides broad supervisory standards for central banks and other financial institutions around the world. Its members include representatives from the central banking bodies of Belgium, Canada, France, Germany, Italy, Japan, Luxembourg, the Netherlands, Spain, Sweden, Switzerland, the United Kingdom, and the United States (BIS, 2005). As a central banking body, the Reserve Bank adheres to, and enforces a range of regulatory guidelines as stipulated by the Basel Committee. These supervisory standards include:

- *The Basel Capital Accord (1988)* – The requirement that banks must maintain at all times a minimum capital ratio and tier one capital ratio for the banking group of 8% and 4% respectively (RBNZ, 2001).⁸
- *The Basel Concordat* – The internationally agreed framework for the supervision by national authorities of multinational banks. It emphasises the ‘general responsibility of home country authorities to supervise banks’ worldwide consolidated activities, as well as the host country responsibility to supervise foreign bank establishments in their territories as individual institutions’ (Bollard, 2004a, p. 1).

2.4.3 Banking Registration

For a financial institution, whether it is foreign or locally-owned, to be technically classified as a registered ‘bank’ in New Zealand, it must meet a number of statutory requirements; which are stipulated in the *Reserve Bank of New Zealand Act 1989* (RBNZ, 2004a). The Act states that in order to be classified as a bank, a financial institution must provide information about its:

- incorporation and ownership structure;
- size and nature of business;
- ability to carry on business in a prudent manner;
- overseas banking laws and regulatory requirements;
- the nature and extent of financial information disclosed to the public in the home jurisdiction;
- the suitability of directors and senior managers for their positions; and
- the standing of the applicant and the owner of the applicant in financial markets (RBNZ, 2004a, p. 2).

The RBNZ (2004a) also states, that in order to be deemed a ‘bank’ a financial institution must meet a minimum capital requirement of \$15 million; which from an

⁸ Refer to Appendix 6 for a review of the capital and tier one ratios of New Zealand’s registered retail banks.

international perspective is relatively small (in Australia the requirement is \$A50 million).

In order to become registered, a bank must adhere to stringent capital adequacy requirements. The Reserve Bank states that in order to become registered (and stay registered), all banks must meet minimum tier one and total capital requirements of 4% and 8% respectively (RBNZ, 2001).⁹ These capital requirements are important for two reasons. Firstly, they help to provide a buffer, so that losses can be absorbed without bringing the bank down. Secondly, they ensure that a bank's owners have a large stake in its trading activities and management of risk (RBNZ, 2001).

2.4.4 Bank Supervision

Supervisory policy in New Zealand is aimed at ensuring the stability of the New Zealand financial system (Bollard, 2004b; International Monetary Fund (IMF), 2004; Mortlock, 2003; RBNZ, 2001; RBNZ, 2005b). To achieve this aim, all banks, whether they are foreign or locally-owned, must adhere to a range of regulatory requirements (Bollard, 2004b).

2.4.4.1 Three disciplinary pillars

The IMF (2004) states that the Reserve Bank's approach to regulation of the financial sector is based around three pillars.

1. The *self-discipline pillar*, which is provided by sound corporate governance practices. A cornerstone of this is the requirement that directors attest quarterly that their bank's risk management systems are adequate, and that they are being implemented effectively. Directors can be held accountable, by way of fine or imprisonment, if the disclosures are false or misleading.
2. The *market-discipline pillar*, which is provided by financial and prudential disclosure to parties with commercial relations with the regulated banks. It is promoted through the issuance of quarterly disclosure statements that

⁹ These capital adequacy requirements are calculated in line with the Basel Accord Framework (RBNZ, 2001).

document a bank's financial condition, risk profile, and risk management policies. Another component of this pillar is the condition that no formal deposit insurance is offered in New Zealand.

3. The *regulation and supervision pillar*, which is provided by the prudential authorities. Regulatory discipline is enforced through various prudential requirements, such as the licensing and supervising of registered banks, or acting as lender of last resort to a solvent but illiquid bank.

The dominance of foreign banks – particularly the Australian-owned retail banks – in the New Zealand Banking system has resulted in some additional supervisory measures being taken, such as the mandatory incorporation of systemically important banks and the requirement that a foreign-owned bank is not overly reliant on support from their foreign parent (Bollard, 2004a; Van Den Bergh, 2005).

2.4.4.2 Incorporation of systemically important banks

The incorporation of 'systemically important banks'¹⁰ is an important regulatory requirement for a banking system with a very high level of foreign ownership (Bollard, 2004a). According to Bollard (2004a), the local incorporation policy has three main objectives, which are outlined below.

Firstly, 'local incorporation is an important element of being able to respond to a financial crisis effectively, in New Zealand's interests' (Bollard, 2004a, p. 4). It provides the Reserve Bank with a greater understanding of the balance sheets and the assets that belong to New Zealand businesses, thus 'enabling a statutory manager to assume control of a failed bank or distressed bank with greater certainty over legal jurisdiction than would be the case with a branch' (Bollard, 2004a, p. 4).

Secondly, local incorporation enhances the Reserve Bank's ability to supervise banks in the best interests of the New Zealand financial system, not that of the home country

¹⁰ The Reserve Bank (2004b) defines a systemically important bank as 'one whose liabilities net of amounts due to related parties that exceed \$10 billion' (p. 1). They are considered significant because 'the size and nature of their business is such that their failure and inability to operate could spread and cause damage to the financial system as a whole' (RBNZ, 2004b, p. 1). At present, the systemically important banks in New Zealand are ASB, ANZ National, BNZ, and Westpac (RBNZ, 2004b).

supervisory authority. It enables the 'imposition of minimum capital adequacy requirements and risk limits, and provides a degree of separation between the subsidiary and the parent, thereby reducing intra-group contagion risk' (Bollard, 2004a, p. 4). By providing a degree of separation, it also makes it a lot more difficult for assets to be moved from the local operation to the parent bank (Bollard, 2004a; Evans and Quigley, 2002).

Thirdly, local incorporation establishes a platform from which sound bank governance can be conducted in the host country, including the requirement for a bank's board of directors to act in the best interest of the New Zealand branch or subsidiary (Bollard, 2004a; Evans and Quigley, 2002).

2.4.4.3 Outsourcing policy

In an attempt to further strengthen its crisis management capabilities, the RBNZ is currently in the process of implementing a new outsourcing policy (Bollard, 2004a). The policy's aim is to ensure that foreign-owned banks in New Zealand are not overly dependent on their respective foreign parents' for information technology systems, accounting functions, risk management skills, and senior management and technical expertise (Bollard, 2004a; Charles River Associates, 2005). According to the RBNZ (2004b), the proposed policy relates directly to the Reserve Bank's responsibility to supervise registered banks for the purpose of promoting a sound and efficient financial system.

2.4.5 Criticisms of Current and Proposed Reserve Bank of New Zealand Policy

2.4.5.1 Improvements to banking supervision

Research by the IMF (2004) suggests that, although the regulatory initiatives currently in place provide a sound basis for bank supervision, there is a lot more that could be done by the Reserve Bank to improve the disclosure of financial information in New Zealand. The IMF research states that disclosure statements should be made more

readily available at a retail level, and that more effective risk indicators could be developed. In an attempt to rectify this, the IMF (2004) report states that 'the content of the statements could be supplemented with focused, prudential information developed specifically for the supervisor' (p. 24).

According to the IMF (2004) another area of weakness, is that there are almost no independent supervisory checks on a bank's systems and controls. The IMF (2004) states that to overcome this, the 'RBNZ might consider commissioning third party reports and establishing a small, specialist team in-house to make focused on site visits on particular aspects of credit and operational risk' (p. 24).

2.4.5.2 Risks of mandatory incorporation

Research by Evans and Quigley (2002), highlighted the dangers of having a system of mandatory incorporation for systemically important banks in New Zealand. Evans and Quigley (2002), stated that not only is mandatory incorporation costly, but it is also inconsistent with the Reserve Bank's belief that market failure should be corrected through prudent market disciplines. The study also highlighted the fact that local incorporation could also expose depositors to a higher level of insolvency risk.

2.4.5.3 Problems with proposed outsourcing policy

Findings from a review of the Reserve Bank's proposed outsourcing policy by Charles River Associates (2005), showed that the proposed policy initiative could 'act as a wedge between the operations of the New Zealand bank and its parent' (p. 36). The study concluded that the proposed outsourcing policy could lead to increased costs, limited investment opportunities, and a less innovative financial system (Charles River Associates, 2005).

2.4.5.4 The uncertainty of deposit insurance

A study by Tripe (2005b), highlighted the fact that there is a great deal of uncertainty surrounding the issue of deposit insurance in New Zealand. The results showed that 55% of respondents believed that their deposits were guaranteed by the New Zealand

bank, while 81% of respondents believed that the Government was either not very clear or extremely unclear in informing the public on how safe their deposits were (Tripe, 2005b).

2.5 The Risks that Banks Face

The fundamental goal of bank management is to maximise the wealth of its shareholders (Ross *et al*, 2004). In an attempt to achieve this goal, banks are inevitably exposed to a range of risks (Rose, 2002; Saunders and Cornett, 2003).¹¹ The primary risks faced by banks include: credit risk, interest rate risk, foreign exchange risk, operational risk, technology risk, and liquidity risk (ANZ National Bank, 2005; ASB, 2005a; BNZ, 2005; Kiwibank, 2005; Sinkey, 2002; TSB Bank, 2005; Westpac, 2005).

2.5.1 Credit Risk

Credit or default risk is considered to be the oldest uncertainty in banking (Sinkey, 2002). Credit risk is defined by Westpac (2005), as being the 'potential risk of financial loss resulting from the failure of customers to honour fully the terms and conditions of a contract with the New Zealand banking group' (p. 26). It is an issue that generally arises from lending activities. However, banks are also exposed to credit risk by assuming contingent liabilities, conducting foreign exchange and derivative transactions, and assuming underwriting commitments (ANZ National Bank, 2005; ASB, 2005a; Basel Committee, 1999; BNZ, 2005; Saunders and Cornett, 2003; Westpac, 2005). Credit risk may be subdivided and analysed in two ways: settlement and pre-settlement credit risk; and indirect and direct credit risk (MIT Laboratory for Financial Engineering, 2005).

¹¹ The greater the potential return the greater the risk (Elmiger and Kim, 2003).

2.5.1.1 Settlement and pre-settlement risk

Pre-settlement risk is defined as ‘the risk that the counterparty to a contract defaults prior to settlement when the value of the contract is positive’ (Westpac, 2005, p. 26). Settlement risk relates to the risk that ‘the completion or settlement of a financial transaction will fail to take place as expected’ (Basel Committee, 1999, p. 7).

2.5.1.2 Indirect and direct credit risk

While settlement and pre-settlement risk relate to the timing aspect of credit risk, direct and indirect risk, depend on the source of risk (MIT Laboratory for Financial Engineering, 2005). Direct credit risk is defined as ‘the risk that a firm's counterparty will default, while indirect credit risk arises from a change in the probability of default of some party which does not necessarily have direct contractual obligations with the firm’ (MIT Laboratory for Financial Engineering, 2005, p. 1).

Another important component of credit risk is the credit rating that banks and other organisations receive from agencies such as Standard and Poor’s or Moody’s. The ratings measure a firm’s ability to meet current contractual obligations, and provide a valuable tool for ascertaining a firm’s tolerance of credit risk (MIT Laboratory for Financial Engineering, 2005). The table below defines the ratings and scales used by both Moody’s and Standard and Poor’s.¹²

Table 2.1: Descriptions of the relevant agencies’ rankings

	Moody's	Standard and Poor's
<i>Investment Grade</i>		
Extremely strong	Aaa	AAA
Very strong	Aa	AA
Strong	A	A
Adequate	Baa	BBB
<i>Speculative Grade</i>		
Less vulnerable	Ba	BB
More vulnerable	B	B
Currently vulnerable	Caa	CCC
Currently highly vulnerable	Ca	CC
In bankruptcy	C	C
In default	C	D

Source: (MIT Laboratory for Financial Engineering, 2005).

¹² For a review of credit ratings given by Moody’s and Standard and Poor’s for Banks in New Zealand please refer to Appendix 5.

2.5.2 Interest Rate Risk

Interest rate risk is defined by Rose (2002) as ‘the danger that shifting interest rates may adversely affect a bank’s net income, the value of its assets, or equity’ (p. 168). Banks are exposed to interest rate risks in four different ways, re-pricing, yield curve, basis, and optionality.

2.5.2.1 Re-pricing risk

The most common form of interest rate risk results from the ‘timing differences that occur in the maturity (for fixed rate) and re-pricing (for floating rate) of a bank assets, liabilities and off-balance-sheet (OBS) activities’ (Basel Committee, 1997, p. 8). While these re-pricing disparities play an integral part in banking, they can expose a bank’s income to unanticipated changes should these interest rates vary (Basel Committee, 1997).

2.5.2.2 Yield curve risk

When re-pricing mismatches occur, a bank can also be exposed to yield curve risk. According to the Basel Committee (1997), yield curve risk ‘arises when unanticipated shifts of the yield curve have adverse effects on a bank’s income or underlying economic value’ (p. 8).

2.5.2.3 Basis risk

Another source of interest rate risk is basis risk. Basis risk is defined by Saunders and Cornett (2003), as being the ‘variable spread between a lending rate and a borrowing rate or between any two interest rates or prices’ (p. 331). When there is a change in interest rates, these disparities can affect the profitability of a bank’s assets and liabilities (Saunders and Cornett, 2003).

2.5.2.4 Optionality

The fourth major source of interest rate risk is optionality. The Basel Committee (1997), states that interest rate risk can also arise 'from the options embedded in many bank assets, liabilities and off-balance-sheet portfolios' (p. 7). An option is a contract (exchange traded option, or over-the-counter option) that gives its owner the right, not the obligation, to buy or sell an asset for a certain price on or before a specified date (Basel Committee, 1997; Ross *et al*, 2004; Saunders and Cornett, 2003).

2.5.2.5 Interest rate risk in New Zealand

The issue of interest rate risk was once relatively unimportant for banks operating in New Zealand (Tripe and Tozer, 1998b). However, in 1984, interest rate controls were abolished, and banks were exposed to rapid rises in interest rate levels (Singleton, 2005). The removal of these controls led to the development, and subsequent demand for, new longer-term fixed rate loans of up to five years (Tripe and Tozer, 1998b). These longer-term products exposed New Zealand banks to the risk of achieving lower interest margins. There was the fear that if interest rates were to rise, the 'costs of deposits would go up towards the level of interest rates at which the loan was fixed, thereby heavily reducing or eliminating banks' interest margins' (Tripe and Tozer, 1998b, p. 24).

2.5.3 Foreign Exchange Risk

The globalisation of the financial services industry in New Zealand and around the world, has led to an increase in the level of foreign exchange risk faced by banks (Department of Finance, Banking, and Property at Massey University, 2003). Exchange rate risk is defined by Ross *et al*, (2004), as the risk of losing income or wealth when the exchange rate changes unexpectedly; it is 'the natural consequence of international operations in a world where relative currency values move up and down' (p. 814).

Foreign exchange risk can arise through owning a business whose assets and liabilities are denominated in another currency (Tripe, 2005a). However, the real risk is not the use of foreign currencies per se, but rather the timing mismatches arising from different values and currency denomination of assets and liabilities (Department of Finance, Banking, and Property at Massey University, 2003).

When foreign exchange imbalances occur, a bank can either be net long or net short in a currency. A positive net long exposure position for a New Zealand bank implies that the bank is net long in a currency (meaning that it has bought more of a foreign currency than it has sold) and faces the risk that the foreign currency will fall in value against the New Zealand dollar. While a negative net short exposure implies that a New Zealand bank is net short in a currency (meaning that it has sold more of a foreign currency than it has purchased) and faces the risk that the foreign currency could increase in value against the New Zealand dollar (Saunders and Cornett, 2003).

2.5.4 Operational Risks

Operational risk is defined by Sinkey (2002) as 'the uncertainty associated with direct or indirect losses from inadequate or failed internal systems, processes, or people from external events' (p. 475).

The key sources of operational risk that the Basel Committee (2003) has identified as having the potential to create substantial losses for a banking institution include:

- Internal fraud – employee theft, intentional misreporting of financial results.
- External fraud – robbery, forgery, cheque kiting, general cheque fraud,¹³ and computer hacking.

¹³ Foster (1999) states that cheque fraud is the 'easiest crime in America' (p. 29), while Lisa Wilhelm, senior vice-president of risk management at Wells Fargo Bank, states that total cheque fraud at banks around the world is between '\$10 billion and \$50 billion a year' (Wilhelm, *cited in*, O'Sullivan, 1997, p. 42).

- Business disruption and system failures caused by technological inefficiencies, such as computer breakdowns, hardware and software malfunctions, and telecommunication outages.
- Employment practices and workplace safety – workers compensation claims, and violation of health and safety regulation.
- Clients, products, and business practices – illegal trading, money laundering, and/or a lack of discretion in terms of the way confidential customer information is handled.
- Damage to physical assets – natural disasters, terrorism.
- Execution, delivery and process management – data entry errors, incomplete legal documentation (Basel Committee, 2003).

2.5.5 Technology Risks

Technology risk is defined by Tripe (2005a) as the risk that a bank may not have the appropriate technology available, at an affordable price, to be able to undertake business in competition with other banks.

2.5.5.1 Security risk

A key component of the technology risks faced by banks is the security risk. Wong (1996) states that security risk takes several forms, these include:

- The security of the system and data from external parties, such as the physical security of the server and password protection of the data.
- The security of the system from virus attacks.
- Security for the purpose of segregation of duties. The system must be able to restrict people from carrying out activities for which they are not authorised.
- The security from system failures. It is imperative that if the hardware fails, that there is a recovery procedure in place.

2.5.5.2 Security attacks

As the use of Internet based services has increased, so has the risk of security breach via computer or network hackers (Standage, 2002). During the last decade, a number of viruses (including Siram, Code Red, Nimda, Love Bug, and Bug Bear) have caused widespread chaos and disruption to businesses across the globe (Standage, 2002). Westpac's New Zealand branch has also been exposed to a number of potentially serious security threats. The most significant of which occurred in October of 2003, when hundreds of Westpac customers were fooled by a Russian email scam, which revealed their Internet banking passwords to fraudsters (The Age, 2004).

2.5.5.3 Online fraud

With the emergence of the Internet, and new Internet based banking services, the issue of online fraud has grown rapidly (Hines, 2004). According to a survey conducted by Forrester Research, more than 500,000 Internet users from the United Kingdom have stopped banking online for fear of online fraud and concerns about keystroke logging software and false emails aimed at stealing customer funds (Thomas, 2005).¹⁴ In 2000, Egg, a major online banking organisation, was successfully defrauded by a number of United Kingdom based gangs. Using fake names and addresses the gangs were able to access savings accounts and loan services provided by Egg (Sangani, 2000).

A 2005 Info Tech poll, found that 200 New Zealand Internet banking customers were the victim of online fraud in 2004. The numbers of victims for each of the affected banks were: Westpac 25; Kiwibank 32; National Bank 29; BNZ 26; ANZ 39 (Schwarz, 2005).¹⁵

¹⁴ Further research by the Forrester Group showed that 42% of all Internet banking customers have received false and unsolicited emails (Thomas, 2005).

¹⁵ The figures reflect the number of fraud cases experienced by the bank (Schwarz, 2005).

2.5.6 Liquidity Risk

The term 'liquidity' refers to a bank's ability to quickly convert non-current assets into cash, so that cash is available when required (Mastercard, 2005).¹⁶ According to Westpac (2005), the principal sources of liquidity for banks include 'customer deposits; wholesale debt issuance; proceeds from sale of marketable securities; principal repayments on loans; interest income; and fee income' (p. 30).

Liquidity risk is defined by Tripe and Tozer, (1998a), as being the risk that a bank or financial institution 'will not have the funds available, when requested, to meet a demand for repayment by a depositor, or to satisfy a demand for funding by a borrower who has a commitment by the bank to lend' (p. 23). Although no banks have been adversely affected in New Zealand, there have been several instances whereby financial institutions have been exposed to serious liquidity threats. The first occurred at the Public Service Investment Society (PSIS) during the late 1970's, this was followed in the mid 1980's by deposit runs at both the United and Countrywide Building Societies (Tripe and Tozer, 1998a).¹⁷

2.6 Summary

This chapter has sought to provide a discussion of the background issues involved in this research. The chapter has defined what is meant by a bank and the types of service provisions banks offer the financial system. It has also detailed the history, structure, and regulatory policies that govern the New Zealand banking system, while

¹⁶ An organisation is said to be liquid if its current assets exceed its short-term liabilities (Ross *et al*, 2004), although this definition does not really apply to banks, which according to this definition are inherently illiquid.

¹⁷ Run – refers to the sudden and unexpected withdrawal of cash by depositors from a bank(s). A run on deposits can be instrumental in creating a liquidity crisis for a bank(s) (Tripe, 2003). A flow on effect from a run is bank panic, which is defined by Saunders and Cornett, (2003) as being 'a systemic or contagious run on the deposits of the banking industry as a whole' (p. 438).

the latter part of the chapter defined the types of bank risks relevant to this study and the way in which banks can be exposed to these risks.¹⁸

Overall, this background discussion has helped to provide a platform from which a more empirically based review can be conducted in chapter three.

¹⁸ The risk definitions used in question 2 of the research, were written in a very simple manner (see section 4.5.1). The perceptions of all risks mentioned in this chapter, (except liquidity risk) were assessed in the questionnaire.

CHAPTER 3

LITERATURE REVIEW

3: Literature Review

3.1 Introduction

This chapter examines a range of prior empirical studies which discuss the pros and cons of foreign bank ownership on local banking systems. The first part of this chapter discusses the findings of previous international (generally developing nation) studies. This is followed by an examination of previous New Zealand based studies on the potential impact of foreign-owned banks on the New Zealand financial system.

3.2 Implications of Foreign-owned Banks: International Research

3.2.1 Positive Impacts of Foreign-owned Banks on Domestic Financial Marketplaces

There is a wide array of published research which suggests that foreign-owned banks have positively impacted the domestic financial systems of developing nations.

3.2.1.1 Greater competition, profitability, and efficiency

Foreign-owned banks have been found to improve the competition, profitability, and efficiency of the domestic financial system in which they operate. Using balance sheet data for 80 countries over the period 1988-1995, a study by Demirgüç-Kunt *et al*, (1998), showed that a high concentration foreign bank involvement tends to spur competition within the domestic marketplace and increase the efficiency of the domestic financial system. Demirgüç-Kunt *et al*, (1998) also found that by bringing additional capital, energetically seeking profitable uses for these funds, and

facilitating effective risk management practices, foreign-owned banks can influence the market in a manner that accelerates long-term growth.

A study by Claessens *et al*, (2001), found that in emerging marketplaces, foreign-owned banks have higher interest margins and profitability than domestic banks; while the opposite was found in developed countries.

3.2.1.2 Perceived safe haven

Foreign banks have also been viewed as a safe haven during financial crises (Peek and Rosengren, 2000). A study by Garcia-Herrero (1997), found that during the financial crises of Argentina, Paraguay, and Venezuela, foreign bank deposits increased as consumers considered foreign banks to be a safe haven. This analogy was supported by a Kraft (2002) study, which found that during the Croatian crisis of 1998-99, foreign bank subsidiaries acted as a safe haven for depositors.

3.2.1.3 Increased stability and reduced threat of contagion

Foreign-owned banks have also been found to improve the stability of the domestic financial system in which they operate. Research by Crystal *et al*, (2002), Dages *et al*, (2000), and Goldberg *et al*, (2000), into the effects of foreign-owned banks in developing countries, showed that during the Argentinean financial crisis, foreign-owned banks played an important role in helping stabilise an uncertain financial marketplace. According to Crystal *et al*, (2002), there were several reasons behind this stabilising effect. Firstly, the structures of the foreign bank portfolios were more geographically and economically diversified than locally-owned banks. This meant that they were less affected by economic or political shocks in the domestic economy. Secondly, foreign-owned banks provided a higher level of knowledge, skill, and technology transfer that contributed to a stronger control and risk management environment in the country. Thirdly, because these banks had large parent banks based overseas, they were better able to access international capital markets than Argentina's locally-owned banks; as a result, the foreign-owned banks provided a valuable source of credit and liquidity to the domestic financial system.

3.2.1.4 Higher loan growth and greater loss absorption

Because of their more geographically diversified asset base, foreign-owned banks are more likely to be able to provide financing to creditworthy borrowers, even in the midst or aftermath of a significant local shock (Peek and Rosengren, 2000). A Crystal *et al*, (2002) study, showed that during the financial crisis in Argentina, foreign-owned banks often had higher average loan growth, higher average provisioning expense, and greater loss-absorption capacity than locally-owned banks. These findings were in line with the results of a previous Goldberg *et al*, (2000) study, which showed that during the Argentinean and Mexican financial crises, foreign-owned banks generally had higher loan growth and lower credit volatility than their locally-owned counterparts. The Goldberg *et al*, (2000) study, also found that it is asset diversification and bank health, not ownership, which are the critical elements behind the growth, volatility, and cyclicity of bank credit during a financial crisis.

3.2.2 Negative Impacts of Foreign-owned Banks on Domestic Financial Marketplaces

Despite these benefits, foreign-owned banks also present a number of issues that have the potential to negatively impact the domestic financial system in which they operate.

3.2.2.1 Risk of external financial shock affecting the domestic economy

A risk of foreign bank involvement is that adverse shocks in a foreign bank's home market may spread through into its subsidiary or branch operations and hurt the domestic economy (Peek and Rosengren, 2000). A study by Peek and Rosengren, (1997) showed the reduction in Japanese bank lending during the 1990's (caused by a decline in the Japanese share market) was transmitted internationally to the United States. In particular, the study found that 'U.S. branches of Japanese banks reduced lending at the time of declines in their parents' capital positions' (Peek and Rosengren, 1997, p. 495).

3.2.2.2 Barriers to domestic bank entry

The involvement of foreign-owned banks can also provide a barrier to domestic bank entry. Locally-owned banks may not be able to compete with the more technologically advanced foreign banks (Peek and Rosengren, 2000). Studies by Clarke *et al*, (1999), Claessens *et al*, (1998), and Claessens *et al*, (2001), have shown that the involvement of foreign banks has resulted in lower interest rate margins and a reduction in the profitability of the locally-owned banks.¹⁹

3.2.2.3 Trouble with regulation of foreign banks

Another negative factor is the difficulty that central bank regulators have in effectively supervising foreign-owned banks, and ensuring that they conduct their business in a prudent manner and act in the best interests of the local market place (Peek and Rosengren, 2000).

3.2.2.4 Manipulating regulatory environments

According to Cárđanas *et al*, (2004), another concern is the opportunity for a foreign-owned bank to 'engage in regulatory arbitrage' and seek to capitalise on the inadequacies of certain regulatory environments (p. 2). This manipulation could lead to host country regulations being overwhelmed by the 'complexities associated with the supervision of large and complex financial institutions, understanding new products and operations and by difficulties to achieve effective coordination with their counterparts located in home or other host countries' (Cárđanas *et al*, 2004, p. 2).

3.2.2.5 Profits accruing to foreign owners

There is also the fear that the foreign bank profits will accrue in the parent banks' home market and will not be retained within the local economy, which could hinder the growth and employment opportunities of the host marketplace (Peek and Rosengren, 2000).

¹⁹ Hermes and Lensink (2002), replicated the analysis of the Claessens *et al*, (2001) and found that the effects of foreign bank entry on the efficiency of domestic banks depends on the level of economic development of a country.

3.2.2.6 *Cherry picking investments*

Foreign-owned banks have also been accused of 'cherry picking' the best and lowest risk investments. The selection of investments in this manner has the propensity to reduce the asset quality and earnings of domestic banks and the stability of the marketplace as a whole (Martinez-Peria, *et al*, 1999).

3.2.2.7 *Liability of foreignness*

The liability of being foreign is another issue that confronts foreign-owned banks. Originally conceived by Hymer (1976), the liability of foreignness is defined by Rittippant (2004) as 'all additional costs a firm operating in a market overseas incurs that a local firm would not incur' (p.12). Zaheer (1995), states that the liability of foreignness can arise from at least four sources.

1. Costs directly associated with spatial distance, such as the costs of travel, transportation, and coordination over distance and across time zones.
2. Firm-specific costs based on a particular company's unfamiliarity with and lack of roots in, a local environment.
3. Costs resulting from the host country environment, such as the lack of legitimacy of foreign firms and economic nationalism.
4. Costs from the home country environment, such as the restrictions on high-technology sales to certain countries (p. 343).

A number of researchers have attempted to explain the ways in which multinational banking organisations can overcome the costs of being foreign. An important study in this regard, was conducted by Srilata Zaheer in 1995. The Zaheer (1995) study analysed the liability of foreignness for major Western and Japanese banks in New York and Tokyo. The results from the research showed that although the liability of foreignness does exist in foreign exchange trading, the level at which this liability impacts the foreign firms, declines the longer they have operated in the host country environment (Zaheer, 1995).

Further studies by Zaheer and Mosakowski (1997), and Miller and Parkhe (2002), have supported the initial Zaheer (1995) findings. Their collective results have helped

to establish the theory that, all things being equal, the liabilities of being foreign will decline the longer a firm remains in a particular location.

3.3 Implications of Foreign-owned Banks: New Zealand

Despite a genuine lack of identifiable research in this area, there has been some attempt during the last five years or so, to better address the issue of foreign bank ownership and its impact on the New Zealand financial system. Using Hull's (2002) study as a base, the next section of the review examines the strong level of interdependency and bank ownership that exists between New Zealand and Australia and the positive and negative impacts that this relationship could have on the stability of the New Zealand financial system.

3.3.1 Positive Impacts of Foreign-owned Banks on the New Zealand Financial System

There are a number of findings which suggest that foreign-owned banks have positively impacted the New Zealand financial system.

3.3.1.1 Increased efficiency and better access to international capital markets

Studies by Liu and Tripe (2001), and Tripe (2004), have shown that foreign-owned banks are more efficient than their locally-owned counterparts. Liu and Tripe (2001), found that the key reasons behind foreign-owned banks being more efficient were asset size, and the length of time that they had been operating in New Zealand. Liu and Tripe (2001), also found that bank mergers over the period of 1989 to 1998 greatly improved the efficiency of New Zealand banks, with the parent bank providing better access to international capital markets. According to Hull (2002)

foreign-owned banks have improved the efficiency of the New Zealand financial system by providing better and cheaper access to international capital markets.²⁰

3.3.1.2 Improved the risk management systems and product offerings of the New Zealand financial system

Foreign-owned banks have improved the risk management capacity of the New Zealand financial system (Bollard, 2004a). According to Bollard (2004a), foreign-owned banks have also ‘facilitated the entry of new banking products and services, and reduced the financial system's vulnerability to domestic economic shocks’ (p. 1). Orr (1998), states that in New Zealand, foreign-owned banks have benefited the New Zealand financial system by bringing additional ‘skills, technology, risk management expertise, reputation and fresh views’, they are also ‘less likely to be influenced by local politicians and are thus more likely to base business on financial risk and return, rather than personal relationships’ (p. 111).

3.3.1.3 Dual country supervision

By having foreign-owned banks, the New Zealand financial system also benefits from the fact that by being foreign-owned they are supervised both in New Zealand and in their home country (Bollard, 2004a). This ‘double’ supervision, provides additional assurance to the RBNZ that the ‘parent banks and consolidated groups soundness comes under regular scrutiny by the home authority, including in respect of capital adequacy, risk positions, risk management systems, governance arrangements, and parent oversight of foreign subsidiaries and branches’ (Bollard, 2004a, p. 1). However, the fact that there are multiple supervisors involved can also bring about a range of challenges for the RBNZ (see section 3.3.2.6).

²⁰ According to Orr (1998) the fact that foreign-owned banks increase banking sector efficiency, are findings that are ‘consistent with the basic economic principles of competition and resource allocation’ (p. 111).

3.3.1.4 Reduced the threat of a New Zealand specific shock

The existence of foreign-owned banks in New Zealand has helped protect the New Zealand financial system against domestic shocks, such as foot and mouth disease. Not only are the asset bases of the foreign banks more geographically diverse, they also have access to and gain support from their foreign parent (Hull, 2002). According to Hull (2002), if all banks in New Zealand (both foreign-owned and locally-owned) were equally exposed to a shock (and the large increase in non-performing loans that would come as a result), the foreign-owned banks could be supported by their parents, whereas the locally-owned banks would not have this option. In this context 'foreign bank ownership is unambiguously better than a purely domestically owned banking system' (Hull, 2002, p. 24).

3.3.2 Negative Impacts of Foreign-owned Banks on the New Zealand Financial System

The high level of foreign ownership, and the way in which this ownership is structured, has created a number of issues which could threaten the stability of the New Zealand financial system.

3.3.2.1 Lack of geographical diversification

As a result of the dominance by Australian-owned banks in New Zealand, there is a concern that the New Zealand financial system is poorly diversified, and as a consequence, less able to manage the effects of an economic crisis (Hull, 2002). To illustrate this lack of diversification, a review of the four Australian parent banks asset, revenue, and profit structures was conducted.

Table 3.1: Percentage share in total assets between New Zealand and Australia

	Australia	New Zealand	Australia and New Zealand
Westpac Banking Corporation	73.2	18.1	91.3
Australia New Zealand Banking Group	70	20	90
Commonwealth Bank of Australia	80.7	12.8	93.5
National Australia Bank	65.4	11	76.4

Sources: (Westpac Banking Corporation, 2005, p. 81; Australia New Zealand Banking Group, 2005, p. 60; Commonwealth Bank of Australia, 2005, p. 63; National Australia Bank, 2004, p. 116).

Table 3.2: Percentage share in total revenue between New Zealand and Australia

	Australia	New Zealand	Australia and New Zealand
Westpac Banking Corporation	81.7	15.4	97.1
Australia New Zealand Banking Group	64	30	94
Commonwealth Bank of Australia	79.7	13.5	93.2
National Australia Bank	69.6	8.7	78.3

Sources: (Westpac Banking Corporation, 2005, p. 81; Australia New Zealand Banking Group, 2005, p. 60; Commonwealth Bank of Australia, 2005, p. 63; National Australia Bank, 2004, p. 116).

Table 3.3: Percentage share in total profits before tax

	Australia	New Zealand	Australia and New Zealand
Westpac Banking Corporation	81.1	15.4	96.5
Australia New Zealand Banking Group	67	27	94
Commonwealth Bank of Australia	82.5	12.7	95.2
National Australia Bank	62.5	8.9	71.4

Sources: (Westpac Banking Corporation, 2005, p. 81; Australia New Zealand Banking Group, 2005, p. 60; Commonwealth Bank of Australia, 2005, p. 63; National Australia Bank²¹, 2004, p. 41).

The figures represented in Tables 3.1 – 3.3 show that the asset, revenue, and profit structures for three of the four parent banks are heavily concentrated in the Australasian region. Of the banks shown, the Commonwealth Bank of Australia and Westpac Banking Corporation are the least diversified, closely followed by the

²¹ The National Australia Bank (NAB) figures for Table 3.3 were calculated by the researcher from results given in the NAB annual report.

Australia New Zealand Banking Group. The National Australia Bank is the most diversified.

This overall lack of diversification, highlights the risk that if a financial crisis were to hit Australia and/or New Zealand, foreign parent banks in Australia may not be able to provide the required liquidity, capital support, and guarantees to their New Zealand subsidiaries or branches (Hull, 2002).²² If financial stability is gauged by bank health and diversity of ownership (see section 3.2.1.4), then it is possible that the New Zealand financial system could be at greater risk to financial shock than countries with a higher degree of geographical diversification (Hull, 2002).

3.3.2.2 *Excessive exposure to non-resident funding*

An argument for foreign bank ownership in New Zealand is, that ‘foreign-owned banks are able to provide a higher degree of diversification and better access to international capital markets’ than their local competitors (Hull, 2002, p. 12). However, this access to international capital markets can result in a larger degree of non-resident funding (Hull, 2002). In New Zealand, over the past 10 or so years, foreign currency liabilities have increased from about 13% of total liabilities, capital, and reserves to 28.95% (Hull, 2002; Tripe, 2004). This high level on foreign debt can create a number of problems which could expose the financial market place to a negative external shock (Hull, 2002). The table below highlights both the growth in foreign-currency denominated debt in New Zealand and the level to which it has been left unhedged.

Table 3.4: Banks’ hedging of foreign currency denominated debt

Year	Foreign currency denominated overseas debt of banks in NZ (Millions \$)	Unhedged (Millions \$)
1998	15,885	56
1999	23,795	44
2000	31,935	646
2001	37,712	8
2003*	36,471	N/A

Sources: (Hull, 2002, p. 13; Tripe, 2004) – Tripe (2004) was used only for the 2003* (June) figure.

²² This risk does not necessarily reflect foreign ownership but rather non-diversified ownership (Hull, 2002). Hull (2002) states ‘countries where banks are all domestically owned would face the same issue with non-diversification as New Zealand faces’ (p. 29).

The fact that most of New Zealand’s foreign debt has been hedged has meant that New Zealand banks are not exposed to any high level of exchange rate risk (Hull, 2002). However, in order to continue to hedge this foreign exchange risk, there must be depth in the cross-currency swap market, with investors willing to hold New Zealand dollar risk. If the risk preferences of foreign investors change (they become unwilling to hold New Zealand dollar risk) or there is a decline in international capital flows, then this market could collapse, leaving the New Zealand economy and the New Zealand dollar vulnerable to much higher levels of exchange rate risk (Hull, 2002).

3.3.2.3 Dependency on access to parent bank capital

The comparable credit ratings between the Australian parent banks and their New Zealand subsidiaries (shown in the table below) illustrates the important role that parent banks play in providing access to international capital markets (Hull, 2002).

Table 3.5: Standard and Poor’s credit ratings of parent bank and New Zealand subsidiary

Parent Bank	Credit rating		New Zealand operation	Credit rating
<i>Westpac Banking Corporation</i> ²³				
22 – Nov – 05	AA-			
<i>Commonwealth Bank of Australia</i>			<i>ASB</i>	
22 – Nov – 05	AA-		22 – Nov – 05	AA-
<i>National Australia Bank</i>			<i>BNZ</i>	
22 – Nov – 05	AA-		22 – Nov – 05	AA-
<i>Australia New Zealand Banking Group</i>			<i>ANZ National Bank</i>	
22 – Nov – 05	AA-		22 – Nov – 05	AA-

Sources: Information obtained from the relevant bank websites as at the dates shown.

The comparable credit ratings highlight the way in which New Zealand banks rely on their Australian parent bank for access to international capital markets. However, if a financial crisis were to occur in Australia, this reliance could create a number of problems for the New Zealand financial system (Hull, 2002). Firstly, New Zealand banks may struggle to directly and quickly access international capital markets as their brand and reputation is not known. Secondly, a financial shock in Australia

²³ Because Westpac’s New Zealand operation functions as a branch, it does not receive its own independent rating, so only the parent rating is shown.

could adversely impact the credit ratings of both the Australian parent and its New Zealand subsidiary, making it difficult for both of them to access international markets (Hull, 2002).

3.3.2.4 Dependency on parent bank risk management systems

The relationship that exists between the major New Zealand retail banks and their Australian parents means that not only do they rely on them for funding, but they also depend on them for support in a number of key operational areas (Hull, 2002; Tripe, 2004).²⁴ Tripe (2004) states, that in some instances, the New Zealand operations may be perceived as being little more than an operation in another Australian state, with staff at a variety of levels reporting to a senior manager in Australia, rather than to a manager in New Zealand. The outsourcing of financial services in this manner may provide greater efficiencies and the opportunity to exploit economies of scale, but it could also leave the New Zealand banks vulnerable in a crisis, as there may not be the skills or resources available at a local level to manage the threat (Hull, 2002).

3.3.2.5 Risk of financial contagion from Australia to New Zealand

A key issue that could negatively impact the stability of the New Zealand financial system and the way in which banks react to shocks, is the strong interdependent relationship between New Zealand and Australia (Hull, 2002). According to Hull (2002), the risks associated with a strong interdependency between the two economies can be discussed using two indicators.

1. The health of the economy and/or stage in business cycle will affect the health of the banking system; for example, a period of economic recession (or expansion) could lead to an increase (or decrease) in non-performing loans, declining (or increasing) net worth, and less (or more) access to external funds (Hull, 2002).

²⁴ Tripe (2004) reported that both the ANZ and BNZ had all of their computer processing outsourced to their respective Australian parents, although ANZ has now largely transferred the processing back to New Zealand in response to requirements imposed by the Reserve Bank of New Zealand.

2. Direct linkages in trade, financial links, and immigration policies could, as Hull (2002) states, 'serve as a propagation mechanism so that an external shock in one country will be felt in the other' (p. 15).²⁵

In terms of business cycles, Gross Domestic Product (GDP) based studies by Hall *et al*, (1998), and Selover and Round (1995), have shown that a strong pro-cyclical relationship exists between the business cycles of New Zealand and Australia.²⁶ These findings were supported by Hull (2002), whose examination of share market fluctuations, US dollar exchange rates, share of trade in GDP, and 10-year swap spreads of Government Bonds between the two countries, showed that a strong correlation exists and that the business cycles of New Zealand and Australia are synchronised. Overall, these findings provide evidence to suggest, that periods of economic recession (or expansion) in Australia will be, by way of business cycle trends, transmitted through into the New Zealand marketplace, thereby affecting the banks that operate there (Hull, 2002).

The Hull (2002) study, also illustrated the effect that strong bilateral trade and free labour mobility between citizens of Australia and New Zealand could have on the New Zealand financial system. From a trade perspective, the results showed that Australia is more important to New Zealand as a trading partner, than New Zealand is to Australia,²⁷ which could, as Hull (2002) states, indicate a 'potential transmission mechanism' or spill over from Australia to New Zealand' (Hull, 2002, p. 21). For example, if Australia were to experience a negative shock, its demand for New Zealand exports might decline, negatively affecting the New Zealand economy and the stability of the New Zealand banking system (Hull, 2002).²⁸

²⁵ Refer to the results of the Peek and Rosengren (1997, 2000) studies, which highlight the fact that adverse shocks in a foreign bank's home market may spread through into its subsidiary or branch operations and hurt the domestic economy.

²⁶ The Selover and Round (1995), study also showed that the synchronisation of the New Zealand and Australian business cycles was more likely to be the result of common external shocks from countries such as Japan and the U.S. than from economic factors at home.

²⁷ Refer to Appendix 7 for Australia and New Zealand trade figures.

²⁸ If Australia and by way of correlation New Zealand, were to experience a financial shock, a mitigating factor in this regard could be the exchange rate adjustments that could occur (Hull, 2002). Hull (2002) states that 'if the shock to Australia resulted in the depreciation of the Australian currency and through the correlation between Australia's and New Zealand's currencies the New Zealand dollar also depreciated, some of the decline in exports to Australia could be offset by exports to other regions' (p. 21).

The interdependent relationship between New Zealand and Australia and the ensuing fear of contagion has raised other issues. Studies by Evans and Quigley (2002), and Mortlock (2003), have noted that there is also the major issue that if trouble did arise offshore, funds may be transferred out of New Zealand to support a foreign parent. Or, from an alternative perspective, financial support might not be forthcoming from a foreign parent should its New Zealand branch or subsidiary face financial failure.

3.3.2.6 Differences of interest between home and foreign supervisors

The difference in interests between home and foreign supervisors is another issue that could affect the stability of the New Zealand financial system. Even though both the Australian Prudential Regulation Authority (APRA) and the RBNZ, undertake their banking supervision roles within the framework of the *Basel Concordat* (see section 2.4.2), there is still an acknowledgement from both parties that their primary role as central bank regulators is to protect their respective financial systems and the banks that operate within them (Bollard, 2004a). For example, in the event of a bank failure in Australia, the *Australia Banking Act (1959)* states that the bank's Australian creditors should be given priority above all other creditors of the banking organisation, so as to help ensure the stability of the Australian financial system; while the *Reserve Bank of New Zealand Act (1989)* states that New Zealand creditors must be given first preference in a banking crisis (Hull, 2002).

According to Bollard (2004a), these conflicting policy objectives can create two major problems for the RBNZ.

1. It complicates the way in which the central bank supervises the financial system.
2. It complicates the way in which a central bank manages a banking crisis.

In an attempt to overcome these problems and maintain a stable financial system, it is imperative that both the host (RBNZ) and home (APRA) country regulators work together in developing similar supervisory tools and a compatible arrangement to managing a crisis (Bollard, 2004a).

3.4 Summary

This chapter has sought to review a range of research regarding foreign-owned banks and their impact on domestic banking systems.

The econometric and literature based studies examined during the review highlighted, from an international (generally emerging market) and New Zealand perspective, the costs and implications of foreign banking ownership on domestic banking systems. This 'econometric' or 'statistical' focus, has helped to illustrate the fact that very little has been done to ascertain the general 'perception and understanding' that banking consumers have of foreign-owned banks and the impact that they may have on local banking systems. This gap in the literature, provides justification for this study and the research methodology that was developed.

With the relative theoretical background having been recorded in this chapter, the next chapter details the research methodology and the way in which it was developed for this research.

CHAPTER 4

RESEARCH METHODOLOGY

4: Methodology

4.1 Introduction

This chapter details the methodology used in this research. It outlines the combined nature of the research, the way in which participants were selected, and the factors associated with the sample size. This chapter also examines the research tool used in the study, its relative strengths and weaknesses, the design and measurement techniques, and the ethical issues incorporated into its development. Finally, the chapter discusses the way in which the data was collected and the types of statistical analyses that were used.

4.2 Combined Research

The mail-out questionnaire incorporated in this research was developed in joint collaboration with Xiaojie Zhuang, a Master's research student in the Department of Finance, Banking and Property at Massey University (Palmerston North). As a result of this collaboration, questions 9, 10, 11, and 12 (see Appendix 2) of the questionnaire are not relevant to this research, and are not discussed in this thesis.

4.3 Participants

Participants in this research study were randomly selected, using computer software, from the New Zealand Electoral Roll (for all electorates), and then screened to eliminate anyone whose date of birth was prior to 1920.

4.4 Sample Size

This research was assisted by a Reserve Bank of New Zealand grant. As a result of this support, 2250 questionnaires were distributed throughout New Zealand. It was thought that this figure would be large enough to provide a worthwhile dataset and a reasonable indication of the attitudes and level of understanding that New Zealanders have on the issues of banking ownership, banking risks and their perception, and government involvement.

From the initial distribution, a total of 311 completed questionnaires were returned, an overall response rate of 13.8 percent.²⁹ This figure was a little disappointing and somewhat lower than the 20 percent response rate that had been anticipated. A number of factors may have contributed to this response rate. Firstly, the mailing of the questionnaire coincided with the early stages of a New Zealand general election campaign, and reference in the covering information sheet (reproduced in Appendix 1) to data having been obtained from the electoral roll may have deterred respondents. Secondly, people may have found the questionnaire difficult to complete, a factor that is reflected in the higher than expected error rates received for some questions. Thirdly, the shared nature of the questionnaire, meant that it was longer than it might have otherwise been, which may also have contributed to the lower than expected response rate. Overall, the lower response rate also reflects one of the disadvantages of conducting research by mail-out questionnaire; that is, because there is no researcher present, there is no pressure on the person to respond, or to offer help to the person should they need it.

4.5 The Research Method

For the purpose of this research, a mail-out questionnaire was developed and distributed throughout New Zealand. This was the first time that this type of method has been used to address the perception and understanding that banking customers

²⁹ Please refer to Appendix 3 for a full demographic analysis of the respondents.

have about the issues of foreign bank ownership and risk perception. Previous studies in this area, by To and Tripe (2002) and Zaheer and Mosakowski (1997), have utilised existing financial data and econometric models to carry out hypothesis based testing, while Hull's (2002) study on the implications of foreign ownership in New Zealand, was largely literature based and contained an array of background data on the New Zealand banking system.

A mail-out questionnaire was chosen ahead of other questionnaire approaches, such as a telephone survey, street based interview, open questions interview, or Internet based survey because:

- It was perceived to be less invasive. Respondents were able to complete it in their own time, in an un-pressured environment.
- It was cheaper and less time consuming. There was no travel or toll based phone charges involved.
- It provided the best means of ensuring a larger geographic and demographical spread within the sample. It was sent anywhere postal services were available.
- It was less susceptible to interviewer bias. There was very little opportunity for the researcher to rephrase questions and/or coerce respondents into giving answers.
- It provided a more obvious guarantee of anonymity. There was no direct contact with the respondent.
- It provided a formal, closed, and categorised-structure, that could be more easily replicated and implemented for future research studies, such as those that might be undertaken by the Reserve Bank.

However, despite these advantages and the choice to use a mail-out questionnaire, there were a number of weaknesses that had to be considered and effectively managed during its development. These included:

- Lower response rates – as there is little or no pressure on respondents to complete and return the questionnaire.

- Lack of researcher control – results could be tainted if the respondent takes time to find the ‘correct’ answers.
- Difficulty in clarifying respondent uncertainties – could present inaccurate perceptions.
- Susceptibility to bias – those that respond, are more likely to have an interest in banking and the New Zealand financial marketplace (Zikmund, 2003).

In an attempt to help overcome these weaknesses, the researcher developed a questionnaire that contained highly standardised questions and instructions that were relevant, well-worded and easy to follow. A cover sheet was also attached (reproduced in Appendix 1) containing information about the research, the role and rights of the respondent, the anonymity and confidentiality of the results, and relevant contact information should a respondent want to find out more about the research. The questionnaire was also exposed to rigorous pre-test evaluations by senior members of the Massey University Banking Department. These issues are discussed at greater length later in the chapter.

4.5.1 Questionnaire Design

In an attempt to develop a highly relevant and accurate questionnaire that delivered reliable and valid results, a number of important design factors were considered.

4.5.1.1 The structure and general layout of the questions

All questions, with the exception of five and six were designed according to the fixed-alternative method, whereby respondents were given a specific number of alternative responses and asked to choose the one closest to his or her viewpoint (Zikmund, 2003). As a result of this, there were no open-ended questions per se; however, there were opportunities in questions five and six, when the ‘other’ option was included within the make-up of the question. This ‘other’ option, gave participants an opportunity to express their answer in an open-ended manner.

4.5.1.2 The phrasing of the questions

The questions were written using simple conversational language, so as to ensure that they were easily understandable to all respondents; this was an issue that was of particular importance when defining the different types of bank risk in question two. Each question addressed one specific issue, so as to avoid developing double-barrelled questions that may induce bias. The selectable options for each question were designed so that they were not ambiguous and that there were clear differences in what each selection meant. For example, question three's options were clearly differentiated as being 'better'; 'no change'; 'worse'; and 'don't know'.

4.5.2 Measurement Techniques Used in Questionnaire

The questionnaire was developed in a manner that addressed the four key constructs identified in the research. These constructs were banking ownership, bank risks, risk perception, and government involvement. In an attempt to explore these issues and obtain relevant answers to the questions posed, a number of measurement techniques were incorporated within the questionnaire. A copy of the full questionnaire is reproduced in Appendix 2.

Knowledge of banking ownership in New Zealand (question one) was measured using the choice measurement technique (Zikmund, 2003). Using a list of 12 financial institutions, people were asked to choose whether a financial institution was locally-owned, foreign-owned, or a non-banking institution. There was also the option 'don't know' if a respondent was unsure of a financial institution's particular ownership details.

In order to measure the respondents' attitudes towards the various banking risks, a ranking scale was used. A ranking scale is stated by Zikmund (2003), as being a measurement task that requires respondents to rank in order a small number of issues on the basis of overall preference. In question two, respondents were asked to rank in order, from most important to least important, the following risks: credit risk, interest rate risk, foreign exchange risk, operational risk and technology risk.

Category scales were also used throughout the questionnaire. Zikmund (2003) defines a category scale as being ‘an attitude scale consisting of several response categories to provide the respondent with alternative ratings’ (p. 311). These scales helped to measure and categorise the respondents’ understanding and attitudes towards: banking ownership in New Zealand (question one); the impact that foreign ownership may have on the risks that banks face (questions three and four); and the issue of government involvement (question thirteen).

Category scales were also included in questions five and six. However, in these instances, respondents were given the opportunity to select multiple answers to a single question. For example, question five asked which factors would make foreign-owned banks less risky than locally-owned banks. Respondents were given multiple options which included amongst others: having a big volume of business; having operated in New Zealand for a long time; and, having a good brand image.

Monadic scales were used to measure the impact that foreign ownership may have on the stability (question seven) and profitability (question eight) of the New Zealand banking system. A monadic scale is defined by Zikmund (2003) as ‘any measure of attitudes that asks respondents about a single concept in isolation’ (p. 324). For example, in question seven respondents were asked whether the concept of foreign bank ownership made the New Zealand financial system more or less profitable. The scale used contained five specific options: ‘a lot less profitable’; ‘less profitable’; ‘neutral’; ‘more profitable’; ‘a lot more profitable’; with an additional sixth option of ‘don’t know’.³⁰

Overall, the inclusion of measurement scales provided an easy and flexible means of structuring both the questions and the answers they generated. From a respondent’s perspective, the set pre-selected answers provided a simple means of answering questions. While from the researcher’s perspective, the scaled parameters allowed for the numerical coding of answers. This simplified the data collection and analysis processes associated with the research.

³⁰ Refer to Appendix 2 for a review of structuring of questions seven and eight.

4.5.3 Other Measurement Issues

Another important issue involved with the development of the questionnaire, and the types of measurement scales used, was the use of pre-tests. Conducted by the researcher and senior Banking Department staff at Massey University, these pre-tests acted as a means of ensuring that the wording of the questions was clear, to the point, and unambiguous. The tests also helped to ensure the reliability and validity of the measures used; ensuring they were free from error, would yield consistent results and most importantly, measure what was intended to be measured.

4.5.4 Other Components of the Questionnaire

Included with the questionnaire was a cover letter/information sheet that explained to the questionnaire recipient: who was conducting the research, what the topic of the research was and its importance, how the recipient was selected for the research (i.e. randomly selected from the electoral roll), the rights of the respondent and the ethical considerations of the research, as well as a range of contact details should the potential respondent require clarification about a question. A form was also included with the letter, whereby respondents were given the opportunity, should they choose to do so, to receive a summary of the research's findings.

Another important component of the questionnaire was the demographic component. Respondents were asked to provide information about their gender, age, ethnicity, personal yearly income and highest level of education. The demographic component allowed for the comparative analysis of the types of responses made by particular categories of respondents, for example, how people aged 40 or older perceive banking risk, as compared to people aged 39 or younger.

4.5.5 Ethical Considerations

The questionnaire was developed in a manner that adhered to all of the necessary ethical guidelines, as set out by Massey University's Human Ethics Committee (MUHEC) in the *Code of Ethical Conduct for Research, Teaching and Evaluations Involving Human Participants*. Questionnaire respondents were guaranteed anonymity as no identifiable information, such as names or contact details were sought in the questionnaire. The returned questionnaires were treated in a confidential manner, with only the researcher being able to open them, and tabulate and analyse the data.

In an attempt to minimise the threat of harm to the university, researchers, respondents, banks and other institutions or groups involved, the questions included in the questionnaire did not ask for any potentially damaging information. Participation in the questionnaire was entirely voluntary and informed consent was implied, by the fact that the participants chose to respond to the survey. The respondent had the absolute right to not respond, if he or she chose not to do so (MUHEC, 2004).

4.6 Data Collection and Analysis

The completed questionnaires were returned to the Massey University Banking Department where they were kept until the data analysis phase of the research. From an ethical perspective, the returned questionnaires were stored away and left unopened until they had been received by the researcher. This ensured that the results were kept confidential.

The data analysis process was initially conducted using Microsoft Excel. By using this program, the researcher was able to tabulate the results in a categorised manner. Answers to both the research and demographic based components were coded using the numbers 0 and 1. Selected responses were coded as 1, whilst non-selections were

coded as 0. When all of the various options for each of the questions were coded, totals were drawn and the results analysed.

After the initial input of data, Excel was then used to conduct means analyses for the results; such as the average respondent rank for operational risk. This was followed by a calculation of frequency distributions on all of the scales measured within the questionnaire; for example, the number of persons that believed foreign ownership made the New Zealand financial marketplace less profitable. The second part of the analysis involved the use of Excel to conduct chi-square tests to ascertain the correlation between various variables. For the chi-square analysis the following formula was used:

$$\chi^2 = \sum_{i=1}^k \frac{(O_i - E_i)^2}{E_i}$$

Note: that the test statistic follows a chi-square distribution with $(r-1)(c-1)$ degrees of freedom and 5% level of significance. Note also, that O_i is the observed frequency in cell i , E_i is the expected frequency in cell i , and k is the number of cells or categories in the contingency table with r rows and c columns.

Using the above formula, the chi-square analysis tested the dependency (or independence) of a range of variables, including, knowledge of banking ownership, risk perception, knowledge of RBNZ deposit insurance policy, and demographic traits.³¹ A dependency (reject H_0 hypothesis) between the two variables was established if the (χ^2) value was greater than the test statistic (degrees of freedom and 5% level of significance). Two variables were deemed to be independent of each other (accept H_0 hypothesis) if the (χ^2) value was lower than the test statistic.

For some of the tests, the researcher has combined categories to increase the frequency in each cell, that is, combined income groups and age groups. This is because the test statistic above, is based on discrete (or count) data and is

³¹ In the statistical analysis that was conducted, all demographic traits except ethnicity were analysed. The ethnicity segment was not analysed because the small data set meant that there was insufficient ethnic diversity within the sample.

approximated by chi-squared distribution. To make this a valid approximation it is required that the expected frequency of each cell exceeds five (Keller *et al*, 1990).³²

4.7 Summary

This chapter has outlined and analysed the various components integral to the methodological make up of this research. It looked at who the participants in the research were, how they were selected, the size of the sample used, the amount of responses received, and the necessary ethical considerations that were adhered to. Furthermore, the chapter has explained how the research instrument, in the form of a mail-out questionnaire, was designed, developed, and implemented and the decisions that went into this production process. The treatment the data received, in terms of collection and analysis, was also explained.

³² Even though groups were combined, the small data set meant that there were still instances where the frequency was less than five.

CHAPTER 5

RESEARCH RESULTS

5: Research Results

5.1 Introduction

The questions that were asked and the results that were gained from the mail-out questionnaire are discussed in this chapter. Two types of results are discussed, the first documents the findings of basic means analyses (where relevant), and the frequency distributions of the scales measured in questions 1-8, and 13 of the questionnaire.³³ The second type of results documented, were obtained from chi-square tests. The chi-square analysis focused on the relationship between scales measuring demographic traits, knowledge of banking ownership (question 1), risk perception (question 2), and knowledge of deposit guarantee policy (question 13).³⁴

The chapter is broken up in a manner which addresses the results for the six objectives of this research. These objectives are restated as being:

1. To ascertain the extent to which New Zealand banking customers know which banks are foreign and locally-owned.
2. To determine the perception of the risks that foreign and locally-owned banks face in New Zealand.
3. To ascertain the effect that bank ownership has on the perception of banking related risks.
4. To ascertain what factors affect the perceived risk of a locally or foreign-owned bank.
5. To determine the perceived impact of foreign bank ownership on the stability and profitability of the New Zealand financial system.

³³ Because the questionnaire was jointly developed with Xiaojie Zhuang, only questions 1-8 and 13 are relevant to this research.

³⁴ Chi-square tests were calculated on only questions 1, 2, and 13 because some of the other terms used were not clearly defined. There was also no mapping of the specific risk type to ownership (refer to the limitations of study section in Chapter 7).

6. To determine what New Zealand banking customers know about the issue of Government policy and its involvement within the New Zealand banking system.

The questions reviewed are examined under these headings and not necessarily in the order in which they were included in the questionnaire.³⁵

5.2 The Results

5.2.1 Objective One: To ascertain the extent to which New Zealand Banking Customers know which Banks are Foreign and Locally-owned.

Question 1: *Which of these financial institutions are banks? Are the banks foreign or locally-owned?*

The issue of banking ownership in New Zealand was specifically addressed in question one of the questionnaire. In question one, respondents were given a list of 12 financial institutions that operate in New Zealand, these were ANZ, ASB, BNZ, Credit Union, HSBC, Kiwibank, National Bank, PSIS, SBS, Super Bank, TSB Bank, and Westpac. In order to answer this question, respondents were given the option of making a selection under one of the following four headings: 'locally-owned', 'foreign-owned', 'non-bank', and 'don't know never heard of'. The tabulated results for this question are shown below.

³⁵ The demographic break down of those who responded to the survey is available in Appendix 3. A statistical analysis of the correlations between demographic variables, knowledge of ownership, and perception of risk is available in Appendix 4.

Table 5.1: Knowledge of banking ownership in New Zealand

	Locally-owned bank	Foreign-owned bank	Non-Bank	Don't Know	Error
ANZ	7.72	89.39	0	1.93	0.96
ASB	33.76	61.09	0	2.89	2.25
BNZ	32.15	64.63	0	2.57	0.64
Credit Union	18.97	5.14	56.91	15.76	3.22
HSBC	4.18	56.27	5.79	30.87	2.89
Kiwibank	95.82 ³⁶	0.32	0.32	2.25	1.28
National Bank	12.22	84.24	0	1.61	1.93
PSIS	33.12	4.50	51.13	9.00	2.25
SBS	16.72	6.11	59.58	45.66	1.93
Super Bank	9.97	36.66	9.65	42.44	1.28
TSB Bank	75.56	10.93	2.89	9.32	1.28
Westpac	6.11	91.00	0	2.25	0.64

Note: All figures shown in the above table are in percentage form. The error percentages given reflect the fact some respondents chose to either, not answer certain components of the question or, gave multiple selections for each banking brand, for example, they may have selected Credit Union as being both a locally-owned bank and a non-bank institution.

5.2.1.1 Foreign-owned banks

Included within the list of 12 financial institutions were seven foreign-owned banking brands³⁷; these are the ANZ, ASB, BNZ, HSBC, National Bank, Super Bank and Westpac. Of the foreign banks listed, the bank that was most recognised as being foreign-owned was Westpac, with 91% of respondents stating that it was foreign-owned. Other foreign-owned bank brands that were recognised were the ANZ (89.39%), National Bank (84.24%), BNZ (64.63%) and ASB (61.09%). The bank that was least recognised as being foreign-owned was the Super Bank, with only 36.3% of respondents stating it to be foreign-owned. The results from the foreign-owned component showed that of the 311 completed questionnaires returned, 45 or 14.47 % of respondents correctly answered the foreign-owned bank component.

³⁶ The figures highlighted in bold represent the percentage of respondents that made the correct selection for that particular financial institution.

³⁷ The term brand is used because the National Bank is owned by the ANZ. The official company name is ANZ National Bank Limited.

5.2.1.2 Locally-owned banks

Of the 12 financial institutions listed, only two are locally-owned; these are Kiwibank and the TSB Bank. The results showed that 95.82% of respondents selected Kiwibank as being locally-owned; while 75.56% of respondents claimed that the TSB Bank was a locally-owned banking institution. Other financial institutions that featured highly in this segment were the ASB with 33.76%, the PSIS with 33.12%, and the BNZ with 32.15%. The results from the locally-owned section showed that of the 311 completed questionnaires returned, 67 or 21.54% of respondents correctly answered the locally-owned bank component.

5.2.1.3 Non-banks

There were three non-banks included in the list of 12 financial institutions; these were the Credit Union, PSIS and the SBS. The results showed that of these non-banks, the most recognisable was the Credit Union with 56.91%; this was followed by the PSIS with 51.13%, and the SBS with 29.58%. The results for the non-bank component showed that of the 311 completed questionnaires returned, 50 or 16.08% of respondents correctly answered the non-bank segment.

5.2.1.4 Don't know

The least known of the 12 financial institutions, was the SBS with 45.66%; this was followed by Super Bank with 42.44% and HSBC with 30.87%.

5.2.1.5 Overall

The research found that only 18 or 5.79% of the 311 total respondents were able to accurately categorise each of the 12 financial institutions as being either a locally-owned, foreign-owned, or a non-bank organisation. While very few respondents were able to correctly categorise all 12 financial institutions, the average total respondent score for the bank ownership question was 7.9 out of 12.³⁸

³⁸ The score refers to the number of financial institutions that a respondent has correctly identified as being either foreign-owned, locally-owned or a non-bank. A respondent's score was marked out of 12

5.2.2 Objective One: Chi-square Results

From an ownership perspective, the most significant results from the chi-square tests showed that there is sufficient evidence (at the 5% level of significance) to indicate that there is a dependency between correctly identifying the ownership status of a financial institution and:

- income (over \$40,000);
- gender (male);
- perception of foremost risk (*foremost risk* refers to a respondent selecting a particular banking risk as having a 1 in importance);³⁹ and
- knowledge of deposit guarantee policy (a respondent's knowledge was classified as being either 'uninformed' or 'well-informed').⁴⁰

The results of all other ownership related chi-square tests were found to support the Null (H_0) hypothesis (see Appendix 4 for results). The results shown below represent the areas where there are dependencies.⁴¹

5.2.2.1 Income and correctly identifying bank ownership

H_0 : Income and knowledge of ownership are independent.

H_A : There is a dependence between income level and knowledge of ownership.

Table 5.2: Income - Frequencies: Expected, Observed

	Up to \$39,999	\$40,000 +	Totals
0 - 4	(19.8) 31	(16.2) 5	36
5 - 8	(75.2) 86	(61.8) 51	137
9 - 12	(73) 51	(60) 82	133
Totals	168	138	306

(number of financial institutions listed), with marks given for correctly selecting an institution as being foreign-owned, locally-owned, or a non-bank (correct answers are highlighted in bold in Table 5.1).

³⁹ This dependency was brought about by the fact that the results for interest rate and technological risk were heavily skewed (see Appendix 4.2).

⁴⁰ A respondent was deemed to be 'well-informed' if they knew that the Government does not guarantee any bank deposits, while an 'uninformed' respondent was classified as one that did not know that the Government does not guarantee any banking deposits.

⁴¹ The chi-square results shown in this chapter have been abbreviated. The full workings are available in Appendix 4.

The test statistic follows a chi-squared distribution with $(r-1)(c-1)$ degrees of freedom. Reject if calculated value (χ^2) exceeds 5.9914 (chi-squared distribution with 2 degrees of freedom and 5% level of significance).

$$\chi^2 = \sum_{i=1}^k \frac{(O_i - E_i)^2}{E_i}$$

Using the above formula $\chi^2 = 32.21380954$

Conclusion: Reject H_0 . There is sufficient evidence (at the 5% level of significance) to indicate that there is a dependency between income and correctly identifying the status of ownership of financial institutions.

5.2.2.2 Gender and correctly identifying bank ownership

H_0 : Gender and knowledge of ownership are independent.

H_A : There is a dependence between gender and knowledge of ownership.

Table 5.3: Gender - Frequencies: Expected, Observed

	Male	Female	Totals
0 - 4	(16.6) 9	(20.4) 28	37
5 - 8	(62.2) 51	(76.8) 88	139
9 - 12	(58.2) 77	(71.8) 53	130
Totals	137	169	306

The test statistic follows a chi-squared distribution with $(r-1)(c-1)$ degrees of freedom. Reject if calculated value (χ^2) exceeds 5.9914 (chi-squared distribution with 2 degrees of freedom and 5% level of significance).

$$\chi^2 = \sum_{i=1}^k \frac{(O_i - E_i)^2}{E_i}$$

Using the above formula $\chi^2 = 20.92095596$

Conclusion: Reject H_0 . There is sufficient evidence (at the 5% level of significance) to indicate that there is a dependency between gender and correctly identifying the status of ownership of financial institutions.

5.2.2.3 *Perception of foremost risk and correctly identifying bank ownership*

H_0 : perception of foremost risk and knowledge of ownership are independent.
 H_A : there is a dependence between perception of foremost risk and knowledge of ownership.

Table 5.4: Perception of foremost risk - Frequencies: Expected, Observed

	Credit	Interest	Foreign exchange	Operational	Technological	Totals
0 - 4	(6.5) 3	(3.1) 9	(6) 7	(1.7) 2	(5.7) 2	23
5 - 8	(29) 32	(13.9) 9	(26.4) 22	(7.6) 9	(25.2) 30	102
9 - 12	(33.5) 34	(16)15	(30.6) 34	(8.7) 7	(29.1) 28	118
Totals	69	33	63	18	60	243

The test statistic follows a chi-squared distribution with $(r-1)(c-1)$ degrees of freedom. Reject if calculated value (χ^2) exceeds 15.5703 (chi-squared distribution with 8 degrees of freedom and 5% level of significance).

$$\chi^2 = \sum_{i=1}^k \frac{(O_i - E_i)^2}{E_i}$$

Using the above formula $\chi^2 = 20.05747992$

Conclusion: Reject H_0 . There is sufficient evidence (at the 5% level of significance) to indicate that there is a dependency between perception of foremost risk and correctly identifying the status of ownership of financial institutions.

5.2.2.4 *Knowledge of deposit guarantee policy and correctly identifying bank ownership*

H_0 : Knowledge of ownership and knowledge of deposit guarantee policy are independent.

H_A: There is a dependence between knowledge of ownership and knowledge of deposit guarantee policy.

Table 5.5: Knowledge of deposit guarantee policy - Frequencies: Expected, Observed

	Well-informed	Uninformed	Totals
0 - 4	(17) 16	(20) 21	37
5 - 8	(61.7) 49	(72.3) 85	134
9 - 12	(78.3) 76	(72.8) 59	135
Totals	141	165	306

The test statistic follows a chi-squared distribution with $(r-1)(c-1)$ degrees of freedom. Reject if calculated value (χ^2) exceeds 5.9914 (chi-squared distribution with 2 degrees of freedom and 5% level of significance).

$$\chi^2 = \sum_{i=1}^k \frac{(O_i - E_i)^2}{E_i}$$

Using the above formula $\chi^2 = 7.675670823$

Conclusion: Reject H₀. There is sufficient evidence (at the 5% level of significance) to indicate that there is a dependency between knowledge of ownership and knowledge of deposit guarantee policy.

5.2.3 Objective Two: To determine the Perception of the Risks that Foreign and Locally-owned Banks face in New Zealand.

Question 2: Rank in order of importance the following bank risks, using numbers 1 to 5, with 1 being the most important factor and 5 being the least important factor.

The issue of banking risk was specifically addressed in question two of the questionnaire. In question two, respondents were given a list of five different types of banking risks; ‘credit risk’, ‘interest rate risk’, ‘foreign exchange risk’, ‘operational

risk’, and ‘technological risk’. Respondents were then asked to rank these risks in order of importance.⁴² The results are shown in tabulated form below.

Table 5.6: The perceived importance of bank related risks

	1	2	3	4	5	Mean ranking
Credit risk	28.10	16.12	27.69	18.18	9.92	2.66
Interest rate risk	13.64	29.34	31.40	18.18	7.44	2.76
Foreign exchange risk	26.03	31.82	18.60	13.64	9.92	2.50
Operational risk	7.44	8.68	12.40	26.03	45.45	3.93
Technological risk	24.79	13.22	9.50	25.21	27.27	3.17

Note: The mean ranking was calculated by dividing the total overall score by the number of valid responses. There was a total error rate of 22.2% for question two. The high error rate was reflective of the fact that people did not rank the risks in an order from one through to five.

5.2.3.1 Risks perceived to be most important

The risk that respondents were the most concerned about was foreign exchange risk (with a mean ranking of 2.50). The results showed that 57.85% of respondents ranked foreign exchange risk as either a 1 or 2 in importance. The next most important risk was credit risk (with a mean ranking of 2.66). The results showed that 44.2% of respondents ranked credit risk as either a 1 or 2 in importance.

5.2.3.2 Risks perceived to be least important

The risks respondents were the least concerned about were operational risk (with a mean ranking of 3.93), and technological risk (with a mean ranking of 3.17). In terms of operational risk, 71.48% of respondents ranked it as either a 4 or 5 in importance, while 52.48% of respondents ranked technological risk as either a 4 or a 5 in importance.

⁴² For a review of the way in which these risks were defined in the questionnaire, please refer to Appendix 2 (question 2).

5.2.4 Objective Two: Chi-square Results

From a foremost risk perspective, the most significant results from the chi-square tests showed that there is sufficient evidence (at the 5% level of significance) to indicate that there is a dependency between the perception of foremost risk and correctly identifying the ownership status of a financial institution (see chi-square results in section 5.2.2.3). Another interesting result was the very strong independency between education and perception of foremost risk. The results below highlight this strong independency.

5.2.4.1 Education and foremost risk selection

H₀: Perception of foremost risk and education are independent.

H_A: There is a dependence between the perception of foremost risk and education.

Table 5.7: Education - Frequencies: Expected, Observed

	Credit	Interest	Foreign exchange	Operational	Technological	Totals
Up to U.E.	(19.6) 21	(9.4) 9	(17.9) 17	(5.1) 4	(17) 18	69
Tertiary Qualification	(49.4) 28	(23.6) 24	(45.1) 46	(12.9) 14	(43) 42	154
Totals	49	33	63	18	60	223

The test statistic follows a chi-squared distribution with (r-1)(c-1) degrees of freedom. Reject if calculated value (χ^2) exceeds 9.489 (chi-squared distribution with 4 degrees of freedom and 5% level of significance).

$$\chi^2 = \sum_{i=1}^k \frac{(O_i - E_i)^2}{E_i}$$

Using the above formula $\chi^2 = 0.639821231$

Conclusion: Accept H₀. There is sufficient evidence (at the 5% level of significance) to indicate that perception of foremost risk and education are independent.

5.2.5 Objective Three: To ascertain the effect that Bank Ownership has on the Perception of Banking Related Risks.

Question 3: *If the bank is foreign-owned does this make these risks better, no change, worse, don't know?*

For question three, the researcher sought to ascertain the effect that foreign bank ownership may have on the risks mentioned in question two. In question three, participants were asked whether foreign bank ownership made the risks ‘better’, ‘no change’, ‘worse’, or ‘don’t know’. The table below documents the research’s findings.

Table 5.8: The effect that foreign bank ownership has on banking risk

Effect	Valid responses	%
3a. Better	43	14.05
3b. No change	156	50.98
3c. Worse	64	20.92
3d. Don't know	43	14.05

Note: Question three had an error rate of 1.61%.

The results showed that 50.98% of respondents believed that foreign-owned banks do not change the dynamics of the risk. 20.92% of respondents felt that foreign-owned banks would make the risks asked in question two worse, while 14.05% stated that foreign-owned banks make these risks better.

Question 4: *If the bank is locally-owned does this make these risks better, no change, worse, don't know?*

In question four, the researcher sought to ascertain the effect that local bank ownership may have on the risks mentioned in question two. Participants were asked whether locally-owned banks made these risks ‘better’, ‘no change’, ‘worse’, or ‘don’t know’. The table below documents the research’s findings.

Table 5.9: The effect that local bank ownership has on banking risk

Effect	Valid responses	%
4a. Better	62	20.26
4b. No change	157	51.31
4c. Worse	53	17.32
4d. Don't know	34	11.11

Note: Question four had an error rate of 1.61%.

The results for question four showed that 51.31% of respondents believe that locally-owned banks do not change the dynamics of the risks. 20.26% of respondents felt that local bank ownership made these risks better, while 17.32% stated that locally-owned banks make these risks worse.

5.2.6 Objective Four: To ascertain what Factors affect the Perceived Risk of a Locally or Foreign-owned Bank.

Question 5: *Which factors would make foreign-owned banks less risky than locally-owned banks?*

In question five, the researcher attempted to ascertain the factors that were considered to make foreign-owned banks less risky than banks that were locally-owned. Respondents were given the opportunity to select multiple options, the results of which are shown in tabulated form below.

Table 5.10: The factors that make foreign-owned banks less risky than locally-owned banks

Factors	Valid responses	%
5a. Having a big volume of business	213	36.29
5b. Have operated in New Zealand for a long time	132	22.49
5c. A good brand image	94	16.01
5d. That the parent company will stop the New Zealand bank making silly mistakes	85	14.48
5e. None of the above, foreign-owned banks are more risky	36	6.13
5f. Other	27	4.60

Note: Question five had an error rate of 2.25%.

The results showed that respondents perceived that ‘having a big volume of business’ (36.29%), and ‘have operated in New Zealand for a long time’ (22.49%), were the major factors that make foreign-owned banks less risky than banks that are locally-owned. Only 4.6% of respondents stated that foreign-owned banks are more risky.

In terms of the ‘other’ findings, some of the comments included:

- Diversification of risk across different markets and jurisdictions, help to make foreign-owned banks less risky.
- Foreign-owned banks are more likely to look after their own nations rather than their New Zealand customers.
- Other international banks have large cash resources.
- There is ‘a wall’ between a New Zealand bank’s business and their foreign owners.

Question 6: *Which factors would make foreign-owned banks more risky than locally-owned banks?*

In question six, the researcher attempted to ascertain the factors that were considered to make foreign-owned banks more risky than banks that were locally-owned. Respondents were given the opportunity to select multiple options, the results of which are shown in tabulated form below.

Table 5.11: The factors that make foreign-owned banks more risky than locally-owned banks

Factors	Valid responses	%
6a. Having a small volume of business	111	19.65
6b. Have operated in New Zealand for a short time	109	19.29
6c. A poor brand image	117	20.71
6d. Parent will make the bank do things in its interests not the NZ bank's interest	202	35.75
6e. None of the above, foreign-owned banks are less risky	19	3.36
6f. Other	7	1.24

Note: Question six had an error rate of 2.57%.

The results showed that 35.75% of respondents stated that the most important factor that makes foreign-owned banks more risky than locally-owned banks was the fear that the parent company would make the bank do things in its own interest and not the New Zealand bank’s interest. This was followed by a poor brand image (20.71%), being in New Zealand for a short time (19.65%), and having a small volume of business (19.29%). Only 3.36% of respondents stated that locally-owned banks are more risky.

In terms of the ‘other’ findings some of the comments included:

- Banks always act in their own interest, be they in New Zealand or offshore.
- The foreign-owned bank is unable to sympathetically meet the needs of their New Zealand customers.

5.2.7 Objective Five: To determine the Perceived impact of Foreign Bank Ownership on the Stability and Profitability of the New Zealand Financial System.

Question 7: *Does foreign ownership of banks make the New Zealand financial system more or less stable?*

Question seven examined the perceived impact of foreign-owned banks on the stability of the New Zealand financial system. The results are shown below.

Table 5.12: The perceived impact that foreign bank ownership has on the stability of the New Zealand financial system

Impact	Valid responses	%
7a. A lot less stable	8	2.59
7b. Less stable	76	24.60
7c. Neutral	90	29.13
7d. More stable	72	23.30
7e. A lot more stable	16	5.18
7f. Don't know	47	15.21

Note: Question seven had an error rate of 0.96%.

The results showed that 29.13% of respondents believe that banks that are foreign-owned have had neutral effect on the stability of the New Zealand financial marketplace. 5.15% of respondents stated that foreign-owned banks have made the New Zealand financial system a lot more stable, while 2.59% of respondents felt that foreign bank ownership have made the New Zealand financial system a lot less stable.

Question 8: *Does foreign ownership of banks make the New Zealand financial system more or less profitable?*

Question eight addressed the issue of foreign ownership and its perceived impact on the profitability of the New Zealand financial system. The results are shown below.

Table 5.13: The perceived impact that foreign bank ownership has on the profitability of the New Zealand financial system

Impact	Valid responses	%
8a. A lot less profitable	33	10.82
8b. Less profitable	113	37.05
8c. Neutral	57	18.69
8d. More profitable	51	16.72
8e. A lot more profitable	4	1.31
8f. Don't know	47	15.41

Note: Question eight had an error rate of 1.93%.

The results from this question show that 37.05% of respondents believe that foreign bank ownership has made the New Zealand financial system a lot less profitable, while only 16.72% of participants felt that foreign-owned banks have made the financial system more profitable.

5.2.8 Objective Six: To determine what New Zealand Banking Customers know about the issue of Government Policy and its involvement within the New Zealand Banking System.

Question 13: *What kind of guarantee do you think the New Zealand Government and/or Reserve Bank provides to depositors in the case of a bank failure?*

This question sought to ascertain the level of understanding New Zealand bank customers have about the issue of deposit insurance and whether or not they believe their deposits are guaranteed.

Table 5.14: The type of guarantee provided by the New Zealand Government and/or Reserve Bank

Type of guarantee	Valid responses	%
13a. It is very clear that there is no government guarantee for my deposits	144⁴³	48.48
13b. It is not very clear, but I think a part of my losses will be compensated by the government	97	32.66
13c. It is quite clear that a part of my losses will be compensated by the government	10	3.37
13d. It is not very clear, but I think the government will guarantee all my bank deposits	38	12.79
13e. It is very clear that the government provides full guarantee for my deposits	8	2.69

Note: Question twelve had an error rate of 4.50%.

The results showed that 48.48% of respondents understood that their deposits would not be guaranteed by the Government, while only 15.48% (13d + 13e) of respondents believe that there is a chance that their deposits are guaranteed.

⁴³ The figures highlighted in bold represent the number of respondents that made the correct assumption that the New Zealand Government does not guarantee banking deposits in New Zealand. For the chi-square tests that were conducted in this research (see Appendix 4), respondents were deemed to be well-informed about RBNZ deposit insurance policy if they selected 13a (results highlighted in bold in Table 5.14).

5.2.9 Objective Six: Chi-square Results

From an ownership perspective, the most significant results from the chi-square tests showed that there is sufficient evidence (at the 5% level of significance) to indicate that there is a dependency between knowledge of deposit guarantee policy and:

- income (over \$40,000);
- age (40 years or older); and
- achieving a high score in correctly identifying the ownership status of a financial institution (see objective one for chi-square results).

The results of all other deposit insurance related chi-square tests were found to support the Null (H_0) hypothesis. The results shown below represent the areas where there are dependencies.

5.2.9.1 Income and knowledge of deposit guarantee policy

H_0 : Income and knowledge of deposit guarantee policy are independent.

H_A : There is a dependence between income level and the knowledge of deposit guarantee policy.

Table 5.15: Income - Frequencies: Expected, Observed

	Up to \$39,999	\$40,000 +	Totals
Well-informed	(76.8) 64	(63.1) 76	140
Uninformed	(91.1) 104	(74.9) 62	166
Totals	168	138	306

The test statistic follows a chi-squared distribution with $(r-1)(c-1)$ degrees of freedom. Reject if calculated value (χ^2) exceeds 3.8414 (chi-squared distribution with 1 degree of freedom and 5% level of significance).

$$\chi^2 = \sum_{i=1}^k \frac{(O_i - E_i)^2}{E_i}$$

Using the above formula $\chi^2 = 8.81901214$

Conclusion: Reject H_0 . There is sufficient evidence (at the 5% level of significance) to indicate that there is a dependency between income and correctly identifying policy on the guaranteeing of deposits.

5.2.9.2 Age and knowledge of deposit guarantee policy

H_0 : Age and knowledge of deposit guarantee policy are independent.

H_A : There is a dependence between age and the knowledge of deposit guarantee policy.

Table 5.16: Age - Frequencies: Expected, Observed

	39yrs or less	40yrs +	Totals
Well-informed	(48.8) 37	(95.2) 107	144
Uninformed	(56.2) 68	(109.8) 98	166
Totals	105	205	310

The test statistic follows a chi-squared distribution with $(r-1)(c-1)$ degrees of freedom. Reject if calculated value (χ^2) exceeds 3.8414 (chi-squared distribution with 1 degree of freedom and 5% level of significance).

$$\chi^2 = \sum_{i=1}^k \frac{(O_i - E_i)^2}{E_i}$$

Using the above formula $\chi^2 = 8.061587663$

Conclusion: Reject H_0 . There is sufficient evidence (at the 5% level of significance) to indicate that there is a dependency between age and correctly identifying policy on the guaranteeing of deposits.

5.3 Summary

This chapter has sought to detail the key results obtained from the research. The results were gained through basic means testing and the tabulation of frequency distributions. This was combined, where relevant, with the results of chi-square tests, which documented the relationship that existed between the expected and observed frequencies of data. The tests analysed the dependencies or independencies that exist between a range of variables, including demographic traits, banking ownership, risk perception, and the knowledge of deposit guarantee policy.

The next chapter discusses what these results may mean and their relevant implications.

CHAPTER 6

DISCUSSION OF RESULTS

6: Discussion of Results

6.1 Introduction

This chapter discusses the results documented in the previous chapter. The chapter interprets the results and details their potential implications. The primary research objectives have been restated before the relevant findings are discussed.

6.2 Objective One: To ascertain the extent to which New Zealand Banking Customers know which Banks are Foreign and Locally-owned.

6.2.1 Knowledge of Bank Ownership in New Zealand

In order to achieve this objective, recipients were given a list of 12 financial institution brands operating in New Zealand. These institutional brands⁴⁴ were ANZ, ASB, BNZ, Credit Union, HSBC, Kiwi Bank, National Bank, PSIS, SBS, Super Bank, TSB Bank, and Westpac. From these brands respondents were asked whether the financial institutions were foreign-owned, locally-owned, or a non-bank. The option of 'don't know' was also provided.

6.2.1.1 Knowledge of foreign-bank ownership

From a foreign-owned perspective, the research showed that a reasonably high percentage of respondents recognised ANZ (89.93%), the National Bank (84.24%), and Westpac (91%) as being foreign-owned. What was less well-known by respondents was that the ASB Bank (61.09%), and to a slightly lesser extent the BNZ

⁴⁴ Important to note again, that the term brand has been used because the National Bank is now owned by the ANZ and operates as part of the company ANZ National Bank Limited.

(64.63%) are foreign-owned. The fact that they were often perceived as being locally-owned may be representative of two major issues. Firstly, the BNZ and the ASB were some of the last major retail banks to be acquired by foreign owners. The BNZ was sold by the New Zealand Government to the National Australia Bank (NAB) in 1992, while a 75% share of ASB Bank was sold to the Commonwealth Bank of Australia (CBA) in 1989; the last locally-owned share (25%) was only sold to the CBA in October 2000 (ASB, 2005b). Secondly, the name BNZ is an acronym for the Bank of New Zealand, which may have misled some respondents into thinking that the bank must be locally-owned.

6.2.1.2 Knowledge of local-bank ownership

From a locally-owned perspective, the results showed that a very high percentage of respondents recognised Kiwibank (95.82%) and the TSB Bank (75.56%) as being New Zealand-owned banks. The fact that these banks are recognised as being locally-owned suggests that they have been well-branded, with their points of difference clearly defined.

6.2.1.3 Knowledge of non-bank institutions

In terms of the non-bank institutions, the research showed that the Credit Union (56.91%) and the PSIS (51.13%) were the most identifiable, while the SBS (29.58%) was the least recognised as a non-bank. These low scores help to demonstrate the fact that most respondents do not generally know which organisations are non-banks. If the Reserve Bank is attempting to encourage the New Zealand banking public to engage in prudent market disciplines, then a number of issues need to be addressed. More needs to be done to ensure that consumers actually understand which financial organisations are registered banks, which are non-banks, and the factors that distinguish the institutions as being different.

6.2.1.4 Most unrecognisable financial institutions

The results showed that the most unrecognisable financial institution was the SBS, with 45.66% of respondents stating that they had never heard of it; while 42.66% of respondents had not heard of Super Bank. The SBS figure was surprising given its long standing history and reputation as a financial organisation. However, it is conceivable that many respondents from the North Island may not have recognised it because of its strong concentration in the South Island. The fact that it was worded as SBS, not the Southland Building Society, may have also affected the results. The Super Bank result was less surprising given the fact that it is reasonably new to the New Zealand market. At present it has no identifiable or independently developed branch network, and relies solely on its joint arrangements with New World, Four Square, Pac 'n' Save, and Write Price supermarket chains.

6.2.1.5 Overall knowledge of bank ownership

Overall, these results reflect the fact that most respondents have a reasonable understanding of the ownership status of the financial organisations that were listed in the questionnaire. The results from the chi-square tests showed that higher income earners have a better understanding of bank ownership than lower income earners. This reflects an obvious point; those with more money (potentially more to lose) are generally more informed and have a greater understanding of the types of institutions where they can invest their money. The chi-square tests also showed that females and persons under the age of 40 had observed lower scores than was expected. This suggests that these segments of the community need to be targeted, so as to improve the overall awareness of banking ownership in New Zealand.

6.3 Objective Two: To determine the importance of the Risks that Foreign and Locally-owned Banks face in New Zealand.

To achieve this objective, respondents were asked to rank in order of importance (using numbers 1 to 5, with 1 being the most important factor and 5 being the least important factor) the following bank risks: credit risk, interest rate risk, foreign exchange risk, operational risk, and technology risk.

6.3.1 The Importance of Bank Risks

6.3.1.1 Most important bank risks

The results showed that of those that responded, the most important risks are foreign exchange risk, credit risk, and interest rate risk, with mean rankings of 2.5, 2.66, and 2.76 respectively. In terms of foreign exchange risk, the high ranking reflects the need for banks to effectively hedge their foreign and local currency exposures. The results may reflect the perception that the New Zealand currency, with a low volume of trade globally, is volatile and sensitive to world events. The fact that the results from the chi-square tests showed that well-informed persons (see Appendix 4.2) selected foreign exchange risk as being the risk of most importance, could suggest that this perception is real. The concern surrounding foreign exchange risk may also reflect the fact that respondents have a lack of knowledge of the hedging options that are available to banks.

From a credit risk perspective, the results suggest that respondents are concerned about the need for banks to provide sound grounds for lending. In a competitive market margins are often less, therefore profits from bank lending are often derived through a greater volume of lending; which should, if all things remain the same, equate to a higher percentage of bad loans. The highly competitive mortgage market is one area where a high volume of trade is needed to maximise profits. The credit risk findings may be reflective of the concern that respondents have towards the current lending practices of banks in the housing market. If interest rates were to rise,

an over concentration of lending in this area could expose banks to excessive risk (brought about by an increase in non-performing loans) and substantial financial losses. The involvement and role of interest rate changes within the credit risk scenario (increase in cost of mortgages and as a result the number of bad loans) may also help to account for the fact that interest rate risk was also perceived to be a risk of reasonable importance.

6.3.1.2 Least important bank risks

The least important risks were perceived as being operational risk and technology risk, with mean rankings of 3.93 and 3.17 respectively. In terms of operational risk, this result suggests that respondents are not overly concerned about the potential effect that bank fraud could have on a bank's ability to meet customer requests. This perception may highlight the confidence that respondents have in the safety and security procedures that have been implemented by banks. From a technological risk perspective, the results may also highlight a perception that respondents are confident with the ability of New Zealand banks to effectively manage technological infrastructures and the services that they support.

6.4 Objective Three: To ascertain the effect that Bank Ownership has on the Perception of Banking Related Risks.

To achieve this objective, respondents were asked if depending on whether a bank was foreign or locally-owned, does it make the risks (credit risk, interest rate risk, foreign exchange risk, operational risk, technology risk) they face 'better', 'worse', 'no change', or 'don't know'.

6.4.1 Impact of Ownership Status on Perception of Risk

The results from questions three and four of the study made interesting reading. Although there were slight variations in the perception of whether local or foreign-

owned banks would make the risks better or worse, the overall theme of the results highlighted the fact that banking ownership, whether it be foreign or local, does not influence the way in which respondents perceive banking related risks. These results support previous econometric studies by Goldberg *et al*, (2000), which suggested that the riskiness of a bank should not be expressed from an ownership perspective, more the asset quality, diversification, and overall health of the business.

The fact that banking ownership, whether it be foreign or local, does not influence the way in which respondents perceive banking related risks, suggests that respondents have confidence in the way both types of organisations manage their risk exposures. This perception may also suggest that respondents believe that foreign banks do not incur any costs that local firms do not, or vice versa. These perceptions may have greater validity given the fact that most respondents have a reasonable understanding of which banking organisations are local or foreign-owned. The finding that very few respondents believed foreign-owned banks to be no-more or no-less risky than locally-owned banks (see Tables 5.5 and 5.6) helps to further validate this objective's main finding.

6.5. Objective Four: To ascertain what factors effect the Perceived Risk of a Locally or Foreign-owned Bank.

To achieve this objective, respondents were given a list of factors that could make foreign-owned banks more or less risky than locally-owned banks. These factors included: having a large volume of business (or small volume of business); have operated in New Zealand for a long period of time (or have operated in New Zealand for a short period of time); a good brand image (or a poor brand image); that the parent company will stop the New Zealand bank making silly mistakes (or that the parent company will make the bank do things in its interests not the New Zealand bank's interest); foreign-owned banks are more risky (or foreign-owned banks are less risky). There was also an 'other' option where respondents were able to document their own perspectives, if the option that best suited their opinions was unavailable.

6.5.1 Factors that make Foreign-owned Banks Less or More Risky than Locally-owned Banks

6.5.1.1 Factors that make foreign-owned banks less risky

The findings showed that 'large bank size' and 'having operated in New Zealand for a long time' were the most important factors behind making a foreign-owned bank less risky than one that is locally-owned. These perception based findings support and reinforce previous claims made by Miller and Parkhe, (2002), Rittippant (2004), To and Tripe (2002), and Zaheer and Mosakowski (1997), in econometric based studies, that the larger the asset size, and the longer the length of time a foreign bank operates in a country, the less of a risk the bank presents to not only itself, but to the stability of the host country's financial system. As a result of these findings, and those of objective three, (that banking ownership does not change the way in which consumers perceive risk), the researcher believes that this further cements the belief that the theory 'liability of foreignness' is not relevant in a New Zealand banking context.

6.5.1.2 Factors that make foreign-owned banks more risky

The results showed that the most important factor that makes foreign-owned banks more risky is the belief that the parent company will make the bank do things in its own interests not the New Zealand bank's interests. This was followed by the belief that by having a poor brand image, a small volume of business, and having operated in New Zealand for only a short period of time, causes foreign banks to be potentially more risky than local banking organisations.

The researcher believes that the perceived significance of these factors highlights the importance of the Reserve Bank and the role it plays in monitoring foreign-owned banks and the New Zealand financial system in general. The Reserve Bank's policies play a pivotal part in ensuring that only stable, well-resourced financial organisations are allowed to enter the New Zealand financial system and apply for registered bank status. In order to protect the New Zealand financial system, and ensure that all of the foreign-owned retail banks are financially sound and will act in the best interests of

their New Zealand customers, the Reserve Bank must effectively enforce its primary regulatory initiatives, such as:

- The requirement that a bank's directors must sign attestations in their bank's public disclosure statement that verify both the accuracy of the financial information and the adequacy of their bank's risk management systems.
- The promotion of accurate and regular financial disclosure statements that include a comprehensive range of financial, corporate, and risk-related information about the bank.
- Imposing prudential requirements that reduce the probability of banks experiencing financial distress to a very low level. These requirements include minimum capital adequacy, lending limits to related parties, and a requirement that systemically important banks must be locally incorporated (RBNZ, 2005b).

6.6 Objective Five: To determine the Perceived impact of Foreign Bank Ownership on the stability and profitability of the New Zealand Financial System.

In order to achieve this objective, respondents were asked to state whether they felt that foreign ownership has made the New Zealand financial system: a lot less stable (or profitable), less stable (or profitable), neutral, more stable (or profitable), a lot more stable (or profitable). There was also a 'don't know' option if respondents were unsure of the impact of foreign-owned banks.

6.6.1 Does Foreign Ownership of Banks make the New Zealand Financial System More or Less Stable?

The results to this question highlighted the mixed feelings that New Zealanders have towards the impacts of foreign-owned banks on the New Zealand financial system.

These mixed perceptions differ slightly from the findings of an econometric study by Goldberg *et al*, (2000), which showed that during the Argentinean financial crisis, foreign-owned banks played an important role in helping stabilise an uncertain financial marketplace. There are a number of reasons as to why the results may differ. Firstly, the New Zealand financial system is far more developed than Argentina's, with high standards of auditing, accounting and disclosure, credit risk underwriting and supervision already in place. Secondly, the New Zealand financial system has had a very long association with foreign banks, whereas in Argentina and other Latin American countries they are a reasonably new feature of the banking landscape (Crystal *et al*, 2002). Thirdly, the New Zealand banking sector is heavily dominated by foreign-banks with 99% of banking assets in the hands of foreign owners; whereas in Argentina the figure was much closer to 50% (Crystal *et al*, 2002).

The issue of foreign ownership and the way in which it may affect the stability of the local financial systems has been widely discussed in recent years. Although the results of this research suggest that foreign-banks do not negatively impact the stability of the New Zealand financial system, research by Hull (2002), suggests that the undiversified nature of New Zealand's foreign banks could impact the stability of the New Zealand financial system. The undiversified asset structure could mean that if a financial crisis were to hit Australia and/or New Zealand, foreign parent banks in Australia may not be able to provide the required liquidity, capital support, and guarantees to their New Zealand subsidiaries or branches (Hull, 2002). If trouble occurred offshore, there is also the concern that funds may be transferred out of New Zealand to support a foreign parent (Evans and Quigley, 2002; Hull, 2002). The close relationship with Australia, through bank assets, synchronisation of business cycles, or bilateral trade, has also given rise to fear that financial shocks in Australia could be transmitted through into the New Zealand economy (Hull, 2002).

The issues of diversification (or lack of) and financial contagion and their potentially threatening relationship with financial instability, is something that the Reserve Bank of New Zealand is very mindful of. Through its three pillars of discipline (self, market, and regulatory), the Reserve Bank seeks to maintain a stable financial system by 'placing the management of risk in the hands of those closest to it, and lays

responsibility for outcomes with boards of directors, management, and creditors – that is, those who have the most to lose from a mismanaged bank’ (Bollard, 2005, p. 1).

6.6.2 Does Foreign Ownership of Banks make the New Zealand Financial System More or Less Profitable?

From a profitability perspective, the most significant result showed that the majority of respondents believe that foreign bank ownership makes the New Zealand financial system ‘less’ or ‘a lot less’ profitable. This perception differs from the findings of previous New Zealand based studies by Hull (2002), and Tripe and Liu (2001), which suggest that foreign bank ownership has increased the efficiency of the New Zealand financial system. However, it is in line with the findings of previous international studies by Berger *et al*, (2000), and Miller and Parkhe (2002), which found that foreign banks have a lower profit efficiency than local banking organisations, and as a result, detract from the profitability of the domestic financial system. The perceived reduction in profitability may reflect the belief that as the level of competition increases, the interest margins of banks decreases. The reduction in core lending margins has meant that banks have sought to increase the income they receive from non-interest related services, such as risk management solutions and general account fees.

These results could also reflect the perception, that as the banks are foreign-owned, the profits they make in New Zealand will be sent offshore to the Australian parent and not retained within the New Zealand financial system. Following on from this, is the possible belief that as a foreign firm, investment opportunities could be skewed towards its home market, and not that of New Zealand.

6.7 Objective Six: To determine what New Zealanders know about the issue of Government Policy and involvement within the New Zealand Banking System.

This objective focused on the understanding that respondents have about the issue of guaranteeing deposits and whether the New Zealand Government offers such a policy. In order to ascertain the understanding that respondents have on the issue, the researcher asked whether it was 'clear' or 'not clear' that the New Zealand Government would guarantee all, a part of, or none of their deposits.

6.7.1 The Level of Understanding Surrounding the Guaranteeing of Bank Deposits

The results highlighted two major findings. Firstly, that 48.48% of respondents believed that the Government/Reserve Bank offered no guarantee on the banking deposits they held. The results from the chi-square tests showed that respondents with a higher income, or better knowledge of ownership, were more inclined to have a better knowledge of the Reserve Bank's attitude towards deposit guarantee policy (see Appendix 4.9 and 4.11). Secondly, that 45.45% (option 13b + 13d on the questionnaire) of respondents (generally younger, with a lower income) are not clear on the Government's standing, either for or against the guaranteeing of deposits. These relationships, help to reaffirm a point made earlier, that those with more money (potentially more to lose) are generally more informed and have a greater understanding of institutions where they can invest their money and the types of regulatory policy that could have a bearing on the security of their investments.

Overall, the perceptions given in this study differ from a previous study by Tripe (2005b), which found that 50% of respondents believed that the Government/Reserve Bank would guarantee deposits should a bank fail. Tripe (2005c) also found that 81% of respondents believed that the Government was either 'not very clear' or 'extremely unclear' in informing the public on how safe their deposits were. The significant reduction in the number of uncertain responses (48.48% of respondents in this study

were certain that no guarantee is given) to this question may suggest that the level of understanding surrounding the guaranteeing of deposits is improving. However, the fact that 45.45% are still uncertain, highlights the need to better inform and educate the New Zealand banking public. The confusion that still exists may stem from the fact that Kiwibank (a recently formed Government owned bank), has branded itself as offering a guarantee on deposits, a feature that differentiates itself from the attitudes of the Reserve Bank and of all other retail banks in New Zealand.

The results may also reflect the fact that, even though 48.48% of respondents believe that no guarantee is offered, if a banking failure were to occur, the effects on the banking customers and the wider New Zealand economy, would be too great for the Government to do nothing. One could therefore argue that although there is no legally acknowledged form of deposit insurance, there is an implied one. There is also the Reserve Bank's role as a lender of last resort that must be considered. The lender of last resort, which although it is by no means a guarantee, would act as a means of ensuring the safety of the bank and therefore the depositors that bank with it.

6.8 Summary

Using the six primary research objectives as a structural base, this chapter has discussed what the findings from this research may mean and their possible implications. The discussion has, where relevant, attempted to relate the results from this perceptions based study with previous econometric studies, so as to provide a comparative perspective between what people believe and what may have actually happened.

The next chapter summarises and concludes this study's main findings. It will also examine the study's limitations and where possible areas of further research may lie.

CHAPTER 7

CONCLUSIONS

7: Summary and Conclusions

7.1 Introduction

This chapter brings together all that has been written about in previous chapters. The research has been exploratory in nature, because there was little found in the previous literature to resolve the problem in a New Zealand context.

This final chapter will firstly summarise the key aspects of each of the previous chapters. In 7.2.1 the research aim is restated, with conclusions drawn from the research shown in 7.2.2. The limitations of the study are addressed in 7.3, while areas of possible further research are discussed in 7.4 and final conclusions are drawn in 7.5.

7.2 Summary of Conclusions drawn from the Analyses of Data

7.2.1 The Research Aim

Given the paucity of empirical evidence regarding the perception of foreign bank ownership in New Zealand, this thesis has sought to develop an in-depth awareness of what New Zealand banking customers understand about the potential risks of dealing with foreign-owned retail banks, relative to those that are New Zealand owned. The research covered in this thesis asked a number of questions, the answers to which help to resolve the research problem.

7.2.2 Conclusions

The conclusions drawn from the research are reported below, each grouped against the appropriate research objective. In the interests of clarity, the research objectives on which the various questionnaire questions were based are restated before the conclusions drawn are shown.

7.2.2.1 Objective one: To ascertain the extent to which New Zealand banking customers know which banks are foreign and locally-owned.

The results showed that respondents had an average score of 7.9 out of 12, which suggests that most have a reasonable understanding of which banks are, or are not foreign-owned. The chi-square tests showed that those respondents that were 'male' or were 'aged over 40' or earned 'over \$40,000' generally had higher observed scores than other respondents. This reflects an obvious point; those with more money (potentially more to lose) are generally more informed and have a greater understanding of the types of institutions where they can invest their money. The results also showed that much less is known about which banks are non-banking institutions. This begs the question, if the Reserve Bank is trying to pursue a prudent regulatory regime, then how can it be pursued effectively if the majority of banking consumers are unable to accurately identify financial institutions that are banks and those which are not? In light of this, it may be prudent for the Reserve Bank to look towards targeting 'females', 'younger persons', or 'lower income earners' about the differences in the ownership status amongst New Zealand's financial institutions and the potential ramifications of these differences.

7.2.2.2 Objective two: To determine the perception of the risks that foreign and locally-owned banks face in New Zealand.

The research showed that respondents are most concerned about foreign exchange risk and credit risk, and as a result, a bank's ability to hedge its foreign currency exposure and provide sound grounds for lending. From a foreign exchange risk perspective, the results may reflect the perception that the New Zealand currency,

with a low volume of trade globally, is volatile and sensitive to world events. The importance of credit risk may be a sign of the times and perhaps reflect a concern that respondents have about the stability of the property market and the lending practices of banks in this market. The perception that operational risk is the least important risk, suggests that respondents do not believe fraudulent activities by staff members could impact a bank's ability to meet customer requests. This perception may be representative of the confidence that respondents have in the security measures that have been implemented by banks in New Zealand, to protect themselves against fraudulent activities.

7.2.2.3 Objective three: To ascertain the effect that bank ownership has on the perception of banking related risks.

The research showed that banking ownership whether it is foreign or local, does not change the way in which respondents perceive risk. This perception is in line with the results of a previous econometric study by Goldberg *et al*, (2001), which suggested that the riskiness of a bank should not be expressed from an ownership perspective, more the asset quality, diversification, and overall health of the business.

7.2.2.4 Objective four: To ascertain what factors affect the perceived risk of a locally or foreign-owned bank.

The research showed that respondents perceive the key factors behind making a foreign-owned bank *less risky* than local banks are 'large bank size', and 'having operated in New Zealand for a long time'. Given that New Zealand's foreign-owned banks are large and have operated in New Zealand for a long time, could also help to explain why respondents believe that status of ownership does not impact the risks that banks face, and the belief that the theory 'liability of foreignness' is not relevant in a New Zealand context. The most important factor that is perceived to make foreign-owned banks *more risky* than locally-owned banks is the belief that 'the parent company will make the bank do things in its interests not the New Zealand bank's interest'. This perception highlights the importance of the Reserve Bank and the need for effective banking supervision (disclosure, director attestations, and the

mandatory incorporation of systemically important banks) so that foreign-owned banks do work in the best interests of New Zealand.

7.2.2.5 Objective five: To determine the perceived impact of foreign bank ownership on the stability and profitability of the New Zealand financial system.

In terms of stability, the research showed that New Zealand banking customers believe that foreign-owned banks do not add or detract from the stability of the New Zealand financial system. These perceptions differ from previous econometric studies for developing nations which showed that foreign-owned banks played an important role in helping stabilise uncertain financial marketplaces. From a profitability perspective, the research showed that nearly 48% of respondents felt that foreign ownership makes the New Zealand financial system less or a lot less profitable. These perceptions differ from other New Zealand (econometric) studies by Tripe and Liu (2001), but are in accord with previous International (econometric) studies by Berger *et al*, (2000) and Miller and Parkhe (2002).

7.2.2.6 Objective six: To determine what New Zealand banking customers know about the issue of Government policy and its involvement within the New Zealand banking system.

This objective focused on the understanding that respondents have about the issue of guaranteeing deposits and whether the New Zealand Government offers such a policy. The results demonstrated that most respondents (48.48%) clearly understand the fact that their deposits are not guaranteed. The results from the chi-square tests showed that respondents with a higher income, or better knowledge of ownership, were more inclined to have a better knowledge of the Reserve Bank's attitude towards deposit guarantee policy. These relationships highlight the point that those with more money (potentially more to lose) are generally more informed. The results showed that these persons have a greater understanding of the institutions where they can invest their money and the types of regulatory policy that could have a bearing on the security of their investments. Despite the certainty that exists, the research also found that 45.45% of respondents are not clear on the Government's standing, either for or against the

guaranteeing deposits. This suggests that more needs to be done by the Reserve Bank, to better inform and educate the New Zealand banking public.

7.3 Limitations of the Study

As indicated in Chapter 1, this research had limitations that were anticipated and need to be restated here. These are as follows:

1. The primary research is geographically limited to New Zealand and findings may not be reflective of what might be found in other countries.
2. The study's focus is aimed specifically at retail banks and does not take into consideration the risks present in wholesale banks.
3. Those that responded to the mail-out questionnaire may have a special interest or knowledge of the topic being researched. This may increase this research's susceptibility to bias.
4. The use of a mail-out questionnaire may increase the response error of the research. This is because the respondent, with no researcher control, may misinterpret a question's instruction and/or meaning, which could lead to an invalid response.
5. Because there was no researcher control during the completion of the questionnaires, there was also the risk that respondents may have taken the time to find the 'correct' answers, rather than give an honest perception of their own understanding or interpretation of the issue.
6. The sample size of the research may mean that the results only provide a general indication of what wider behaviours might be.

Two further limitations were realised after the research had been conducted, which limited the study's ability to produce as in-depth analysis as was hoped. These issues are:

1. The vagueness of some of the terms used in the questionnaire did not help with the analysis of the results. In hindsight, the researcher should have looked to define the issues of 'stability' and/or 'profitability' within the structure of the questions.
2. It would have perhaps been more pertinent to rank the different types of risks for foreign-owned banks, locally-owned banks and non-banks. The fact that this was not done, limited the ability to gauge the differences in risk perception and risk importance that exist between the different types of financial institutions.

Despite these limitations, it is believed that the findings provide a worthwhile foundation on which to build a valuable addition to the existing knowledge base and encourage further inquiry into the subject.

7.4 Areas of Future Research

As a piece of exploratory research, this exercise has been useful in revealing a picture of the way that a sample of New Zealand bank customers perceive the risks of dealing with foreign-owned banks, relative to those that are locally owned. The development and use of a questionnaire has provided a platform from which further research can abound. Possible areas of future research could include:

- An analysis of the differences in risk perception and selection of foremost risk between registered banks and non-banks.
- A review of the way in which Reserve Bank policy impacts the risk perceptions of New Zealand banking customers.
- A more in-depth look at the implications of New Zealand's strong relationship with Australia and the effects that this may have on both the New Zealand economy and its banking system.

- A more in-depth review of the differences that exist between the ‘risk’ related findings of foreign-owned banks that operate in developed and developing nations.
- Developing an understanding of the way different types of institutional investors perceive the risks of dealing with foreign and locally-owned banks.

7.5 Conclusions

As a piece of quantitative research, the only legitimate findings are those that are actually embedded in the data obtained. As a result, six major conclusions can be drawn from this study.

1. That banking ownership, whether it is foreign or local, does not change the way in which respondents perceive risk. This finding is given further validity by the fact that respondents have a reasonable understanding of which banks are foreign-owned or locally-owned.
2. That the most important risks facing banks at present, as perceived by respondents, are foreign exchange risk and credit risk, and consequently a bank’s ability to hedge its foreign currency exposure and provide sound grounds for lending.
3. The key factors that make a foreign-owned bank *less risky* than locally-owned banks are ‘large bank size’, and ‘having operated in New Zealand for a long time’. While the most important factor that make a foreign-owned bank *more risky* is the belief that the parent company will make the bank do things in its interests and not the New Zealand bank’s interest.
4. That the presence of foreign-owned banks in New Zealand, as perceived by respondents, does not make the New Zealand financial system any ‘more’ or ‘less’ stable.
5. That the presence of foreign-owned banks in New Zealand, as perceived by respondents, reduces the profitability of the New Zealand financial system.

6. That a significant percentage of respondents are still not clear on the Government's standing, either for or against the guaranteeing of deposits.

CHAPTER 8

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CHAPTER 9

APPENDICES

9: Appendices

Appendix 1: Cover Sheet

The Importance of Information Disclosed by Banks in New Zealand and Whether Banks are Foreign Owned

You are invited to take part in a survey which is part of two research projects investigating:

1. public perceptions of the way banks in New Zealand provide information on themselves, and the importance with which that information is regarded;
2. issues related to the foreign ownership of some of the banks operating in New Zealand.

This research is being carried out by Xiaojie Zhuang (known as Jeff) and Jacob Wood, who are Masters Research students in the Department of Finance, Banking and Property at Massey University (Palmerston North). Jeff and Jacob are supervised by Mr David Tripe from the Centre from Banking Studies at Massey University.

Participants in this survey were selected at random from the New Zealand Electoral Roll. All questionnaires are confidential, and no individuals will be identified in any publications resulting from this survey.

Participation in the research project is voluntary, with participants having the right to:

- choose not to answer any question(s);
- withdraw from the study at any point until the questionnaire is returned to the researchers;
- contact the researcher for clarification of questions;
- be given access to summary findings upon conclusion of the study.

If you choose to participate and would like a summary, please complete the enclosed form with your address details and return it with the questionnaire to enable a copy of the survey results summary to be forwarded to you when it becomes available towards the end of this year.

The findings from this research project will be used in the researchers' masters projects. It is also possible that they may be published in an appropriate academic journal and/or as conference papers in the future.

By choosing to take part in the study you will be asked to complete the following questionnaire, which will take approximately 10 minutes to complete. Please send the completed questionnaire back to the researcher via the enclosed addressed and reply paid envelope. If you would like a copy of a summary of the results, please complete the enclosed slip of paper.

If at any time you would like to know more about the research or have any questions concerning the research, please feel free to contact the research supervisor, Mr David Tripe, at 06 350 5799_Extn 2337 during business hours, by fax at 06 350 5651 or by email at D.W.Tripe@massey.ac.nz.

This project has been evaluated by peer review and judged to be low risk. Consequently, it has not been reviewed by one of the University's Human Ethics Committees. The researchers named above are responsible for the ethical conduct of this research.

If you have any concerns about the conduct of this research that you wish to raise with someone other than the researcher, please contact Professor Sylvia Rumball, Assistant to the Vice-Chancellor (Ethics & Equity), telephone 06 350 5249, email humanethicspn@massey.ac.nz.

Your feedback is extremely valuable and we appreciate your time spent answering the questions. Thank you in advance for your assistance in completing this questionnaire.

Appendix 2: Questionnaire

The Questionnaire was developed in conjunction with Jeff Zhuang. As a result of the collaboration, some of the questions included in this appendix were not relevant to this research.

Aspects not relevant to this research include questions numbers 10, 11, and 12.

1. Which of these financial institutions are banks? Are the banks foreign or locally owned? Tick the box you think applies for each institution.

	Locally-owned bank	Foreign-owned bank	Not a registered bank	Don't know/never heard of it
ANZ	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
ASB	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
BNZ	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Credit Union	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
HSBC	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Kiwi Bank	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
National Bank	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PSIS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SBS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Super Bank	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TSB	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Westpac	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

2. Please rank in order of importance the following bank risks, using numbers 1 to 5, with 1 being the most important factor and 5 being the least important factor.

- _____ The risk that a bank is unable to get its borrowers to repay their loans, therefore affecting the bank's ability to meet customer requests.
- _____ The risk that changes in interest rates will affect the bank's financial position, therefore affecting the bank's ability to meet customer requests.
- _____ The risk that changes in foreign exchange rates will affect the bank's financial position, therefore affecting the bank's ability to meet customer requests.
- _____ The risk that bank employees or other fraudsters will steal money from the bank, therefore affecting the bank's ability to meet customer requests.
- _____ The risk that a bank will experience a computer breakdown, therefore affecting the bank's ability to meet customer requests.

3. If the bank is foreign-owned does this make these risks: (please select one option)

- ☐ Better
- ☐ No change
- ☐ Worse
- ☐ Don't Know

4. If the bank is locally-owned does this make these risks: (please select one option)

- ☐ Better
- ☐ No change
- ☐ Worse
- ☐ Don't Know

5. Which factors would make foreign-owned banks less risky than locally owned banks? Tick as many as you think might apply.

- ☐ Having a big volume of business
 - ☐ Have operated in New Zealand for a long time
 - ☐ A good brand image
 - ☐ That the parent company will stop the New Zealand bank making silly mistakes
 - ☐ None of the above – Foreign-owned banks are more risky
- Other (please specify) _____
- _____

6. Which factors would make foreign-owned banks more risky than locally owned banks? Tick as many as you think might apply.

- ☐ Having a small volume of business
 - ☐ Have operated in New Zealand for only a short period of time
 - ☐ A poor brand image
 - ☐ That the parent company will make the bank do things in its interest's not the New Zealand bank's interest
 - ☐ None of the above – Foreign owned banks are less risky
- Other (please specify) _____
- _____

7. Does foreign ownership of banks make the New Zealand financial system more or less stable? (please select one option)

- ☐ A lot less stable
- ☐ Less stable
- ☐ Neutral
- ☐ More stable
- ☐ A lot more stable
- ☐ Don't know

8. Does foreign ownership of banks make the New Zealand financial system more or less profitable? (please select one option)

- ☐ A lot less profitable
- ☐ Less profitable
- ☐ Neutral
- ☐ More profitable
- ☐ A lot more profitable
- ☐ Don't know

9. Please rank in order of importance the following considerations that might influence your choice of a bank with which to run your account, using numbers 1 to 4, with 1 being the most important factor and 4 being the least important factor.

- _____ Good deals (e.g. higher deposit interest rates, low transaction and account fees, low interest rates on credit cards and loans).
- _____ The ability to do my banking business easily (e.g. convenient branches, good ATM network, internet banking and telephone banking).
- _____ Soundness of the bank (e.g. high credit rating, high capital ratio).
- _____ Good quality customer service (e.g. friendly and helpful bank staff, efficient services and accurate transactions).

10. Where would you expect to find information about the bank that you deal with? Tick as many as you think might apply.

- ☐ The bank or its website
- ☐ The Reserve Bank or its website
- ☐ The public library
- ☐ There is no information available

Other (please specify) _____

11. All registered banks in New Zealand are required by law to publish a quarterly disclosure statement. A disclosure statement contains a wide range of financial and other information on a bank. There are two forms of statement available to the public: the *Key Information Summary* and the *General Disclosure Statement*.

Which of the following best describes your situation? (Please select one option)

- ☐ I was not aware of the availability of disclosure statements.
- ☐ People at my bank told me about them, but I've not looked at them.
- ☐ People at my bank told me about them, and I have looked at them.
- ☐ I have heard about disclosure statements from newspapers, the Reserve Bank, or some other source, but I've not looked at any of them.
- ☐ I have heard about disclosure statements from newspapers, the Reserve Bank, or some other source, and I have looked at them.

12. What is the most important source that you rely on to judge your bank's soundness? (Please select one option)

- ☐ The bank's advertisements in newspapers, financial magazines and on TV.
- ☐ Recommendations or suggestions from my family and friends.
- ☐ Formal disclosure information provided by my bank.
- ☐ Advice from my financial advisers/planners.
- ☐ Reports and reviews in newspapers, financial magazines and financial TV programmes.

13. What kind of guarantee do you think the New Zealand Government and/or Reserve Bank provides to depositors in the case of bank failure? (Please select one option)

- ☐ It is very clear that there is no government guarantee for my deposits.
- ☐ It is not very clear, but I think a part of my losses will be compensated by the Government.
- ☐ It is quite clear that a part of my losses will be compensated by the Government.
- ☐ It is not very clear, but I think the Government will guarantee all my bank deposits.
- ☐ It is very clear that the Government provides full guarantee for my deposit

For the remaining questions please tick the option that best describes your situation

14. Gender: ☐ Male ☐ Female

15. Age: ☐ 19 or under
☐ 20 – 29
☐ 30 – 39
☐ 40 – 49
☐ 50 – 59
☐ Over 60

16. Ethnicity: ☐ NZ European
☐ Maori
☐ Pacific Islander
☐ Chinese
☐ Other Asian

Other (Please state) _____

17. Personal Income: ☐ \$20,000 or under
☐ \$20,001 - \$29,999
☐ \$30,000 - \$39,999
☐ \$40,000 - \$49,999
☐ \$50,000 - \$59,999
☐ Over \$60,000

18. Highest level of education: (Please select one option)

- ☐ No formal qualification
- ☐ School Certificate
- ☐ University Entrance
- ☐ Polytechnic or other tertiary certificate or diploma
- ☐ University Bachelor's degree
- ☐ University post-graduate qualification

Appendix 3: Demographical Breakdown of Participants

Table 1: Gender

	Number of respondents	Relative (%)
Male	137	44.63
Female	170	55.37
Total valid responses	307	100.00

Note: Four respondents did not state a gender. A relative percentage of 1.29%

Table 2: Age

	Number of respondents	Relative (%)
19 or under	7	2.26
20 - 29	41	13.23
30 - 39	57	18.39
40 - 49	68	21.94
50 - 59	65	20.97
Over 60	72	23.23
Total valid responses	310	100.00

Note: One respondent did not state an age. A relative percentage of .32%

Table 3: Ethnicity

	Number of respondents	Relative (%)
NZ European	241	79.02
Maori	25	8.20
Pacific Islander	2	0.66
Chinese	7	2.30
Other Asian	6	1.97
Other	24	7.87
Total valid responses	305	100.00

Note: Six respondents did not state an ethnicity. A relative percentage of 1.93%

Other Ethnicities included: African (1 or .32%); Australian (2 or .6%); English (5 or 1.61%); European (5 or 1.61%); Fijian Indian (1 or .32%); German (1 or .32%); Indian (1 or .32%); Japanese (1 or .32%); Kiwi (1 or .32%); New Zealander (3 or .96%); and Scottish (3 or .96%).

Table 4: Income

	Number of respondents	Relative (%)
\$20,000 or under	69	22.55
\$20,000 - \$29,999	50	16.34
\$30,000 - \$39,999	49	16.01
\$40,000 - \$49,999	38	12.42
\$50,000 - \$59,999	31	10.13
Over \$60,000	69	22.55
Total valid responses	306	100.00

Note: Five or 1.61 percent of respondents did not state an income.

Table 5: Education

	Number of respondents	Relative (%)
No formal education	38	12.38
School Certificate	38	12.38
University Entrance	33	10.75
Polytechnic or other tertiary certificate or diploma	95	30.94
University Bachelor's degree	68	22.15
University post-graduate qualification	34	11.07
Other	1	0.33
Total valid responses	307	100.00

Note: Four or 1.29 percent of respondents did not provide an education level.

Appendix 4: Statistical Analysis using Chi-squared Tests

4.1 Definition of terms used in chi-squared tests

Foremost risk – refers to a respondent selecting a particular banking risk as being a 1 in importance.

Knowledge of ownership – refers to the respondents’ ability to correctly identify the ownership status of financial institutions. Respondents received a score out of 12 (number of financial institutions in the survey), with their total score categorised as being in one of three groups: 0-4, 5-8, and 9-12. A mark was given when a respondent correctly identified a financial institution as being either foreign-owned, locally-owned or non-bank.

Well-informed – a respondent was deemed to be well-informed if they knew that the Government does not guarantee any bank deposits.

Uninformed – a respondent was deemed to be uninformed if they did not know that that the Government does not guarantee any banking deposits.

4.2 Perception of foremost risk and knowledge of ownership

H₀: Perception of foremost risk and knowledge of ownership are independent.
H_A: There is a dependence between perception of foremost risk and knowledge of ownership.

Frequencies: *Expected*, Observed

	Credit	Interest	Foreign exchange	Operational	Technological	Totals
0 - 4	(6.5) 3	(3.1) 9	(6) 7	(1.7) 2	(5.7) 2	23
5 - 8	(29) 32	(13.9) 9	(26.4) 22	(7.6) 9	(25.2) 30	102
9 - 12	(33.5) 34	(16)15	(30.6) 34	(8.7) 7	(29.1) 28	118
Totals	69	33	63	18	60	243

The test statistic follows a chi-squared distribution with (r-1)(c-1) degrees of freedom.

$$\chi^2 = \sum_{i=1}^k \frac{(O_i - E_i)^2}{E_i}$$

Note: The equation was obtained from Keller *et al*, (1990).

Where O_i is the observed frequency in cell i , E_i is the observed frequency in cell i , and k is the number of cells or categories in the contingency table with r rows and c columns.

Chi-square calculations

Cell	Observed	Expected	$\frac{(O_i - E_i)^2}{E_i}$
1	3	6.5	1.884615385
2	32	29.0	0.310344828
3	34	33.5	0.007462687
4	9	3.1	11.22903226
5	9	13.9	1.698375451
6	15	16.0	0.06494382
7	7	6.0	0.18147651
8	22	24.4	0.243600655
9	34	30.6	0.380127493
10	2	1.7	0.052941176
11	9	7.56	0.274285714
12	7	8.84	0.382986425
13	2	5.68	2.384225352
14	30	25.19	0.918463676
15	28	29.14	0.04459849
		χ^2	20.05747992

Reject if calculated value (χ^2) exceeds 15.5703 (chi-squared distribution with 8 degrees of freedom and 5% level of significance).

Conclusion: Reject H_0 . There is sufficient evidence (at the 5% level of significance) to indicate that there is a dependency between perception of foremost risk and correctly identifying the status of ownership of financial institutions.

4.3 Perception of foremost risk and knowledge of deposit guarantee policy

H₀: Perception of foremost risk and knowledge of deposit guarantee policy are independent.

H_A: There is a dependence between the perception of foremost risk and knowledge of deposit guarantee policy.

Frequencies: *Expected*, Observed

	Credit	Interest	Foreign exchange	Operational	Technological	Totals
Well-informed	(31.8) 34	(15.2) 12	(29) 29	(8.3) 6	(27.7) 31	112
Uninformed	(37.2) 35	(17.8) 21	(34) 34	(9.7) 12	(32.3) 29	131
Totals	69	33	63	18	60	243

The test statistic follows a chi-squared distribution with $(r-1)(c-1)$ degrees of freedom.

$$\chi^2 = \sum_{i=1}^k \frac{(O_i - E_i)^2}{E_i}$$

Where O_i is the observed frequency in cell i , E_i is the observed frequency in cell i , and k is the number of cells or categories in the contingency table with r rows and c columns.

Chi-square calculations

Cell	Observed	Expected	$\frac{(O_i - E_i)^2}{E_i}$
1	34	31.8	0.152201258
2	35	37.2	0.130107527
3	12	15.2	0.673684211
4	21	17.8	0.575280899
5	29	29.0	0
6	34	34.0	0
7	6	8.3	0.637349398
8	12	9.7	0.545360825
9	31	27.7	0.393140794
10	29	32.3	0.337151703
		χ^2	3.444276613

Reject if calculated value (χ^2) exceeds 9.489 (chi-squared distribution with 4 degrees of freedom and 5% level of significance).

Conclusion: Accept H_0 . There is sufficient evidence (at the 5% level of significance) to indicate that perception of foremost risk and knowledge of deposit guarantee policy are independent.

4.4 Gender and perception of foremost risk

H_0 : Gender and perception of foremost risk are independent.
 H_A : There is a dependence between gender and the perception of foremost risk.

Frequencies: *Expected, Observed*

	Credit	Interest	Foreign exchange	Operational	Technological	Totals
Male	(26.1) 30	(12.5) 6	(23.9) 23	(6.8) 6	(22.7) 27	92
Female	(42.9) 39	(20.5) 27	(39.1) 40	(11.2) 12	(37.3) 33	151
Totals	69	33	63	18	60	243

The test statistic follows a chi-squared distribution with $(r-1)(c-1)$ degrees of freedom.

$$\chi^2 = \sum_{i=1}^k \frac{(O_i - E_i)^2}{E_i}$$

Where O_i is the observed frequency in cell i , E_i is the observed frequency in cell i , and k is the number of cells or categories in the contingency table with r rows and c columns.

Chi-square calculations

Cell	Observed	Expected	$\frac{(O_i - E_i)^2}{E_i}$
1	30	26.1	0.582758621
2	39	42.9	0.354545455
3	6	12.5	3.38
4	27	20.5	2.06097561
5	23	23.9	0.033891213
6	40	39.1	0.020716113
7	6	6.8	0.094117647
8	12	11.2	0.057142857
9	27	22.7	0.814537445
10	33	37.3	0.495710456
		χ^2	7.894395416

Reject if calculated value (χ^2) exceeds 9.489 (chi-squared distribution with 4 degrees of freedom and 5% level of significance).

Conclusion: Accept H_0 . There is sufficient evidence (at the 5% level of significance) to indicate that gender and perception of foremost risk are independent.

4.5 Age and perception of foremost risk

H_0 : Age and perception of foremost risk are independent.

H_A : There is a dependence between age and perception of foremost risk.

Frequencies: *Expected*, Observed

	Credit	Interest	Foreign exchange	Operational	Technological	Totals
39 yrs or less	(24.7) 23	(11.8) 17	(22.6) 21	(6.4) 7	(21.5) 19	87
40 yrs or more	(44.3) 46	(21.2) 16	(40.4) 42	(11.6) 11	(38.5) 41	156
Totals	69	33	63	18	60	243

The test statistic follows a chi-squared distribution with $(r-1)(c-1)$ degrees of freedom.

$$\chi^2 = \sum_{i=1}^k \frac{(O_i - E_i)^2}{E_i}$$

Where O_i is the observed frequency in cell i , E_i is the observed frequency in cell i , and k is the number of cells or categories in the contingency table with r rows and c columns.

Chi-square calculations

Cell	Observations	Expected	$\frac{(O_i - E_i)^2}{E_i}$
1	23	24.7	0.117004049
2	46	44.3	0.06523702
3	17	11.8	2.291525424
4	16	21.2	1.275471698
5	21	22.6	0.113274336
6	42	40.4	0.063366337
7	7	6.4	0.05625
8	11	11.6	0.031034483
9	19	21.5	0.290697674
10	41	38.5	0.162337662
		χ^2	4.466198683

Reject if calculated value (χ^2) exceeds 9.489 (chi-squared distribution with 4 degrees of freedom and 5% level of significance).

Conclusion: Accept H_0 . There is sufficient evidence (at the 5% level of significance) to indicate that age and perception of foremost risk are independent.

4.6 Income and perception of foremost risk

H_0 : Perception of foremost risk and income are independent.

H_A : There is a dependence between the perception of foremost risk and income.

Frequencies: *Expected*, Observed

	Credit	Interest	Foreign exchange	Operational	Technological	Totals
\$39,999 or less	(35.8) 31	(17.1) 22	(32.7) 32	(9.3) 9	(31.1) 32	126
\$40,000 or more	(33.2) 38	(15.9) 11	(30.3) 31	(8.7) 9	(28.9) 28	117
Totals	69	33	63	18	60	243

The test statistic follows a chi-squared distribution with $(r-1)(c-1)$ degrees of freedom.

$$\chi^2 = \sum_{i=1}^k \frac{(O_i - E_i)^2}{E_i}$$

Where O_i is the observed frequency in cell i , E_i is the observed frequency in cell i , and k is the number of cells or categories in the contingency table with r rows and c columns.

Chi-square calculations

Cell	Observation	Expected	$\frac{(O_i - E_i)^2}{E_i}$
1	31	35.8	0.643575419
2	38	33.2	0.693975904
3	22	17.1	1.404093567
4	11	15.9	1.510062893
5	32	32.7	0.014984709
6	31	30.3	0.016171617
7	9	9.3	0.009677419
8	9	8.7	0.010344828
9	32	31.1	0.026045016
10	28	28.9	0.028027682
		χ^2	4.356959054

Reject if calculated value (χ^2) exceeds 9.489 (chi-squared distribution with 4 degrees of freedom and 5% level of significance).

Conclusion: Accept H_0 . There is sufficient evidence (at the 5% level of significance) to indicate that income and perception of foremost risk are independent.

4.7 Education and perception of foremost risk

H_0 : Perception of foremost risk and education are independent.

H_A : There is a dependence between the perception of foremost risk and education.

Frequencies: *Expected, Observed*

	Credit	Interest	Foreign exchange	Operational	Technological	Totals
Up to U.E.	(19.6) 21	(9.4) 9	(17.9) 17	(5.1) 4	(17) 18	69
Tertiary Qualification	(49.4) 28	(23.6) 24	(45.1) 46	(12.9) 14	(43) 42	154
Totals	49	33	63	18	60	223

The test statistic follows a chi-squared distribution with $(r-1)(c-1)$ degrees of freedom.

$$\chi^2 = \sum_{i=1}^k \frac{(O_i - E_i)^2}{E_i}$$

Where O_i is the observed frequency in cell i , E_i is the observed frequency in cell i , and k is the number of cells or categories in the contingency table with r rows and c columns.

Chi-square calculations

Cell	Observed	Expected	$\frac{(O_i - E_i)^2}{E_i}$
1	21	19.6	0.1
2	48	49.4	0.039676113
3	9	9.4	0.017021277
4	24	23.6	0.006779661
5	17	17.9	0.045251397
6	46	45.1	0.017960089
7	4	5.1	0.237254902
8	14	12.9	0.09379845
9	18	17.0	0.058823529
10	42	43.0	0.023255814
		χ^2	0.639821231

Reject if calculated value (χ^2) exceeds 9.489 (chi-squared distribution with 4 degrees of freedom and 5% level of significance).

Conclusion: Accept H_0 . There is sufficient evidence (at the 5% level of significance) to indicate that perception of foremost risk and education are independent.

4.8 Income and knowledge of ownership

H_0 : Income and knowledge of ownership are independent.

H_A : There is a dependence between income level and knowledge of ownership.

Frequencies: *Expected*, Observed

	Up to \$39,999	\$40,000 +	Totals
0 - 4	(19.8) 31	(16.2) 5	36
5 - 8	(75.2) 86	(61.8) 51	137
9 - 12	(73) 51	(60) 82	133
Totals	168	138	306

The test statistic follows a chi-squared distribution with $(r-1)(c-1)$ degrees of freedom.

$$\chi^2 = \sum_{i=1}^k \frac{(O_i - E_i)^2}{E_i}$$

Where O_i is the observed frequency in cell i , E_i is the observed frequency in cell i , and k is the number of cells or categories in the contingency table with r rows and c columns.

Chi-square calculations

Cell	Observed	Expected	$\frac{(O_i - E_i)^2}{E_i}$
1	31	19.8	6.335353535
2	86	75.2	1.55106383
3	51	73.0	6.630136986
4	5	16.2	7.743209877
5	51	61.8	1.887378641
6	82	60.0	8.066666667
		χ^2	32.21380954

Reject if calculated value (χ^2) exceeds 5.9914 (chi-squared distribution with 2 degrees of freedom and 5% level of significance).

Conclusion: Reject H_0 . There is sufficient evidence (at the 5% level of significance) to indicate that there is a dependency between income and correctly identifying the status of ownership of financial institutions.

4.9 Income and knowledge of deposit guarantee policy

H_0 : Income and knowledge of deposit guarantee policy are independent.
 H_A : There is a dependence between income level and the knowledge of deposit guarantee policy.

Frequencies: *Expected*, Observed

	Up to \$39,999	\$40,000 +	Totals
Well-informed	(76.8) 64	(63.1) 76	140
Uninformed	(91.1) 104	(74.9) 62	166
Totals	168	138	306

The test statistic follows a chi-squared distribution with $(r-1)(c-1)$ degrees of freedom.

$$\chi^2 = \sum_{i=1}^k \frac{(O_i - E_i)^2}{E_i}$$

Where O_i is the observed frequency in cell i , E_i is the observed frequency in cell i , and k is the number of cells or categories in the contingency table with r rows and c columns.

Chi-square calculations

Cell	Observed	Expected	$\frac{(O_i - E_i)^2}{E_i}$
1	64	76.8	2.133333333
2	104	91.1	1.826673985
3	76	63.1	2.637242472
4	62	74.9	2.22176235
		χ^2	8.81901214

Reject if calculated value (χ^2) exceeds 3.8414 (chi-squared distribution with 1 degree of freedom and 5% level of significance).

Conclusion: Reject H_0 . There is sufficient evidence (at the 5% level of significance) to indicate that there is a dependency between income and correctly identifying policy on the guaranteeing of deposits.

4.10 Age and knowledge of ownership

- H_0 : Age and knowledge of ownership are independent.
 H_A : There is a dependence between age and knowledge of ownership.

Frequencies: *Expected*, Observed

	39yrs or less	40yrs +	Totals
0 - 4	(12.5) 16	(24.5) 21	37
5 - 8	(47.1) 45	(91.9) 94	139
9 - 12	(45.4) 44	(88.6) 90	134
Totals	105	205	310

The test statistic follows a chi-squared distribution with $(r-1)(c-1)$ degrees of freedom.

$$\chi^2 = \sum_{i=1}^k \frac{(O_i - E_i)^2}{E_i}$$

Where O_i is the observed frequency in cell i , E_i is the observed frequency in cell i , and k is the number of cells or categories in the contingency table with r rows and c columns.

Chi-square calculations

Cell	Observed	Expected	$\frac{(O_i - E_i)^2}{E_i}$
1	16	12.5	0.98
2	45	47.1	0.093630573
3	44	45.4	0.043171806
4	21	24.5	0.5
5	94	91.9	0.047986942
6	90	88.6	0.022121896
		χ^2	1.686911218

Reject if calculated value (χ^2) exceeds 5.9914 (chi-squared distribution with 2 degrees of freedom and 5% level of significance).

Conclusion: Accept H_0 . There is sufficient evidence (at the 5% level of significance) to indicate that age and knowledge of ownership are independent.

4.11 Age and knowledge of deposit guarantee policy

H_0 : Age and knowledge of deposit guarantee policy are independent.

H_A : There is a dependence between age and the knowledge of deposit guarantee policy.

Frequencies: *Expected*, Observed

	39yrs or less	40yrs +	Totals
Well-informed	(48.8) 37	(95.2) 107	144
Uninformed	(56.2) 68	(109.8) 98	166
Totals	105	205	310

The test statistic follows a chi-squared distribution with $(r-1)(c-1)$ degrees of freedom.

$$\chi^2 = \sum_{i=1}^k \frac{(O_i - E_i)^2}{E_i}$$

Where O_i is the observed frequency in cell i , E_i is the observed frequency in cell i , and k is the number of cells or categories in the contingency table with r rows and c columns.

Chi-square calculations

Cell	Observed	Expected	$\frac{(O_i - E_i)^2}{E_i}$
1	37	48.8	2.853278689
2	68	56.2	2.477580071
3	107	95.2	1.462605042
4	98	109.8	1.268123862
		χ^2	8.061587663

Reject if calculated value (χ^2) exceeds 3.8414 (chi-squared distribution with 1 degree of freedom and 5% level of significance).

Conclusion: Reject H_0 . There is sufficient evidence (at the 5% level of significance) to indicate that there is a dependency between age and correctly identifying policy on the guaranteeing of deposits.

4.12 Gender and knowledge of ownership

H₀: Gender and knowledge of ownership are independent.
H_A: There is a dependence between gender and knowledge of ownership.

Frequencies: *Expected, Observed*

	Male	Female	Totals
0 - 4	(16.6) 9	(20.4) 28	37
5 - 8	(62.2) 51	(76.8) 88	139
9 - 12	(58.2) 77	(71.8) 53	130
Totals	137	169	306

The test statistic follows a chi-squared distribution with (r-1)(c-1) degrees of freedom.

$$\chi^2 = \sum_{i=1}^k \frac{(O_i - E_i)^2}{E_i}$$

Where O_i is the observed frequency in cell i , E_i is the observed frequency in cell i , and k is the number of cells or categories in the contingency table with r rows and c columns.

Chi-square calculations

Cell	Observed	Expected	$\frac{(O_i - E_i)^2}{E_i}$
1	9	16.6	3.451304348
2	28	20.4	2.804938815
3	51	62.2	2.026561144
4	88	76.8	1.642736746
5	77	58.2	6.072852234
6	53	71.8	4.922562674
		χ^2	20.92095596

Reject if calculated value (χ^2) exceeds 5.9914 (chi-squared distribution with 2 degrees of freedom and 5% level of significance).

Conclusion: Reject H₀. There is sufficient evidence (at the 5% level of significance) to indicate that there is a dependency between gender and correctly identifying the status of ownership of financial institutions.

4.13 Gender and knowledge of deposit guarantee policy

H₀: Gender and knowledge of deposit guarantee policy are independent.
H_A: There is a dependence between gender and the knowledge of deposit guarantee policy.

Frequencies: *Expected*, Observed

	Male	Female	Totals
Well-informed	(63.6) 69	(78.4) 73	142
Uninformed	(73.4) 68	(90.6) 96	164
Totals	137	169	306

The test statistic follows a chi-squared distribution with (r-1)(c-1) degrees of freedom.

$$\chi^2 = \sum_{i=1}^k \frac{(O_i - E_i)^2}{E_i}$$

Where O_i is the observed frequency in cell i , E_i is the observed frequency in cell i , and k is the number of cells or categories in the contingency table with r rows and c columns.

Chi-square calculations

Cell	Observed	Expected	$\frac{(O_i - E_i)^2}{E_i}$
1	69	63.6	0.458490566
2	68	73.4	0.397275204
3	73	78.4	0.371938776
4	96	90.6	0.321854305
		χ^2	1.549558851

Reject if calculated value (χ^2) exceeds 3.8414 (chi-squared distribution with 1 degree of freedom and 5% level of significance).

Conclusion: Accept H₀. There is sufficient evidence (at the 5% level of significance) to indicate that gender and correctly identifying policy on the guaranteeing of deposits are independent.

4.14 Education and knowledge of ownership

H₀: Education and knowledge of ownership are independent.

H_A: There is a dependence between education and knowledge of ownership.

Frequencies: *Expected*, Observed

	Up to U.E.	Tertiary Qualification	Totals
0 - 4	(12.5) 15	(22.5) 20	35
5 - 8	(48.8) 56	(88.2) 81	137
9 - 12	(47.7) 38	(86.3) 96	134
Totals	109	197	306

The test statistic follows a chi-squared distribution with $(r-1)(c-1)$ degrees of freedom.

$$\chi^2 = \sum_{i=1}^k \frac{(O_i - E_i)^2}{E_i}$$

Where O_i is the observed frequency in cell i , E_i is the expected frequency in cell i , and k is the number of cells or categories in the contingency table with r rows and c columns.

Chi-square calculations

Cell	Observed	Expected	$\frac{(O_i - E_i)^2}{E_i}$
1	15	12.5	0.5
2	56	48.8	1.062295082
3	38	47.7	1.972536688
4	20	22.5	0.277777778
5	81	88.2	0.587755102
6	96	86.3	1.090266512
		χ^2	5.490631162

Reject if calculated value (χ^2) exceeds 5.9914 (chi-squared distribution with 2 degrees of freedom and 5% level of significance).

Conclusion: Accept H₀. There is sufficient evidence (at the 5% level of significance) to indicate that education and knowledge of ownership are independent.

4.15 Education and knowledge of deposit guarantee policy

H₀: Education and knowledge of deposit guarantee policy are independent.
H_A: There is a dependence between education and the knowledge of deposit guarantee policy.

Frequencies: *Expected*, Observed

	Up to U.E.	Tertiary Qualification	Totals
Well-informed	(50.6) 43	(91.4) 99	142
Uninformed	(58.4) 66	(105.6) 98	164
Totals	109	197	306

The test statistic follows a chi-squared distribution with (r-1)(c-1) degrees of freedom.

$$\chi^2 = \sum_{i=1}^k \frac{(O_i - E_i)^2}{E_i}$$

Where O_i is the observed frequency in cell i , E_i is the observed frequency in cell i , and k is the number of cells or categories in the contingency table with r rows and c columns.

Chi-square calculations

Cell	Observed	Expected	$\frac{(O_i - E_i)^2}{E_i}$
1	69	63.6	0.458490566
2	68	73.4	0.397275204
3	73	78.4	0.371938776
4	96	90.6	0.321854305
		χ^2	1.549558851

Reject if calculated value (χ^2) exceeds 3.8414 (chi-squared distribution with 1 degree of freedom and 5% level of significance).

Conclusion: Accept H₀. There is sufficient evidence (at the 5% level of significance) to indicate that education and correctly identifying policy on the guaranteeing of deposits are independent.

4.16 Knowledge of ownership and knowledge of deposit guarantee policy

H₀: Knowledge of ownership and knowledge of deposit guarantee policy are independent.

H_A: There is a dependence between knowledge of ownership and knowledge of deposit guarantee policy.

Frequencies: *Expected*, Observed

	Well-informed	Uninformed	Totals
0 - 4	(17) 16	(20) 21	37
5 - 8	(61.7) 49	(72.3) 85	134
9 - 12	(78.3) 76	(72.8) 59	135
Totals	141	165	306

The test statistic follows a chi-squared distribution with (r-1)(c-1) degrees of freedom.

$$\chi^2 = \sum_{i=1}^k \frac{(O_i - E_i)^2}{E_i}$$

Where *O_i* is the observed frequency in cell *i*, *E_i* is the observed frequency in cell *i*, and k is the number of cells or categories in the contingency table with *r* rows and *c* columns.

Chi-square calculations

Cell	Observed	Expected	$\frac{(O_i - E_i)^2}{E_i}$
1	16	17.0	0.058823529
2	49	61.7	2.614100486
3	76	78.3	0.067560664
4	21	20.0	0.05
5	85	72.2	2.269252078
6	59	72.8	2.615934066
		χ^2	7.675670823

Reject if calculated value (χ^2) exceeds 5.9914 (chi-squared distribution with 2 degrees of freedom and 5% level of significance).

Conclusion: Reject H_0 . There is sufficient evidence (at the 5% level of significance) to indicate that there is a dependency between knowledge of ownership and knowledge of deposit guarantee policy.

Appendix 5: Registered Banks in New Zealand and their relevant credit ratings

Name	Registration date	Standard and Poor's	Moody's
ABNZ AMRO Bank NV (B)	2 March 1998	AA-	Aa3
ANZ National Bank Limited	1 April 1987	AA-	Aa3
ASB Bank Limited	11 May 1989	AA-	Aa3
Bank of New Zealand	1 April 1987	AA-	-
Citibank N A (B)	22 July 1987	AA-	-
Commonwealth Bank of Australia (B)	23 June 2000	AA-	Aa3
Deutsche Bank A G (B)	8 November 1996	AA-	Aa3
Kiwibank Limited	29 November 2001	AA-	-
Kookmin Bank (B)	14 July 1997	BBB+	A3
St George Bank New Zealand Limited	3 February 2003	BBB-	-
Rabobank New Zealand Limited	7 July 1999	AAA	-
Rabobank Nederland (B)	1 April 1996	AAA	Aaa
The Bank of Tokyo-Mitsubishi Limited (B)	1 March 2004	A-	A1
The Hong Kong and Shanghai Banking Corporation Limited (B)	22 July 1987	-	Aa3
TSB Bank	8 June 1989	BBB-	-
Westpac Banking Corporation (B)	1 April 1987	AA-	Aa3

Source: (RBNZ, 2005a).

Note: Total number of registered banks = 16 (as at 22nd November 2005). Banks marked (B) operate in New Zealand as branches of overseas incorporated banks. All other banks are incorporated in New Zealand.

Appendix 6: Capital structure and asset size of New Zealand retail banks

Table 1: Capital adequacy of New Zealand’s registered retail banks (As a percentage of total risk-weighted credit exposures)

	Tier 1 (%)	Capital (%)
ANZ National Bank	8.1	10.7
ASB	9.7	10.3
BNZ	7.5	10.41
Kiwibank	12.8	12.8
TSB	14.84	15.53
Westpac	7.1	10

Source: Adapted from (RBNZ, 2005c).

Note: The capital-adequacy standards as set out in the Basel Accord (1998) require banks to have a minimum capital ratio and tier one capital ratio for the banking group of 8% and 4% respectively (RBNZ, 2001).

Table 2: Total asset size of New Zealand’s registered retail banks

	(\$) Millions	(%) change last 12 months
ANZ National Bank	81803	9.1
ASB	3879	17.4
BNZ	42908	11.5
Kiwibank	1861	42.6
TSB	2395	11.68
Westpac	45684	7.9

Source: Adapted from (RBNZ, 2005c).

Appendix 7: Bilateral trading relationship between New Zealand and Australia

Table 1: New Zealand’s top trading partners

Top 5 imports	Imports (%)	Top 5 exports	Exports (%)
Australia	22	Australia	20
United States	17	United states	15
Japan	11	Japan	13
China	6	UK	5
UK	4	Korea	4

Source: (Hull, 2002, p. 21).

Table 2: Australia’s top trading partners

Top 5 imports	Imports (%)	Top 5 exports	Exports (%)
United States	20	Japan	20
Japan	13	United States	10
China	8	Korea	8
UK	6	New Zealand	6
Germany	5	China	5

Source: (Hull, 2002, p. 21).