

Copyright is owned by the Author of the thesis. Permission is given for a copy to be downloaded by an individual for the purpose of research and private study only. The thesis may not be reproduced elsewhere without the permission of the Author.

**New Zealand's Experiment with Prudential Regulation:
Can Disclosure Discipline Moderate Excessive Risk Taking
in
New Zealand Deposit Taking Institutions?**

A thesis presented in partial fulfillment of the requirements for the degree

Doctor of Philosophy

at

Massey University, Albany.

William Robert Wilson

2009

Abstract

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

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

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

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

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

Acknowledgements

I wish to express my sincere thanks to my supervisors Professor Lawrence Rose and Associate Professor John Pinfold. They have continually supported and encouraged my research over a number of years.

Special thanks must also go to Dr David Tripe and Associate Professor Andrew Parsons for their assistance. David painstakingly collected the liquidity data used in my analysis of banks, from registered bank General Disclosure Statements over a number of years. This data was necessary to complete the bank CAMEL framework used for analysis. Andrew allowed me to include my financial literacy survey question in a survey of bank customer satisfaction levels he was undertaking in 2006. Without data from these two sources my dissertation would have been incomplete.

I have been fortunate in being part of the Department of Commerce at Albany; my colleagues in economics and finance have always been willing to assist when asked. Their advice has ranged from the most appropriate statistical techniques to employ to the intricacies of Endnote referencing. Massey University and the Department of Economics and Finance have provided many opportunities to meet world-class researchers at seminars in New Zealand and at overseas conferences, giving me an exposure to ideas which would not have otherwise been open to me. Ultimately, this is an environment in which new researchers can be developed. I consider myself very fortunate to have had the opportunities afforded to me by Massey University.

Finally, I would like to thank my family for being understanding. My need for a change in life direction placed a burden on you all. Thank you for your support.

Table of Contents

Abstract	i
Acknowledgements	iii
Table of Contents	iv
List of Tables	vii
List of Figures	ix
List of Appendices	x
1 Introduction	1
1.1 Introduction.....	1
1.2 Background and Motivation	2
1.3 Research Objectives and Questions	6
1.3.1 Research Question 1 Test of Bank Risk Premium.....	8
1.3.2 Research Question 2 Test of Bank Deposit Market Share.....	8
1.3.3 Research Question 3 Test of NBDT Risk Premium	8
1.3.4 Research Question 4 NBDT Probability of Crisis	8
1.4 Data, Methodology and Findings.....	9
1.5 Contributions of the Study	12
1.6 Significance of the Study	13
1.7 Organisation of the Study	13
2 Literature Review	16
2.1 Introduction.....	16
2.2 Banking Supervision and Regulations	16
2.2.1 Short History of Banking Supervision and Regulations	17
2.2.2 Banking and Banking Supervision in New Zealand	34
2.3 Rationale, Structure and Forms of Banking Supervision.....	70
2.4 Market Discipline in Prudential Regulation	78
2.4.1 Forms of Market Discipline	78
2.4.2 The Role of Debt-holder Discipline.....	80
2.4.3 Mechanisms Through Which Debt-holders Impose Discipline.....	82
2.4.4 Empirical Studies Testing for Depositor Discipline	82
2.4.5 Limitations of the Previous Market Discipline Research	88
2.4.6 Prerequisites for Effective Depositor Discipline	91
2.4.7 Depositor Discipline Prerequisites Existing in New Zealand Institutions.....	92
2.4.8 Limitations to Market Discipline	94
2.5 Chapter Summary	97

3	Testing of New Zealanders' Attitude Towards Deposit Risk.....	102
3.1	The Role of Financial Literacy in Effective Prudential Supervision.....	103
3.2	Previous Surveys of Financial Literacy and Findings	104
3.3	2006 Depositor Risk Survey	112
3.3.1	Design of the Survey Instrument	113
3.3.2	The Survey Sample and Sampling Procedure.....	113
3.4	Presentation of Survey Results	117
3.4.1	Registered Bank Survey Responses.....	118
3.4.2	Non-Bank Financial Institutions Survey Responses.....	130
3.4.3	Ability to Risk-Rank Investments.....	133
3.5	Comparison with International Surveys.....	135
3.6	Implications and Conclusions	135
4	Testing of Discipline in New Zealand Registered Banks.....	139
4.1	Introduction.....	139
4.2	Sample Banks.....	140
4.3	Registered Bank Data	142
4.3.1	Risk Premium Data	143
4.3.2	Deposit Level Data	146
4.3.3	Risk Indicator Data	148
4.4	Methodology	153
4.5	Risk Premium Regression Results at Disclosure Publication.....	155
4.6	Risk Premium Regression Results at Disclosure Balance	159
4.7	Deposit Market Share Regression Results.....	163
4.8	Discussion	166
4.9	Conclusion	169
5	Testing of Discipline in New Zealand Non-Bank Deposit-takers	172
5.1	NBDT Sample.....	173
5.2	NBDT Data	176
5.2.1	Crisis Dummy Variable	177
5.2.2	Risk Premium Data.....	180
5.2.3	Risk Indicator Data	181
5.3	Methodology	185
5.4	Regression Analysis.....	186
5.5	Logistic analysis.....	188
5.6	Discussion	190
5.7	Conclusion	192

6	Conclusion	194
6.1	Introduction.....	194
6.2	Review of Research Objective, Methodology, Questions	197
6.2.1	Research Question 1	198
6.2.2	Research Question 2	200
6.2.3	Research Question 3	201
6.2.4	Research Question 4	202
6.2.5	Summary	202
6.3	Contributions of the Thesis.....	203
6.4	Specific Policy Recommendations	207
6.5	Critical Review of Thesis and Suggestions for Future Work	209
7	Appendices.....	211
8	References.....	245

List of Tables

Table 1 Total Assets of NZ-registered Banks Sept 2007	62
Table 2 Deposit Risk Survey Responses by Province	115
Table 3 Age Distribution of Respondents	116
Table 4 Respondents' Education	116
Table 5 Respondents' Household Income Range	116
Table 6 Respondents' Main Bank	117
Table 7 Question 8 Bank Risk * Depositor Size	118
Table 8 Question 9 Information about Bank Risk	119
Table 9 Question 10 Most Important Source about Bank Risk	119
Table 10 Question 11 Bank Disclosure Statements	120
Table 11 Question 12 Outcome of Bank Collapse	121
Table 12 Cross-tabulation – Bank Depositor (\$5000) * Q12 Outcome of Bank Collapse	123
Table 13 Cross-tabulation – Depositor Size * Q12 Outcome of Bank Collapse	124
Table 14 Cross-tabulation – Q1 Respondents' Main Bank * Q12 Outcome of Bank Collapse	126
Table 15 Cross-tabulation – Q1 Respondents' Age * Q12 Outcome of Bank Collapse	127
Table 16 Cross-tabulation – Q 6 Depositor Income * Q12 Outcome of Bank Collapse	128
Table 17 Cross-tabulation - Q 11 Disclosure awareness * Q12 Outcome of Bank Collapse	129
Table 18 Question 13 Information about Finance Company Risk	131
Table 19 Question 14 Most Important Source about Finance Company Risk	132
Table 20 Question 15 Finance Company Disclosure Statements	133
Table 21 Total Assets NZ Registered Banks	140
Table 22 Sample Banks' Risk Premium Data RP (RB 3mDep Bal) Statistics	146
Table 23 Sample Banks' Deposit Level Data Statistics	147
Table 24 Registered Bank Risk Indicators Fitted into a CAMEL Framework	151
Table 25 Registered Banks Sample Mean Risk Indicator Values	152
Table 26 Pearson Correlations — All Registered Banks	152
Table 27 Pearson Correlations – Registered Bank (TSB Excluded)	152
Table 28 Equation (5) – Risk Premium at Disclosure Publication (RP_t)	156
Table 29 Equation (6) — Risk Premium at Disclosure Balance (RP_{t-1})	160
Table 30 Equation (6) — Risk Premium at Disclosure Balance (RP_{t-1}) TSB Removed in 5 (bal)	163

Table 31 Equation (7) and (8) - Dependent Variable: ΔDMS_t (pub) and ΔDMS_{t-1} (bal)	165
Table 32 Crisis NBDTs' Total Assets NZ\$m	178
Table 33 Non-crisis NBDTs' Total Assets NZ\$m	179
Table 34 NBDT Sample Means	181
Table 35 NBDTCAMEL Risk Indicators	183
Table 36 NBDTs Sample Pearson Correlations	184
Table 37 Collinearity Statistics	185
Table 38 Equation (10) – NBDTs' RP Regression Analysis	187
Table 39 Classification Table — NBDT Logit Analysis	189
Table 40 Variables in Equation — NBDT Logit Analysis	189
Table 41 NBDT Regression RP vs. Predicted Probability	190
Table 42 Standard & Poor's Credit Rating NBDT	235

List of Figures

Figure 1 Number of U.S. Bank Failures 1934-1995 (FDIC Staff, 1997)	30
Figure 2 2006 Size distribution of Non-Bank Deposit Takers and Registered Banks	65
Figure 3 TARP Funds as of March 27, 2009	97
Figure 4 Investment Risk Rankings by New Zealanders	134
Figure 5 NZ Registered Bank Funding Sept 2007 SSR B1-B10 (RBNZ Staff, 2008b)	144
Figure 6 NZ Registered Bank Funding by Maturity Sept 2007 (RBNZ Staff, 2007a)	145
Figure 7 Residual Distribution Model 4 (pub) Dependent Variable: (RP_t)	157
Figure 8 Residual Distribution Model 4 (bal) Dependent Variable: (RP_{t-1})	161
Figure 9 NBDTs' Funding and NBDTs in Crisis	175
Figure 10 PFL Structure reported in its December 2006 Prospectus.	220
Figure 11 PFL \$Gap (\$m) Assets-Liabilities Sept 2005	221
Figure 12 Bridgecorp Group Structure	223
Figure 13 Five Star Group Structure	226
Figure 14 Geneva Finance Structure	228
Figure 15 Geneva Finance \$Gap (\$m) Asset-Liabilities March 2007	229
Figure 16 Provincial Finance Ltd 12-Month Deposit Rate	243
Figure 17 Bridgecorp Ltd 12-month Deposit Rate	243
Figure 18 Five Star Consumer Finance Ltd 12-month Deposit Rate	244
Figure 19 Geneva Finance Ltd 12-month Deposit Rate	244

List of Appendices

Appendix 1 2006 Depositor Risk Survey (Massey/Auckland Universities)	211
Appendix 2 Your Right to Know Brochure (Securities Commission Staff, 2007b)	214
Appendix 3 Deep Freeze List - Finance Industry Failures (Hickey, 2009)	218
Appendix 4 Case Study Analysis of Four Significant NBDT Failures	219