Can depositors exert market discipline in the United Kingdom and Turkish banking systems?

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CAN DEPOSITORS EXERT
MARKET DISCIPLINE
IN THE UNITED KINGDOM AND TURKISH BANKING SYSTEMS?

by

F. Ipek Eksi

A Doctoral Thesis
Submitted in partial fulfilment of the requirements
for the award of

Business School of Loughborough University

September 2003
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# CONTENTS

<table>
<thead>
<tr>
<th>CONTENTS</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>ABSTRACT</td>
<td>vi</td>
</tr>
<tr>
<td>ACKNOWLEDGEMENTS</td>
<td>vii</td>
</tr>
<tr>
<td>LIST OF GRAPHS</td>
<td>viii</td>
</tr>
<tr>
<td>LIST OF TABLES</td>
<td>ix</td>
</tr>
<tr>
<td>LIST OF FIGURES</td>
<td>xi</td>
</tr>
<tr>
<td>LIST OF ACRONYMS</td>
<td>xii</td>
</tr>
</tbody>
</table>

## CHAPTER ONE: INTRODUCTION

1.1 Introduction  1
1.2 Background of the Research  2
1.3 The Rationale of the Research and Research Questions  4
1.4 Structure of the Thesis  8

## CHAPTER TWO: THE RATIONALE FOR FINANCIAL SAFETY NETS AND DEPOSIT INSURANCE

2.1 Introduction  10
2.2 The Rationale for Banking  11
2.3 The Rationale for Financial Safety Nets  15
   2.3.1 Prudential Regulation of Banking  19
   2.3.2 Lender of Last Resort  20
   2.3.3 Deposit Insurance  21
2.4 Deposit Insurance Schemes  22
   2.4.1 Administrative Forms of Deposit Insurance Schemes  24
   2.4.2 Financing Deposit Insurance  24
   2.4.3 Extent of Coverage  25
2.5 The Problem of Moral Hazard  27
2.6 History of Deposit Insurance  28
2.7 Deposit Insurance Schemes in the UK  30
2.7.1 Background to the Deposit Protection Scheme in the UK and the Main Bank Failures

2.7.2 Background to the Building Societies' Investor Protection Scheme

2.7.3 Current Deposit Insurance Scheme in the UK

2.8 Deposit Protection Schemes in Turkey

2.8.1 Background to the Deposit Protection Scheme in Turkey

2.8.2 New Banking Law Prior to the Banking Crisis of 2000

2.8.3 Current Deposit Protection Scheme in Turkey

2.8.4 The Banking Crisis of 2000

2.9 Chapter Summary

CHAPTER THREE: LITERATURE REVIEW OF AND THE REGULATORY VIEW ON MARKET DISCIPLINE

3.1 Introduction

3.2 Market Discipline

3.2.1 Depositor Market Discipline

3.2.2 The Alternative Sources of Market Discipline

3.2.2.1 Debt Holders as a Source of Market Discipline

3.2.2.2 Stockholders as a Source of Market Discipline

3.3 Empirical Studies Concerning Market Discipline

3.3.1 Depositor Behaviour

3.3.2 Debt Holders' Behaviour

3.3.3 Stockholders' Behaviour

3.4 Regulatory View on Market Discipline

3.4.1 Regulators' Views in the UK

3.4.1.1 Some General Points on the New Compensation Arrangements

3.4.1.2 Financial Services Authority View

3.4.2 Regulators' Views in Turkey

3.4.3 The Basle Committee on Banking Supervision's View

3.5 Chapter Summary
CHAPTER FOUR: A SURVEY ON DEPOSITOR BEHAVIOUR IN THE UK AND TURKEY: EMPIRICAL METHODOLOGY

4.1 Introduction 84
4.2 Domain of the Study 84
4.3 Data Collection 85
  4.3.1 Sample 85
4.4 Questionnaire Design 88
  4.4.1 Information Sought 88
  4.4.2 Type of Questionnaire and Method of Administration 94
  4.4.3 Individual Question Content / Questionnaire Items 96
  4.4.4 Form of Response 97
  4.4.5 Question Wording 99
  4.4.6 Sequence of Questions 99
  4.4.7 Physical Characteristics of the Questionnaire 100
4.5 Questionnaire Pre-testing and Piloting for the UK 101
  4.5.1 Initial Pre-test for the UK 102
  4.5.2 Pilot Study for the UK 104
  4.5.3 Efforts to Improve the Response Rate 106
4.6 Main UK Survey 106
4.7 Translating the Questionnaire for Use in Turkey 108
4.8 Sampling, Questionnaire Pre-testing and Piloting for Turkey 109
  4.8.1 Initial Pre-test for Turkey 109
  4.8.2 Pilot Study for Turkey 110
4.9 Main Turkish Survey 111
4.10 Reliability and Validity of the Questionnaire 112
  4.10.1 Reliability 113
  4.10.2 Reliability Test 113
  4.10.3 Validity 115
4.11 Chapter Summary 118
CHAPTER SEVEN: STRATEGIC CONCLUSIONS OF THE RESEARCH

7.1 Introduction 191
7.2 Key Findings of the Research 192
7.3 Policy Implications 197
7.4 Directions for Future Research 200

BIBLIOGRAPHY 201

APPENDIX 1: Deposit Insurance Schemes
APPENDIX 2: Cover Letter (English)
APPENDIX 3: Questionnaire (English)
APPENDIX 4: Questionnaire (Turkish)
APPENDIX 5: The UK Sample
APPENDIX 6: The Turkish Sample
ABSTRACT

Market discipline in the banking sector, which is the ability of private sector agents to discipline bank behaviour by pricing their debt according to their risk profile, has gathered significant attention from both regulators and academics in recent years. Despite conflicting ideas about the optimal way on how to attain market discipline in the banking sector, it is agreed that traditional supervisory methods have to be complemented with market forces.

The literature on market discipline is usually on the US banking sector. The contribution of this thesis to the literature is achieved by extending the analysis to the UK and Turkish banking sectors and by looking at the subject from a depositor's angle. The purpose of this thesis is to analyse and to empirically test to what extent depositor market discipline exists in the UK and Turkey. To do this, a survey method, namely the questionnaire, was conducted and then analysed by descriptive analysis and statistical significance testing. In addition, using panel data estimation methods on individual bank balance sheets and income statement information, this research study also examined the evidence of market discipline in the banking industries of the UK and Turkey by testing the sensitivity of (i) deposit growth, and (ii) deposit interest rates to indicators of bank risk. The latter could only be applied to Turkish banks due to data limitations concerning the UK banks.

The descriptive analysis and statistical significance testing for the UK and Turkish surveys show that while the main conditions necessary for depositors to exert market discipline are absent in the UK, these conditions exist in Turkey. Pooled least squares regression analysis points out that there is no statistically significant relationship between bank risk-taking and deposit growth in the UK. However, for the Turkish banking sector, the empirical findings indicate that Turkish depositors exert market discipline.

The evidence found concerning the existence of market discipline in Turkey, despite the existence of full explicit coverage, highlights the importance of the credibility of the guarantees and of the delays and other costs involved in recovering funds from the guarantor. On the other hand, the findings of the UK leg of the study show that a careful safety net design is not enough by itself to promote depositor market discipline. Therefore, this study recommends that the depositors' awareness and understanding of available compensation schemes and levels of financial literacy be improved, and the disclosure of information has to be enhanced to deliver the goal of depositor market discipline.

Keywords: Deposit insurance, Market Discipline, Banking, Safety Net Design, The United Kingdom, Turkey
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Finally, I would like to thank my mother Ülker, my father Haluk, my brother Mert and my daughter Buse for their continuous support and understanding; and, words alone cannot express the thanks I owe to Emrah Eksi, my husband, for his encouragement and patience.

This thesis is dedicated to my late grandmother who has always believed in me.
<table>
<thead>
<tr>
<th>Graph</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.1</td>
<td>Number of Explicit Deposit Insurance Systems in Existence</td>
<td>29</td>
</tr>
<tr>
<td>5.1</td>
<td>How many banks or building societies do you currently hold your savings? (UK)</td>
<td>121</td>
</tr>
<tr>
<td>5.2</td>
<td>Reasons for Having Multiple Accounts (UK)</td>
<td>121</td>
</tr>
<tr>
<td>5.3</td>
<td>Type of Institution (UK)</td>
<td>122</td>
</tr>
<tr>
<td>5.4</td>
<td>Reason for not checking any information about banks (UK)</td>
<td>123</td>
</tr>
<tr>
<td>5.5</td>
<td>How much do you hold in that account? (UK)</td>
<td>123</td>
</tr>
<tr>
<td>5.6</td>
<td>I am willing to take financial risk (UK)</td>
<td>124</td>
</tr>
<tr>
<td>5.7</td>
<td>I would take action if I were concerned about financial condition of my bank (UK)</td>
<td>125</td>
</tr>
<tr>
<td>5.8</td>
<td>I would decrease the amount of my savings if I suspect any deterioration in the financial condition of my bank (UK)</td>
<td>125</td>
</tr>
<tr>
<td>5.9</td>
<td>I would close the account immediately on a rumour about my bank being in financial difficulty (UK)</td>
<td>125</td>
</tr>
<tr>
<td>5.10</td>
<td>Expectancy towards to be bailed out (UK)</td>
<td>126</td>
</tr>
<tr>
<td>5.11</td>
<td>How many banks do you currently hold your savings? (Turkey)</td>
<td>139</td>
</tr>
<tr>
<td>5.12</td>
<td>Reasons for Having Multiple Accounts (Turkey)</td>
<td>140</td>
</tr>
<tr>
<td>5.13</td>
<td>Type of Institution-a (Turkey)</td>
<td>140</td>
</tr>
<tr>
<td>5.14</td>
<td>Type of Institution-b (Turkey)</td>
<td>140</td>
</tr>
<tr>
<td>5.15</td>
<td>Reason for not checking any information about banks (Turkey)</td>
<td>141</td>
</tr>
<tr>
<td>5.16</td>
<td>How much do you hold in that account? (Turkey)</td>
<td>142</td>
</tr>
<tr>
<td>5.17</td>
<td>I am willing to take financial risk (Turkey)</td>
<td>143</td>
</tr>
<tr>
<td>5.18</td>
<td>I would take action if I were concerned about financial condition of my bank (Turkey)</td>
<td>143</td>
</tr>
<tr>
<td>5.19</td>
<td>I would decrease the amount of my savings if I suspect any deterioration in the financial condition of my bank (Turkey)</td>
<td>144</td>
</tr>
<tr>
<td>5.20</td>
<td>I would close the account immediately on a rumour about my bank being in financial difficulty (Turkey)</td>
<td>144</td>
</tr>
<tr>
<td>5.21</td>
<td>Expectancy towards to be bailed out (Turkey)</td>
<td>145</td>
</tr>
</tbody>
</table>
## LIST OF TABLES

<table>
<thead>
<tr>
<th>Table</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Table 2.1</td>
<td>Regulatory Measures and Objectives for Banks</td>
<td>20</td>
</tr>
<tr>
<td>Table 2.2</td>
<td>Deposit Insurance Systems With Risk Adjusted Premiums</td>
<td>25</td>
</tr>
<tr>
<td>Table 2.3</td>
<td>Deposit Insurance Systems With Co-Insurance</td>
<td>26</td>
</tr>
<tr>
<td>Table 2.4</td>
<td>Deposit Coverage Changes in Turkey</td>
<td>38</td>
</tr>
<tr>
<td>Table 2.5</td>
<td>Share of Failed Banks in Turkish Banking System in 1994 Crisis</td>
<td>40</td>
</tr>
<tr>
<td>Table 4.1</td>
<td>Stages for Developing a Questionnaire</td>
<td>88</td>
</tr>
<tr>
<td>Table 4.2</td>
<td>Cronbach's Alpha Reliability Tests</td>
<td>114</td>
</tr>
<tr>
<td>Table 5.1</td>
<td>The MWW Test of Hypothesis 1 (UK)</td>
<td>127</td>
</tr>
<tr>
<td>Table 5.2</td>
<td>The MWW Test of Hypothesis 2 (UK)</td>
<td>128</td>
</tr>
<tr>
<td>Table 5.3</td>
<td>The MWW Test of Hypothesis 3 (UK)</td>
<td>128</td>
</tr>
<tr>
<td>Table 5.4</td>
<td>The MWW Tests of Hypothesis 4 (UK)</td>
<td>129</td>
</tr>
<tr>
<td>Table 5.5</td>
<td>The Kruskal-Wallis Test of Hypothesis 5-a (UK)</td>
<td>130</td>
</tr>
<tr>
<td>Table 5.6</td>
<td>The Kruskal-Wallis of Test Hypothesis 5-b (UK)</td>
<td>131</td>
</tr>
<tr>
<td>Table 5.7</td>
<td>The Kruskal-Wallis Test of Hypothesis 5-c (UK)</td>
<td>131</td>
</tr>
<tr>
<td>Table 5.8</td>
<td>The Kruskal-Wallis Test of Hypothesis 6 (UK)</td>
<td>131</td>
</tr>
<tr>
<td>Table 5.9</td>
<td>Z Test for a Proportion of Hypothesis 8 (UK)</td>
<td>133</td>
</tr>
<tr>
<td>Table 5.10</td>
<td>Z Test for a Proportion of Hypothesis 9 (UK)</td>
<td>134</td>
</tr>
<tr>
<td>Table 5.11</td>
<td>Z Test for a Proportion of Hypothesis 10 (UK)</td>
<td>134</td>
</tr>
<tr>
<td>Table 5.12</td>
<td>Z Test for a Proportion of Hypothesis 11 (UK)</td>
<td>135</td>
</tr>
<tr>
<td>Table 5.13</td>
<td>The Friedman Two-Way Analysis of Variance Test of Hypothesis 12 (UK)</td>
<td>136</td>
</tr>
<tr>
<td>Table 5.14</td>
<td>The MWW Test of Hypothesis 1 (Turkey)</td>
<td>146</td>
</tr>
<tr>
<td>Table 5.15</td>
<td>The MWW Test of Hypothesis 2 (Turkey)</td>
<td>147</td>
</tr>
<tr>
<td>Table 5.16</td>
<td>The MWW Test of Hypothesis 3 (Turkey)</td>
<td>147</td>
</tr>
<tr>
<td>Table 5.17</td>
<td>The MWW Tests of Hypothesis 4 (Turkey)</td>
<td>148</td>
</tr>
<tr>
<td>Table 5.18</td>
<td>The MWW Test of Hypothesis 5 (Turkey)</td>
<td>149</td>
</tr>
<tr>
<td>Table 5.19</td>
<td>The Kruskal-Wallis Test of Hypothesis 6 (Turkey)</td>
<td>150</td>
</tr>
<tr>
<td>Table 5.20</td>
<td>Z Test for a Proportion for Hypothesis 8 (Turkey)</td>
<td>151</td>
</tr>
<tr>
<td>Table 5.21</td>
<td>Z Test for a Proportion for Hypothesis 9 (Turkey)</td>
<td>152</td>
</tr>
<tr>
<td>Table 5.22</td>
<td>Z Test for a Proportion for Hypothesis 10 (Turkey)</td>
<td>152</td>
</tr>
<tr>
<td>Table 5.23:</td>
<td>Z Test for a Proportion for Hypothesis 11 (Turkey)</td>
<td>153</td>
</tr>
<tr>
<td>------------</td>
<td>---------------------------------------------</td>
<td>-----</td>
</tr>
<tr>
<td>Table 5.24:</td>
<td>The Friedman Two-Way Analysis of Variance Test for Hypothesis 12 (Turkey)</td>
<td>154</td>
</tr>
<tr>
<td>Table 5.25:</td>
<td>The MWW Test of Hypothesis 1 (Comparison of the UK and Turkish Surveys)</td>
<td>157</td>
</tr>
<tr>
<td>Table 5.26:</td>
<td>The MWW Test of Hypothesis 2 (Comparison of the UK and Turkish Surveys)</td>
<td>157</td>
</tr>
<tr>
<td>Table 5.27:</td>
<td>The MWW Test of Hypothesis 3 (Comparison of the UK and Turkish Surveys)</td>
<td>158</td>
</tr>
<tr>
<td>Table 5.28:</td>
<td>The MWW Test of Hypothesis 4 (Comparison of the UK and Turkish Surveys)</td>
<td>158</td>
</tr>
<tr>
<td>Table 5.29:</td>
<td>The MWW Test of Hypothesis 5 (Comparison of the UK and Turkish Surveys)</td>
<td>159</td>
</tr>
<tr>
<td>Table 5.30:</td>
<td>The MWW Test of Hypothesis 6 (Comparison of the UK and Turkish Surveys)</td>
<td>160</td>
</tr>
<tr>
<td>Table 5.31:</td>
<td>The MWW Test of Hypothesis 7 (Comparison of the UK and Turkish Surveys)</td>
<td>160</td>
</tr>
<tr>
<td>Table 6.1:</td>
<td>Share in Deposits</td>
<td>181</td>
</tr>
<tr>
<td>Table 6.2:</td>
<td>Maturity Structure of Deposits in Turkey</td>
<td>182</td>
</tr>
<tr>
<td>Table 6.3:</td>
<td>Pooled Least Squares Estimates of Depositor Market Discipline in the UK (Dependent Variable: Growth)</td>
<td>184</td>
</tr>
<tr>
<td>Table 6.4:</td>
<td>Pooled Least Squares Estimates of Depositor Market Discipline in Turkey (Dependent Variable: Growth)</td>
<td>186</td>
</tr>
<tr>
<td>Table 6.5:</td>
<td>Pooled Least Squares Estimates of Depositor Market Discipline in Turkey (Dependent Variable: Spread)</td>
<td>188</td>
</tr>
</tbody>
</table>
## LIST OF FIGURES

<table>
<thead>
<tr>
<th>Figure</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Figure 1.1</td>
<td>The Research Process Diagram</td>
<td>5</td>
</tr>
<tr>
<td>Figure 4.1</td>
<td>Sample Population Selection Procedure</td>
<td>86</td>
</tr>
<tr>
<td>Figure 4.2</td>
<td>Summary of Breakdown of Responses to the UK Pilot</td>
<td>105</td>
</tr>
<tr>
<td>Figure 4.3</td>
<td>Summary of Breakdown of Responses to the Main UK Study</td>
<td>107</td>
</tr>
<tr>
<td>Figure 4.4</td>
<td>Summary of Breakdown of Responses to the Turkish Pilot</td>
<td>111</td>
</tr>
<tr>
<td>Figure 4.5</td>
<td>Summary of Breakdown of Responses to the Main Turkish Study</td>
<td>112</td>
</tr>
</tbody>
</table>
LIST OF ACRONYMS

BBA: British Bankers Association
BCCI: Bank of Credit and Commerce International
BHC: Bank Holding Company
BIS: Bank for International Settlements
BOE: Bank of England
BRSA: Banking Regulation and Supervision Agency
BSC: Building Societies’ Commission
CBT: Central Bank of Turkey
CD: Certificate of Deposits
DPB: Deposit Protection Board
ECU: European Currency Unit
EEA: European Economic Area
FDIC: Federal Deposit Insurance Corporation
FDICIA: Federal Deposit Insurance Corporation Improvement Act
FRS: Financial Reporting Standard
FSA: Financial Services Authority
FSCS: Financial Services Compensation Scheme
GBP: British Pound
IMF: International Monetary Fund
ING: Internationale Nederlanden Group
JMB: Johnson Matthey Bankers
MBBG: Major British Banking Group
MBG: Major Banking Group
MWW: Mann-Whitney-Wilcoxon
NMB: National Mortgage Bank
SDIF: Savings Deposit Insurance Fund
TRL: Turkish Lira
UK: United Kingdom
US: United States
USD: United States Dollar
CHAPTER ONE

INTRODUCTION

1.1 Introduction

Banks have a crucial role to play in the well being of an economy. By gathering savings from depositors and providing funds for investment, running the payments system and coordinating financial transactions, they operate at the centre of the exchange of money throughout the economy. However, not only developing but also developed economies around the globe have experienced several banking failures, which has increased the concern of regulators over the safety and soundness of financial systems. Therefore, in response to the dramatic rise in bank failures, market discipline has been considered as a complementary instrument to improve the safety and soundness of the banking system by regulators.

The issue of market discipline in the banking sector, which is defined by Berger (1991) as a situation in which private sector agents (depositors, debt holders or stockholders) face costs that are increasing in the risks undertaken by banks and take action on the basis of these costs, such as by asking for higher interest rates or withdrawing their funds from riskier banks, has also attracted considerable attention from academics. However, while the importance of market discipline in banking is widely recognised, there is much less consensus among researchers as to its actual presence (Birchler and Maechler, 2001). Therefore, the aim of this research is to empirically analyse the existence of market discipline in the banking industries of the UK and Turkey.
In this chapter, an introduction to the thesis is provided. The background of the research is explained in the next section. The rationale of the research and research questions are described in Section 1.3. Outlines of the following chapters are presented in the last section.

1.2 Background of the Research

Since the 1980s, more than two thirds of the member countries of the International Monetary Fund (IMF) have experienced either banking crisis or significant banking problems (Barth et al., 1997). Bank failures, which can have systemic effects on the financial system, cause a number of problems. The relationship between banks and customers could cease, which would adversely affect both depositors and customers who have loan relationships. Ceasing bank lending also leads to disruption in the payments system and may also cause a reduction in investment and other economic activities. Besides, governments face huge costs in resolving banking crisis. Therefore, financial safety nets are introduced to reduce the fragility of the financial system and cap costs if they occur. In conclusion, financial safety nets have the dual objectives of offering protection to depositors and reducing banks' incentives to engage in risky activities. There are two mechanisms where financial safety nets depend on restraining bank risk-taking: (i) bank regulation, and (ii) market discipline. In general, bank regulators have a direct impact on banks' behaviour. Bank regulators may ask banks to take corrective steps when they believe it is necessary (Demirgüç-Kunt and Huizinga, 1999). However, while some academics and policymakers claim that, in order to avoid bank failures, governments have to regulate and supervise banks more effectively, other believe that tight regulation may restrict business activities and result in welfare losses.

In the last 15 years, market discipline has attracted a great deal of attention from regulators around the globe. The main reason for bank supervisors to rely on market forces derives from the current situation of banking business, which is becoming increasingly complex. As the adequacy of the traditional supervisory tools is questioned, reliance on market discipline is gaining importance.
Recently, the Basle Committee on Banking Supervision, headquartered at the Bank for International Settlements in Switzerland, proposed a revision of the Basel Accord and specified market discipline as one of the three pillars, along with improved capital standards and supervisory review, for safeguarding the banking system (BIS, 2000). It is argued that enhanced public disclosure allows market discipline to work earlier and more effectively, therefore strengthening the incentives for banks to behave in a prudent and efficient manner.

Furthermore, the chairman of the United States Federal Reserve System, Alan Greenspan (2001a), has stated that “The real pre-safety-net discipline was from the market, and we need to adopt policies that promote private counterparty supervision as the first line of defence for a safe and sound banking system.”

The widely accepted argument for greater reliance on market discipline is that it will restrain managerial risk-taking and reduce potential losses to the deposit insurance funds. Opponents of this view favour the traditional reliance on supervision by the bank regulatory agencies as the primary method to maintain the safety and soundness of the banking system and the integrity of the deposit insurance funds. They question the ability of outsiders, in particular depositors, to evaluate the credit quality of bank portfolios and therefore to assess their risk without more detailed inside information available to bank examiners (Simons and Cross, 1991). However, countries’ banking sectors can enjoy a number of social benefits from enhanced market discipline. Firstly, the influence of moral hazard because of government guarantees will decline if market discipline is increased. Secondly, the efficiency of banks may be improved by putting pressure on the relatively-inefficient banks, which they can be forced to become more efficient or to exit from the banking industry (Berger, 1991). Finally, if regulators rely more on market forces, the social cost of bank supervision may be reduced. Especially when the anonymity of the market is taken into consideration, it can be said that it is hard to “lobby for its forgiveness” and the market forces may even react more quickly than regulators to increases in bank risk-taking (Martinez-Peria and Schmukler, 2001).
Flannery (2001) also states the potential ability of market information to support supervisory assessments. He argues that market assessment of bank condition complements standard supervisory procedures and acts as an early warning system, either by providing information that is already known to supervisors and can reinforce their action or by presenting new information.

Benston et al. (1986) argue that some creditors must be at risk as a prerequisite of market discipline, and that creditors will select among competing banks on the basis of capital ratios and other measures of financial strength, and the resulting discipline will be a force for conservatism. They also point out that creditors should demand higher rates of return on funds placed with an institution that they perceive to be too risky; the institution can either pay the higher rates and/or cut back on risky activities to reduce overall exposure, or else face the loss of funds as they mature. In addition, they also state that runs and system-wide panics represent the extreme form of market discipline.

As a result, although it is generally agreed that bank supervisors should increasingly rely on market forces to supplement their traditional supervisory methods, the ability of market forces to impose market discipline still remains an open question.

1.3 The Rationale of the Research and Research Questions

As market discipline is considered an efficient means of discouraging banks from excessive risk-taking that could cause them to fail (Park and Peristiani, 1998), the question of whether market forces are able to impose discipline on banks has been approached in the literature in a number of different ways. It is discussed in the literature whether stockholders, depositors and the creditors at large can be a source of market discipline to prevent banks from undertaking excessive risk-taking. However, empirical studies provide mixed evidence.

Most of the existing academic literature on market discipline focuses on the experience of the United States (US) commercial banking over the last two decades. There are few studies concerning the experience of European countries or developing
countries, and I could not trace any study concerning depositor market discipline in the United Kingdom (UK) and Turkey, and the extent to which depositors in these countries could impose market discipline remains an empirical question.

Therefore, in this research, the existence of market discipline in the UK and Turkish banking sectors is analysed and depositors will be studied as the source of market discipline. A multi-dimensional approach is adopted while conducting this research. Theoretical discussions on the subject are evaluated. Besides, regulators’ views were also obtained, which provided invaluable insight on the area of research. Two-step quantitative analysis is implemented. The survey instrument, namely the questionnaire, is used in both countries to obtain information about depositors’ ability to be a source of market discipline. In addition, an econometric analysis evaluates whether there is evidence of market discipline, i.e. whether depositors respond to bank risk-taking by withdrawing their deposits or by requiring higher interest rates on deposits. The framework of this research is shown in Figure 1.1.

Figure 1.1: The Research Process Diagram
This research attempts to make a contribution to the literature by evaluating the potential for the British and Turkish depositors to impose market discipline. Therefore, the main research problem of this study is 'Can a bank depositor be an effective source of market discipline in the UK and Turkey?'. A number of factors make the banking sectors of the UK and Turkey very important to study market discipline, and regulatory views obtained from both the UK and Turkish authorities reinforce the importance of depositor market discipline accompanied by strong prudential regulation.

London has a very good reputation as an international financial centre. Moreover, the UK has a very sound financial system and does not frequently experience bank failures. The simultaneous failure of banks that potentially threatens the stability of the financial system has been very rare in the UK and the small banks' crisis in the 1990s was the last widespread occasion where the Bank of England provided emergency liquidity support to the UK banks.

On the other hand, despite the fact that the banking sector is one of the most rapidly growing sectors in the 1990s, the Turkish banking sector has suffered several transformations (the latest one was in 2001), and almost one third of private banks operating in Turkey have failed since 1997.

The objective of this research is also to examine whether the extent of market discipline is related to different regulatory environments and whether certain design features of deposit insurance schemes undermine market discipline. Although both these two countries have adopted explicit deposit insurance schemes, the design features of the systems differ significantly, and the discrepancies between the schemes is very important for the analysis. In the UK scheme, there is a co-insurance principle where depositors bear some standard proportion of any deposit loss; this means giving all depositors an incentive to monitor the risk-taking of banks with they place their money (Dale, 2000). It is a very crucial feature of all the compensation arrangements that were adopted and indicates the regulators' keen interest on depositor discipline in the UK. On the other hand, Turkey's deposit insurance
scheme has been modified because of banking crises and currently Turkish depositors are enjoying full coverage.

Although depositors are seen as one of the principal sources of market discipline in these countries, lack of any study that analyses depositor behaviour and the facts about depositors is seen as a gap in the literature. To fill this gap, a survey method namely the questionnaire, is used. The aim of the questionnaire is to find out depositors' ability to exert market discipline. Also, it aims to gain insight about their understanding concerning financial systems and the regulations that they operate under, as well as their awareness about the compensation arrangements. The general purpose of the questionnaire is to explore to what extent we can expect depositors to be a source of market discipline in the UK and Turkey, and specific research questions concerning the questionnaire are presented below:

1. Do the pre-conditions for effective market discipline exist among depositors?
2. What is the importance of risk for depositors when investing their funds?
3. Are they able to obtain and use the information about the risk-taking of their banks?
4. Do people who know about deposit protection schemes differ in their attitudes from other people who do not know?
5. Does publicity surrounding default and the fact that some depositors have borne losses act as a warning to other consumers to be more careful?
6. What are the attitudes of depositors' towards the "too-big-to-fail" policy?
7. Do customers who know about the deposit protection scheme diversify their savings?
8. How important is it to make people aware of the deposit protection arrangements? What actions could be expected?

In addition to survey analysis, the existence of depositor market discipline is also investigated by econometric analysis. Using panel data estimation on bank balance sheets and income statement information, econometric analysis examines market discipline by testing whether there is a significant relationship between depositor
behaviour and bank performance. The two main questions that the econometric analysis is concerned with are;

1. Do bank specific risk variables significantly explain bank deposit growth, i.e. do riskier banks experience slower growth of deposits?
2. Do bank specific risk variables significantly explain bank deposit interest rates, i.e. do riskier banks pay higher interest rates?

The econometric analysis also investigates the following questions:

1. Do large banks enjoy the “too-big-to-fail” policy?
2. Do the failing banks in Turkey pay significantly higher interest rates and experience slower growth of deposits than other banks in the period prior to their failure?
3. Did the introduction of full coverage deposit insurance scheme in Turkey make a significant impact on bank behaviour?

1.4 Structure of the Thesis

In the first chapter of this thesis, the theme of the research was introduced. The rest of the thesis is structured as follows.

Chapter Two examines the rationale for banking and financial safety nets. In addition, the features of deposit insurance schemes are discussed, followed by examination of the moral hazard problem. Next, deposit insurance schemes in the UK and Turkey are evaluated. The chapter concludes with a summary of the issues discussed in the chapter.

Chapter Three provides a review of the literature relevant to the development of the research. Firstly, the market discipline concept is explored, and then depositor discipline and other sources of market discipline, namely equity holders and debt holders, are discussed. Next, examination of empirical studies concerning market discipline is presented. In order to complete the framework of the research,
regulators' views on market discipline have also been assessed and presented in this chapter.

Chapter Four describes the research methodology utilised in the survey, including the data collection method, the sampling frame, the questionnaire development and the implementation of the study. Moreover, the survey questions and hypotheses, which emerged as a result of the theoretical discussions and were shaped by the regulators' views, are presented in this chapter.

Chapter Five presents the empirical results of the UK and Turkish surveys. The findings are provided firstly for the UK study followed by the Turkish study. Next, the results of the comparison between the two country is presented. The chapter concludes with a summary of the important findings of the survey for the research.

Chapter Six aims to test the existence of depositor discipline by applying econometric analysis. The theoretical basis for the analysis for the empirical investigation is provided followed by presentation of the methodology used, including the panel data that is collected. Finally, the results of the econometric analysis are provided followed by a summary of the main findings.

Finally, Chapter Seven summarises all the key findings and draws conclusions pertinent to policy-makers. The limitations of this work are discussed and recommendations for future research are made.
CHAPTER TWO

THE RATIONALE FOR FINANCIAL SAFETY NETS
AND DEPOSIT INSURANCE

2.1 Introduction

Banks have a crucial role in economies, not only as they act as financial intermediaries to provide a link between creditors and borrowers but also because they influence the functioning of securities markets and affect the quantity of money, the levels of investment and economic growth (Dewatripont and Tirole, 1994).

Because of their crucial role in every economy, banks attract the attention of policymakers who attempt to counter the potential effects of bank failures by operating financial safety nets. The main underlying rationale of these safety nets is to avoid the systemic risk that could result in a financial crisis in the economy. As Allen and Herring (2001) state “The primary justification for bank regulation that is usually given is the avoidance of systemic risk, or in other words, the avoidance of financial crisis.”

Therefore, all countries implement financial safety nets to prevent systemic bank insolvencies that could give rise to massive costs, not only to banks themselves and their depositors, but also to society at large (Demirgüç-Kunt and Huizinga, 1999). Together with the prudential regulation of banking and the provision of a lender of last resort, deposit insurance is one of the three components of the safety net that policymakers rely on to ensure the stability of the financial system. Deposit insurance is generally considered necessary to protect small depositors and to prevent bank runs, and thereby to enhance the stability of the financial system. However, deposit insurance is also considered to have associated costs, the main one being
moral hazard.

The purpose of this chapter is to examine the rationale for deposit insurance and present an overview of the deposit insurance schemes in the UK and Turkey. The chapter is divided into seven sections, including this introduction. In the second section, the theoretical reasons for the existence of banks and their intermediary role in economies are introduced. The rationale for financial safety nets is presented in the third section. In the fourth section, the deposit insurance concept is reviewed and the moral hazard problem is explained. The overview of the UK deposit insurance scheme is presented in the fifth section, which is followed by the Turkish deposit insurance scheme in the sixth section. Finally, in the seventh section, a chapter summary is drawn.

2.2 The Rationale for Banking

In order to examine the rationale for bank regulation, and particularly deposit insurance, I first need to explain the existence of banks in an economy. Traditionally, banks are defined as institutions that act as intermediaries between depositors and borrowers throughout the economy (Heffeman, 1996). Gathering savings from depositors, providing loans and investment funds, running the payments system and coordinating financial transactions make them crucial to the well-being of the economy, and these roles distinguish them from other commercial institutions. In developing countries, they are by and large the heart of the financial market and even in industrial countries with complex financial markets they still have a role as primary providers of financial services (Garcia, 1997).

According to Santomero (1997), depository institutions serve at least two primary functions. First, they create financial assets and second, they provide payment systems to liability holders and a positive return for their savings. Banks create assets by their financial intermediary role, using the funds of entities that have financial surpluses and lending those funds to entities that are in financial deficit. Therefore, the liability side of a typical bank balance sheet consists of funds borrowed by the bank, primarily deposits. The asset side of a bank balance sheet, on the other hand, is
comprised primarily of loans and investments. Considering the two different sides of a bank’s balance sheet, while a number of people argue that banks are in the business of managing assets, some other people model banking as a business of managing liabilities. However, there is no doubt among academics that banks fundamentally perform an important intermediary role by lending the funds that they accept from depositors.

Heffernan (1996) presents two reasons for the importance of the intermediary function of a bank between borrowers and lenders: first, information costs; and second, liquidity preferences. According to information cost theory, through their intermediary function, banks can allow depositors to offer their funds to borrowers with lower associated information costs than would be otherwise incurred by depositors or lenders. Heffernan points to four types of information costs, search, verification, monitoring and enforcement costs.

Search costs arise when a borrower or a lender searches for and obtains information, and then chooses and negotiates with the other party of a contract, whereas verification costs arise when a lender needs to verify the accuracy of the information about the borrower. Monitoring costs occur while monitoring the activities of a borrower. In their survey of banking theories that explain the economic role of banks, Bhattacharya et al. (1998) argue that, instead of lenders, intermediary institutions monitor the attributes of investment projects because, without the intermediation of an institution, either all the many investors involved in funding that investment project would need to be involved in monitoring it or investors would be forced to lend large amounts of funds to a very few projects which they could monitor, thereby losing the benefits of diversification. Diamond (1984) examines the monitoring activity of institutions for investment projects and argues that institutions that intermediate to many investment projects achieve diversification by monitoring them and therefore offer this intermediation service to investors at a lower cost compared to a non-intermediated contract.

The last form of information cost, namely enforcement costs, occur when the lender takes legal action against the borrower to enforce the contract or to seek
compensation if the borrower is unable to meet the contractual conditions.

Therefore, a potential lender may prefer to do business with a potential borrower through the intermediation of a bank, as banks incur lower information costs than depositors because of economies of scope\(^1\). As banks obtain information when lending to borrowers, they have access to this privileged information while it is unlikely to be available to depositors who try to lend directly. Therefore, because of this comparative advantage in the gathering of information, banks can offer intermediation services for lending and borrowing activities at a lower cost compared to the cost incurred when two parties arrange a contract among themselves.

Besides information costs, liquidity preference is another factor that explains the importance of the intermediary function of a bank between borrowers and lenders. As borrowers and lenders are likely to have different liquidity preferences, it would be very difficult and costly for a potential lender to find the potential borrower with the same liquidity preferences. However, as banks are able to pool large numbers of deposits and loans, it is likely to match both parties with the same liquidity preferences. Besides, banks could transform illiquid assets into liquid funds and therefore have the necessary liquidity. Providing liquidity is an important facility that banks offer to their customers at a lower cost than would be incurred without the intermediation of banks (Heffernan, 1996).

In their pivotal study, Diamond and Dybvig (1983) analyse demand for liquidity and transformation services provided by banks. They conclude that, by offering a range of deposit instruments with greater liquidity and a smoother pattern of returns over time than the illiquid assets financed by these funds, banks can transform illiquid assets into liquid funds and provide a form of liquidity insurance as they can make payments to depositors who require cash before maturity. The Diamond-Dybvig model shows that without an intermediary, risk averse depositors who are uncertain about the timing of their future consumption needs and who invest in illiquid investments that offer a higher return in the long term, could have a very low return.

\(^1\) According to the economies of scope, which are also known as synergies, with the increasing level of production of different outputs, the average cost falls (Ross et al., 1993).
if they face a short-term liquidity need, as liquidation of a long-term investment could be costly.

Besides their traditional role of intermediation between borrowers and lenders, and as well as providing payment systems to its lenders, banks engage in many other profit-making activities. These activities include:

1. Acting as an intermediary in foreign exchange transactions as well as providing off-balance sheet activities for risk management purposes,
2. Offering a wide range of other non-bank financial or related activities such as securities and commodities trading, brokerage, underwriting, custodial services and corporate finance (Heffernan, 1996; Latter, 1997).

However, regulators are not only concerned with the banks’ classic role as intermediaries. According to Edward Kelley (1997), who is a member of the Board of the Governors of the Federal Reserve System of the US, in addition to their traditional role of providing the basic financial services of borrowing and lending and providing liquidity to depositors, banks supply the linkage between the financial system and the conduct of monetary policy.

The above-mentioned intermediary roles of banks distinguish them from other institutions and make them among the most heavily regulated industries in every economy. Latter (1997) argues that banks are unique in an economy because of their deposit-taking activity and are therefore subject to particular attention from the regulatory authorities. Latter identifies five reasons why the deposit-taking activity makes banks unique:

1. “A bank deposit is typically an unsecured and capital-certain claim.
2. It therefore implies a strong element of trust.
3. Borrowers, on average, require funds for longer periods of time than that for which depositors, on average, are willing to forego their funds; even overdrafts, which may technically have to be repaid on demand, have to be regarded, in total, as a fairly illiquid claim; thus, maturity
transformation is central to the economic function of a bank, and is at the same time a key source of risk.

4. Deposits constitute money, notably in the transactions sense: funds on current account or at call, or term deposits at maturity, can generally be used, and are accepted, as a means of executing payments and settling debts with third parties.

5. Consequently, banks find themselves at the centre of the payments system, the efficiency of which is vital to the broader economy."

2.3 The Rationale for Financial Safety Nets

In the previous section, the role of the banks in an economy and the underlying theories that seek to explain that role were reviewed. A well-functioning banking system is crucial in every economy as it provides intermediation between borrowers and lenders, payment services and a variety of financial and non-financial services. These critical contributions to an economy attract the attention of policy-makers concerned with the safety and soundness of the banking system. Therefore, in order to ensure that the banking system functions efficiently, it is the most heavily regulated industry almost everywhere. Barth et al. (1997) explain the regulatory attention devoted to banking systems by stating: "The occurrence of banking crisis or significant banking problems merits special attention because they can lead to severe disruptions in both a country's payment mechanism and its credit system."

However, like all other institutions, banks can fail for a number of reasons. Latter (1997) categorises the causes of bank failure under seven headings; macroeconomic instability, deficient supervision, poor strategies, weak management, inadequate control systems, operational failures and fraud.

If the failure of a bank is unlikely to endanger the solvency of other institutions in the system, its consequences cannot be called systemic and regulators may well allow it to fail (Goodhart, 1996). In fact, regulators may well not wish to allow inefficient banks to remain in business as a policy of general tolerance can impose social costs
on other banks and the community. Kane (1987) explains this by arguing that if inefficient insolvent banks compete aggressively for deposits and loan business, they can harm better managed and fundamentally sound banks as they are forced to compete in an unhealthy financial system.

The main concern regarding the failure of a bank is therefore the possibility of a systemic problem that can arise because of the contagious effects of a bank failure. Herring and Santomero (1999) define systemic risk "...as the risk of a sudden, unanticipated event that would damage the financial system to such an extent that economic activity in the wider economy would suffer." According to Herring and Santomero, these sudden and unanticipated events can occur because of a failure of a major participant in the financial system, a technological breakdown of settlements or payments system, or a political shock.²

As failure of a bank could lead other depositors' to be suspicious about the condition of their banks, deposit withdrawals could have a domino effect and threaten the existence of even financially sound institutions. There are three main reasons behind this argument. Firstly, as Dale (1984) argues, a severe liquidity squeeze resulting from sudden deposit withdrawals can be very quickly transformed into a solvency problem, as the victim bank tries to unload illiquid assets, thereby depressing their prices and incurring losses. Secondly, depositors have a natural tendency to try to withdraw their funds ahead of others at times of financial distress, which would continue as a chain reaction and threaten the existence of other banks. Thirdly, publicly available information could be inadequate to permit an accurate assessment of the financial condition of banks and the depositors might misinterpret the signals.

Therefore, contagious effects could result in banking instability and the occurrence of such instability might have serious negative impacts on a nation's economy as it could spread to other sectors in an economy and trigger a fully-fledged crisis. Demirgüç-Kunt and Kane (2001) cite Turkey as an example of a country where weaknesses in the banking sector triggered a crisis of confidence in other domestic sectors.

² It should be noted that, not only internal but also external shocks could be the reason for the systemic risk in today's global financial system where a crisis in one country can easily spread to others.
financial institutions during February 2001 and led to a large-scale flight of foreign
capital and a severe currency crisis that resulted in the alteration of the currency
regime.

Latter (1997) argues that the cost to government budgets of resolving banking crises
has been highly significant and, in addition to the transfer cost within the national
economy, there are likely to be real net costs in terms of the welfare losses to the
economy as a whole. Latter also argues that administrative costs, the consequences
of any diversion of macroeconomic policy enforced by the crisis, the possible
benefits of averting a more serious crisis, the implications for the efficiency of
financial intermediation of either supporting failed or failing institutions or allowing
a shake-out in the banking sector to run its course, should also be considered when
calculating the real costs of a banking crisis.

McKenzie and Khalidi (1994) argue that the externalities of a bank failure could
impose costs on other sectors of the economy and society as a whole. They identify
four externalities:

1. As depositors have cheque accounts at banks, a bank failure could affect
   the ability of depositors to undertake routine payment transactions.
2. Borrowers could be driven into insolvency if the receivers of the failed
   bank recall the loans, and this could result in a further contraction in
   economic activity.
3. The failure of a bank can generate contagion effects throughout the
   system which might develop into a deposit run, i.e. failure of a bank
   leads to uncertainty about the safety of other banks and depositors might
   seek to withdraw their savings from other banks.
4. When a failure happens, the deposit guarantee fund is placed under
   pressure, which in turn increases the cost of the guarantee system.

In order to prevent banking system failures that could cause these externalities, a
number of measures are usually adopted, which together may be said to constitute a
financial safety net (Dale, 1984). The chief of these are:
1. Banking laws and regulations, which aim to constrain excessive risk-taking, and supervision and examination of banks, which provide further protection against excessive risk-taking.
2. Providing liquidity to banks that are solvent but having liquidity problems under the heading of the classic "lender of last resort" function.
3. Deposit insurance schemes.

While summarising the core objectives of financial regulation as being to sustain systemic stability, to maintain the safety and soundness of financial institutions and to protect the consumer, Llewellyn (1999) also discusses the components of the economic rationale for safety nets in banking and financial services under seven headings:

2. The correction of other market imperfections and failures.
3. The need for monitoring financial firms and the economies of scale that exist in this activity.
4. The need for consumer confidence, which also has a positive externality.
5. The potential for gridlock, with associated adverse selection and moral hazard problems.
6. Moral hazard associated with the revealed preference of governments to create safety net arrangements: lender of last resort, deposit insurance, and compensation schemes.
7. Consumer demand for regulation in order to gain a degree of assurance and lower transactions costs."

According to the president of the Federal Reserve Bank of Kansas City, Thomas M. Hoenig (1997), the purpose of financial safety nets is not only to perform the traditional functions of depositor protection and systemic stability, but also to maintain the integrity of the payments system, which he considers as an important issue that draws the line between banks and other financial and non-financial institutions.
As banks are more prone to contagion than other commercial entities because of financial linkages and confidence effects, policy-makers have established financial safety nets. In general, financial safety nets have three components: the prudential regulation of banking, a lender of last resort and deposit insurance. These financial safety nets are considered vital in almost every country to promote the stability of the banking system and therefore prevent financial crises. The components of financial safety nets are considered in more detail in the following sub-sections.

2.3.1 Prudential Regulation of Banking

In order banks to operate in a safe and prudent manner, policy-makers impose control mechanisms through regulation of the domestic banking systems. The control mechanisms can be examined under two headings:

1. Prudential regulation, that focuses on the solvency and safety and soundness of financial institutions; and

2. Conduct of business regulation that focuses on how financial firms conduct business with their customers.

Allen and Herring (2001) argue that, although the regulation for banks is primarily designed to prevent systemic risk, there are three more objectives of bank regulation; investor protection, efficiency enhancement and achievement of broader social objectives. Table 2.1 presents the role of different types of bank regulation in achieving those regulatory objectives.

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3 Anti-money laundering regulations designed to combat organised crime is an example of such a social objective.
Table 2.1: Regulatory Measures and Objectives for Banks

<table>
<thead>
<tr>
<th>Regulatory Measures</th>
<th>Systemic Risk</th>
<th>Investor Protection</th>
<th>Efficiency Enhancement</th>
<th>Broader Social Objectives</th>
</tr>
</thead>
<tbody>
<tr>
<td>Antitrust enforcement/ competition policy</td>
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<td>Asset restrictions</td>
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<td>Capital adequacy standards</td>
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<td>Conduct of business rules</td>
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<td>Conflict of interest rules</td>
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<td>Customer suitability requirements</td>
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<tr>
<td>Fit and proper entry tests</td>
<td>✓</td>
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<td>Interest rate ceilings on deposits</td>
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<td>Interest rate ceilings on loans</td>
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<tr>
<td>Investment requirements</td>
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<tr>
<td>Liquidity requirements</td>
<td>✓</td>
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<td>Reporting requirements for large transactions</td>
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<tr>
<td>Reserve requirements</td>
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<tr>
<td>Restrictions on geographic reach</td>
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<tr>
<td>Restrictions on services and product lines</td>
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</tbody>
</table>

Adapted from Allen and Herring, 2001.

2.3.2 Lender of Last Resort

In general, besides enhancing price stability, central banks are also responsible for preventing financial crises by acting as a lender of last resort, which can be defined as the emergency liquidity assistance of a central bank. This facility allows financial institutions, generally depository institutions such as banks, that have critical liquidity needs to achieve central bank funds through discount windows and open market operations. In order to provide an efficient lender of last resort facility, the central banks should consider the following issues (Folkerts-Landau and Lindgren, 1998):

1. The lender of last resort should be available to the whole banking system.
2. Only solvent but illiquid institutions should use this facility.
3. The central bank should lend speedily, only for a short term and at a penalty rate.
4. The loan should be collateralised and collaterals should be accepted at a conservative value in normal times.
5. The central bank (or other bank regulators if there is a separate regulatory agent) should allow individual institutions to fail and be closed.
The advocates of the lender of last resort argue that protecting the integrity of the payments system, avoiding bank runs and preventing illiquidity at an individual bank from unnecessarily leading to its insolvency are the main objectives of this policy (Folkerts-Landau and Lindgren, 1998). However, this facility is criticised for causing a moral hazard problem, as banks may be less willing to operate a prudent liquidity policy if they are aware that liquidity problems would be addressed by the lender of last resort facility of the central bank. The moral hazard problem is also considered to be a drawback of deposit insurance, which is examined in Section 2.5 in detail.

2.3.3 Deposit Insurance

Deposit insurance is another vital component of a financial safety net, which is generally implemented to prevent bank runs. In addition to that, deposit insurance serves the aim of protecting small depositors by covering the losses of those who are unable to foresee a bank failure.

Depositors place funds in banks and they expect to be able to withdraw their deposits whenever they want. During a bank run, as depositors fear that their banks may be about to fail, they rush to withdraw their savings, as each depositor has a strong incentive to withdraw his/her fund before other depositors if there is any serious doubt about the safety of a particular bank (Dale, 1993; Kuritzkes et al., 2002). However, such sudden withdrawals of deposits could result in bank runs, which could lead to a systemic problem.

As most of the depositors may be unable to distinguish safe banks from risky banks, deposit runs could force both solvent and insolvent banks to fail. However, existence of deposit insurance may help to prevent bank runs and stabilise the deposit bases of the banks. On the other hand, the existence of deposit insurance leads to a moral hazard that allows failing banks to continue engaging in their risky activities and taking deposits until they are closed by the regulators. In the next section, the concepts of deposit insurance are reviewed in detail.

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4 Central banks generally address the problem of moral hazard caused by the lender of last resort facility by imposing liquidity requirements on banks and using 'penalty' lending rates.
2.4 Deposit Insurance Schemes

As banks play a crucial role in an economy, policy-makers have given deposit insurance a clear role in the safety net structure. Santomero (1997) defines the use and role of deposit insurance as the protection of depositors and investors after a crisis in a bank's balance sheet has begun that could result in losses. The existence of deposit insurance is also seen as a mechanism to prevent panic by assuring depositors in other banks about the integrity of the system as a whole, thereby providing systemic stability.

Some argue the main role of deposit insurance is consumer protection. It is aimed at protecting small depositors in the case of bank failure. This is based on the view that depositors cannot be expected to assess the risk-taking of the banks that they place their money with and cannot monitor the financial conditions of the banks. On the other hand, a further rationale of deposit insurance is to prevent bank runs through establishing confidence in the banking system, as small depositors seek to withdraw their funds from not only financially troubled banks but also healthy banks in the case of a panic (Dale, 1993).

Deposit insurance schemes have been established in a number of countries, in many cases as a result of bank failures in that country, and in recent years the number of countries offering explicit deposit insurance has increased rapidly (Demirgüç-Kunt and Kane, 2001). There are also a number of countries, especially outside Western Europe where explicit deposit insurance has been legally required by the European Union since 1994, which adopt implicit deposit insurance systems. However, implicit deposit insurance is criticised for having adverse effects, as the lack of a well-designed system of deposit insurance creates depositor uncertainty, that can worsen runs on banks, and requires in the end greater coverage than otherwise would have been offered (Garcia, 1997).

Demirgüç-Kunt and Kane (2001) argue that, in the short run, policy-makers consider explicit deposit insurance schemes a costless answer to problems of bank runs or panics, as no immediate budgetary expenditure needs to be booked. They also point
out the political benefits, such as protecting small depositors and providing opportunities for small banks to compete with larger institutions for deposits. However, in their cross-country empirical research Demirgüç-Kunt and Kane found that, even in favourable circumstances, using explicit deposit insurance to increase depositor confidence threatens to heighten financial fragility by reducing the degree of market discipline that banks experience.

An analysis of different deposit guarantee schemes indicates that deposit insurance practices differ among countries. Comparative information on different countries’ deposit insurance schemes is presented in Appendix 1. It seems that there is no perfect solution that fits the needs of every country. Therefore, when establishing deposit insurance schemes, it is very important to understand the financial and regulatory systems of the country as well as depositors’ behaviour within the country. However, there are some basic principles that are widely judged relevant to any deposit protection scheme. Garcia (1996) argues that a deposit insurance system must:

1. Be explicitly formulated in law.
2. Be compulsory.
4. Have the authority and necessary information to reform faltering banks and deal effectively with insolvent banks.
5. Be established only after unsound banks have been restructured.
6. Treat large, small, private and state-owned banks equally.
7. Provide for prompt reimbursement when a bank fails.

While these principles are critical for any deposit insurance scheme in general, policy-makers should consider three additional features of the deposit insurance scheme, namely administrative forms, financing and extent of coverage. These are examined in the following sub-sections. Demirgüç and Huizinga (1999) found that higher coverage, government-funding only reduce market discipline, while private and especially joint management of insurance schemes may improve market discipline.
2.4.1 Administrative Forms of Deposit Insurance Schemes

The administrative forms of deposit insurance schemes differ between countries. Protection may be supplied by government, or by a combined body representing both the government and banks operating in that country, or by a banking association. Membership to the scheme may be compulsory or voluntary. Demirgüç-Kunt and Huizinga (1999) analysed 64 countries deposit insurance schemes and found that private and especially joint management of insurance schemes may improve market discipline.

2.4.2 Financing Deposit Insurance

A number of different financing principles have been adopted among countries. The funded type of scheme is the one that many countries prefer. In this system banks pay periodic contributions to an established fund. The alternative type is the system where no premium is regularly paid by the banks. In starting the insurance fund, an initial contribution is requested from banks and the new banks that apply to participate in the scheme have to pay for being a member of the scheme in case of non-compulsory membership. In case of non-compulsory membership, banks are called upon to share the burden after a bank fails. As a variant, an additional premium can be collected if the deposit insurance fund amount falls below a certain level. In the absence of a formal scheme, the burden of a failed bank might fall on the government or its agencies in the case of an implicit guarantee. Demirgüç-Kunt and Huizinga (1999) found that government funding is obstacle towards the aim of market discipline.

In many cases banks are called upon to pay a premium to the deposit insurance scheme calculated as a fixed percentage of total deposits or the insured deposit base of the bank. Generally, these premiums range from 0.01-0.05 percent of the above-mentioned deposit bases and do not exceed 1 percent. On the other hand, a number of countries apply risk-related premiums, which are calculated according to a bank’s risk characteristics. Until 1995, only the US had a system with risk-related premiums. However, as of 2000, the number of countries that had risk-adjusted
Premium systems have risen to 21 (Demirgüç-Kunt and Sobaci, 2000). These countries are presented in Table 2.2.

### Table 2.2: Deposit Insurance Systems With Risk Adjusted Premiums

<table>
<thead>
<tr>
<th>Country</th>
<th>Deposit Insurance Systems With Risk Adjusted Premiums</th>
</tr>
</thead>
<tbody>
<tr>
<td>Argentina</td>
<td>Equatorial Guinea</td>
</tr>
<tr>
<td>Bulgaria</td>
<td>Finland</td>
</tr>
<tr>
<td>Cameroon</td>
<td>Gabon</td>
</tr>
<tr>
<td>Central African Republic</td>
<td>Hungary</td>
</tr>
<tr>
<td>Chad</td>
<td>Italy</td>
</tr>
<tr>
<td>Republic of Congo</td>
<td>Macedonia</td>
</tr>
<tr>
<td>El Salvador</td>
<td>Marshall Islands</td>
</tr>
<tr>
<td></td>
<td>United States</td>
</tr>
</tbody>
</table>

Source: Demirgüç-Kunt and Sobaci, 2000

#### 2.4.3 Extent of Coverage

The types of account that the insurance scheme excludes differ across countries: deposits of other banks or financial institutions, deposits belonging to the directors, managers, shareholders and auditors of a failed bank, deposits arising out of transactions in connection with which there has been a criminal conviction for money laundering, and deposits denominated in foreign currency are generally excluded. The reason behind the exclusion of banks’ deposits (or financial institutions deposits) is the assumption that the financial institutions are sophisticated investors and therefore able to exert market discipline.

Countries where the primary objective is to protect the payment systems typically offer deposit insurance to depositors who place their funds with commercial banks and to other depository institutions providing payment transactions. In a number of countries, experience suggests that regulators may build up separate insurance schemes for commercial banks and for other deposit-taking institutions (Demirgüç-Kunt and Sobaci, 2000).

While deposit insurance schemes vary in the extent and amount of coverage that they provide to depositors, in general, there are three types of deposit coverage practices:

1. 100 percent coverage: Under this system, all eligible deposits are fully covered. Dale (1993) summarises the outcome of full deposit insurance
as a banking system characterised by excessively-risky assets and high incidence of insolvency, as well as heavy claims on the deposit insurance fund and the taxpayer.

2. Insurance cut-off based on deposit size: Under this system, up to a certain amount of each deposit is covered and depositors are exposed to a default risk in the amount of the excess.

3. Co-insurance: Under this system, the insurance extends up to a certain percentage of the deposit up to a specific amount and therefore the depositor bears some portion of all losses. As of spring 1999, there were 17 countries that have deposit insurance schemes with co-insurance mechanisms (Demirgüç-Kunt and Sobaci, 2000). These countries are presented in Table 2.3.

<table>
<thead>
<tr>
<th>Table 2.3: Deposit Insurance Systems With Co-Insurance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Austria</td>
</tr>
<tr>
<td>Chile</td>
</tr>
<tr>
<td>Colombia</td>
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<tr>
<td>Czech Republic</td>
</tr>
<tr>
<td>Dominican Republic</td>
</tr>
<tr>
<td>Estonia</td>
</tr>
<tr>
<td>Germany</td>
</tr>
<tr>
<td>Gibraltar</td>
</tr>
<tr>
<td>Iceland</td>
</tr>
</tbody>
</table>

Source: Demirgüç-Kunt and Sobaci, 2000

As a matter of fact, the design of a deposit insurance scheme faces a trade-off between its major objectives, namely to prevent bank runs and to protect small depositors. Besides, the policy-makers also consider protecting the deposit insurance fund from bankruptcy while designing such a scheme. If the concern of the policy-makers is to protect small depositors and protect deposit insurance funds from large losses, the schemes that have limited coverage should be implemented. However, the schemes that have limited coverage undermine the objective of preventing bank runs by depositors (Gilbert, 1990). On the other hand, in order to prevent bank runs and reduce the risk arising from bank runs, full coverage deposit insurance scheme should be implemented. However, full coverage of deposit insurance not only has the potential to increase the losses of the deposit insurance fund in case of a bank failure, but also to create the moral hazard problem, which is examined in the next section.
2.5 The Problem of Moral Hazard

Opponents of deposit insurance argue that a deregulated financial system is the best for a country's economy and that, in the long run, deposit insurance has an adverse effect on the system by reducing incentives for economic agents to act efficiently (Santomero, 1997). Santomero explains this by stating that deposit insurance poses the moral hazard problem for depositors, i.e. deposit insurance affects the willingness of banks to undertake risks, making an unstable system even more susceptible to instability. Since depositors are no longer interested in the bank's financial condition, believing that all or most of their liabilities are insured by a government agency, they no longer need to watch or even worry about bank risk or bank solvency, as their claim is on the government, not the bank itself. Consequently, a bank's management, which recognises this fact and its full implication, is now capable of attracting funds at a risk-free rate as the constraints of market discipline are diminished.

As a result, deposit insurance could encourage risk-taking by insured institutions, which is called the moral hazard problem. The moral hazard argument states that if no one charges a bank a higher price for accepting more risk, profit-maximising bankers will exploit the risk-return trade-off by assuming as much risk as possible (Flood, 1993). With the existence of a 100 percent deposit insurance guarantee, depositors do not have an incentive to monitor the activities of the bank where they place their money and do not require any risk premium on their funds.

In order to improve market discipline and reduce moral hazard, Demirgüç-Kunt and Kane (2001) identify the conditions that a deposit insurance scheme should contain. These are:

1. Credibly low coverage limits per account;
2. Narrow coverage;
3. Co-insurance;
4. Compulsory membership;
5. Ex-post funding;
6. Targeting surviving banks to cover losses;
7. Private-public joint management.
Moral hazard is also caused by the application of fixed rate premiums. It is argued that the effect of moral hazard increases under a 100 percent coverage and flat-rate deposit insurance system, as no one charges a risk premium to the bank (Balaban and Çilli, 1997).

Senior executives, directors and influential shareholders may also contribute to moral hazard. Knowing that the depositors are protected and therefore not asking for a premium, they will engage in riskier types of businesses. If they lose, the deposit insurance fund will cover the depositors for some or all of their losses, and if they win, they will directly get the benefit. Therefore, excluding the deposits of senior managers, directors and influential shareholders from insurance coverage may discourage them from taking excessive risk. This is not, however, the only mechanism that acts to limit excessive risk-taking by banks. For a start, when a bank fails the bank manager's reputation will be adversely affected and he/she may lose their job. Besides, there is a value attached to property rights in the bank’s charter and this charter value is lost to shareholders in the case of bank failure. Therefore, shareholders may try to protect the charter by giving up expected profits from high risk-taking. Bank regulators can also legally force bank owners and managers to act more prudently.

2.6 History of Deposit Insurance

The US system is one of the oldest, adopted in 1934. Although there has always been a compensation limit, the Federal Deposit Insurance Corporation’s (FDIC) policy from 1933 to 1982 was to address the problem of failing banks by arranging assisted mergers and providing blanket coverage for all depositors. During the period 1933-1983, there were 620 bank failures in the US where 99.8 percent of all depositors had their deposits repaid in full. In 1983, this arrangement gave way to a “modified payoff” policy, which was a payoff of uninsured depositors and other creditors based on the predicted collections from a failed bank’s receivership. However, this procedure ceased following the collapse of the Continental Illinois National Bank and Trust Company in May 1984. Continental Illinois, which at the time was the
nation's seventh-largest bank, was also the largest commercial and industrial lender in the US and the FDIC fully-covered all deposits in the bank, an example of the "too-big-to-fail" policy. The period 1985-1990 saw the highest number of bank failures since the 1930's, and 99 percent of uninsured deposits with failed banks were protected. However, at the end of 1991, the US Treasury enacted the Federal Deposit Insurance Corporation Improvement Act (FDICIA). Under the act, risk-related deposit insurance premiums were introduced, a form of structured early intervention and resolution to the regulatory treatment of troubled banks was agreed, and the FDIC's discretion to protect uninsured depositors with failed banks was restricted. In addition to those measures, the FDIC's power to bail out large banks has been controlled by introducing strict procedures. After the enactment of the law, the FDIC essentially left uninsured depositors to bear their losses (Dale, 2000).

The US has the oldest history of deposit insurance being the first country to introduce a national deposit insurance system. Following the experience of the US, the number of countries that have adopted explicit deposit insurance has been increasing. Graph 2.1 shows the increase in the number of countries that have explicit deposit insurance schemes.

Recently, in May 2002, an association by the name of the International Association of Deposit Insurers was founded under the auspices of the Bank For International Settlements (BIS), embracing the participants from 24 entities that provide deposit
insurance within 23 developed and developing countries\(^5\). The objectives of the association are to contribute to the stability of financial systems by promoting international cooperation in the field of deposit insurance and to set out guidance to enhance the effectiveness of deposit insurance systems.

2.7 Deposit Insurance Schemes in the UK

The UK has had a deposit insurance scheme since 1979 and in this section the developments concerning the deposit insurance arrangements since their adoption are discussed. While evaluating these developments, the main banking failures in the UK are also assessed in the context of deposit insurance. The rules of the Single Financial Services Compensation Scheme are examined to provide an understanding of the current arrangements for depositors of both banks and building societies.

2.7.1 Background to the Deposit Protection Scheme in the UK and the Main Bank Failures

During the period 1973-1975, the UK experienced the secondary bank crisis (Reid, 1982). The causes of the secondary bank crisis can be analysed under two main headings: developments in the structure of the financial system; and the economic conjuncture. The secondary banks were depository institutions that were not reporting to the Bank of England (BOE) and not subject to the BOE’s supervision and regulation. Their primary assets were long term loans for the purchase of land and buildings and their primary liabilities were short-term wholesale deposits. Due to the tightening of monetary policy in 1971 as a response to the hike of the price of oil by OPEC countries, the real property market collapsed. The secondary banks were badly hurt by defaults on loans they granted for the purchase of property and on the fall in the value of their equity stakes in development projects. The crisis was also triggered by the run of the wholesale depositors due to a loss of confidence. The BOE organised a “lifeboat” to rescue some secondary banks with the assistance of

\(^5\) These countries are Argentina, Bahamas, Brazil, Bulgaria, Canada (with two entities), Czech Republic, El Salvador, France, Hungary, Japan, Jamaica, Jordan, Kenya, Korea, Mexico, Nigeria, Peru, Philippine, Taiwan, Trinidad & Tobago, Turkey, Ukraine and the US.
commercial banks and merchant banks. Twenty-six institutions received support and eight of them were placed in receivership or liquidation. Two other banks received support from the BOE. As a result, it is estimated that the BOE lost GBP 100 million with the commercial banks losing GBP 50 million (Bank of England, 1978).

After the secondary banking crisis, there was a call for the reform of banking supervision, which resulted in the adoption of the Banking Act of 1979 (Radecki, 1990; Hall, 1999). The Act introduced two main provisions. Firstly, it required all banks and other institutions taking deposits to be recognised or licensed. Secondly, a deposit insurance scheme was introduced. The Deposit Protection Scheme, which took effect from February 1982, required all recognised banks and licensed deposit-takers to pay a levy, proportionate to the size of their deposit base and subject to a minimum payment of GBP 2,500 and a maximum of GBP 300,000 (Hall, 1993). That scheme covered the funds of each depositor up to 75 percent of GBP 10,000. In 1987, this was increased to 75 percent of GBP 20,000.

Under another amendment made in 1995 to comply with European Union law, the Deposit Protection Scheme began to cover 90 percent of a bank’s total liability to a depositor in respect of deposits made with European Economic Area (EEA) offices to a maximum payment to any one individual of GBP 18,000 or ECU 20,000 (whichever is greater) per bank. The scheme covered deposits denominated in European currency units and deposits in the currencies of the following currencies: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden and the UK. The scheme was funded by banks authorised in the UK (excluding branches of banks from other EEA countries unless they had “topped-up” the cover offered by their domestic schemes using the UK scheme) based on their holdings of deposits in EEA currencies and ECUs.

During the period 1982-1996, 29 UK-authorised banks were placed either in administration or in liquidation, and Johnson Matthey Bankers (JMB) and the National Mortgage Bank (NMB) were purchased by the BOE as part of support operations. Of the failed institutions, the NMB, the Bank of Credit and Commerce
International (BCCI), the British & Commonwealth Bank and Barings were big banks, whereas the others were small institutions. The relatively small size of most banks that failed was reflected in the small size of the total payments from the Deposit Protection Fund (Jackson, 1996).

In 1984, JMB, which was mainly involved in banking and bullion business, faced problems as a result of holding a loan portfolio with concentrated risk. JMB had loans and overdrafts exceeding GBP 300 million, of which half was judged irrecoverable (Hall, 1999; Dale, 1995). Although it was a small-scale institution, the BOE refrained from allowing it to fail to avoid contagion and possible damage to the reputation of the London bullion market or its status as a financial centre more generally (Dale, 1995). The BOE organised a joint support operation with the help of the major clearing banks. The BOE and the major clearing banks provided GBP 130 million and GBP 50 million was contributed by the JMB’s parent company out of the GBP 245 million required. This was followed by the purchase of JMB by the BOE for GBP 1 (one pound), which provided an indemnity of up to GBP 150 million to meet losses in the commercial loan book. The major banks and other gold dealers agreed to counter-indemnify the BOE up to GBP 75 million. This incident led to the Banking Act 1987 under which there is only one category of bank and the system of authorisation and supervision was intensified (Hall, 1999).

In 1991, as a result of an auditing firm report that stated that BCCI management had been involved in fraudulent activities, BCCI was closed by a co-ordinated action headed by the BOE and followed by more than 6 countries in which it operated (Hall, 1999). The auditing firm reported that BCCI booked fictitious loans, failed to keep records of the deposits, and violated lending limits. A distinctive feature of the closure of BCCI was the BOE’s willingness to allow BCCI to default on the uninsured liabilities to ordinary depositors. The depositors were provided with protection up to the limit of the Deposit Protection Scheme, which was 75 percent of the deposit with a ceiling of GBP 15,000. The Deposit Protection Scheme paid out GBP 78 million in compensation and more than 6,000 depositors lost over GBP 500 million (The Times, 31.7.1997). The BCCI failure showed the importance of the role of both management and directors for the maintenance of internal controls and
effective and appropriate accounting systems, and led the Basle Committee on Banking Supervision to review arrangements regarding cross-border supervision (Hall, 1999).

During the period 1990-1991, four small banks collapsed as a result of financial difficulties, which was followed by widespread withdrawals from the small banks by depositors. However, the clearing banks that had joined the lifeboat operation in the mid-1970s refrained from providing support this time, as they were not prepared to risk their capital in the interests of financial stability. As a result, the BOE provided covert support to those banks i.e. guaranteed the recycling of deposits from large to small banks.

Barings, which was founded in 1762 and had a reputation as the oldest established UK merchant bank, collapsed in 1995. At that time Barings had total assets of GBP 6 billion and deposits of around GBP 3 billion. The collapse was a result of losses incurred through unauthorised derivatives dealings in a Singapore trading unit (Dale, 1995; Hall 1996). Although the BOE attempted to arrange a rescue package through a group of clearing and merchant banks and GBP 600 million was put together, the BOE failed to implement the plan as the losses of Barings due to the derivative positions were continuously increasing. Finally, Barings was acquired by Internationale Nederlanden Group (ING) for the sum of GBP 1 (one pound) and ING later injected a further GBP 660 million and took over the losses. Depositors were protected by this arrangement and the business of Barings was revived (Dale, 1995; Hall, 1996). With the Barings case, attention turned to the supervisory and auditory failings and raised the importance of both management and directors in maintaining internal controls, which will enhance both internal governance and accountability within banks.

After the Barings crisis, it became clear that many small merchant banks faced a liquidity crisis. The BOE organised support through the clearing banks to prevent contagion from the Barings crash leading to runs in such banks (Dale, 1995).

During the period 1982-1996, payments to depositors in failed UK banks amounted
to GBP 144 million gross and GBP 88 million net after the recovery of funds from liquidation or administration. The UK scheme is less generous than those operating in many other countries, reflecting concerns that full cover would reduce the incentives for depositors to take a view on the soundness of individual banks and therefore reduce market discipline on bank management (Jackson, 1996).

2.7.2 Background to the Building Societies' Investor Protection Scheme

The scheme was established by the Building Societies Act 1986 and amended by the Credit Institutions (Protection of Depositors) Regulations 1995 and by the Building Societies Act 1997.

The scheme was to be funded by levies on building societies as and when required, and there was no standing fund. The Building Societies' Commission (BSC) covered its administration costs, as the Building Societies Investor Protection Board had no funds of its own. The Board could borrow temporarily, the amount being limited to that which the Board may levy.

The scheme was designed to be triggered by the insolvency of a building society or a determination by the BSC that deposits, which are due and payable, cannot be paid. Each protected investor received payments of 90 percent (25 percent initially) of the aggregate of his/her protected deposit up to a maximum of GBP 18,000 (GBP 10,000 initially) or the sterling equivalent of ECU 20,000, whichever is greater.

The scheme covered most share accounts and deposits in the UK building societies and in any institution authorised in another EEA member state which had joined the scheme to provide top-up cover to depositors with its UK branches (FSA, 1997).

Prior to its replacement by the Single Financial Services Compensation Scheme, the scheme had not been triggered and therefore there have been no payouts.
2.7.3 Current Deposit Insurance Scheme in the UK

The Single Financial Services Compensation Scheme (FSCS) came into effect on 1 December 2001. Besides the Deposit Protection Scheme, the Building Societies Investor Protection Scheme and two further schemes were also replaced by the new scheme. The objectives of the New Compensation Scheme are discussed further in the next chapter. Under the single scheme, payments under the Scheme are limited to 100 percent of the first GBP 2,000 of a depositor's total deposits with the bank and 90 percent of the next GBP 33,000, resulting in a maximum payment of GBP 31,700.

Most depositors, including individuals and small firms are covered. The compensation limit applies to each depositor and covers the total of all their deposits held with that firm. The Scheme covers deposits made with all offices of the bank within the EEA and deposits denominated in all currencies are treated alike. The limits shown above are those that will apply in the majority of cases. However, if a deposit is made with the branch of a UK bank in another EEA state or with a branch in the UK of a bank incorporated in another EEA state, the limits may be different. The Financial Services Compensation Scheme is triggered when an authorised institution goes out of business, for example, if it is subject to an insolvency action, such as liquidation or administration. It may also be triggered when the FSA considers that an authorised institution is unable to repay its depositors, or is likely to be unable to do so (Hall, 2002).

The Financial Services Compensation Scheme is funded by levies on participating firms authorised under the Financial Services and Markets Act 2000. For levying purposes, the Scheme comprises three sub-schemes: accepting deposits; insurance business; and designated investment business. For levying purposes, the costs of the scheme are divided into two main categories; management expenses and compensation payments, which include Pension Review claims. Management expenses consist of base costs (the core costs of running the Scheme), specific costs (the costs of assessing and making compensation payments) and establishment costs (the costs of setting up the Scheme, which are being recovered through levies over three years from 1 December 2001).
By paying annual levies, finns fulfil their obligation to contribute to the base costs element of the management expenses and to the establishment costs. On the other hand, levies are allocated to Contribution Groups for the specific costs and compensation payments. This means that such levies are only raised against finns that are authorised to carry out the same type of business as those of the failed finns.

There are limits to the amounts that the FSCS can levy in a financial year. For compensation purposes, the limits for each sub-scheme are:

1. Accepting deposits: no more than 0.3 percent of a participant firm's protected deposits on a cumulative basis.
2. Insurance business: no more than 0.8 percent of a participant firm's net premium income on protected policies.
3. Designated investment business: the total levy must not exceed GBP 400 million.

The management expenses levy is subject to an annual limit, following consultation with the industry by the Financial Services Authority (FSA).

2.8 Deposit Protection Schemes in Turkey

Turkey has had a deposit insurance scheme since 1933 and in this section the developments concerning the deposit insurance arrangements since their adoption are discussed. While evaluating these developments, the main banking failures in Turkey are also being assessed in the context of deposit insurance. The rules of the Deposit Insurance Scheme under the Banking Regulation and Supervision Agency are also examined to provide understanding of the current arrangements for depositors and banks.

2.8.1 Background to the Deposit Protection Scheme in Turkey

The protection of deposit holders from bank failure has evolved since 1933 as a result of successive banking crises. The Turkish banking system witnessed five main
banking crises during the period 1933-2001.

Due to the influence of the Great Depression, the first major banking crisis occurred in the 1930s. Following the bank failures, "The Law for the Protection of Deposits" was enacted in 1933, which protected savings deposits through the reserve requirements that banks held within the Central Bank as the preferential reserves for savings deposits. Nevertheless, the protection was criticised for being insufficient, and in 1936, with an amendment to the Banking Law, the protection was increased by allowing depositors to be treated as preferential creditors in respect of 40 percent of their savings deposits and, in the case of bankruptcy, this portion would be paid to the depositors without waiting for the result of the liquidation. This portion was increased to 50 percent with an amendment to the Banking Law in 1958. This process has been criticised due to the fact that there is no upper limit on the protection and all depositors, whether personal account holders or companies can benefit from this arrangement as the term "savings deposit" is not defined properly.

The Banks' Liquidation Fund system was established in the 1960s after the failure of 15 commercial banks. Economic stagnation and the depression of the 1950s and the effects of the stability programme led to the closure of those banks and they were acquired by public banks during the period 1960-1964. The relevant article of the Banking Law that allowed 50 percent of the savings deposits of the depositors as preferential creditors in the case of bank bankruptcy stayed enforced. In addition, in the case of a decision by the Ministry of Finance for a gradual liquidation of a bank that could not fulfil its liabilities, another bank would be appointed to assist the gradual liquidation of the bank by providing technical and financial help. The financial gap that would arise due to the liquidation would be met by the Banks' Liquidation Fund, to be formed under the wing of the Central Bank of Turkey (CBT), which would be financed by contributions collected from the banks representing 0.05 percent of their total savings and commercial deposits on an annual basis. In the case of insufficiency of this fund, the CBT would lend funds in the amount and conditions set by the Committee for the Credit for Banks. The fund was financed by banks and aimed to repay bank depositors in the case of failure. However, the banks' contribution never reached an adequate level, and the
repayment of deposits to the depositors of the failed banks necessitated the borrowing of TRL 352 million from the CBT. The Fund reimbursed the above-mentioned amount to the CBT by 1978. The Bank’s Liquidation Fund system was in force until 1983.

The third round of banking crisis was in 1983. In July 1980, interest rates were liberalised and rose sharply as a consequence of the competitive environment in the financial sector. High inflation coupled with high interest rates worsened the financial position of firms, which found themselves unable to repay their loans. The bad loans of the banks increased substantially and six banks were closed and acquired by public banks. Following bank runs and the liquidation of six banks, the Savings Deposit Insurance Fund (SDIF) was established to replace the Bank’s Liquidation Fund system in 1983. The purpose of the SDIF was not only to safeguard and maintain confidence and stability in the banking system by insuring deposits in banks, but also to strengthen and if necessary reform the financial structure of the banks.

The SDIF was managed and staffed by the CBT until the year 2000. Under this system, all banks that accept deposits are obliged to insure their savings deposits collected in Turkey. The main source of the fund are the premiums, which are calculated based on total savings deposits in both Turkish lira and foreign currency, including Turkish lira certificate of deposits (CDs) but excluding commercial accounts. The precise coverage of the scheme has changed several times due to economic developments, especially changes in the rate of inflation. The changes since the establishment of the SDIF in 1983 are summarised in Table 2.4.

Table 2.4: Deposit Coverage Changes in Turkey

<table>
<thead>
<tr>
<th>Years</th>
<th>Coverage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1983-1986</td>
<td>100% of TRL 3 million</td>
</tr>
<tr>
<td>1986-1992</td>
<td>Up to TRL 6 million, 100% of first TRL 3 million, 60% of remaining</td>
</tr>
<tr>
<td>1992-March 1994</td>
<td>Up to TRL 50 million, 100% of first TRL 25 million, 60% of remaining</td>
</tr>
<tr>
<td>1994 March-May</td>
<td>100% of TRL 150 million</td>
</tr>
<tr>
<td>1994 May-2000 June</td>
<td>100% of all savings accounts</td>
</tr>
<tr>
<td>2000 June-2000 Dec</td>
<td>Up to TRL 100 billion</td>
</tr>
<tr>
<td>2000 Dec-today</td>
<td>100% of all savings accounts</td>
</tr>
</tbody>
</table>

The variable premium system, which is based on the capital adequacy ratio of banks, replaced the fixed rate premium application in March 1994. The undercapitalised banks, whose capital adequacy ratios are below 8 percent\(^6\), are obliged to pay a premium of 0.26 percent of their total savings deposits subject to insurance denominated in TRL (including TRL denominated certificates of deposit) lodged by real persons in the branches of the banks that operate and are authorised to receive deposits in Turkey, as well as the foreign currency deposits lodged by real persons who are residents in Turkey. The premium percentage was 0.25 percent for adequately-capitalised banks. The premiums were paid quarterly.

In early 1994, Turkey experienced a run on the Turkish lira, triggered by a loss of confidence in economic policy and concerns over the country’s ability to service its external debt. Until the last quarter of 1993, the excess liquidity created in the money markets was used to finance public deficits. However, 1994 started with huge movements in interest rates and exchange rates. In the first months of 1994, the amount of TRL expanded excessively since the public sector was not able to borrow from the market and relied on central bank resources. These developments, combined with the downward pressure on domestic interest rates, led to a weakening of the TRL. In response to excessive fluctuations in the exchange rate, the CBT increased the interbank interest rates and tried to withdraw the liquidity surplus, therefore preventing it from being used to acquire foreign currency. The overnight interbank rate rose to 700 percent in March 1994. At the same time, the CBT intervened in the market by selling foreign currency. Those developments decreased the CBT’s official foreign exchange reserve from USD 6.3 billion to USD 3.5 billion.

Banks, which relied heavily on non-deposit liabilities and financed their activities mostly via foreign currency borrowings, were adversely affected by these fluctuations in the financial markets. As a result, banks increased their lending rates, and loans slowed down dramatically. In addition, the amount of overdue loans

\(^6\) The calculation of deposit premiums based on capital adequacy ratios has been in force since 5 May 1994 (Source: Official Gazette of the Republic of Turkey, 5.5.1994, Decision of the Council of Ministers No. 94/5465.)
increased. Another important development was observed in the decline in residents' deposits as a result of a lack of confidence to the system.

As a result of these developments, three banks were closed down: TYT Bank and Marmara Bank, two small private banks, were banned from taking depositors' cash on 11 April 1994 and 20 April 1994 respectively; and Impexbank, an import-export bank, was told by the Treasury on 23 April 1994 not to open its doors the following day. Other banks operating in Turkey suffered runs on their deposits.

As can be observed from Table 2.5, the position of the three banks that failed in April 1994 was not very important for the system. At the end of 1993, according to their balance sheets, their share in the total net worth of the banking system was 2 percent; they gave only 2 percent of total loans and their off-balance sheet activities constituted 2.5 percent of the total. The only item that had significance was deposits, which reached 5.75 percent of total deposits at the end of 1993. On the other hand, the deposits of the failed banks constituted mainly interbank deposits, rather than retail deposits. Retail deposits were only 2.4 percent of total deposits at the year-end of 1993. Nevertheless, the decision to liquidate those banks and allow them to default on their depositors without being transferred to public banks reduced confidence in the banking sector. In addition, rumours that the government might freeze the funds in foreign currency-denominated accounts further deepened the crisis. Finally, in order to re-establish confidence in the system and maintain stability, the deposit insurance which had covered 100 percent of TRL 150 million of savings accounts at the time of the failures was extended to full coverage.

Table 2.5: Share of Failed Banks in Turkish Banking System in 1994 Crisis

<table>
<thead>
<tr>
<th>Failed Banks</th>
<th>Number of Branches %</th>
<th>Number of Employees %</th>
<th>Capital %</th>
<th>Loans %</th>
<th>Total Deposits %</th>
<th>Net Profits %</th>
</tr>
</thead>
<tbody>
<tr>
<td>MARMARA BANK</td>
<td>0.18</td>
<td>0.33</td>
<td>0.65</td>
<td>1.47</td>
<td>2.36</td>
<td>0.25</td>
</tr>
<tr>
<td>IMPEXBANK</td>
<td>0.12</td>
<td>0.23</td>
<td>0.63</td>
<td>1.67</td>
<td>2.77</td>
<td>0.38</td>
</tr>
<tr>
<td>TYT BANK</td>
<td>0.18</td>
<td>0.25</td>
<td>0.67</td>
<td>1.46</td>
<td>0.62</td>
<td>0.21</td>
</tr>
<tr>
<td>TOTAL</td>
<td>0.48</td>
<td>0.81</td>
<td>1.95</td>
<td>4.6</td>
<td>5.75</td>
<td>0.84</td>
</tr>
</tbody>
</table>

Source: Adapted from Banks Association of Turkey, 1995.
The decision to provide blanket coverage was an emergency action to rebuild confidence in the banking system; and, although the government announced that there would be a smooth and gradual movement towards the abolition of the full guarantee for savings deposits, it took six years to make any changes, mainly because of political concerns. During the period 1994-1996, many political parties criticised the implications of full coverage for savings deposits. The criticisms were mainly based on the moral hazard effects of the deposit insurance, i.e. the adverse effects on banks' behaviour and the loss of an incentive for depositors to monitor their banks' activities. It was argued that, to continue the full coverage policy that hindered the degree of market discipline, the government provided an incentive for banks to increase risk-taking with the expectancy of earning higher profits.

As well as implementing full deposit insurance coverage, the “Economic Measures Plan”, which was put into effect in April 1994, limited the loans that the central bank could give to the Treasury and introduced changes relating to liquidity requirements, auditing principles, eligible activities for banks, and principles concerning entry and exit from the banking system.

2.8.2 New Banking Law Prior to the Banking Crisis of 2000

In June 1999, parliament approved a new Banking Law. With the enactment of the new Law, certain changes were made to strengthen key prudential regulations and place the banking supervision framework on a proper foundation by increasing transparency and independence in the operation of the Banking Regulation and Supervision Agency (BRSA), and by providing all the tools needed for the improved resolution of problem banks.

The Board of BRSA became fully autonomous as the involvement of the Council of Ministers in all decisions in the area of supervision (other than the appointment of the members of the Board) was removed. The decisions to licence and de-license banks and to approve provisioning regulations now rest with the Board. With the recent amendments, the three-year period during which a Board member was
prohibited from being employed as a senior executive in the banking sector (a provision which had made it difficult to find active professionals to take Board positions) was eliminated as well.

Prudential standards relating to bank lending to owners and to single or related parties were also strengthened. The ratio of total loans to those having an indirect relationship is to be reduced from the current 75 percent of capital to 25 percent between 2002 and 2007, with a 5 percent decline occurring every six months.

With the new amendments, the SDIF was given authority and responsibility for restructuring problem banks, to facilitate their sale in full or in part, and to liquidate the residual business in accordance with existing laws. The fund is no longer permitted to lend or otherwise provide liquidity support to banks other than those under its full control.

Necessary modifications have been made recently to the regulations relating to the capital adequacy and foreign exchange exposure limits of banks to ensure that they apply on a consolidated basis. Within this context, two decrees related to "The Principles Concerning the Accounting and Implementation of the Standard Ratio for Foreign Currency Net General Position/Capital Base on a Consolidated Basis" and "The Principles and Procedures on the Measurement and Valuation of Capital Adequacy of Banks on a Consolidated Basis" were published in the Official Gazette dated 21 December 1999, taking effect after 30 June 2000. With these decrees, aiming at enhancing transparency and improving the monitoring capabilities of the authorities, banks are required to issue consolidated financial statements for themselves and their financial affiliates and to report twice a year.

2.8.3 Current Deposit Protection Scheme in Turkey

Regulation on the SDIF introduced by the Board of BRSA on 26 August 2000 defined the organizational structure, duties and responsibilities of the Fund.

The BRSA is responsible for the management, functioning and auditing of the
"Savings Deposits Insurance Fund" and for establishing the principles of savings deposits insurance.

The official decision on "Saving Deposits Subject to Insurance and Premiums to be collected by the Saving Deposits Insurance Fund No. 2000/682" was published in the Official Gazette dated 1 June 2000. According to the decision, saving deposits in both Turkish lira and foreign currency deposit accounts, which are of the nature of saving deposits opened by real persons (both residents and non-residents), held with domestic branches of banks operating in Turkey and authorised to accept deposit, are subject to deposit insurance.

With the decision, the level of coverage on saving deposit accounts opened and/or renewed after the publication of this decision changed. According to the change, the coverage limit was reduced to up to TRL 100 billion per account until 31 December 2000, and to up to TRL 50 billion as from 1 January 2001, but the fund still covers 100 percent of saving deposit accounts opened before the decision. However, the banking crisis that emerged in December 2000 interrupted this application and blanket coverage still holds.

The premium rate is as follows, on the basis of the quarterly totals of the Turkish lira saving deposits and foreign currency deposits being of the nature of saving deposit account opened by real persons:

1. TRL 25 per TRL 10,000 for banks who fulfil all of the prudential ratios; and
2. TRL 26 per TRL 10,000 for banks who cannot fulfil prudential ratios.

2.8.4 The Banking Crisis of 2000

At the end of 1999, with the coordination of the International Monetary Fund (IMF), Turkey adopted a stabilisation programme aimed at decreasing the inflation rate below 10 percent by 2002. Firm monetary and exchange rate policies were the core elements of the programme designed to provide a nominal anchor for reducing
inflation expectations, healthy public finances aimed at eliminating the principal source of inflation pressures, and wide-ranging structural reforms designed to liberalise and modernise the economy. Significant progress was made during 2000. However, a severe banking crisis blew up in late November of that year, accompanied by a massive capital outflow.

On 22 November 2000, the financial markets entered into turmoil due to an extreme liquidity squeeze. It can be said that the recent liquidity problem emerged mainly due to changes in the behaviour of the banking sector. Expecting a decline in the profitability of investment in Treasury bills, banks switched to the credit market, which is, by definition, less liquid. More specifically, the financial problems emerged from a small number of banks, which had aggressively taken market positions in anticipation of further declines in interest rates by investing in longer term investments, highly leveraged by short-term (CBT, 2002b).

Such changes in behaviour had resulted from a substantial fall in interest rates from the inception of the new economic programme. During this period, the deposits of the banking sector fell in real terms and the maturity of deposits declined. This development further constrained the liquidity position of the banking system.

Interest rates started to increase from mid-October caused by the unpredicted increase in the current account deficit and delayed structural reform, i.e. delays to the privatisation programme.

On 27 October 2000, the BRSA announced its decision to transfer two commercial banks, namely Bank Kapital and Etibank, to the SDIF. Those two banks were unable to take the necessary measures previously asked by the BRSA in order to overcome the problems in their financial structure.

The banks had open foreign exchange positions caused by borrowing from foreign resources, generally in the form of syndicated loans. However, the liquidity problem intensified due to the seasonal year-end foreign exchange demand of foreign institutional investors. The strengthened open position requirements, accompanied by
the long holiday period at the year-end, intensified the local banks' foreign exchange demand earlier than usual. Foreign investors' seasonal foreign exchange demand was also augmented due to the deterioration in the economic situation in Argentina as well as the delays in structural reforms in Turkey. Shortfalls in the expected foreign exchange revenues from privatisation raised concerns about the future of the economic program.

In 20 November, rumours that some banks were facing liquidity crises spread rapidly, leading first-tier banks to cut their lines of credit to the interbank market, while foreign investors who were not willing to expose themselves to Turkish banking risks ceased to invest in the overnight money market.

Consequently, on 22 November the CBT intervened to the foreign exchange market by selling USD 1.5 billion and the overnight repo rate hit 250 percent, while the rates on the secondary bond and bill market rose to 500 percent. However, these increases in interest rates did not curb the demand for foreign exchange. In fact, the squeeze in Turkish lira liquidity fuelled the demand for foreign exchange as it caused an increase in Turkish lira interest rates. These significantly high interest rates were perceived as a risk rather than a higher yield and the foreign exchange demand from international players continued.

In the period between 17 and 30 November, the CBT sold approximately USD 6.2 billion to the markets and the foreign exchange reserves of the CBT were estimated to have declined from USD 24.2 billion to USD 18.5 billion.

The CBT announced that the net domestic assets ceiling would be restored at the new level attained in the last few days, which was around TRL 2,000 trillion. Originally, the net domestic assets target was set at TRL 1,200 trillion, allowing for a fluctuation within a band of +/- 5 percent of the previous quarter's monetary base. It was apparent from this announcement that the CBT had firmly reassured the markets about its decision to stick to its original monetary program and to the principle that Turkish lira liquidity would be created only through foreign exchange purchases.
The government and the CBT resorted to certain measures in order to cope with the negative expectations of the market. Firstly, the government announced the time schedule for the privatisation of Turkish Telecom; it declared that 33.5 percent of Telecom would be sold to a strategic partner, with management rights and details of the auction to be announced on 14 December. Secondly, the law concerning the rehabilitation and privatisation of the state-owned banks and the supplementary tax package was approved by the parliament. On 6 December, a new IMF loan totalling over USD 10 billion was announced aimed at supporting the government’s measures. In addition to those developments, the BRSA announced its decision to take over the nation’s sixth largest private bank, namely Demirbank, which was at the centre of the liquidity problem. This was followed by the declaration of the Treasury stating that all deposits and credit of Turkish banks were under the guarantee of the Treasury. With this announcement not only the domestic players’ but also the international players’ confidence was restored. This was the end of the experiment with limited coverage, which had been adopted earlier in the same year.

2.9 Chapter Summary

The purpose of this chapter has been to review the underlying rationale for the existence of banks and bank safety nets. I particularly examined the deposit insurance and moral hazard problems. In addition, the UK and Turkish deposit insurance schemes were reviewed. Deposit insurance is not a new phenomenon for either the UK or Turkey. In the UK, after the Secondary Banking Crisis (1973-1975), the Banking Act of 1979 was introduced and the deposit guarantee system was established and began to operate in 1982 under the supervision of the Bank of England. In Turkey, the initial deposit insurance arrangements started in 1933 and the formal Savings Deposit Insurance Fund was established in 1983 as a legal entity functioning to insure the savings deposits of depositors and to preserve confidence and stability in the banking sector.

Recently, regulators and economists have been increasingly arguing about the role of depositors in exercising market discipline. According to the theory of market discipline, bank depositors can exert market discipline either by withdrawing their
funds or by demanding higher interest rates from riskier banks. However, equity holders and debt holders could also be a source of market discipline. In the next chapter, I present the concept of market discipline and the views of regulators in the UK and Turkey on this issue.
CHAPTER THREE

LITERATURE REVIEW OF AND
THE REGULATORY VIEW ON MARKET DISCIPLINE

3.1 Introduction

Recently, market discipline has been considered as an instrument to ensure the safety and soundness of the banking system by regulators and academics. According to Park and Peristiani (1998), because of the increasing complexity of banking business, it has become more difficult to effectively regulate banks exclusively based on prearranged rules. Stern (1998b) argues that greater market discipline, accompanied by effective bank supervision, should better protect the taxpayer from expensive bailouts and better guard the economy against serious resource allocation. Moreover, the Basel Committee on Banking Supervision's consultative paper puts forward some specific proposals for achieving a greater role for market discipline and considers market discipline as one of the three complementary elements, along with minimum capital requirements and a supervisory review process, to promote safety and soundness in the banking system. (BIS, 2000)

The outline of this chapter is as follows. In the second section, the theoretical discussion about market discipline and the potential sources of market discipline - namely the depositor, the debt holder and the stockholder are identified. As the prerequisites for market discipline are discussed in the literature by a number of authors, after defining market discipline, looking for the prerequisites for the potential forces exerting market discipline is essential for the sake of the research. Therefore, in the third section, the literature on market discipline is reviewed. In particular, the prerequisites for depositors to deliver market discipline are identified, and these are used as the basis for the questionnaire design in this research. Besides,
the empirical evidence concerning the alternative forms of market discipline provides direction for the econometric analysis that examines the evidence of market discipline by studying whether depositors monitor their banks and punish risky banks either by withdrawing their deposits or by requiring higher deposit interest rates. In the fourth section, the regulatory view on market discipline is provided. In this section, I present the views of the UK and Turkish policy-makers, as well as an overview of the recent consultative paper of the Basle Committee on Banking Supervision, namely “A New Capital Adequacy Framework: Pillar 3 Market Discipline” (BIS, 2000). A summary section ends the chapter.

3.2 Market Discipline

Financial intermediaries as depository institutions issue different types of liabilities: deposits; debts; and stock. On the other hand, they invest their funds in two major types of financial asset, namely marketable securities and loans, and the margin between the interest rate paid and earned is the basic source of profit. The risk to the suppliers of funds is determined primarily by the risks associated with these assets. The suppliers of funds will attempt to control their risk exposures either by restricting the risk assumed by the business or by demanding a rate of return appropriate to the level of risk underlying the firm’s investments. This is referred to as market discipline (Mantipragada, 1992).

Berger (1991) describes market discipline in the banking sector as a situation in which private sector agents, such as depositors, stockholders or creditors face costs that increase as a result of banks’ excessive risk-taking and take action on the basis of these costs. Private sector agents, who are profit-maximising economic agents, can exert market discipline by discouraging risky activities of a bank as they penalise those activities through raising the cost or restricting the volume of funding (Crockett, 2002).

Recently, the application of market discipline has attracted considerable attention from both academics and bank regulators. Flannery (2001) explains this interest by arguing that the increasing complexity of financial institutions, which makes them
difficult to monitor and control, requires bank regulators to rely more on market discipline to supplement their traditional bank supervisory procedures.

Policy-makers also express the benefits of increased market discipline. The new Basle Capital Accord, therefore, makes market discipline as one of the three pillars of financial regulation, by stating that *market discipline imposes strong incentives on banks to conduct their business in a safe, sound and efficient manner* (BIS, 2000).

In a speech made by Federal Reserve Board Chairman Alan Greenspan (Seiberg and Anason, 1997), governments are asked to rely more on market discipline to police financial institutions: “The appeal of market-led discipline lies not only in its cost-effectiveness and flexibility, but also in its greater adaptability to changing financial environments.”

On the other hand, whether market discipline should be a component of the financial safety net is a matter of intense debate, especially among academics. Some argue that market discipline cannot be effective as market participants would not be able to understand the risk-taking of banks. However, Stern (1998b) argues that in economies where the markets set prices, and in that way the resources for the great preponderance of goods and services are allocated effectively, the market should be responsible for economic progress, and therefore additional market incentives to contain excessive risk-taking in banking should be introduced.

Randall (1989) states that the market discipline concept rests on the assumption that the market recognises, properly evaluates, and discounts problems before they become so large as to threaten a banking institution. However, according to the results of his study, stock prices under-performed and bond ratings were downgraded only at a late stage in the development of the problems after substantial, sometimes fatal damage had been done. Randall (1990) also argues that market analysts, whether they represent bank stock investors or creditors, have relatively little to go on in forming a judgement on the potential for major losses in a bank's loan portfolio and cannot monitor bank performance in a timely fashion. He also argues that co-insurance leaves the banking system subject to dangerous deposit volatility.
On the other hand, Flannery (2001) argues that investors have a comparative advantage in monitoring, while supervisors have a comparative advantage in influencing bank conditions. Accordingly, supervisors should take into account the market’s input so as to minimize the social cost of their supervisory process.

In general, there are five factors for market discipline to effectively ensure the safety and soundness of the banking system (Lane, 1992; Crockett, 2002). These are:

1. Market participants should have sufficient information to reach informed judgements,
2. Information should be readily available,
3. Market participants should have the ability to process information correctly and have the right incentives,
4. There must be no bailout anticipated,
5. The banks must respond to market signals.

In general, market discipline is regarded as being present where market participants monitor and identify changes in bank condition and send signals to those banks. On the other hand, as Flannery (2001) points out, there is another phenomenon that market discipline is commonly supposed to incorporate, i.e. market participants’ ability to influence a bank’s actions. However, in this research, I am only concerned with the former, and analyse whether market participants exert market discipline by demonstrating actions. As Eisenbeis and Gilbert (1985) point out, market participants could demonstrate two general types of action: first through the higher prices that liability holders charge depository institutions for their funds and second through a reduction in the supply of funds.

An example of the existence of market discipline in the banking sector is where depositors penalise riskier banks by requiring higher interest rates or by withdrawing their deposits. However, in the literature, not only deposits but also debt and equity holders are among the sources that are capable of providing market discipline. These are described in the following sub-sections.
However, there is another source of market discipline that is briefly addressed in the literature, which is bank management. It is expected that bank managers who are concerned with protecting their own (and those of others) jobs will tend to operate the bank in a conservative manner. However, the degree to which management can be viewed as a source of restraint against risk-taking depends on compensation arrangements and the personal attitude of managers. Garcia (1997) argues that the bank managers of the insured bank, knowing that runs are unlikely, may take on additional risk in their asset portfolios, and reduce the amount of capital and liquid reserves they hold to enable them to weather shocks. It is also stressed that tying the base of the managers’ salaries to short run profits lessens the aptitude to behave in a conservative manner.

3.2.1 Depositor Market Discipline

Since deposits constitute the bulk of the liabilities of depository institutions, depositors are regarded as the most logical source of market discipline. Jordan (2000) argues that depositors, who are not fully protected by a deposit insurance scheme, which might be implicit or explicit, have an incentive to monitor banks’ activities as they face default risk and should therefore penalise risky banks by either demanding risk premiums i.e. higher interest rates, or withdrawing their deposits.

Mantripragada (1992) views depositor market discipline as a potential supplement to the regulatory supervision of depository institutions and describes an effective depositor monitoring system as one which succeeds in curbing the risk-escalating behaviour of depository institutions without destabilising the financial system or leaving the small depositor unprotected.

The widely-accepted argument for greater reliance on depositor market discipline is that it would restrain managerial risk-taking and reduce potential losses to the deposit insurance fund (Simons and Cross, 1991). Furthermore, Martinez-Peria and Schmukler (1998) point out three potential social benefits from enhancing depositor market discipline in the banking sector. These are:
1. By punishing bank risk-taking, increased market discipline may reduce the moral hazard that deposit guarantees create (i.e. the incentive for banks to undertake excessive risks).

2. Market discipline may improve the efficiency of banks by forcing the relatively inefficient banks either to become more efficient or to exit the industry.

3. The social cost of supervising banks may be lowered if regulators transfer greater control to market forces that can distinguish healthy from bad banks.

Given such benefits, it is important for a banking system that depositors exert market discipline effectively. Therefore, the prerequisites of depositor market discipline are discussed immediately below.

Garten (1988) suggests a number of conditions that need to be met in order for depositor market discipline to work effectively:

1. There must be a group of depositors for whom risk is a primary concern in choosing a depository.

2. Depositors must have access to information to judge the risks involved.

3. The discipline imposed by depositors must be severe enough to be felt by the management of a depository, but not so drastic as to preclude an opportunity for the management to respond to the concerns of the depositors.

4. The deposit market must be able to identify which banks will be saved in case of failure.

5. The choice of banks to be saved should be based on specific factors relating to the financial condition of the bank so investors can make predictions long in advance of failure.

In addition to Garten’s conditions, Mantripragada (1992) puts forward two additional conditions that must exist for depositor discipline to work effectively. These are:
1. Some banks must be allowed to fail, resulting in losses to depositors.
2. The banking industry must be financially healthy and enjoy depositor confidence.

Baer and Brewer (1986) also put emphasis on the capacity and willingness of uninsured depositors to evaluate publicly available information on individual bank performance for effective depositor market discipline. However, Garten (1988) argues that since a significant portion of uninsured deposits are maintained for reasons that have little to do with the risk and return associated with investments in particular banks, the majority of uninsured depositors will not continuously monitor banks’ risk. She emphasises that those uninsured depositors are unwilling to monitor bank risk, rather than being unable to do so. However, Macey and Garrett (1988) disagree and point out that it is not necessary that all depositors assess risks; it is sufficient for marginal depositors to do so. Garten (1988) also argues that the risk that is undertaken by banks will be constrained by market forces only if depositors can assess the relative degrees of risk assumed by individual banks and then set differential prices on the deposits that reflect their information about risk. Considering this latter condition, opponents of depositor market discipline question the ability of depositors to evaluate the quality of bank assets and therefore to assess the bank risk-taking (Simons and Cross, 1991).

Benston (1993) evaluates and rejects the major arguments stated against the use of uninsured depositors to impose market discipline. The major arguments that he evaluates and his reasons for rejecting them are as follows:

1. *Uninsured depositors may be unable to monitor banks or to do so in a timely fashion.*

   Benston disagrees and argues, firstly, that banks disclose a considerable amount of information and, secondly, that several private financial reporting services make comparisons among banks by providing financial ratios. Thirdly, he draws attention to the importance of examiners’ reports, and suggests further disclosure of such reports. Finally, he argues that the financial statements of other corporations that regularly issue
debts are much more difficult to interpret than those of banks. Furthermore, the risk being borne by the uninsured depositors is greater than the risk of lending to non-bank corporations as banks operate with lower ratios of equity capital to assets than do other corporations, hence they should monitor their banks very closely. As a conclusion he states that depositors could assess the risks taken by their banks, and that they could make such assessments as effectively as can creditors generally.

2. *Even if depositors could evaluate bank performance, the additional interest rate they could charge would be insufficient to affect bank behaviour materially.*

He disagrees with the above statement. He cites the studies done by Cargill (1989), Hirschhorn and Zervos (1990), Keeley (1990), and Ellis and Flannery (1992), which find that the interest rates on these largely uninsured deposits reflect the risks of the banks that issued them. In addition, Benston argues that although depositors may keep their funds in particular banks because these banks offer them service and convenience, they will demand rewards if they believe that their funds might be at risk. Therefore, he concludes that depositors and other bank creditors could charge banks an interest rate that reflected the risk to which they were exposed. He also adds that banks would take the charges imposed by uninsured creditors into account in determining the levels of risk that they would assume. However, he fails to submit any evidence to support this argument. Gilbert (1983) emphasises this point and states that in order to defend the market discipline concept completely, there must be studies that test banks’ responses to negative signals in major funding markets, such as lower stock prices, deposit outflows, or higher costs of funds.

3. *In any event, uninsured depositors are likely to withdraw their funds rapidly (run) rather than monitor banks, thereby causing costly disruptions to other banks and the economy.*

He argues that when bank runs could occur, it is likely that banks would increase their capital and diversify their risks and take steps to assure their depositors that their funds were safe, similar to the actions taken by non-bank corporations.
The studies on depositor market discipline also suggest that uninsured depositors can be a source of market discipline. However, because of the existence of deposit insurance schemes that reduce the efficiency of depositor market discipline, insured depositors cannot be a source of market discipline, as they do not have incentives to monitor the risk-taking of their banks.

Analysing the behaviour of depositors, Blum (2000) argues that insured depositors are indifferent about the risk-taking of banks that they invest their funds with and only depositors who are not fully protected by deposit insurance or by state guarantees have incentives to monitor their banks' behaviour and exert market discipline. According to Blum, the costs of insured deposits do not reflect the banks' risk-taking and therefore banks would not have an incentive to keep risks within reasonable limits.

Demirgüç-Kunt and Detragiache (2000) also argue that explicit deposit insurance may decrease bank stability by encouraging bank risk-taking and this harmful impact on bank stability tends to be stronger when, inter alia, the coverage offered to depositors is extensive. They claim, however, that the risk of moral hazard can be contained through effective prudential regulation and supervision of the banking system. The cross-country study by Demirgüç-Kunt and Huizinga (1999) conducts market discipline tests for a number of developed and developing countries and then pools the bank and country specific data in order to test whether there is an impact of deposit insurance on market discipline. They found some evidence that the existence of deposit insurance lowers the responsiveness of deposit interest rates to changes in bank liquidity, an indication that market discipline is weakened. However, their study was not successful in finding significant market discipline effects in regressions explaining the growth of deposits. According to Billet et al. (1998), explicit deposit insurance might soften the market discipline of banks, as the findings of their study indicate that when the market punishes banks for increased risk-taking, the latter shift towards insured deposits in order to avoid cost imposed by market.

Gilbert (1990) argues that deposit insurance creates an incentive for banks to assume
higher risk, and he describes risk in terms of the variance of a bank’s return on assets expressed as a percentage of its capital. He states that, in the absence of deposit insurance, if banks have portfolios of assets with higher variances in their rates of return or lower ratios of capital to total assets, they have to pay higher deposit interest rates.

On the other hand, a number of studies suggest that both uninsured and insured depositors can be a source of market discipline. Park and Peristiani (1998) tested for the presence of depositor market discipline by examining the effects of depository institutions’ risk on the interest rate and quantity of uninsured deposits, using a risk measure derived from actual failure records. They found that both uninsured and insured depositors exert market discipline by requiring higher interest rates and by withdrawing their deposits from riskier institutions. The findings of Park and Peristiani are important from two points of view. Firstly, they show that depositors can effectively monitor depository institutions when incentives are increased. Secondly, because of the indirect and non-pecuniary costs that insured depositors might bear, such as time delay in deposit redemption, they can also have an incentive to monitor their banks activities and therefore be a source of market discipline. Park and Peristiani conclude that as depositors are potentially an effective source of monitoring for depository institutions, attempts to increase depositor market discipline may promote sounder banking practices.

Barajas and Steiner (2000) state that even in countries that have explicit deposit insurance schemes, depositors act as if their deposits are not insured. They explain the presence of depositor market discipline even in the explicit deposit insurance schemes by stating that, first, the moral hazard problem in depositor behaviour might not be very important because of the incredibility of deposit insurance as depositors do not trust the deposit guarantee fully; and second, deposit insurance might reduce but not totally eliminate market discipline. This statement is interesting as it is generally argued that even in the absence of explicit deposit insurance, depositors may often act as if their deposits were insured and expect a bail out if their bank were to face difficulties.
The study of Gropp and Vesala (2001) also point to this perspective on the impact of deposit insurance on risk-taking. Gropp and Vesala analysed the relationship between deposit insurance and risk-taking and found that the establishment of explicit deposit insurance schemes significantly reduces the risk-taking of European banks. Their finding also stands in contrast to the empirical findings of Billet et al. (1998), Demirgüç-Kunt and Huizinga (1999), Demirgüç-Kunt and Detragiache (2000) and Blum (2000), who found that implementation of explicit deposit insurance schemes increases the risk-taking activities of banks. Gropp and Vesala explain this conflict by arguing that, previous to the establishment of explicit deposit insurance, European banking systems have been characterised by strong implicit deposit insurance and therefore the introduction of the explicit schemes implies a de facto decline in the range of the safety net. Gropp and Vesala also found that large banks did not change their risk-taking in response to the introduction of deposit insurance, which suggests that the introduction of explicit deposit insurance does not mitigate “too-big-to-fail” problems. However, the reason for large banks not changing their risk-taking behaviour could also be because of this policy as large banks might have already changed their behaviour before the introduction of explicit deposit insurance.

As a matter of fact, there is a common point in a number of authors’ views that the existence of the “too-big-to-fail” policy as well as the extended cover providing to all depositors after a bank failure reduce the effectiveness of market discipline.

According to the “too-big-to-fail” policy, a bank that is too-big-to-fail is one whose failure would have a sufficiently significant impact on the financial system and the economy as a whole such that these failures would be intolerable to the authorities (Soussa, 2000). Such disruptions would be costly as they would prevent the economy from benefiting from functions provided by the financial system, which include the efficient allocation of resources, the provision of the payment system, and the efficient pricing of financial risk (De Bandt and Hartmann, 1998).

According to Blum (2000), as a bank loses its charter and incurs bankruptcy costs when it faces insolvency, it has self-interest to avoid unreasonably high risks.
However, existence of the “too-big-to-fail” policy which results in bail outs regardless of insolvency eliminates the incentive for banks to act in a prudent manner.

In the context of depositor market discipline, it is argued that a “too-big-to-fail” policy as well as the extended cover provided to all depositors after a bank failure, implicitly insures those which are not explicitly insured by deposit insurance, thereby eliminating the uninsured depositors’ incentive to monitor the bank (Soussa, 2000).

3.2.2 The Alternative Sources of Market Discipline

In the previous sub-section, depositors who are the primary source of market discipline were examined. Besides depositors, debt holders and equity holders that are capable of providing market discipline are discussed in the next sub-sections.

3.2.2.1 Debt Holders as a Source of Market Discipline

Banks issue various types of debt securities such as certificate of deposits, commercial papers, medium-term notes and subordinated debt. Certificate of deposit holders were analysed under the heading of depositor discipline and subordinated debt issues have several characteristics, such as their junior status and long maturity that make them particularly attractive for providing increased market discipline and extensively studied in the literature. Therefore, in this section I particularly focus on subordinate debt holder market discipline.

Subordinated debt\(^7\) is an uninsured liability that banks issue to raise funds. The term subordinated refers to the status of the creditors of a bank in bankruptcy as subordinated debt holders only receive payments once all depositors have been paid in full in the event of bank failure (Gilbert, 1990).

Similar to depositors, if a bank increases its risk-taking, subordinated debt holders

\(^7\) Dictionary of Banking Terms (1997) defines subordinated debt as a kind of debt having a claim against the issuer's assets that is lower ranking, or junior to, other obligations, and is paid after the claims of the holders of senior securities are satisfied.
can exert market discipline either by requiring a risk premium for the debt instruments that the bank issues, or by selling the debt instruments that they hold as an investment. While the bank's expected cost of issuing the debt instrument increases in the former case, the secondary price of an existing debt instrument decreases in the latter. Therefore, in order for subordinated debt holders to be a source of market discipline, investors must gather and collect information about the banks' risk-taking and use this information to decide whether to buy or sell the banks' debt (Board of Governors of the Federal Reserve System, 1999).

Subordinated debt has some characteristics that make it particularly attractive for providing market discipline. In the US, the typical subordinated instrument issued by a bank or, more commonly, its holding company, is a fixed rate, non-callable, ten year bond and the relative homogeneity of the subordinated debt market makes the comparison between the issuers straightforward. Besides, unlike equity, bond prices do not benefit if bank profits exceed expectations, and therefore both the issuance price and the secondary market prices are sensitive to the risks of a banking organization, making subordinated debt an especially strong instrument of market discipline.

The Board of Governors of the Federal Reserve System (1999) summarises the advantages of subordinated debt over the other two sources of market discipline under three headings:

1. Subordinated debt is uninsured and after equity is among the first to lose value in the event of a bank failure. Therefore, the issuance and secondary market prices of subordinated debts are particularly sensitive to bank risk.

2. The incentives of bank depositors and debt holders might be different from the incentive of equity holders. Both sides are exposed to loss and therefore have to monitor bank risk. However, while depositors and debt holders do not benefit from any upside gains that accumulate from the excessive risk-taking of banks, equity holders could enjoy the gains and, accordingly, have a much stronger preference for risk-taking.
3. Finally, their relatively long maturity presents comparative advantage for the subordinated debt to provide effective market discipline, as subordinated debt investors are not able to run, possibly mitigating a systemic risk situation.

Evanoff (1993) argues for increasing the percentage of subordinated debt in the capital structure of the bank in order to enhance market discipline, and sees the subordinated debt holders as the best source of market discipline. He draws attention to the limited liability of the shareholders, who enjoy all the benefits of riskier investments. He also sees the depositors' role in exerting market discipline as inferior, arguing that they may not have sufficient information and may not be capable of adequately monitoring the bank as well. He states that since subordinated debt holders could not demand repayment prior to the terms of the contract, they would continuously monitor bank behaviour and demand a higher interest rate from riskier banks. If banks relied more on subordinated debt in their capital structure, when approaching insolvency, market discipline would be applied in a slow methodical process during which maturing debt became ever more difficult to roll over. Therefore, instead of a sudden run on deposits, there might be a "soft landing" in the case of failure. In addition, depositors are less likely to withdraw deposits as debt holders serve as a buffer stock.

Benston (1993) also mentions the important advantages of subordinated debt over deposits and equity capital. In addition to Evanoff's point, he states that when subordinated debt is publicly traded, the authorities are provided with an early warning signal in the form of the interest yield demanded on the debt as well as any difficulty a bank has in replacing maturing debt.

However, according to Blum (2000), subordinated debt holders do not have any advantage over depositors in terms of exerting market discipline by withdrawing their investments. Blum suggests that, in contrast to deposits, as subordinated debts have longer terms, subordinated debt holders cannot withdraw their funds quickly once problems in a bank start to emerge. Therefore, depositors are in a better position as they can exert market discipline either by asking for higher interest rates or by
punishing banks by withdrawing their funds whenever they do not approve of the bank’s behaviour.

3.2.2 Stockholders as a Source of Market Discipline

Benston (1993) points out that stockholders can act as an important source of market discipline. The major incentive for stockholders to monitor bank performance is the position of their claims’ ranking in the case of failure. Stockholders’ claims to the bank’s assets rank lowest in priority in the case of failure. So the stockholders are the first to lose when the operations of an economically-insolvent bank cease. Therefore, it is expected that stockholders will pay attention to the risk-taking of banks. On the other hand, under the limited liability principle of the stockholder, they only incur losses to the extent of their investments in the bank while they gain benefit from a high degree of risk-taking. The limited downside and unlimited upside may provide stockholders with a bias towards risk assumption; however, stockholders can be expected to exercise a degree of market discipline.

3.3 Empirical Studies Concerning Market Discipline

In this section, I review the findings of empirical studies in order to conclude about the effectiveness of market discipline. Empirical studies concerning the effectiveness of market discipline of bank risk can be mainly classified into three groups. The first group of studies estimates the influence of measures of risk assumed by banks on the behaviour of deposits; the second group of studies estimates the influence of measures of risk assumed by banks on the yields paid on subordinated debt; and finally the third group of studies estimates the influence of measures of risk assumed by banks on the stock prices of banks.

3.3.1 Depositor Behaviour

The studies concerning depositor market discipline mainly analyse the impact of bank risk-taking, as captured by the balance sheet and by market measures of risk, on the yields and growth of deposits. Some measures of risk frequently used include the
capital ratio, the proportion of non-performing loans to total loans, the return on assets and the variance of stock returns. The majority of the existing published academic studies concerning depositor market discipline are based on the US banking system; there are only a few that examined other countries.

The earlier studies that examined depositor behaviour in the US banking system are inconsistent with the effectiveness of market discipline. Both Crane (1976) and Herzig-Marx and Weaver (1979) analysed the relationship between CD interest rates and bank specific risk variables and while the results of Herzig-Marx and Weaver show that only the coefficient of the liquidity ratio is statistically significant, Crane did not find any significant relationship, leading him to conclude that risk measures were not important compared with customer relationships.


Baer and Brewer (1986) estimated CD rates as a function of the variables used by bank supervisors to reflect risk. They found that CD rates are strongly affected by accounting-based measures of bank risk-taking. The relationship between CD rates and bank risk-taking was also examined by Hannan and Hanweck (1988), James (1989) and Ellis and Flannery (1992). Hannan and Hanweck (1988) estimated the relationship between interest rates on CDs and bank risk for five different maturities and found strong evidence that uninsured depositors exacted a risk premium for risky banks. Estimating the interest cost on large CDs as a function of risk measures, James (1989) found that interest cost was positively related to the ratio of domestic loans to capital and the loan loss provision ratio. The negative relation between interest cost and the ratio of foreign loans to capital is interpreted as evidence of an implicit government guarantee of foreign loans. Furthermore, Ellis and Flannery (1992) constructed time series models of six large money-centred banks’ CD rates, to determine whether measured changes in bank risk influence the rate paid on
uninsured deposits. They found that the CD rates paid by large money centre banks include a significant risk premium.

In the literature, depositor market discipline has generally been investigated to assess its impact either on the deposit interest rate or on the quantity of deposits. However, the studies of Park (1995) and Park and Peristiani (1998) have combined both of these bank approaches and examine market discipline by focusing on the relationship between bank risk and both the pricing of and growth in uninsured deposits.

Park (1995) examined the impact of bank risk on the interest rate and the growth of deposits between 1985 and 1992 in the US banking system, measuring bank risk as an estimation of the probability of failure based on actual failure records. He found that riskier banks pay higher interest rates and experience slower growth of deposits and concludes that depositors exert market discipline. However, he was unable to find evidence supporting the “too-big-to-fail” hypothesis, as depositors did not prefer large banks. Using a similar methodology, Park and Peristiani (1998) analysed depositor market discipline in the US thrift industry during the 1980s by examining the effects of depository institutions’ risk on the pricing and growth of deposits, using a risk measure derived from actual failure records and they found that as banks’ activities became riskier, both uninsured and insured depositors exert market discipline by requiring higher interest rates and by withdrawing their deposits.

Jordan’s (2000) study is a more recent one that analysed the effectiveness of depositor discipline in the US. By focusing on whether failed banks faced depositor discipline as they become troubled, Jordan examined 65 banks that failed in New England in the early 1990s, focusing in particular on the two years data before the quarter in which banks fail. The results of Jordan indicate that uninsured depositors react to the weakening in bank strength. However, for New England banks, market discipline by depositors was not very effective as failing banks increased their use of insured deposits enough to offset much of the shortfall created by the decline in uninsured deposits. Therefore, he concludes that as the failing banks were able to substitute relatively cheaper insured funds for the expensive uninsured funds, changes in the pricing and supply of uninsured deposits had only a modest impact on
bank behaviour and the effectiveness of market discipline was diminished. However, in his study, Jordan also found that the interest rate spreads that many banks in the sample were paying over their competitors' rates were increasing as the sample banks approached their failure date. Failed banks increased their insured deposits by offering higher interest rates for insured deposits than those of competitors in order to attract depositors; they also faced higher search costs in obtaining new funds. The findings of Jordan highlight the importance of co-insurance. In the US, all deposits below USD 100,000 are fully insured and there is not any co-insurance. However, the results of Jordan show that although uninsured depositors withdraw their deposits from unhealthy banks, as these banks could fund themselves through insured deposits the effectiveness of market discipline was diminished. This suggests that in the face of a co-insurance scheme, the banks would be unable to fund themselves and the depositors could exert market discipline effectively.

Although there is extensive research analysing depositor behaviour in the US, there is limited evidence on whether depositors in other developed or, indeed, developing countries exert market discipline on banks, either by requiring higher interest rates or by withdrawing their deposits from riskier ones.

Schumacher's (1996) research on Argentina, Martinez-Peria and Schmukler's (2001) study on Argentina, Chile and Mexico, Mondschean and Opiela's study (1999) on Poland, Barajas and Steiner's study (2000) on Columbia and Birchler and Maechler's study (2001) on the Swiss banking systems have provided evidence on depositor market discipline.

Schumacher (1996) studied the Argentinean banking crisis during 1994-1995 and found evidence of market discipline. She used bank-level data and firstly estimated the probabilities of bank failure. Secondly, she examined whether these probabilities had an impact on deposit behaviour over the course of the 1995 Argentinean banking crisis. She found that the probability of failure is explained by the ratio of non-performing loans, the return on assets, and a number of variables measuring liquidity. She also found that the probability of failure negatively affects the behaviour of depositors, especially during the peak of the crisis in March 1995. During 1994,
excluding December, she found that riskier banks paid higher interest rates on deposits.

Martinez-Peria and Schmukler (2001) considered the banking systems of Argentina, Chile and Mexico, and their findings support the existence of market discipline in all three cases, as the growth of deposits was significantly related to bank fundamentals, once controlling for systemic and macroeconomic variables also affecting the demand for deposits. This result is also shown to hold even in the case of small, insured depositors.

Mondschean and Opiela (1999) examined the behaviour of Polish depositors with time deposits from 1992 and 1996 by using a general least squares regression model. They also examined whether the ownership status of state-owned banks provided them with a competitive advantage over private banks, as well as the impact of the introduction of the explicit deposit insurance scheme. They found that depositors exert market discipline by requiring a price for risk-taking, the relationship between bank risk and deposit interest rates diminishing after the passage of a formal deposit insurance scheme; and state banks were also found to pay lower deposit interest rates than private banks. However, the model of Mondschean and Opiela excludes some variables, such as liquidity and earnings, which are commonly used in the analysis of depositor market discipline.

By using panel data for the 1985-1999 period, Barajas and Steiner (2000) examined whether depositors in Columbia disciplined bank behaviour, where deposit insurance is compulsory, there is co-insurance by depositors and risk-weighted premiums, and with relatively small coverage declining continuously in real terms. Their estimations indicate that depositors prefer banks with stronger fundamentals and banks decrease their risk-taking after depositors punish them by withdrawing deposits and requiring higher interest rates. They conclude that market discipline exists in Colombia. However, they also express that the observed response of banks could also be a result of effective bank supervision rather than market discipline by itself. The findings of Barajas and Steiner differ from those of Demirgűç-Kunt and Detragiache (1999), who find that the banking systems of the countries with explicit and relatively
extensive deposit insurance tend to be more fragile, which is consistent with the argument that deposit insurance leads to an increase in moral hazard and a breakdown in market discipline.

While the majority of the above-mentioned studies focus on the interest rates paid by banks in order to test the existence of market discipline, some academics, such as Birchler and Maechler (2001), have concentrated on the level of deposits. They examine the presence of market discipline by examining whether depositors withdraw their deposits from riskier banks in the Swiss deposit market by using a panel of bank-specific data on 250 Swiss banks over the period 1987-1998. They found considerable evidence of depositor market discipline in the Swiss deposit market, as depositors are sensitive to bank-specific fundamentals, to institutional differences across bank groups and to institutional changes in the deposit insurance scheme.

3.3.2 Debt Holders' Behaviour

In the literature, several studies analysed whether subordinated debt holders exert market discipline by testing the relationship between debt spreads over the rate on Treasury securities, and ratings and accounting measures of risk specific to banking organizations derived from balance sheets and income statements. Similar to the empirical studies on depositor behaviour, the existing literature on subordinated debt mainly examined the US market. However, while most of the earlier empirical studies did not find significant statistical relationships between the risk premium demanded by investors and bank risk, the findings of more recent studies support the existence of market discipline in the subordinated debt market.

One of the first studies that analysed whether subordinated debt holders could be a source of market discipline is the study of Beighley (1977), who examined the US market and found evidence of market discipline. In his study, Beighley tested the relationship between the premium rate, which is the spread between the interest rate on the subordinated debt and the interest rate of the US Treasury securities, and
measures of bank risk, including a loss ratio and a leverage ratio, and found that the coefficients on the loss and leverage ratios are positive and significant.

On the other hand, the studies of Pettway (1976), Fraser and McCormack (1978), Herzig-Marx (1979), Avery et al. (1988), and Gorton and Santomero (1990) also examined the US market but their findings did not support the existence of market discipline.

Pettway (1976) estimated the spread as a function of the capital ratio of banks and other independent variables. He found that the coefficients on the capital ratios were not significant and concludes that investors were not sensitive to the bank risk-taking. Fraser and McCormack (1978) and Herzig-Marx (1979) also estimated the relationship between the spread and measures of bank risk and could not find any evidence supporting the existence of market discipline.

Avery et al. (1988) analysed the risk premiums for the US bank holding companies' (BHC) subordinated debts for the year-ends of 1983 and 1984. They estimated the risk premium, that is the spread between the interest rate on the subordinated debt and the interest rate on US Treasury securities, as a function of various measures of risk derived from balance sheets, Moody's and Standard and Poor's bond ratings and an index proposed by the Federal Deposit Insurance Corporation (FDIC) for the pricing of risk-based deposit insurance, and found that risk premiums are weakly related to ratings, whereas they are uncorrelated with the FDIC Index and balance sheet variables.

Gorton and Santomero (1990) improved upon the methodology of earlier studies by demonstrating that the relationship between spreads on uninsured bank liabilities and risk cannot be assessed by using a linear function. Rather, they imputed the implied volatility of the bank's assets from a pricing model for subordinated debt derived from options pricing and correlated those volatilities to bank-specific measures of risk. They used a data sample that was used by Avery et al. (1988) and the findings indicate that there is little support for the argument that there was statistically significant market discipline in the banks' subordinated debt market.
While most of the earlier empirical studies found no or little statistically significant relationship between spreads and bank-specific risk measures, recent studies of Flannery and Sorescu (1996) and Morgan and Stiroh (1999) provided some evidence of market discipline in the US subordinated debt market. Moreover, the findings of Bruni and Paterno (1995) and Sironi (2000), who examined European banks, support the effectiveness of market discipline in the European subordinated debt market.

Using a more widespread data set than earlier studies, Flannery and Sorescu (1996) analysed subordinated debt yields over the period 1983-1991 and found a significant relationship between spread and risk at the US BHCs after 1989 when bank regulators abandoned the "too-big-to-fail" policy that had protected large banks. According to their results, in the early years, bank-specific risk measures did not explain spreads as investors did not differentiate among banks' risk-taking because of the "too-big-to-fail" policy and they explained the lack of market discipline in the earlier studies by pointing to the implied government guarantees of the 1980s.

The disciplinary role of investors in the US markets has also been investigated by Morgan and Stiroh (1999), who used spreads, ratings of Moody's and Standard and Poor's and asset portfolios in their analysis, for the 1993-1998 period. While their findings provide some evidence of market discipline of banks, they could not find a strong relationship between spreads and ratings and asset portfolios for large banks. Therefore, they conclude that implicit guarantees for large banks might prevent investors from exerting market discipline on those banks.

While existing empirical studies concerning the risk sensitivity of subordinated debt are mostly based on the US banking system, the studies of Bruni and Paterno (1995) and Sironi (2000) analysed European banks, and their findings support the existence of market discipline. Bruni and Paterno (1995) examined market discipline in European subordinated debt markets for a limited sample of 28 observations and for a single day by testing the relationship between the spread on USD denominated bonds and Moody's ratings and bank-specific variables. Sironi (2000) also investigated whether investors in the European markets discriminate between bank
risk-taking by testing the risk sensitivity of the spreads of subordinated debts. The sample that Sironi used in his analysis consists of 290 observations based on subordinated debt issues of 65 banks from 13 European countries during the 1991-2000 period. His findings could be summarised under three headings. First, investors discriminate between the different risk profiles of European banks. Second, while implicit guarantees, such as a "too-big-to-fail" policy, were present during the 1991-1995 period, these guarantees weakened in the second half of the 1990s. Third, state banks benefit from an implicit government guarantee. He concludes that, in the light of his first two findings, investors in subordinated debts in the European markets could be a source of market discipline.

3.3.3 Stockholders' Behaviour

The studies concerning stockholders as a source of market discipline mainly examine market discipline by testing the hypothesis that bank stock prices are inversely related to the risk-taking of banks. The majority of the results of the studies that have examined the stockholders' behaviour support the effectiveness of market discipline.

The studies of Beighley et al. (1975), Pettway (1976) and Brewer and Lee (1986) examined the impact of bank risk-taking on stock prices and found evidence of market discipline.

Beighley et al. (1975) modelled bank stock prices as a function of bank-specific risk variables, such as the capital ratio, earnings, loan-loss rates and asset size, and found that those banks with higher capital ratios and lower loan loss rates have higher stock prices. Pettway (1976) modelled estimated betas\(^8\) of banks derived from weekly percentage changes in the banks' stock prices and the average weekly percentage change in the New York Stock Exchange index over a period of five previous years as a function of return variables, price/expected earnings (P/E) ratios and bank specific risk variables, including the ratio of total capital to risk assets, earnings growth and size of total deposits. Analysing the data of 38 large US banks for the 1971-1974 period, Pettway found that while the betas were inversely related to the

\(^8\) Beta is a measure of risk derived from past stock prices.
earnings growth for 1972 and to the capital ratio for 1974, the coefficients of the size variable were significantly positive for 1971 and 1973 and the coefficient of the P/E variable was significantly positive for 1974. A similar finding was documented by Shome et al., (1986), who estimated stock prices as a function of bank specific risk variables and found that only the coefficient of the capital ratio was positive, yet statistically significant for some years but insignificant for other years.

Brewer and Lee (1986) also analysed the relationship between betas and bank-specific risk variables and their findings, which were similar to those of Pettway as only the coefficients of some variables were found to be positive and significant, indicate that there is evidence of market discipline in the stock market. In particular, they found that, whereas an increase in loans and reliance on purchased funds and a decrease in the ratio of capital to total assets had an important impact on the bank equity, income statements and loan charge-off data provided little information on the risk sensitivity of bank equity. Brewer and Lee also found that there are regional differences in the market response to measures of risk, as New York-based BHCs exhibit more sensitivity to risk variables compared with other regional BHCs.

While the above-mentioned studies examined the impact of bank risk-taking on stock prices, Cornell and Shapiro (1986), Smirlock and Kaufold (1987) and James (1989) have studied the impact of less developed country loans and announcements of loan loss provisions on bank stock prices.

Cornell and Shapiro (1986) estimated returns to shareholders of 43 large banks as functions of the composition of their assets and liabilities in the years 1982-1983. They found that the percentage that Latin American loans represent of total assets had a significant, negative impact on returns in 1982. Energy loans had a negative impact in 1982-1983. Loans purchased from Penn Square Bank had a negative impact on returns in the month in which that bank failed.

Smirlock and Kaufold (1987) looked for the changes in stock prices of large banks at the time of the announcement by Mexico in 1982 of its moratorium on debt payments as a function of the ratio of Mexican debt to equity capital at individual
banks. They found that the coefficient on the ratio of Mexican debt to equity capital is negative and significant. Banks were not required to disclose their Mexican debt at the time of the 1982 moratorium.

James (1989) estimated the returns on holding the stock of BHCs as a function of the change in the market value of the BHCs' loans to less developed countries and dummy variables for individual banks and individual time periods. He found that the change in the market value of loans to less-developed countries has a positive, significant coefficient that is not significantly different from unity.

On the other hand, the results of the studies of Randall (1989) and Simons and Cross (1991) are inconsistent with the effectiveness of market discipline. By employing a case study approach, Randall (1989) examined the impact of the announcement of large losses on the stock prices for a sample consisting of 40 BHCs by comparing the stock prices before and after the losses were announced. His findings, which were based on a case study rather than an econometric model that analyses the determinants of stock prices, indicate that stockholders did not impose market discipline on banks as bank stocks were not sensitive to the risks assumed by banks until large losses were announced.

The study of Simons and Cross (1991) provided similar results as their findings also indicate that bank stockholders could not be a source of market discipline. They analysed whether the market may have recognised problems in a bank's assets before the regulators became aware of them. They argue that in this case the monitoring undertaken by bank shareholders would help regulators to identify a problem bank earlier, rather than to rely extensively on bank examinations to identify problems in banks. In order to test whether the stock market anticipated the bank's downgrade status, they employed the residual analysis technique, which is commonly used in event studies, with a sample consisting of 22 US BHCs, and examined the stock prices of BHCs that were downgraded by examiners to a 4 or 5 CAMEL rating between 1981 and 1987. As they found that shareholders' returns failed to anticipate downgrades by examiners, their results could not provide any evidence that
stockholders could exert market discipline. Therefore, they conclude that the prices of BHC stocks cannot be monitored to improve the supervision of commercial banks.

3.4 Regulatory View on Market Discipline

Following the review of the studies that have been undertaken concerning market discipline, regulators' views have also been assessed to help complete the framework for this research. The regulators' views in the UK, Turkey and the Basle Committee on Banking Supervision are evaluated respectively. The findings are used to develop research hypotheses.

3.4.1 Regulators' Views in the UK

The Deposit Protection Board (DPB) and the Financial Services Authority (FSA) were contacted to seek interviews on the regulators' views about the importance of the deposit protection scheme for the UK, the role of the "co-insurance" principle in the existing scheme and especially the importance of "depositor discipline". The aim of the researcher was to gain deeper understanding about how regulators think and feel about these topics of concern to the research.

The DPB was unable to accede to the researcher's request, as their policy does not allow for the granting of an interview, and instead they provided written answers to the researcher's questions. The FSA sent two consultation papers on consumer compensation, which provided answers to most of the questions that had been addressed to them. In addition, Mr. Brennan, from the FSA's Compensation and Oversight Policy Department, contributed written answers.

3.4.1.1 Some General Points on the New Compensation Arrangements

The FSA assumed its powers and responsibilities under the Financial Services and Markets Act 2000 on 1 December 2001. The FSA have four statutory objectives, namely: maintaining market confidence; promoting public understanding of the financial system; securing an appropriate degree of protection for consumers (whilst
recognizing their own responsibilities); and reducing the scope for financial crime (Hall, 2002).

The Act requires the FSA to make rules establishing a scheme for compensating consumers when authorised firms are unable, or likely to be unable, to satisfy claims against them. The body established to operate and administer the compensation scheme is the Financial Services Compensation Scheme (FSCS). By making rules that allow the FSCS to pay compensation to retail consumers and small business, focusing protection on those who need it most, the compensation scheme rules form an important part of the toolkit the FSA uses to meet its statutory objectives.

The main compensation schemes that were replaced by the new scheme were the Deposit Protection Scheme, the Building Societies Investor Protection Scheme, the Investors Compensation Scheme, the Policyholders Protection Scheme, the Friendly Societies Protection Scheme and the FSA’s scheme covering firms authorised under s43 of the Financial Services Act 1986. The basic single scheme structure is as follows. There are three sub-schemes. The first sub-scheme covers deposits taken by banks and building societies; the second sub-scheme covers insurance policies written by insurance companies and friendly societies; and the third sub-scheme covers all authorisable business not covered by one of the other two sub-schemes.

The FSA describes the features of the new compensation scheme as follows:

1. Transparent in their structure and operation and clear both to claimants and to the regulated firms which will provide the funding;
2. Easily accessible to claimants and potential claimants;
3. Fair in the application both to claimants and contributors;
4. Efficient and responsive in operation;
5. Simple and cost effective.

New limits on compensation payable are as follows: 100 percent of the first GBP 2,000 and 90 percent of the next GBP 33,000, which leads to a maximum payment of
GBP 31,700. Under the old scheme the maximum compensation was GBP 18,000, (90 percent of GBP 20,000).

3.4.1.2 Financial Services Authority View

The view of the FSA has been mainly gathered from the Consultation Papers 5 and 24 issued by the FSA on December 1997 and June 1999 respectively, while additional information about the past research concerning the compensation arrangements was obtained from Mr. Brennan from the Compensation Oversight and Policy Department.

The importance of deposit insurance to the integrity and soundness of the UK’s financial system is described by the FSA as crucial: having a compensation scheme is very important, not only for protecting the investors but also for promoting confidence in financial institutions and the financial system as a whole. The reason for establishing compensation schemes is justified as a form of consumer protection for individuals who are not generally able to assess the risk of the institutions they deal with. The FSA also points out that compensation schemes help to reduce the systemic risk that a single failure of an entity may cause.

While implementing deposit insurance, a number of countries give priority to the soundness and stability of their financial system rather than protecting small depositors. However, in the UK, protection of small depositors is of overriding importance, as it is argued that the soundness of the financial system is traditionally achieved instead by strong prudential supervision by the Bank of England (Kyei, 1995)\(^9\).

The FSA also puts particular emphasis on the importance of deposit insurance for the protection of small depositors who are unable to judge the financial condition of a bank for themselves. According to the FSA, one of the two fundamental objectives of the compensation schemes is that the compensation schemes must be available to

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\(^9\) The responsibility for banking supervision was transferred from the Bank of England to the FSA on 1 June 1998.
consumers who are least able to sustain financial loss. The FSA points to the findings of "The Family Resources Survey 1996/1997", which suggested that 57 percent of families had less than GBP 1,500 of savings (excluding life assurance or funded provisions). The FSA argues that losing 10 percent of a deposit can hit these consumers very hard. On the other hand, when placing their money with a bank or building society, there is little they can do to insure themselves against this risk. Depositors who spread their risk by depositing small amounts with different banks or building societies may lose out in terms of the interest they can earn on their deposits.

As mentioned in the previous chapter, the UK is one of the very few countries that adopted the co-insurance principle that leaves the depositor exposed to an element of risk on all deposits. According to the FSA, the element of co-insurance has been an important and highly supported principle in the structure of the existing compensation schemes in the UK. The existence of individual limits and an element of co-insurance within the existing schemes is thought to act as an incentive for consumers to take care about where they place their funds or whom they deal with and reflects the principle that consumers should take some responsibility for their own financial decisions.

The primary considerations concerning the appropriate level of co-insurance has been widely debated and the FSA points out that there is a need to strike a balance between offering enhanced protection to certain consumers, who would be hit particularly hard by any approach which requires them to bear a share of any loss, and the desire to avoid providing a disincentive for consumers to make wise decisions about where to place their money or do business.

The FSA undertook initial research about the public awareness about compensation arrangements. According to the findings of their initial research, consumers' general awareness of compensation arrangements was very low and it was not a factor to which they attached much significance when making savings or investment decisions, which might suggest that the incentive effect of the co-insurance element
in the existing schemes is limited. Besides, the low level of awareness undermines the stabilising potential of compensation arrangements.

A number of points about the methodology of the FSA's research are worth noting. Several research agencies in the UK offer "omnibus" surveys as a means for their clients to obtain data speedily. This is achieved by inserting questions in consumer survey questionnaires, which are conducted on a regular basis, usually weekly or fortnightly. Basically, an 'omnibus' survey consists of a series of short questionnaires on behalf of different clients who share the costs of recruitment, interviewing, etc. The compensation research was carried out by using an omnibus survey of UK adults. The sample was designed to be representative of all adults in telephone-owning households. Interviewing took place between 27th and 29th November 1998 and a total of 983 interviews were conducted.

In order to create an effective incentive for consumers to take responsibility for their decisions under the new scheme, the FSA states that it is crucial to promote public awareness of the scheme and its provisions despite the complexity of the arrangements. They also point out that the UK regulators have already introduced requirements on firms to ensure compliance with the provisions in the Deposit Guarantee Directive which requires that consumers are made aware of the existence of deposit protection arrangements. On the other hand, Deposit Guarantee Directive (article 9-section 3) prohibits the use of the terms of the compensation arrangements for advertising purposes.

It is also stated that the publicity surrounding a default and the fact that some of the consumers have suffered losses act as a warning to other consumers to be more careful. However, the FSA is aware of the arguments that it is not appropriate to expect some consumers, especially among the private individuals and small companies who are the focus of the compensation cover, to differentiate between authorised institutions and to understand why institutions operate with different levels of risk. On the other hand, the FSA states that they would like to encourage people to enter into transactions in financial services only after they have given proper consideration, to the best of their ability, to the balance of risk and reward.
In light of the above points it can be concluded that the FSA wishes to promote market discipline in the banking sector with the help of the co-insured depositor. However, the introduction of the single compensation scheme increased the overall level of protection available to personal depositors compared with the former schemes. The major change from the former schemes application was the exclusion of large firms, which were seen as financially sophisticated consumers who were less deserving of protection and whose existence as uninsured depositors would help to increase market discipline.

3.4.2 Regulators' Views in Turkey

The researcher contacted the Assistant General Manager and the Manager of the Savings Deposits Insurance Fund (SDIF) and the Assistant General Manager of the Banking Department in the Central Bank of Turkey (CBT) to get their points of view on the deposit insurance system in Turkey and its relevance to market discipline. Both the SDIF and the CBT officials explained their views on the subject. Moreover, the press releases of the Banking Regulation and Supervision Agency (BRSA) have been examined to fulfil the above-mentioned aim.

The BRSA is the new agency that has been in charge of the financial sector since August 2000. The BRSA states its mission as being to safeguard the rights and benefits of depositors and to create the proper environment in which banks and financial institutions can operate with market discipline, in a healthy, efficient and globally competitive manner, thus contributing to the achievement of long-run economic growth and stability of the country. It is clear that the BRSA wants the financial institutions to be subject to market discipline as well as to its regulation.

The main goals of the organisation are summarized below:

*To enhance banking sector efficiency and competitiveness*: elimination of distortions created by the existence of state banks; strengthening of the banks' capital
base; reduction of the banks' intermediation costs; minimisation of group banking and non-financial activities.

**To maintain confidence in the banking sector:** in accordance with market discipline and the "self responsibility" principle, to design the proper regulation for public awareness; making adequate, understandable and accurate information accessible to the markets in a timely manner; promoting international best standards in accounting and reporting systems; providing a transparent environment in which information on risks is clear and accessible for all parties.

**To minimize the potential risks to the economy from the banking sector:** prevention of all kinds of transactions and practices that can jeopardize the smooth and safe operation of the banks; developing early warning and prompt correction systems to prevent individual problems from causing systemic risk.

**To enhance the soundness of the banking sector:** enhancing the flexibility of the sector against risks; giving importance to the improvement of corporate governance; developing internal control and risk management systems; taking market risk into account in the calculation of capital adequacy; improving the BRSA's capacity for risk-focused and consolidated supervision and control.

**To protect the rights of the depositors:** establishing a balance between the adverse effects of deposit insurance, such as erosion of market discipline and increase in moral hazard, and the need to protect the rights of depositors.

The SDIF, which was formed in the CBT, was amalgamated with BRSA in August 2000 and is responsible for managing the fund in line with BRSA's regulations.

According to the SDIF, the awareness of the public concerning the deposit insurance was quite low till 1993. However, after Turkey experienced the banking crisis in the spring of 1994 when three banks failed, the publicity surrounding the defaults made people aware of the compensation arrangements. Since then the SDIF has been
receiving frequent inquiries from the public and also from Turkish workers who live abroad concerning the deposit insurance scheme.

The SDIF regards the existence of 100 percent coverage for individuals as very important as a means of protecting small investors. However, the SDIF claimed that people who are aware of the 100 percent coverage do not pay attention to the financial condition of the banks that they place their funds with and prefer banks which pay higher interest rates regardless of risk (the SDIF also puts emphasis on the tendency for risky banks to pay higher interest rates to attract deposits than the sound banks operating in the Turkish financial system).

On the other hand, the institutional investors whose funds lack any protection are believed to pay attention when selecting their banks and to prefer to do business with sound banks. As an example, nearly all of the deposits at the three banks, which the SDIF took over in 1994, belonged to individuals. Institutional investors did not have deposits with those banks that failed. The SDIF argues that examining the structure of the deposit base of an institution gives a good idea of its financial condition. While sound banks could be able to borrow funds from the institutional investors, risky banks’ deposit bases consist mainly of personal savings deposits.

Currently, banks are paying premiums to the SDIF according to their capital ratios and the SDIF believes that it is a sensible approach to apply risk-related premiums based on capital ratios. However, the current premium structure is not effective as there is only a slight difference between normal rates (0.0025 percent for the banks that have all their ratios at targeted levels) and penalty rates (0.0026 percent for the banks that have ratios below target).

Ceyla Pazarbaşioğlu (2002), Vice President of the BRSA, stated that their key objective is to foster confidence in banks and contribute to the strengthening of the sector. She stressed that the BRSA attaches importance to market discipline and, in line with the improvements in the sector, a limit will eventually be re-introduced to the deposit insurance coverage. Besides, the BRSA is planning to provide information about its actions and the banking sector through comprehensive reports.
that will be published. In addition to that, the Capital Markets Board is in the process of introducing additional disclosure requirements for publicly-traded banks.

3.4.3 The Basle Committee on Banking Supervision’s View

The Basle Committee on Banking Supervision gives special importance to promoting effective market discipline as the Committee views increased market discipline as an effective complement to supervisory efforts to maintain a sound banking system (BIS, 2000).

The Basle Committee on Banking Supervision’s recent proposals to reform capital adequacy are based on three main “pillars”. While the first two pillars focus on capital requirements and on the future role of national supervisors respectively, the third pillar is aimed at strengthening the role of market discipline through an improvement in banks’ disclosure (BIS, 2001). The third pillar recognises that market discipline has the potential to reinforce capital regulation and other supervisory efforts to promote safety and soundness in banks and financial systems. The Basle Committee also argues that market discipline imposes strong incentives on banks to conduct their business in a safe, sound and efficient manner and, therefore, the Committee has a strong interest in facilitating effective market discipline as a lever to strengthen the safety and soundness of the banking system.

However, the Committee also points out the importance of disclosure to provide effective market discipline by stating “In order for market forces to work effectively, thereby fostering a stable and efficient financial system, market participants need access to correct and timely information. Disclosure, therefore, is a complement to supervision.” In order to improve the disclosure practices of banks, the Committee recommends that banks should publicly disclose six broad categories of information, namely financial performance, financial position (including capital, solvency and liquidity), risk management strategies and practices, risk exposures (including credit

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10 The Basle Committee on Banking Supervision is a committee of banking supervisory authorities which was established by the Central Bank Governors of the Group of Ten countries in 1975. It consists of senior representatives of bank supervisory authorities and central banks from Belgium, Canada, France, Germany, Italy, Japan, Luxembourg, the Netherlands, Sweden, Switzerland, the United Kingdom and the United States.
risk, market risk, liquidity risk and operational, legal and other risks), accounting policies, and basic business, management and corporate governance information to support market discipline and strengthen financial stability by promoting the transparency of banks' activities and risk exposures. The Committee defines transparency as the "public disclosure of reliable and timely information that enables users of that information to make an accurate assessment of a bank's financial condition and performance, business activities, risk profile and risk management practices" (BIS, 2000).

The Basle Committee on Banking Supervision puts emphasis on the complementary interaction of prudential supervision and market discipline, which is critical in promoting the long-term stability of both individual institutions and banking systems. The Committee points out that bank supervisors are interested in bank transparency mainly for two reasons: firstly, they recognise that markets contain disciplinary mechanisms which, under appropriate conditions, reinforce supervisory efforts by rewarding banks that manage risk effectively and penalising those whose risk management is weak or ineffective. Secondly, effective banking supervision relies on the collection and analysis of information to assess the conditions of individual banks and banking systems as a whole.

It is argued that a sound and well-managed bank should benefit when it provides comprehensive, accurate, relevant and timely information on its financial condition and performance, as well as information concerning its ability to manage and control risks, and should be able to access capital markets more efficiently than similar institutions that do not provide adequate disclosures. This is mainly because high quality public disclosure improves the capability of market participants to make informed decisions. Market discipline is founded on the observation that a sound and well-managed bank is able to achieve better terms and conditions in transactions with informed and rationally behaving market counterparties.

Besides pricing, market participants also provide disciplining incentives. For instance, they may decrease the volume or narrow the range of business undertaken with banks that have increased their risk profiles. Also, uninsured and partly insured
depositors have an incentive to withdraw their funds in the case of any problems regarding the safety of the bank. Finally, the market can totally refuse to enter a new business.

The Basle Committee on Banking Supervision puts strong emphasis on the fact that market discipline based on adequate public disclosure can be an effective complement to supervisory efforts to encourage banks to maintain sound risk management systems and practices.

3.5 Chapter Summary

In this chapter the concept of market discipline was introduced, the literature was reviewed the regulatory view on this issue was discussed. Reviewing the literature on market discipline revealed that most of the studies on this subject have been undertaken in the US and that very few studies have been done on market discipline in developing countries. Evaluation of the views of the regulators in the UK and Turkey and the Basel Committee on Banking Supervision helped shaping the research questions.
CHAPTER FOUR

A SURVEY ON DEPOSITOR BEHAVIOUR IN THE UK AND TURKEY: EMPIRICAL METHODOLOGY

4.1 Introduction

This aim of this chapter is to provide a detailed description of the methodology used for the survey on depositor behaviour in the UK and Turkey. Given the research objectives stated in the first chapter and the context in which the research was to be undertaken, it was decided that the most effective data collection method would involve a two-step quantitative process. From the theoretical discussion developed in the second and third chapters, a number of hypotheses have been stated. The initial stage of the empirical work was developed in the light of the theoretical work. It was decided to undertake survey research, which is defined by Hutton (1990) as the method of collecting information by asking a set of preformulated questions in a predetermined sequence in a structured questionnaire to a sample of individuals drawn so as to be representative of a defined population.

The second stage of the research involved employing econometric analysis to examine the existence of market discipline in the banking industries of the UK and Turkey during the 1990s. The focus is on the relationship between bank risk-taking and both the pricing of and growth in deposits, as discussed in the sixth chapter.

4.2 Domain of the Study

Every research starts with a problem. As was stated in the first chapter, the main research problem of this study is, “Can a bank depositor be an effective source of market discipline in the UK and Turkey?” To answer this question, the researcher
has to check whether the pre-conditions of market discipline exist in the environment where the depositors make their decisions. It is also essential to marshal as much relevant factual information about the characteristics, views and behaviour of depositors as possible. Those facts then need to be evaluated in an appropriate theoretical framework.

Therefore, as one of the methodologies to be employed in this research, a sample survey was undertaken in order to collect the relevant depositor information so that it could be analysed in order to test the research hypotheses stated in Section 4.4.1 of this chapter.

To sum up, the questionnaire is used to explore a number of hypotheses and to achieve a measure of understanding about peoples’ perceptions about their banking activities, attitudes towards risk and their ability to be a source of market discipline.

4.3 Data Collection

Tull and Hawkins (1993) state that when deciding on a data collection method, the primary consideration is the choice of technique that is capable of generating appropriate information from the appropriate sample at the lowest cost. Allison et al. (1996) define three survey tools to gather data; observations, questionnaires and interviews. For this study, observational methods were not thought practical due to time, access and cost considerations. On the other hand, the disadvantages of the interview method listed by Oppenheim (1992), such as high costs both in terms of time and money, precluded the use of interviews as the researcher had a very limited budget. Consequently a mail questionnaire was chosen to collect data.

4.3.1 Sample

The major objective of sampling theory is to provide accurate estimates of unknown values of the parameters from sample statistics that can be easily calculated. (Frankfort-Nachmias and Nachmias, 1996). Churchill (1995) advises a six-step procedure to follow when selecting a sample of a population (Figure 4.1).
The first step is about defining the population. To accurately estimate unknown parameters from known statistics, the population has to be defined in terms of (1) content, (2) extent, and (3) time (Frankfort-Nachmias and Nachmias, 1996). As the aim of the study is to examine depositor behaviour in the UK and Turkey in the context of market discipline, the population was defined as the head of households over 18 years of age who have savings accounts in those countries. The time was set differently for each country as the surveys took place in 1999 and 2000-2001, respectively. The UK survey was undertaken during the researcher’s residence in the UK in 1999 and the Turkish survey was conducted in December 2000-January 2001, after the researcher returned to Turkey.
The second step was identifying the sampling frame. The sampling frame was the listing of the elements from which the actual sample will be drawn (Churchill, 1995). A high degree of correspondence between the sampling frame and the sampling population is a vital element as the accuracy of a sample depends on the sampling frame (Frankfort-Nachmias and Nachmias, 1996). Following the identification of the sampling frame, the sampling procedure has to be determined.

For the UK study, in order to identify a suitable sample, which would generate the results that would be applicable across the nation as a whole, London was selected and split geographically. As the population of the UK is spread across a number of cities, the sample was selected to reflect this national distribution. Although the initial intention was to use the house type classification, which is generally used in marketing research, this did not prove practical. Instead, the research area was split up geographically in a manner which replicated the distribution of population across the country. Respondents were then selected randomly from each part. In this way it was possible to construct a nationally random sample from one city.

A sampling frame based on the list of a commercial mailing company was used. However, the problem of blank foreign elements arose. The problem of blank foreign element occurs when some sampling units in the sampling frame are not included in the research population (Frankfort-Nachmias and Nachmias, 1996). In this case, it became clear that some households did not have any savings accounts. These cases had to be treated as blanks and omitted from the sample. In order to deal with this drawback, a slightly larger than normal sample was initially selected, as recommended by Frankfort-Nachmias and Nachmias (1996).

To start with, a list of 1,000 households in the London area was drawn up, falling into the appropriate geographically-distributed areas. The names of the individuals who declared themselves as the head of the family were obtained from the commercial mailing company, allowing the correspondence to be addressed to a named individual. According to Oppenheim (1992) this has an effect on getting a higher response rate as people find the inquiry more genuine when they see their
name on the envelope rather seeing only the address. The telephone number of the head of household was identified by using telephone directories.

The sampling procedure that was used for the Turkish survey is provided in Section 4.8.

4.4 Questionnaire Design

The questionnaire is a vital research instrument for the collection of data and its main function is measurement (Oppenheim, 1992). Questionnaire design needs continuous revision and attention in order to serve its goal of providing reliable and valid data in a usable form for the researcher (Cragg, 1991). Therefore, the stages suggested by Churchill (1995) for developing a questionnaire were applied in this study (Table 4.1).

<table>
<thead>
<tr>
<th>Table 4.1: Stages for Developing a Questionnaire</th>
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<tbody>
<tr>
<td>1. Specify the information that will be looked for</td>
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<tr>
<td>2. Decide the type of questionnaire and method of administration</td>
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<td>3. Decide the content of the individual questions</td>
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<td>4. Decide the form of response to each question</td>
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<td>5. Decide the wording of each question</td>
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<td>6. Decide the sequence of the questions</td>
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<td>7. Decide the physical characteristics of the questionnaire</td>
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<td>8. Re-examine steps 1-7 and make any necessary changes</td>
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<tr>
<td>9. Pre-test the questionnaire and make any necessary changes</td>
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Source: Churchill (1995)

4.4.1 Information Sought

It is important to consider at the outset how the information collected by the questionnaire will be used. It has to be decided very carefully what information
should be collected from each respondent because the results can easily be distorted by inadequate information (Aaker et al., 1995).

The evaluation of the theoretical discussions and the regulators’ views were used to form the research questions and the research hypotheses, which are stated here below. Those hypotheses were tested by the results of the questionnaires that were done in the UK and Turkey respectively.

**Research Questions**

1. Do the pre-conditions for market discipline exist among depositors?
2. What is the importance of risk for depositors when investing their funds?
3. Are they able to get information about the financial condition of their banks?
4. Are they able to use the information on the financial condition of their banks?
5. Do people who know about the deposit protection scheme differ in their attitudes from those who do not know?
6. Does publicity surrounding default and the fact that some depositors have incurred losses act as a warning to other consumers to be more careful?
7. What are the attitudes of depositors towards the “too-big-to-fail” policy?
8. Do depositors who know about the deposit protection scheme diversify their savings?
9. How important is it to make depositors aware of the deposit protection arrangements, and how will such awareness affect their behaviour?

**Research Hypotheses Tested for the UK and Turkey**

(1) **H₀**: There is no difference in the importance attached to the financial strength of the bank when opening an account among the British/Turkish depositors who have knowledge about compensation schemes and those who have not.

**H₁**: There is a difference in the importance attached to the financial strength of the bank when opening an account among the British/Turkish depositors who have knowledge about compensation schemes and those who have not.
(2) Ho: There is no difference in the tendency to diversify savings among the British/Turkish depositors that have knowledge about compensation schemes and those who have not.

H1: There is a difference in the tendency to diversify savings among the British/Turkish depositors that have knowledge about compensation schemes and those who have not.

(3) Ho: There is no difference in the tendency to monitor the financial condition of their bank among the British/Turkish depositors who have knowledge about bank failures and those who have not.

H1: There is a difference in the tendency to monitor the financial condition of their bank among the British/Turkish depositors who have knowledge about bank failures and those who have not.

(4) Ho: There is no difference in the propensity to 'run' among the British/Turkish depositors who have knowledge about bank failures and those who have not.

H1: There is a difference in the propensity to 'run' among the British/Turkish depositors who have knowledge about bank failures and those who have not.

(5) Ho: There is no difference in the propensity to 'run' among the British/Turkish depositors who have accounts with different types of institutions.

H1: There is a difference in the propensity to 'run' among the British/Turkish depositors who have accounts with different types of institutions.

(6) Ho: There is no difference in the expectation of being bailed out of British/Turkish depositors who have accounts with different types of institutions.
H1: There is a difference in the expectation of being bailed out of British/Turkish depositors who have accounts with different types of institutions.

(7) Ho: There is no difference in terms of checking financial information before investing among the British/Turkish depositors who have knowledge about bank failures and those who have not.

H1: There is a difference in terms of checking financial information before investing among the British/Turkish depositors who have knowledge about bank failures and those who have not.

(8) Ho: The British/Turkish depositors who felt competent to assess the financial condition of their banks when they opened their account are equal in number to those who did not feel competent.

H1: The British/Turkish depositors who felt competent to assess the financial condition of their banks when they opened their account are not equal in number to those who did not feel competent.

(9) Ho: The British/Turkish depositors who have the information related to the financial condition of their banks are equal in number to those who do not.

H1: The British/Turkish depositors who have the information related to the financial condition of their banks are not equal in number to those who do not.

(10) Ho: The British/Turkish depositors who have the necessary skills to be able to monitor the financial condition of their banks are equal in number to the British/Turkish depositors who do not.

H1: The British/Turkish depositors who have the necessary skills to be able to monitor the financial condition of their banks are not equal in number to the British/Turkish depositors who do not.
(11) **Ho:** British/Turkish depositors who are monitoring the financial condition of their banks are equal in number to the British/Turkish depositors who are not.

**H1:** The British/Turkish depositors who are monitoring the financial condition of their banks are not equal in number to the British/Turkish depositors who are not.

(12) **Ho:** All the factors are equally important in opening bank accounts.

**H1:** All the factors are not equally important in opening bank accounts.

**Research Hypotheses Concerning the Comparison for the UK and Turkey**

(1) **Ho:** There is no difference in the importance attached to the financial strength of a bank when opening an account among Turkish and British depositors.

**H1:** There is a difference in the importance attached to the financial strength of the bank when opening an account among Turkish and British depositors.

(2) **Ho:** There is no difference in the importance attached to the safety of principal between Turkish and British depositors.

**H1:** There is a difference in the importance attached to the safety of principal between Turkish and British depositors.

(3) **Ho:** There is no difference in terms of willingness to take financial risk among Turkish and British depositors.

**H1:** There is a difference in terms of willingness to take financial risk among Turkish and British depositors.

(4) **Ho:** There is no difference in terms of being competent to assess the financial condition of a bank between Turkish and British depositors.

**H1:** There is a difference in terms of being competent to assess the financial condition of a bank between Turkish and British depositors.
(5) **H₀**: There is no difference in having access to information to monitor the financial condition of a bank between Turkish and British depositors.

**H₁**: There is a difference in having access to information to monitor the financial condition of a bank between Turkish and British depositors.

(6) **H₀**: There is no difference in having skills to monitor the financial condition of a bank between Turkish and British depositors.

**H₁**: There is a difference in having skills to monitor the financial condition of a bank between Turkish and British depositors.

(7) **H₀**: There is no difference in monitoring the financial condition of their banks between Turkish and British depositors.

**H₁**: There is a difference in monitoring the financial condition of their banks between Turkish and British depositors.

(8) **H₀**: There is no difference in terms of knowledge about deposit protection schemes among Turkish and British depositors.

**H₁**: There is a difference in terms of knowledge about deposit protection schemes among Turkish and British depositors.

(9) **H₀**: There is no difference in terms of knowledge about bank failures between Turkish and British depositors.

**H₁**: There is a difference in terms of knowledge about bank failures between Turkish and British depositors.

(10) **H₀**: There is no difference in the expectation of being bailed out among Turkish and British depositors.

**H₁**: There is a difference in the expectation of being bailed out among Turkish and British depositors.
4.4.2 Type of Questionnaire and Method of Administration

After determining the information sought, the type of the questionnaire and method of administration had to be specified. The structure and the degree of 'disguise' of the questionnaire are of vital importance and must be determined at this stage. While the term 'structure' relates to the degree of standardisation imposed on the questionnaire, 'disguise' is the amount of knowledge about the purpose of a study communicated to a respondent (Churchill, 1995). For this study, a structured and undisguised questionnaire was selected and, as in a typical structured-undisguised questionnaire, the responses as well as the questions are standardised. Churchill (1995) points out the efficient use of structured and undisguised questionnaires to collect data on attitudes, intentions, awareness, demographic/socio-economic characteristics and behaviour. As this study deals with respondents' attitudes, awareness and behaviour, a structured and undisguised questionnaire meets its needs.

Three administrative methods may be used in surveys to collect data. They are mail questionnaires, personal interviews and telephone interviews. The personal interview is a face-to-face, interpersonal role situation in which an interviewer asks respondents questions designed to elicit answers pertinent to the research hypotheses. Telephone interviews are similar in essence, apart from taking place over the telephone (Frankfort-Nachmias and Nachmias, 1996). Where (as in this case) mail questionnaires are used, the questionnaire is posted to the intended respondent, who is then expected to complete and return it by using a pre-paid envelope.

The main reasons for this choice reflect the main advantages established for the use of mail questionnaires. These advantages, together with some reasons for rejecting the personal interviews, are as follows:

1. It was intended to reach a large number of respondents who were geographically dispersed; so using a questionnaire was cost effective comparing to interviews (Sekaran, 2000; Frankfort-Nachmias and Nachmias, 1996; Mangione, 1995; Oppenheim, 1992).
2. Due to the time constraints on the study, conducting a questionnaire was quicker than trying to interview potential respondents. Interviews need extensive time to complete and subject to data processing. There is no doubt that interviews need much more time than questionnaires (Mangione, 1995).

3. Potential biasing errors caused by the presence of interviewers are reduced by using a mail questionnaire (Frankfort-Nachmias and Nachmias, 1996; Mangione, 1995).

4. The researcher would like to give the respondents time to think about their answers and provide time to consult their own sources of information (Sekaran, 2000; Frankfort-Nachmias and Nachmias, 1996).

5. Respondents are more likely to respond to sensitive questions when they do not have to face an interviewer (Churchill, 1995; Mangione, 1995).

The advantages of the mail surveys and the reasons for selecting this approach in this study are clear. However, the approach is not without its drawbacks, which now need to be mentioned, together with the methods used to try to overcome them.

If the required data are not provided, or not in a form sufficient to answer the question, dispatching a second questionnaire causes two problems: it costs time, and problems may be encountered getting in touch with respondents. A questionnaire's ability to collect supplementary information is limited by comparison with interviews. For these reasons, before embarking on the full-scale research, a pilot study was undertaken in order to confirm that the data being sought could be provided and that the questionnaire contained sufficiently discriminating questions. The results of the pilot study were used to test the initial assumptions about the research project, and the results indicated whether additional information was required.

In mail questionnaires, it is very important to make questions clear and unambiguous, as there is no interviewer to help the respondent. The questionnaire is designed carefully and pre-tested in order to overcome such problems.
One major drawback of the questionnaire is the likelihood of a low response rate. Besides, the problem of refusing to reply introduces an element of bias as respondents and non-respondents may differ from each other in terms of characteristics relevant to the research. In order to increase the response rate, the aim of the research was explained clearly in the cover letter, which asked for the respondents' contribution (cover letter is provided in Appendix 2). As respondents are generally more likely to respond if they feel that their answers are kept confidential (Mangione, 1995) they were promised confidentiality. A pre-paid envelope was provided to the respondents and follow-up reminder calls were conducted.

4.4.3 Individual Question Content / Questionnaire Items

Factual questions are used to obtain objective information from the respondents regarding their backgrounds, environments, habits, and the like. Although they are assumed to be easy to design, there are concerns regarding the accuracy of the responses. The respondents may not know the information or they may not recall the information or they may not understand the question and sometimes they are reluctant to cooperate (Frankfort-Nachmias and Nachmias, 1996). Following the recommendation of Frankfort-Nachmias and Nachmias (1996), several steps were taken to increase the accuracy, including asking more than one question about the matter.

The respondents were also asked a number of questions where subjective experience was involved, such as matters relating to beliefs, attitudes, feelings and opinions. Attitudes can be described by their content, direction and intensity and the reason why the attitudes are investigated is because of the researcher’s aim to account for the respondents’ general understanding concerning the financial environment that they operate in. Attitudes cannot be measured by a single question and in order to determine both the strength of a respondent’s attitude and the conditions under which their attitude may change, several attitude statements are used. Each section is briefly discussed below.
Section one of the questionnaire has seven questions; these questions are mainly concerned with the issues of identifying the nature of the bank or building society accounts that the respondents use and finding out their past behaviour towards risk-taking.

Section two of the questionnaire has 19 questions. Besides attitudes towards risk-taking, the ability of the depositors to exert market discipline by means of fulfilling the pre-conditions of market discipline is explored in this section. In addition to those issues, a number of factual questions, which are designed to understand the depositors' awareness of the financial environment they operate in, are asked in this section.

In the third section of the questionnaire, background information regarding the respondents was collected. This section is kept very brief on purpose and the details that are not planned for use in the analysis are not asked.

The last section of the questionnaire is designed to allow for any additional comments that the respondents are willing to provide and a space is provided for writing the names and addresses of the respondents who would like to have feedback concerning the findings of the study.

4.4.4 Form of Response

Besides the content of the questions, the structure of the questions and the format of the response categories are of vital importance when constructing the questionnaire (Frankfort-Nachmias and Nachmias, 1996). There are two options for the form of response: closed-ended questions and open-ended questions (Mangione, 1995). In the closed-ended questions the respondents are asked to choose between the fixed response categories. On the other hand, open-ended questions provide freedom for the respondents to give any answer they wish (Hague, 1993). Open-ended questions can also be looked at under two sub-headings; those seeking short, specific answers and those seeking longer, narrative responses. In the questionnaire design both types of open-ended questions were used. Short, specific answer types were naturally
preferred for questions about basic characteristics, such as age. On the other hand, although the use of longer, narrative types of questions are often thought not to work very well in self-administered questionnaires, they were used to a limited extent in this survey in order to gain deeper understanding about respondents’ attitudes towards risk and their ability to exert market discipline. Churchill (1995) states that open-ended questions are often used to begin a questionnaire, as this can be useful in providing a frame of reference for respondents and help prepare them for further questions. Following Churchill’s recommendation, open-ended questions were duly used for the initial questions in this survey.

Nevertheless, most of the questions in the survey were closed-ended. Alternative responses were presented to the respondent who was invited to choose the answer that best matched his or her situation. The main types of closed-ended question are multiple-choice questions, dichotomous questions and scales (Churchill, 1995). Dichotomous questions with two possible responses were used in the questionnaire, as were questions using Likert scales. These required the respondent to indicate a degree of agreement or disagreement with a statement along a scale extending from “strongly agree” to “strongly disagree” (Churchill, 1995; Sekaran, 2000). Following the discussion of Diamantopoulos and Schlegelmilch (1997), the researcher also adopted the “pragmatic” view followed by most social researchers and treated those scales as if they were intervallic.

The main advantages of the closed-ended questions are firstly that they are quick to answer and secondly they are straightforward to analyse (Sekaran, 2000; Frankfort-Nachmias and Nachmias, 1996). On the other hand, Frankfort-Nachmias and Nachmias (1996) suggest that multiple choice questions may introduce bias by forcing the respondent to choose from given alternatives that might not have otherwise come to mind. However, Tull and Hawkins (1993) argue that multiple choice questions are necessary to persuade the respondents to fill in the questionnaires in self-administered surveys. The options provided in the response categories were derived from the theoretical literature and every effort was made to provide an exhaustive list. Also, a few contingency questions (which is a type of closed-ended question applicable to a subgroup of respondents) were included.
(Frankfort-Nachmias and Nachmias, 1996). The subgroup was identified by a preceding filter question asked to all respondents, and those responding appropriately were directed to the contingency question. Finally, a matrix question, which is a method of organising a large set of rating questions that have the same answer categories, was used as the third question of the first section of the questionnaire.

4.4.5 Question Wording

The essential objective in formulating a question is to create one that provides a standardised stimulus to all respondents and provides a systematic way of recording their answers (Mangione, 1995). Several steps were taken to achieve this objective following the suggestions of Mangione (1995) and Churchill (1995). Firstly, in order to make people read the questions completely, the questions were worded simply and unambiguously and (reflecting the results of the pre-tests) a number of questions were split into their component parts to avoid confusion. Secondly, in order to ensure clarity the key terms were defined, and the usage of expert jargon was avoided, as the respondents would be in the main lay people who could not be expected to be familiar with such terminology. The researcher took care to avoid double negative constructions so as not to confuse respondents. Hypothetical questions are generally thought difficult to answer and in order to express what the question means, a detailed explanation is provided to the respondents. Every effort was made to avoid ‘double-barrelled questions’ - that is to say, multiple questions in the form of a single question. Mutually exclusive response categories were employed to avoid any possibility of overlap in the alternative responses. In addition, the researcher refrained from using loaded questions, which might have forced respondents to answer in one way or another. Following the suggestion of Oppenheim (1992), an introductory sentence was used in one case to make respondents better aware of the nature of the question.

4.4.6 Sequence of Questions

Converse and Presser (1986) state that there are almost no experimentally-based general rules governing the ordering of questions and Oppenheim (1992) states that
the final approach and sequence must be decided by the researcher’s own survey objectives and by the results of the pilot work. However, Mangione (1995) notes that in mail surveys respondents can read the entire questionnaire before they begin to reply so the answers are not necessarily influenced by the ordering of the questions.

Two general approaches to question sequencing can be adopted (Sekaran, 2000; Frankfort-Nachmias and Nachmias, 1996; Churchill, 1995); they are the funnel sequence and the inverted funnel sequence. In the funnel sequence each successive question is related to the previous question and has a progressively narrower scope. By contrast, in the inverted funnel sequence, broader questions follow narrower ones. In this study, the order of the questions was mainly determined by the outcomes of the pre-tests, which lead to a funnel sequence. Besides, Frankfort-Nachmias and Nachmias (1996) and Churchill (1995) put emphasis on using simple and interesting questions at the outset to encourage respondents to cooperate. Finally, in view of the evidence that the position of an item in a list has a significant effect on its being chosen, the order of the items in the lists were randomised so as not to cause any systematic bias.

4.4.7 Physical Characteristics of the Questionnaire

After determining the sequence of the questions, the next step is shaping the physical characteristics of the questionnaire. In self-completion and mail questionnaires the layout, printing, choice of paper, spacing and answering directions are vital for improving the response rate (Oppenheim, 1992). Besides, the physical characteristics of the questionnaire can affect the accuracy of the replies that are obtained (Churchill, 1995). Following the suggestions of Mangione (1995), each page of the questionnaire gave a balanced appearance with all margins being equal, while the fonts and characters of the words were arranged so that they did not look squeezed to the respondents. A typestyle that was easily readable was chosen and a number of features, such as boldfacing and italicising, were carefully used. In order to help respondents move through the questionnaire efficiently each question was given a number. Shading was used to help the respondents' eye scan from one question to the other. Pages were printed back to back to avoid making the questionnaire look
unduly weighty and a booklet format was used to achieve a professional look (Churchill (1996) advises such a format when the questionnaire fits into multiple sheets stating that it reinforces an image of quality). Clear instructions were provided regarding where to go next in the questionnaire so that respondents could easily follow the intended sequence.

The first envelope in the survey was addressed to the respondent personally to avoid looking like junk mail and increase the probability of being opened and read (Oppenheim, 1992). A pre-paid envelope, with the researcher’s return address pre-printed on it, was provided and the envelope was selected in line with the suggestion of Mangione (1995) so that the respondent should not have to fold the questionnaire in order to fit it into the envelope.

Oppenheim (1995) recommended that in the open-ended questions where an “other please specify” category is used, it must always be followed by a space or some lines to accommodate the answer and must be piloted. This procedure was applied while shaping the “other please specify” category.

A specific direction to circle a number in the answer category was provided for the respondents. Circling a code number is preferable because the code number can be easily transferred to a computerised storage device (Frankfort-Nachmias and Nachmias, 1996).

4.5 Questionnaire Pre-testing and Piloting for the UK

The final stage of the questionnaire development is the pre-test where mistakes can be detected before the final survey is implemented (Sekaran, 2000; Diamantopoulos et al., 1994). The crucial question is “Will the instrument provide data of sufficient quality and quantity to satisfy the objectives of the research project?” (Hunt et al., 1982). The three aspects that are aimed to be captured by the pre-test of the questionnaire are, firstly, the individual questions, secondly, the overall design and, finally, items about data analysis. Therefore, before piloting the questionnaire, pre-testing was carried out.
4.5.1 Initial Pre-test for the UK

With the help of the pre-test it is first possible to identify specific types of defective questions, including ambiguous questions, repetitious questions, loaded/leading questions, missing/lop-sided alternatives and questions containing difficult/inappropriate vocabulary. Secondly, aspects of the overall design of the questionnaire, such as the length, layout, and format for the questions used, the number of lines to leave for replies, and the sequencing of questions (Hunt et al., 1982), can be tested. And finally, with regard to data analysis, the pre-test can allow coding and tabulating procedures to be piloted with dummy tables prepared to facilitate this process. The results of the open-ended questions may also be used to create new research hypotheses, as advised by Hunt et al. (1982).

Although three methods of administering the pre-test are discussed in the literature (i.e. personal interviews, telephone interviews and mail self reports), the majority of authorities in this area suggest that the first series of pre-tests should be done by personal interviews without taking the final administration into account (Churchill, 1995; Peterson, 1988). Two methods of conducting the pre-test are advised; protocols (respondents think out loud while answering each question) and debriefing (respondent evaluates the questionnaire after completion) (Hunt et al., 1982). Churchill (1995) argues that the amount of information that is gathered is greater when the protocol method is used. However, Diamantopoulos et al. (1994) argue that thinking a loud might influence the decision itself. Both types of methods for conducting the pre-tests were used in this study.

Respondents for the pre-test sample may be constituted from two groups. Under the approach recommended by Churchill (1995), a pre-test sample that is similar to the overall survey population is selected. Under an alternative approach, colleagues of the researcher not directly involved with the design of the questionnaire can be invited to review it before the formal pilot study in order to spot technical errors. Green et al. (1988) and Hunt et al. (1982) advise that if the ultimate questionnaire is to be used with a very unsophisticated target population, it would require a larger
pre-test sample than would one intended for sophisticated audiences. In this research, as the target population is the ordinary household and the subject is technical, the researcher duly sought to ensure a high number of respondents for the pre-test. The questionnaire was first pre-tested within the Loughborough University Business School. Fifty questionnaires were distributed and 26 responses were received. In addition, a total of 14 people from other departments of the University, other research colleagues and people who are working for financial firms commented on the questionnaire.

The following points were raised as a result of the pre-testing.

1. The first question in section one, which sought information concerning the number of banks that the respondents use, was posed in order to find out the degree of diversification. However, it emerged that the question was also capturing information as to why the depositors use multiple banks. So the question was split up into two questions.

2. In the second question of section one, the term “safety of bank” was thought vague by a number of respondents; therefore it was replaced with “financial condition of your bank”.

3. The seventh question in section one seeks details on the amount of the respondent’s saving. This question initially had two answer categories with a wide gap reflecting the deposit insurance limit. However, the test respondents suggested that it would be better to narrow the gap so as not to intimidate the respondents. So the categories were increased to three, with narrower gaps between the amounts.

4. Originally, it was planned to ask for ticks from respondents. However, the experts on the questionnaires recommended the circling of numbers. This not only makes coding the data in the necessary program easier, as noted above, but also helps the respondent as psychologically higher numbers indicate higher agreement and vice versa. So all the response categories (with the exception of the open-ended ones) were converted from boxes to numbers that could be circled.
5. The layout of the questionnaire was found to provide too much information on each page so it was changed and the number of the pages reduced to four resulting in the questions being easier to read.

6. The open-ended question that asks the reason for having multiple accounts was changed to a closed-ended question as the pre-test suggested that this was capable of covering all the possible responses. This procedure was also followed in the question that asks the respondents why they did not check any financial information relating to their bank. The pre-test respondents’ original responses were used to determine the response categories in the expectation that this would increase the response rate to these two questions.

7. The sequence of the questions was also altered as a result of the pre-tests and the question that asks the name of the respondents’ bank was asked earlier than originally planned.

8. It was also discovered that the respondents had not been given enough space to write down their comments in the fourth section, so it was increased.

4.5.2 Pilot Study for the UK

After the results of the pre-test had been evaluated and the necessary changes made, the next step was the mail pilot of the study. While selecting the respondents for the pilot study, the following principles were followed. Firstly, in pilot studies the respondents should be as similar as possible to those intended for the main enquiry (Oppenheim, 1992). Secondly, the pilot sample size must depend on the sophistication of the target population. As the questionnaire is targeted at ordinary members of the public who have savings accounts, we assume they are not very sophisticated. Therefore, 100 respondents were chosen for the pilot study by systematic sampling from the selected sample. Systematic sampling involves selecting every \( k \)th element after a random start (Churchill, 1995).

All the pilot respondents were sent the pack, including the cover letter, questionnaire and the return pre-paid envelope. All questionnaires were sent with a dated,
personalised cover letter printed on University headed paper and signed individually. The cover letter explained the nature of the research, the purpose of the research, the importance of the survey both to the respondents and the researcher, and also included guidance on the completion of the questionnaire (Churchill, 1995). In addition to those features, contact details were provided for respondents who might wish to get in touch with the researcher (Mangione, 1995).

Nine completed questionnaires were returned in two weeks and three came back as undelivered. The effective response rate, i.e. Respondents/Eligible to Respond, in this case was 9.3 percent. In order to increase the response rate, 15 randomly-selected people were called by telephone for the follow-up. Six of these could not be contacted and two confirmed that they did not hold savings accounts. Seven respondents were found eligible; however, five of them said that they were too busy to fill in the questionnaire. Although one said he would respond, he did not do so. Therefore, only one additional questionnaire was received by the help of the follow-up and the response rate rose to 10.3 percent (Figure 4.2).

**Figure 4.2: Summary of Breakdown of Responses to the UK Pilot**

```
<table>
<thead>
<tr>
<th>Pilot N = 100</th>
</tr>
</thead>
<tbody>
<tr>
<td>Usable - no follow-up 9</td>
</tr>
<tr>
<td>Undelivered 3</td>
</tr>
<tr>
<td>Telephone follow-up 15</td>
</tr>
<tr>
<td>Couldn't contact 6</td>
</tr>
<tr>
<td>Non-eligible 2</td>
</tr>
<tr>
<td>Eligible 7</td>
</tr>
<tr>
<td>Usable 1</td>
</tr>
<tr>
<td>Too busy 5</td>
</tr>
<tr>
<td>Not returned 1</td>
</tr>
</tbody>
</table>
```
4.5.3 Efforts to Improve the Response Rate

Dillman (1983) points out that techniques used for improving response rates from heterogeneous populations such as the general public are not very successful. The general public is regarded as the most difficult population. There have been vast numbers of studies into how to improve the response rate in mail surveys; however, the results of such research are not always consistent.

Mangione (1995) suggests that the single most important technique to use to produce high response rates is to send out reminders. He advises multiple reminders over a total mailing period of about 8 to 9 weeks, which incurs additional cost. However, as this study was done on a limited budget, only a telephone follow-up could be used in order to increase the response rate. The telephone follow-up for the mail pilot was carried out two weeks after the initial mailing.

4.6 Main UK Survey

For the main study, 900 questionnaires were sent out (questionnaire for the UK is provided in Appendix 3). In two weeks time 108 completed questionnaires were returned and 36 questionnaires came back as undelivered. In addition to those, 15 blank questionnaires were received stating that the households have no savings account.

As in the pilot study, a telephone follow-up was used to increase the response rate. A follow-up of 150 people was randomly selected from the list of respondents. The respondents had been guaranteed confidentiality but not anonymity, so the questionnaires were initially coded. By the help of the coding, the researcher was able to keep track of the questionnaires that had been returned. This procedure enabled the researcher to identify non-respondents easily. It is argued that seeing numbers on the questionnaire may put off some respondents who are sensitive about being identified; however, the researcher could not afford to waste time or money in contacting people who had already replied to the questionnaire. Mangione (1995) also suggests that in anonymous surveys, sending reminders to a group of
respondents without knowing whether they have replied or not is a waste of postage, supplies, and resources; confuses respondents; and sometimes leads to respondents worrying that their survey got lost in the mail, so they fill out a second survey that the researcher does not want but is unable to identify.

The telephone follow-up for the main study was carried out two weeks after the initial mailing and lasted for ten days. During this exercise 37 of the respondents could not be contacted and 18 confirmed that they do not hold savings accounts. Of the remainder, 95 were found to be eligible; however, 33 of them declared that they were too busy or not interested in filling the questionnaire. In the event, 43 of the respondents contacted did not return the questionnaire, while 18 completed questionnaires were received with the help of the follow-up and the total number of response duly rose to 126. Therefore, the effective response rate, i.e. Respondents/Eligible to respond, was 14.6 percent (Figure 4.3).

Figure 4.3: Summary of Breakdown of Responses to the Main UK Study
'Item non-response' is where specific questions have not been answered or have obviously been answered incorrectly (Churchill, 1995). Mangione (1995) points out the importance of item non-response on the data analysis and argues that item non-response occurs when the item is not relevant to the individual or confusing or when the respondents do not understand what is wanted from them. Other reasons for non-response are respondents forgetting to answer or refusing to answer or being unable to remember the right answer (Diamantopoulos and Schlegelmilch, 1997).

For this study, respondents were given answers to select for the majority of questions and the level of item non-response was very low, which indicates that the questions were well understood and that enough categories were provided to allow respondents to feel that they could convey their positions effectively.

4.7 Translating the Questionnaire for Use in Turkey

In order to apply the questionnaire to the Turkish sample the questionnaire had to be translated into Turkish. When translating a survey instrument, the translation method has to be decided and the translation objective has to be stated explicitly (McKay et al., 1996). In order to achieve these objectives alternative translation methods and objectives were considered.

Direct translation (one-way) and back-translation are the main methods of translating survey instruments. In direct translation, the source language instrument is translated into the target language by a bilingual person. Direct translation can also be handled by a group of bilingual individuals independently who discuss their results and finalise the target language document. On the other hand, back-translation is more complicated and has three main steps. First, the survey instrument is translated from the source language into the target language by a bilingual translator and then another bilingual translator translates the target language instrument into the source language. To conclude, both versions are evaluated and the target language instrument is modified accordingly (Sperber et al., 1994).
There are mainly three objectives that are sought while translating questionnaires. Those are literal translation, conceptual translation and culturally equivalent translation. While the dictionary equivalents of the terms are used in literal translation, conceptual translation depends on the use of terms or phrases in the target language that capture the implied associations or connotative meaning of the text used in the source language instrument. On the other hand, culturally equivalent translation extends the conceptual equivalence of words and phrases in the source instrument to use equivalent patterns of thought and behaviour in the social world of the target language speakers (McKay et al., 1996).

In this study, the back-translation method was used and as the translation objective conceptual translation was adopted. Two bilingual people worked on the questionnaire. Firstly, the document was translated from English to Turkish, then the other person translated this version into English and the results were evaluated and agreed on in the final document.

4.8 Sampling, Questionnaire Pre-testing and Piloting for Turkey

The sample selection (size and location) had been arranged in line with the UK survey; the names, addresses and the telephone numbers of 900 respondents from the Ankara (capital of Turkey) area were obtained from telephone directories. Ankara was split up geographically into five local municipalities. Therefore, this discrimination was used to identify a suitable sample that would generate the results that would be applicable across Turkey as a whole. 180 respondents from each of these five groups were selected.

Following the translation of the survey the pre-test was conducted.

4.8.1 Initial Pre-test for Turkey

The pre-test of the Turkish questionnaire was carried out in December 2000 among 19 colleagues in the Central Bank of Turkey and 26 teaching staff in the Middle East Technical University. As the overall design and the data analysis had already been
pre-tested in the UK study, the emphasis now was mainly on testing the individual questions.

The following points were raised as a result of the pre-testing:

1. In the first question in section one, the term “savings account” was ambiguous for a number of respondents; therefore, an explanation was added stating that both call and time deposits were covered by the question.

2. In the twelfth question in section two, the “failing bank” concept seemed vague to a number of respondents, therefore an explanation was added.

3. In the part two of twelfth question in section two, the space available to respondents was increased, as there were many bank failures that they recalled.

4. In question 29 of the third section, the employment groups were reformulated in line with the Government Statistics Office categorisation.

4.8.2 Pilot Study for Turkey

The pilot study took place in December 2000 when 100 respondents were chosen for the pilot study by a systematic sampling method. All the pilot respondents were sent the pack including the cover letter, questionnaire and the return pre-paid envelope. Within two weeks 18 completed questionnaires were returned and one came back as undelivered. The effective response rate was 18.2 percent. After the telephone follow-up for 15 people who were randomly selected, two further completed questionnaires were received, which increased the response rate to 20.2 percent (Figure 4.4).
4.9 Main Turkish Survey

The main Turkish mail survey was carried out in January 2001. 800 questionnaire packs were prepared and sent out (questionnaire for Turkey is provided in Appendix 4). Within two weeks, 156 completed questionnaires were returned and 23 questionnaires came back as undelivered. In addition to those, 10 blank questionnaires were received stating that the recipients had no savings account. To improve the response rate, 150 people were randomly selected to be called and reminded about the questionnaire. However, 44 of these could not be contacted, while 21 declared that they had no savings account. Out of 85 respondents who were eligible to respond, 19 declared that they were either not interested or too busy to reply to the questionnaire. As a result of the telephone follow-up, a further 29 completed questionnaires were returned. The total number of responses rose to 185. The effective response rate, i.e. Respondents/Eligible to respond was, therefore, 24.1
percent (Figure 4.5). As with the UK study the "item non-response rate" for the Turkish study was reassuringly low.

Figure 4.5: Summary of Breakdown of Responses to the Main Turkish Study

4.10 Reliability and Validity of the Questionnaire

In order to reach meaningful results, the instrument that is used to measure attitudes and behaviour must be reliable and valid. While research reliability is concerned with the reproducibility of the questionnaire, validity is about how well the survey item measures what it sets out to measure (Litwin, 1995).
4.10.1 Reliability

Reliability refers to the extent to which a measuring instrument has variable errors, i.e. errors that appear inconsistently from observation to observation during any one measurement attempt or that vary each time a given unit is measured by the same instrument (Frankfort-Nachmias and Nachmias, 1996).

There are two major ways to check reliability; stability and equivalence. Checking the relationship between two applications of the measure at different times to assess its stability is known as the test-retest method. Higher correlation indicates greater reliability.

Assessment of equivalence checks of reliability is done by examining the relationship between the items. Multiple-item scale measures are assessed to establish whether the items are highly correlated and whether the overall measure is therefore reliable (Litwin, 1995).

4.10.2 Reliability Test

Internal consistency reliability is an indicator of how well the different items measure the same issue. It is applied to a group of items that are thought to measure different aspects of the same concept and is measured by calculating a statistic known as Cronbach’s coefficient alpha. It is a statistical device that reflects the homogeneity of the scale, which means that it is a reflection of how well the different items complement each other in their measurement of different aspects of the same variable or quality (Sekaran, 2000; Litwin, 1995).

Cronbach’s Alpha was run on the data in the study and the results are shown in Table 4.2. The descriptions of the questions in Table 4.2 are abbreviated from those contained in the questionnaire (refer to Appendix 3 for the full questions).
The results of the Cronbach’s Alpha tests indicate that the measures used in the study and the individual questions were reliable. Nunnally (1978) suggests a value of 0.70 as a lower boundary for alpha; however, scales published with lower alphas are not unusual. DeVellis (1991) argues that values below 0.60 are unacceptable, those between 0.70 and 0.80 are respectable, while those between 0.80 and 0.90 are very good. Most of the results generated here are above 0.70 and were, therefore, found reliable and used in the analysis.
4.10.3 Validity

Reliability assessments are necessary, but they are not sufficient when examining the psychometric properties of a survey instrument (Litwin, 1995). After testing the reliability of the questionnaire, the next stage is to examine its validity. Validity indicates whether the question, item or scale measures what it is supposed to measure.

Content validity is a subjective measure of how appropriate the items seem to a set of reviewers who have some knowledge of the subject matter. It is a matter of judgment and checked during the course of the research (Litwin, 1995).

Thoroughness or comprehensiveness of the measurement device is the major concept of content validity. In this regard representativeness is vital. In this research a close-ended questionnaire was used as a survey tool. The aim was to test a number of hypotheses that have been identified in a theoretical framework. The content of the questionnaire has been derived from the theoretical discussion and hypotheses generated from that discussion.

Building the questionnaire around the factors in this way strengthens content validity. The relationship between individual questions and the factors they seek to describe or capture is examined below.

Ability to Exert Market Discipline

Question 8: I felt competent to assess the financial condition of my bank when I opened my account.

Respondents that feel themselves able to assess the financial condition of banks when they open their account are highly likely to pay attention to financial condition when selecting their banks and are therefore probably a source of market discipline.
Question 9: I am confident that I have the information necessary to monitor the financial condition of my bank.

In order for depositors to exert market discipline it is vital that they have access to such information. Therefore, respondents who have access to the information about the financial condition of their banks are likely to use this information to monitor their banks’ financial standing.

Question 10: I am confident that I have the skills needed to monitor the financial condition of my bank.

Financial matters are said to be complex for a lot of people. Therefore, feeling confident is an important indicator that respondents have some understanding about financial issues and suggests that they probably will have an interest in paying attention to their banks’ financial standing.

Question 11: I monitor the financial condition of my bank.

This question relates very directly to the depositor’s ability to exert market discipline.

Question 12: I shop for the best terms before opening accounts.

Respondents that shop for the best terms are highly likely to pay attention to the security of their institutions as well as the rate of return on offer.

Attitudes Towards Risk-taking

Question 19: I am willing to take financial risks.

This question relates very directly to the depositor’s attitude towards risk-taking.
Question 20: It is a good idea to split my savings among different banks to reduce the risk of losing all my deposits if a bank collapsed. Respondents who are risk-averse are highly likely to diversify their savings and probably have multiple accounts in order to be protected against the risk of losing all or some of their savings depending on the deposit protection available in the event of a bank failure.

Question 21: It is very important for me to be confident that my savings are not at risk.
This question deals with the depositors' attitude towards risk-taking. It is assumed that depositors who have concerns about the risk-taking of the institutions play an important role in market discipline.

The following questions were also asked to learn about attitudes towards risk. As discussed in the literature, runs and system-wide panics represent the extreme form of market discipline.

Question 24: I would take action if I were concerned about the financial condition of the bank where I hold my savings.
It is expected that respondents who are risk-averse will take action when they become aware of any financial news that calls into question the health of their financial institutions.

Question 25: I would decrease the amount of savings if I suspected any deterioration in the financial condition of my bank.
Respondents who have any suspicion about the safety of their depository institution are likely to decrease the amount of their savings. This question accordingly seeks to identify their ability to exert market discipline.
Question 26: I would close my account immediately on a rumour about my bank being in financial difficulty.

Respondents who are very risk-averse are expected to act even on rumours.

4.11 Chapter Summary

This chapter has provided detailed information on the methodology employed to undertake the survey analysis. A mail survey was undertaken and a questionnaire developed based on the literature. This was then carefully pre-tested and piloted. Following the administration of the UK mail survey, the Turkish survey was conducted. The study sizes were 1,000 and 900 households respectively, and response rates were 14.6 percent and 24.1 percent respectively. As a result, 126 and 185 usable questionnaires were available for further analysis, the findings of which are presented in the next chapter.
CHAPTER FIVE

THE RESULTS OF THE SURVEYS ON DEPOSITOR BEHAVIOUR IN THE UK AND TURKEY

5.1 Introduction

This chapter explains the analytical techniques used and the findings of the surveys, firstly for the UK then for Turkey, and lastly draws comparison between the UK and Turkish survey results. For both the UK and Turkish surveys, a descriptive analysis is conducted and hypothesis-testing procedures are followed. Then, the conclusions are drawn for both country studies. In the final analysis, the hypothesis-testing for country comparisons is conducted and the main conclusions are drawn.

The selection of testing techniques needs to reflect both the hypotheses being addressed and the nature of the data collected. It is important that the techniques of analysis have been identified before the questionnaires are actually sent out. In this way, the researcher could ensure that the data collected is appropriate for the statistical techniques to be used in the analysis and that the information generated through these tests is capable of addressing the hypotheses.

Having examined the data for reliability and validity, an approach was then devised to structure the investigation of that data. This approach involves two distinct phases; descriptive analysis and statistical significance testing.

Diamantopoulos and Schlegelmilch (1997) suggest that data description must be done before starting hypothesis-testing. They also point out that descriptive analysis provides preliminary insights regarding the responses obtained and provides summary measures of typical or average responses as well as the extent of variation.
in responses for a given variable. Besides, they argue that descriptive analysis provides an early opportunity for checking whether the distributional assumptions of subsequent statistical test are likely to be satisfied. Therefore, descriptive analysis was carried out for both the UK and Turkish surveys.

The second step was to use statistical significance testing to identify if the observed patterns in the data were statistically significant. To undertake this objective a number of analyses were used. An important consideration in determining whether a parametric or a nonparametric method is appropriate is the scale of measurement used to generate data. All data are generated by one of four scales of measurement: nominal, ordinal, interval, and ratio and parametric methods require the use of interval or ratio-scaled data (Anderson et al. 1999). The level of measurement in this study could not go beyond the ordinal level in many cases so the analysis was selected from among non-parametric techniques.

5.2 Descriptive Analysis of the UK Survey

All the frequencies and cross-tab results could not to be reproduced here because of the considerable amount of size. However, these results were examined and the potentially important relationships within them highlighted. The descriptive analysis provided an initial analysis of the data on which the statistical significance testing then builds. Selected frequencies were reproduced here to generate the frame of the data collected.

The respondents were asked how many accounts they held in order to find out if they were using multiple accounts and the incentives behind this. The researcher was mainly interested to see if they were diversifying their funds because of risk-related concerns. According to Garten (1988), a crucial prerequisite that needs to be met in order for depositor discipline to work effectively is the existence of a group of depositors for whom risk is a primary concern in choosing a depository. Therefore, depositors’ risk perceptions were evaluated from different angles.
It was found that 41.3 percent of the sample were holding their savings in one bank whereas 32.5 percent, 9.5 percent, 7.9 percent, 4.8 percent, 2.4 percent, and 1.6 percent of the sample held their savings in two, three, four, five, six and seven banks, respectively (Graph 5.1).

Reasons behind having multiple accounts were investigated for the 74 respondents who had multiple accounts and it was found that convenience was the major reason (34.7 percent), followed by interest rate (26.7 percent). Spreading risk was only third (21.3 percent) in front of the different product offer (17.3 percent) (Graph 5.2). Therefore, the desire to spread risk was not the major reason for having multiple accounts and, only a concern for a limited number of respondents.
In order to explore the difference between the attitudes of respondents who had their main savings in different banks by hypothesis-testing, institutions were divided into three categories, namely (i) the banks belonging to the Major British Banking Group (MBBG) (ii) other banks and (iii) building societies (Graph 5.3). The respondents were asked to answer the questions for their main account where they held most of their savings. In the sample, 70 percent of the respondents were MBBG depositors, 20 percent were building society depositors and 10 percent were the depositors of other banks. According to the British Bankers Association data for December 2001, 61 percent of the population had an account with MBBG, 21 percent had an account with building societies, 7 percent had an account with other banks and 11 percent had their savings in National Savings (BBA, 2001). Therefore, I conclude that the UK sample is representative.

Another important aspect of the questionnaire was to understand the depositors' perceptions of the institutions to which they were entrusting their money. They were asked if they checked any information regarding the financial condition of their bank where they hold most of their savings. According to the findings, 91.3 percent of the respondents said they did not check, while only 8.7 percent claimed that they did. To bring the discussion one step further, the researcher looked for the reasons behind not attempting to check any information while making such a decision. For this question the response categories were derived from the pilot study where the same question was asked as an open-ended question. Lending their savings to a well-known name was the major reason for not checking any information (30.4 percent). 28.6 percent of the respondents claimed that being an existing customer of a bank was the reason for not further checking information. Faith in UK regulation was the reason given by
11.6 percent. The percentage of the respondents that relied on big banks being safe was 10.7 percent, while 8.9 percent said that their bank's good reputation was their reason. 4.8 percent of the respondents were attracted by high interest-paying banks and 4.0 percent of the respondents admitted that they do not know how to check the financial condition of a bank (Graph 5.4).

Consumers are advised by the FSA (and also by the former Deposit Protection Board) to check for the authorisation of the banks and building societies before they invest their money. However, only 9.8 percent claimed they did so whereas 90.2 percent of the depositors said that they did not check the authorisation of their banks and building societies before opening the account.

Respondents were divided into three groups according to the amount of funds that they hold in their account. 59 percent is holding less than £9,999, while 18 percent were holding between GBP 10,000 - GBP 19,999 and only 23 percent were holding above GBP 20,000 (Graph 5.5).
According to the results, the majority of the respondents had accounts within the insurance limits. This finding is in line with the 1996/1997 Family Resources Survey that indicates that 57 percent of families have less than GBP 1,500 of savings.

Respondents' awareness about compensation arrangements and bank failures has vital importance for the study and was evaluated as follows. 64.5 percent of the respondents stated that they had heard or read about banks that had failed in the UK. On the other hand, only 19 percent of the respondents claimed that they had heard or read about the Deposit Protection Scheme in the UK and only 10.3 percent knew the insurance limit correctly. Besides, the percentage of respondents who knew about the element of co-insurance within the compensation arrangements was only 4 percent, and the terms of the insurance offered only influenced 3.2 percent of the sample.

Another attempt to find out the respondents' attitude to financial risk was to ask directly if they were willing to take financial risk and the results were presented in Graph 5.6. According to the results, 22.5 percent of respondents were in favour of taking financial risk while 51.6 percent were against it and 25.8 percent said that they felt neutral about the subject. Although half of the respondents were against taking financial risk, the 22.5 percent were willing to take financial risk and the 25.8 percent being neutral about the subject raises questions about the ability of depositors to be a source of market discipline.

![Graph 5.6: I am willing to take financial risk (UK)](image-url)
Only 6.4 percent of the respondents claimed that safety of the principal was not important for them. On the other hand, 45.2 percent agreed that it is a good idea to split savings among different banks to reduce the risk of losing all or some of their deposits if a bank collapsed.

The following Graphs 5.7, 5.8 and 5.9 show that the respondents had a clear tendency to run in the case of any disturbance in the financial markets.

Graph 5.7: I would take action if I were concerned about financial condition of my bank (UK)

Graph 5.8: I would decrease the amount of my savings if I suspect any deterioration in the financial condition of my bank (UK)

Graph 5.9: I would close the account immediately on a rumour about my bank being in financial difficulty (UK)
In order to explore the respondents' attitude towards being bailed out, they were asked what would they expect if their bank failed. Graph 5.10 shows that 26.2 percent expected to be bailed out partially, 32.5 percent expected to receive just their legal entitlement and 40.8 percent expected to be bailed out in full.

![Graph 5.10: Expectancy towards to be bailed out](UK)

A number of demographic issues have been looked at in order to classify the respondents. According to the results, 47.6 percent of the respondents were male and 52.4 percent were female. 20.6 percent of the respondents' had professional qualifications. 9.5 percent had postgraduate qualifications, 25.4 percent had first degree and 19.8 percent had A level or equivalent. On the other hand, 15.9 percent had O level or equivalent degree. 7.9 percent had no qualification. The ages of the respondents varied from 23 to 81, where the mean is 45.8. 43.8 percent of the respondents were full-time employed, 14.3 percent of the respondents were part-time employed, 4.8 percent are not in paid employment and 12.7 percent were retired.

5.3 Hypothesis-Testing in the UK Survey

The Mann-Whitney-Wilcoxon Test (MWW) is a non-parametric test for identifying the differences between two populations based on the analysis of two independent samples. This test was used mainly because it does not require any assumptions about the form of the probability distribution from which the measurements come and it can be used with nominal data. However, when I reject the hypothesis that the populations are identical by using the MWW test, I cannot
state how they differ. The value of the standardised test statistic \( z \) provides the basis for deciding whether to reject the null hypothesis. At 0.05 level of significance, to reject the null hypothesis, \( z \) must be less than \(-1.96\) or greater than \(+1.96\) (Anderson et al. 1999).

The MWW test is used to test the below-mentioned hypotheses:

(1) **H\(_0\):** There is no difference in the importance attached to the financial strength of the bank when opening an account among the British depositors who have knowledge about compensation schemes and those who have not.

**H\(_1\):** There is a difference in the importance attached to the financial strength of the bank when opening an account among the British depositors who have knowledge about compensation schemes and those who have not.

It can be seen from Table 5.1 that \( z = -2.431 \), therefore I reject the null hypothesis that the importance of financial strength of a bank when opening an account is the same for both groups. Mean ranks indicate that knowledge about the compensation arrangements had an adverse effect by means of depositors attaching less importance to their institutions' financial condition.

**Table 5.1: The MWW Test of Hypothesis 1 (UK)**

<table>
<thead>
<tr>
<th>Importance of Financial Strength</th>
<th>Mean Rank</th>
<th>N</th>
<th>Z</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Know about deposit insurance</td>
<td>46.39</td>
<td>23</td>
<td>-2.431</td>
<td>0.015</td>
</tr>
<tr>
<td>Do not know about deposit insurance</td>
<td>65.59</td>
<td>100</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(2) **H\(_0\):** There is no difference in the tendency to diversify savings among the British depositors that have knowledge about compensation schemes and those who have not.
H1: There is a difference in the tendency to diversify savings among the British depositors that have knowledge about compensation schemes and those who have not.

It can be seen from the Table 5.2 that \( z = -2.073 \); I can therefore reject the null hypothesis that the tendency to diversify savings among the British depositors who have knowledge about compensation schemes and those who have not are the same. The findings indicate that British depositors who know about compensation arrangements diversify their savings.

<table>
<thead>
<tr>
<th>Tendency to Diversify</th>
<th>Mean Rank</th>
<th>N</th>
<th>Z</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Know about deposit insurance</td>
<td>76.77</td>
<td>24</td>
<td>-2.073</td>
<td>0.038</td>
</tr>
<tr>
<td>Do not know about deposit insurance</td>
<td>60.38</td>
<td>102</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 5.2: The MWW Test of Hypothesis 2 (UK)

(3) Ho: There is no difference in the tendency to monitor the financial condition of their bank among the British depositors who have knowledge about bank failures and those who have not.

H1: There is a difference in the tendency to monitor the financial condition of their bank among the British depositors who have knowledge about bank failures and those who have not.

Since \( z = -0.646 \), I can not reject the null hypothesis that there is no difference in terms of monitoring the financial condition of their banks among the British depositors who have knowledge about bank failures and those who have not (Table 5.3).

<table>
<thead>
<tr>
<th>Monitoring financial condition</th>
<th>Mean Rank</th>
<th>N</th>
<th>Z</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Know about bank failures</td>
<td>63.97</td>
<td>80</td>
<td>-0.646</td>
<td>0.518</td>
</tr>
<tr>
<td>Do not know about bank failures</td>
<td>59.82</td>
<td>44</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 5.3: The MWW Test of Hypothesis 3 (UK)
(4) **Ho:** There is no difference in the propensity to 'run' among the British depositors who have knowledge about bank failures and those who have not.

**H1:** There is a difference in the propensity to 'run' among the British depositors who have knowledge about bank failures and those who have no.

This hypothesis was tested by using question numbers 24, 25, 26 and 13. As can be seen from Table 5.4, the value of standardised test statistic $z$ are -0.691, -0.405 and -1.027, respectively, therefore I cannot reject the null hypothesis that British depositors who have knowledge about bank failures and who have not are the same in terms of propensity to run.

**Table 5.4: The MWW Tests of Hypothesis 4 (UK)**

<table>
<thead>
<tr>
<th></th>
<th>Mean Rank</th>
<th>N</th>
<th>Z</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Take Action</strong></td>
<td>Know about bank failures</td>
<td>63.96</td>
<td>80</td>
<td>-0.691</td>
</tr>
<tr>
<td></td>
<td>Do not know about bank failures</td>
<td>59.84</td>
<td>44</td>
<td></td>
</tr>
<tr>
<td><strong>Decrease Savings</strong></td>
<td>Know about bank failures</td>
<td>63.39</td>
<td>80</td>
<td>-0.405</td>
</tr>
<tr>
<td></td>
<td>Do not know about bank failures</td>
<td>60.89</td>
<td>44</td>
<td></td>
</tr>
<tr>
<td><strong>Close the Account</strong></td>
<td>Know about bank failures</td>
<td>60.16</td>
<td>80</td>
<td>-1.027</td>
</tr>
<tr>
<td></td>
<td>Do not know about bank failures</td>
<td>66.76</td>
<td>44</td>
<td></td>
</tr>
</tbody>
</table>
The Kruskal-Wallis test was used to compare an ordinal variable across three or more independent groups. This test does not require the assumptions of normality and equal variances that are required by the parametric analysis of variance procedure. According to this test, under the null hypothesis in which the populations are identical, the sampling distribution of \( W \) can be approximated by a chi-square distribution with \( k-1 \) degrees of freedom. This approximation is generally acceptable if each sample size is greater than or equal to five.

The following two hypotheses were tested using the Kruskal-Wallis test.

(5) Ho: There is no difference in the propensity to 'run' among the British depositors who have accounts with different types of institutions.

H1: There is a difference in the propensity to 'run' among the British depositors who have accounts with different types of institutions.

This hypothesis was tested by three consecutive tests using the responses from questions 24, 25, 26 and 2. The classification of the institutions is as follows: Major British Banking Group banks, other banks and building societies.

The statistical tests that are produced in Table 5.5 (\( \chi^2 = 3.051, \text{df}=2, p=0.217 \), in Table 5.6 (\( \chi^2 = 3.424, \text{df}=2, p=0.181 \)) and in Table 5.7 (\( \chi^2 = 1.314, \text{df}=2, p=0.518 \)) show that the results are not significant at the 5 percent level. The chi-square distribution table shows that with \( k-1=2 \) degrees of freedom and \( \alpha=0.05 \) in the upper tail of the distribution, the critical chi-square value is \( \chi^2 = 5.99147 \). Since the \( \chi^2 \) of the tests are smaller than the critical chi-square value, I cannot reject the null hypothesis that there is no difference in terms of propensity to run among the British depositors who have accounts with different types of institutions.

**Table 5.5: The Kruskal-Wallis Test of Hypothesis 5-a (UK)**

<table>
<thead>
<tr>
<th>Type of institution</th>
<th>Mean Ranks</th>
<th>Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>MBBG</td>
<td>62.74</td>
<td>85</td>
</tr>
<tr>
<td>Other banks</td>
<td>70.63</td>
<td>12</td>
</tr>
<tr>
<td>Building Society</td>
<td>52.92</td>
<td>25</td>
</tr>
</tbody>
</table>
Table 5.6: The Kruskal-Wallis of Test Hypothesis 5-b (UK)

<table>
<thead>
<tr>
<th>Type of institution</th>
<th>Mean Ranks</th>
<th>Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>MBBG</td>
<td>64.86</td>
<td>85</td>
</tr>
<tr>
<td>Other banks</td>
<td>49.00</td>
<td>12</td>
</tr>
<tr>
<td>Building Society</td>
<td>56.06</td>
<td>25</td>
</tr>
</tbody>
</table>

Table 5.7: The Kruskal-Wallis Test of Hypothesis 5-c (UK)

<table>
<thead>
<tr>
<th>Type of institution</th>
<th>Mean Ranks</th>
<th>Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>MBBG</td>
<td>63.12</td>
<td>85</td>
</tr>
<tr>
<td>Other banks</td>
<td>64.33</td>
<td>12</td>
</tr>
<tr>
<td>Building Society</td>
<td>54.64</td>
<td>25</td>
</tr>
</tbody>
</table>

(6) $H_0$: There is no difference in the expectation of being bailed out of British depositors who have accounts with different types of institutions.

$H_1$: There is a difference in the expectation of being bailed out of British depositors who have accounts with different types of institutions.

The results are highly significant ($\chi^2 = 14.679$, df=2, $p=0.001$) and I can therefore reject the null hypothesis that there is no difference in the expectation of being bailing out between British depositors who have accounts with different types of institutions. Indeed, looking at the mean ranks, MBBG depositors most expect to be bailed out; the other bank depositors expect this least; the rankings of building society depositors are in between (Table 5.8).

Table 5.8: The Kruskal-Wallis Test of Hypothesis 6 (UK)

<table>
<thead>
<tr>
<th>Type of institution</th>
<th>Mean Ranks</th>
<th>Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>MBBG</td>
<td>68.14</td>
<td>85</td>
</tr>
<tr>
<td>Other banks</td>
<td>35.71</td>
<td>12</td>
</tr>
<tr>
<td>Building Society</td>
<td>48.38</td>
<td>24</td>
</tr>
</tbody>
</table>
In order to compare two groups on a variable, which is measured on a nominal scale, the **two-sample chi-square test** was used. The null hypothesis tested by the two-sample chi-square test is that no difference exists between the two groups with respect to the relative frequency with which group members fall into the various categories of the variable of interest. The observed frequencies have to depart significantly from the expected frequencies to conclude that the two groups differ along the variable of interest (Diamantopoulos and Schlegelmilch, 1997). As this test requires an expected frequency of 5 for each category, this condition was checked and when it is violated the **Fisher’s exact test** was applied.

(7) Ho: There is no difference in terms of checking financial information before investing among the British depositors who have knowledge about bank failures and those who have not.

H1: There is a difference in terms of checking financial information before investing among the British depositors who have knowledge about bank failures and those who have not.

The Pearson chi-square statistics comes to 1.916, with an observed probability of 0.166. Since the latter is not smaller than 10 percent (p<0.10), 5 percent (p<0.05), or 1 percent (p<0.01), which are the conventional cut-off points for rejecting the null hypothesis, I can therefore conclude that there is no statistically significant difference between British depositors who have knowledge about bank failures and those who have not, in terms of their attitude towards checking financial information before investing. However, as the requirement associated with minimum expected frequencies is violated for one cell, the Fisher’s exact test was applied and the results are still found to be not significant (p=0.195).

In order to test the hypothesis concerning a population proportion, the **z-test for a proportion** was used. This test was applied because each group has more than 30 cases and the test uses the normal approximation to the binomial to calculate a probability value. The following hypotheses were tested using the z-test for a proportion. In order to apply the test, firstly three adjacent categories (namely:
strongly disagree, disagree, neutral) and then two categories (namely: agree and strongly agree) were combined.

(8) **Ho:** British depositors who felt competent to assess the financial condition of their banks when they opened their account are equal in number to those who did not feel competent.

**H1:** British depositors who felt competent to assess the financial condition of their banks when they opened their account are not equal in number to those who did not feel competent.

According to the findings, I can reject the null hypothesis that $\pi=0.50$ as the test is significant ($p=0.001$). Looking to the observed proportions, I can conclude that the British depositors who did not feel competent to assess the financial condition of their bank when they opened their account are greater than those who did feel competent (Table 5.9).

<table>
<thead>
<tr>
<th>Competent to Assess the Financial Condition</th>
<th>Observed Prop.</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group 1</td>
<td>0.66</td>
<td>83</td>
</tr>
<tr>
<td>Group 2</td>
<td>0.34</td>
<td>43</td>
</tr>
</tbody>
</table>

(9) **Ho:** British depositors who have the information related to the financial condition of their banks are equal in number to those who do not.

**H1:** British depositors who have the information related to the financial condition of their banks are not equal in number to those who do not.

According to the findings, I can reject the null hypothesis that $\pi=0.50$ as the test is highly significant ($p=0.000$). Looking to the observed proportions, I can conclude that the British depositors who do not have the information related to the financial condition of their banks are greater than the British depositors who are (Table 5.10).
Table 5.10: Z Test for a Proportion of Hypothesis 9 (UK)

<table>
<thead>
<tr>
<th>Having Information to Monitor</th>
<th>Observed Prop.</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group 1</td>
<td>0.73</td>
<td>92</td>
</tr>
<tr>
<td>Group 2</td>
<td>0.27</td>
<td>34</td>
</tr>
</tbody>
</table>

(10) Ho: British depositors who have the necessary skills to be able to monitor the financial condition of their banks are equal in number to British depositors who do not.

H1: British depositors who have the necessary skills to be able to monitor the financial condition of their banks are not equal in number to British depositors who do not.

According to the findings, I can reject the null hypothesis that $\pi=0.50$ as the test is significant ($p=0.001$). Looking to the observed proportions, I can conclude that the British depositors who do not have the necessary skills to be able to monitor the financial condition of their banks are greater than the British depositors who have (Table 5.11).

Table 5.11: Z Test for a Proportion of Hypothesis 10 (UK)

<table>
<thead>
<tr>
<th>Having Skills to be Able to Monitor</th>
<th>Observed Prop.</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group 1</td>
<td>0.66</td>
<td>83</td>
</tr>
<tr>
<td>Group 2</td>
<td>0.34</td>
<td>43</td>
</tr>
</tbody>
</table>

(11) Ho: British depositors who are monitoring the financial condition of their banks are equal in number to British depositors who are not.

H1: British depositors who are monitoring the financial condition of their banks are not equal in number to British depositors who are not.

According to the findings, I can reject the null hypothesis that $\pi=0.50$ as the test is highly significant ($p=0.000$). Looking to the observed proportions, I can conclude that the British depositors who are not monitoring the financial condition of their banks are greater than the British depositors who are (Table 5.12).
The above four hypotheses tested the information aspect of market discipline and lead to the conclusion that the majority of British depositors felt inadequate by means of reaching and evaluating information and did not monitor their banks' financial condition.

In order to compare the score of three or more related samples, the Friedman two-way analysis of variance test was applied. This test ranks the scores for each of the cases and then calculates the mean rank score for each sample. If there are no differences between the samples, their mean ranks should be similar. The following hypothesis was tested with the Friedman two-way analysis of variance test.

(12) Ho: All the factors are equally important in opening bank or building society accounts.

H1: All the factors are not equally important in opening bank or building society accounts.

The factors that were studied in the test were based on question 3. The test results indicate that the result is highly significant ($\chi^2 = 85.412$, df=6, p=0.000) therefore I reject the null hypothesis that all the factors are equally important in opening a bank or building society account. Upon examining the mean ranks, it was found that the convenience factor dominated households’ choices. This was followed by interest rate, availability of other services, good reputation, financial strength, well known name and existing relationship. It is expected that risk averse depositors pay attention to the financial strength of a bank when opening an account. However, this result indicates that financial strength was not a primary concern in choosing a depository, and many depositors had other priorities when choosing banks and building societies.
5.4 Implications of the Main Results of the Hypothesis-Testing Concerning the UK Survey

The findings of the hypothesis-testing concerning the UK Survey are discussed according to the order of the hypothesis-testing.

It was found that depositors who have knowledge about compensation arrangements attach less importance to the financial strength of a bank when opening an account than those who have no such knowledge. Although the co-insurance principle has been widely used in the compensation arrangements available in the UK, it does not have the desired impact on the depositors' attitudes by means of urging them to pay attention to whom they are dealing with. However, this may be the result of lack of knowledge concerning the co-insurance principle in the compensation arrangements. According to the results of the descriptive analysis, it was found that only 19 percent of the respondents know about the existence of the Deposit Protection Scheme in the UK and only 10.3 percent addressed the insurance limit correctly. In addition, the percentage of respondents who knew about the element of co-insurance within the compensation arrangements was limited to just 4 percent. This result highlights the fact that it is very important to promote knowledge of the terms of the compensation
arrangements in order to achieve the desired effect on people’s behaviour (Hypothesis 1).

On the other hand, it was found that depositors who have knowledge about compensation arrangements have a greater tendency to diversify their savings. This finding indicates that the terms of the compensation arrangements urged a number of respondents to diversify their savings. It is possible that depositors find it less costly to diversify their savings than to pay attention to the financial strength of their institutions (Hypothesis 2).

The researcher could not find supportive evidence that knowledge about bank failures has an effect on either monitoring the financial condition of their bank (Hypothesis 3) or checking financial information before investing (Hypothesis 7). The results of testing the third and seventh hypotheses suggest that publicity surrounding default and the fact that some depositors have incurred losses does not act as a warning to other consumers to be more careful. This outcome could be explained by low frequency of bank failures in the UK, leading to few retail depositors being exposed to losses.

The results of the testing of the fourth hypothesis meant that I could not find a significant difference in terms of propensity to run among depositors who have and those who do not have knowledge about bank failures (Hypothesis 4).

Upon examining the results of the testing of the fifth hypothesis, it was found that there is no difference in terms of propensity to run among MBBG, building society and other bank depositors (Hypothesis 5). On the other hand, it was found that MBBG depositors have a higher expectation of being bailed out in case of a bank failure than the depositors of building societies and the other banks (Hypothesis 6). This finding implies that the depositors believe that there is a “too-big-to-fail” doctrine in place. The existence of such a belief among depositors reduces their incentive to monitor their banks and therefore reduces the effect of market discipline.
As Baer and Brewer (1986) argue, the success of market discipline depends on the capacity and willingness of depositors to evaluate publicly-available information on individual bank performance. Therefore, I checked whether this important prerequisite of market discipline is fulfilled by British depositors. The results of the analysis regarding accessing the relevant information and having the necessary sophistication to monitor effectively are as follows;

1. The majority of depositors did not feel competent to assess the financial condition of their bank when they opened their account (Hypothesis 8).
2. The majority of depositors did not have information relating to the financial condition of their bank (Hypothesis 9).
3. The majority of depositors did not have the skills to assess the banks’ financial conditions (Hypothesis 10).
4. The majority of depositors did not monitor their banks (Hypothesis 11).

These findings indicate that the majority of UK depositors lack the knowledge, skill and interest to monitor banks and, under these circumstances, their ability to be an effective source of market discipline is highly implausible.

Another important finding for the market discipline aspect is that financial strength was not the main concern when making decisions concerning opening accounts for UK depositors. The result that follows from this analysis is in line with Garten’s (1988) earlier findings. According to Garten “a significant portion of uninsured deposits are maintained for reasons that have little to do with risk and return”. This finding indicates that if they do not feel themselves at risk, they will not engage in monitoring activities and therefore could not be a source of market discipline (Hypothesis 12).

In the light of the above discussion, it can be concluded that British depositors do not operate in an environment that fulfils the prerequisites of effective market discipline.
5.5 The Mail Survey in Turkey

The same procedures that were adopted in the UK survey were used to analyse the Turkish mail survey. The descriptive analysis is followed by the hypothesis-testing section and, finally conclusions are drawn for Turkey.

5.6 Descriptive Analysis of the Turkish Survey

The respondents were asked how many accounts they held their savings in to find out if they were using multiple accounts and the incentives behind this. The researcher was mainly interested to see if they were diversifying their funds because of risk-related concerns. It was found that 50.8 percent of the sample were holding their savings in one bank and 29.7 percent, 15.7 percent, 2.2 percent, and 1.6 percent of the sample held their savings in two, three, four and five banks, respectively (Graph 5.11).

![Graph 5.11: How many banks do you currently hold your savings? (Turkey)]

The reasons behind having multiple accounts were investigated for the 91 respondents who had multiple accounts. It was found that convenience was the major reason (57.1 percent), followed by interest rate (20.9 percent). Different product offer was the third most popular reason (15.4 percent) and spreading risk was the least popular reason (6.6 percent) (Graph 5.12). Therefore, it can be concluded that the desire to spread risk was not the major reason for having multiple accounts, and was only a concern for a limited number of respondents. However, a crucial fact that has to be taken into consideration is that 76.7 percent of the multiple account holders have their main accounts with state-owned banks and banks that are covered by the
Savings Deposit Insurance Fund which reduces the need for diversifying for spreading risk purposes.

Graph 5.12: Reasons for having multiple accounts (Turkey)

In order to explore the difference between the attitudes of depositors who had their main savings in different banks by hypothesis-testing, institutions were classified under two sub-headings. Firstly, banks were grouped into two categories according to their asset size. And the first ten banks were addressed as the Major Banking Group (MBG) with the remaining banks being addressed as the other banks. Secondly, banks were grouped according to their ownership, i.e. state-owned banks, private banks, and banks operating under the Savings Deposit Insurance Fund (SDIF banks). According to the replies of the respondents, it was found that 95.1 percent of the respondents were MBG depositors. 73.5 percent of the respondents had accounts with state-owned banks, 23.2 percent were private bank depositors and 3.2 percent were depositors of SDIF banks (Graphs 5.13 and 5.14).
According to the Turkish Banks Association Survey results for 2000, 55 percent of the population has an account with state-owned banks, 34 percent has an account with private banks and 11 percent are depositors of SDIF banks (Banks Association of Turkey, 2001). Therefore, I conclude that the Turkish sample is representative.

In order to explore the depositors' perceptions of the institutions with which they were entrusting their money, they were asked if they checked any information regarding the financial conditions of their banks where they hold most of their savings. According to the findings, 30.3 percent of the respondents said they check whereas, 69.7 percent of the respondents claimed that they did not. The major source that the Turkish depositors used for this purpose was found to be the financial press (63 percent).

In line with the UK study, the reasons for not attempting to check such information was investigated for 129 respondents and, according to the findings, being an existing depositor was given as the major reason for not checking on such information (29.4 percent). On the other hand, 28.6 percent of the respondents claimed that the perception that big banks are safe kept them from checking such information. Investing their money with a well-known name was the reason for 23.8 percent of the respondents not checking. 10.3 percent of the respondents said a good reputation was the reason, while 4.8 percent said being paid a high interest rate was the reason. The respondents who said they did not know how to check and who had faith in Turkish banking regulation were both 1.6 percent of the total sample (Graph 5.15).

Graph 5.15: Reason for not checking any information about banks (Turkey)
Respondents were divided into three groups according the amount of funds that they held in their accounts. The majority of the respondents (83.7 percent) were holding less than GBP 10,000\(^{11}\), while 14.1 percent were holding between GBP 10,000-50,000, and only 2.2 percent were holding above GBP 50,000 (Graph 5.16).

![Graph 5.16: How much do you hold in that account? (Turkey)](image)

As the Turkish banking system has been experiencing frequent banking crises that have led to a number of bank collapses, the awareness of bank failures was quite high. 97.8 percent of the respondents stated that they had heard or read about banks that had failed in Turkey. In addition to that, 85.4 percent of the respondents claimed that they had knowledge about the Deposit Protection Scheme and 68.6 percent of all the respondents addressed the insurance limit correctly.

The influence of the terms of insurance on decision-making while opening an account was asked to the respondents; 50 percent said they did take into consideration the terms of insurance while the other 50 percent said that they did not.

In order to learn more about the respondents’ attitudes to financial risk, they were asked directly if they were willing to take financial risk and the results are presented in Graph 5.17. According to the results, 14.2 percent of respondents were in favour of taking financial risk while 77.6 percent were against it and 8.2 percent said that

\(^{11}\) Converted from Turkish lira to British pound by using year-end exchange rate of 2000, which is 993.878 TRL = 1 GBP.
they felt neutral about the subject. This result indicates that there is a strong opposition to taking financial risk among Turkish depositors.

Graph 5.17: I am willing to take financial risk (Turkey)

90.3 percent of the respondents claimed that the safety of principal was important for them. In addition to that, 72.9 percent agreed that it was a good idea to split savings among different banks to reduce the risk of losing all or some of their deposits in case of a bank collapse. On the other hand, 18.5 percent of the respondents said they actually split their funds in order to be safer. The percentage of the respondents who actually split their funds might seem a bit lower than expected. However, the low rate of average savings (the average amount of funds in a savings account is GBP 369 as at the end of 2000) is the most probable reason for not splitting the savings among banks.

From Graphs 5.18, 5.19 and 5.20, it can be inferred that the Turkish respondents had a clear tendency to run in case of any disturbance in the financial markets, which is very similar to UK respondents' attitudes.
In order to explore the respondents’ attitudes towards being bailed out, they were asked what they would expect if their bank failed. Graph 5.21 shows that 3.2 percent expected to be bailed out partially, 19.5 percent expected to receive only the legal entitlement and 77.3 percent expected to be bailed out in full. As 97.7 percent of the respondents were holding funds below the insurance limit and 97.8 percent of the respondents knew about deposit insurance, it is highly likely that they expect to be protected by the SDIF. The Turkish depositors enjoyed blanket coverage for a long period since 1994, which may shape their expectations as well.

It can also be argued that depositors were influenced by the Banking Regulation and Supervision Board’s (BRSA) failure resolution policy. Since 1997, almost one third of Turkish commercial banks’ operations were considered to be risky for the security and stability of the financial system and the rights of depositors were transferred to
the SDIF by a decision of the BRSA, and those banks were not allowed to default on their obligations to depositors.

A number of demographic issues were also looked at in order to classify the respondents. According to the results, 54.6 percent of the respondents were male while 45.4 percent were female. 76.8 percent of the respondents had university degrees, 21.1 percent were high school graduates, and 2.15 percent had fulfilled the minimum education requirements. The ages of the respondents varied from 17 to 65, with a mean of 36.7. 88.1 percent of the respondents were full-time employed, 7 percent were self-employed, 1.1 percent were an unpaid house-worker and 3.8 percent were retired.

5.7 Hypothesis-Testing in the Turkish Survey

Hypothesis-testing of the Turkish Survey was done in line with the hypothesis-testing of the UK Survey, as presented in Section 5.3 of this chapter. The hypotheses were tested using the same tests; therefore the information about the tests are generally not repeated below.

The Mann-Whitney-Wilcoxon Test (MWW) test was used to test the below-mentioned hypothesis. This test is evaluated at 0.05 level of significance. At this level of significance to reject the null hypothesis, $z$ must be less than $-1.96$ or greater than $+1.96$. 
(1) Ho: There is no difference in the importance attached to the financial strength of the bank when opening an account among the Turkish depositors who have knowledge about compensation schemes and those who have not.

H1: There is a difference in the importance attached to the financial strength of the bank when opening an account among the Turkish depositors who have knowledge about compensation schemes and those who have not.

It can be seen from Table 5.14 that $z=-1.588$; therefore, I cannot reject the null hypothesis that the importance of financial strength of a bank when opening an account is the same for both groups.

<table>
<thead>
<tr>
<th>Importance of Financial Strength</th>
<th>Mean Rank</th>
<th>N</th>
<th>Z</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Know about deposit insurance</td>
<td>93.32</td>
<td>154</td>
<td>-1.588</td>
<td>0.112</td>
</tr>
<tr>
<td>Do not know about deposit insurance</td>
<td>77.76</td>
<td>27</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Mean ranks indicate that knowledge about deposit insurance does not reduce the importance that the depositor attached to the financial strength of their institution. It can be concluded that the existence of deposit insurance does not create moral hazard in Turkey.

(2) Ho: There is no difference in the tendency to diversify savings among the Turkish depositors that have knowledge about compensation schemes and those who have not.

H1: There is a difference in the tendency to diversify savings among the Turkish depositors that have knowledge about compensation schemes and those who have not.
It can be seen from Table 5.15 that, \( z = -2.039 \); therefore, I can reject the null hypothesis that the tendency to diversify savings among the Turkish depositors who have knowledge about compensation schemes and those who have not are the same. Depositors who know about deposit insurance have a greater tendency to diversify their savings among banks.

Table 5.15: The MWW Test of Hypothesis 2 (Turkey)

<table>
<thead>
<tr>
<th>Tendency to Diversify</th>
<th>Mean Rank</th>
<th>N</th>
<th>Z</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Know about deposit insurance</td>
<td>95.59</td>
<td>157</td>
<td>-2.039</td>
<td>0.041</td>
</tr>
<tr>
<td>Do not know about deposit insurance</td>
<td>74.54</td>
<td>27</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(3) \( H_0 \): There is no difference in the tendency to monitor the financial condition of their banks among the Turkish depositors who have knowledge about bank failures and those who have not.

\( H_1 \): There is a difference in the tendency to monitor the financial condition of their bank among the Turkish depositors who have knowledge about bank failures and those who have not.

Since \( z = -0.815 \), I cannot reject the null hypothesis that there is no difference in terms of monitoring the financial condition of their banks among the Turkish depositors who have knowledge about bank failures and those who have not. However, looking to the mean ranks, it can be concluded that, regardless of the knowledge of bank failures, depositors are very keen on monitoring the financial condition of their bank (Table 5.16).

Table 5.16: The MWW Test of Hypothesis 3 (Turkey)

<table>
<thead>
<tr>
<th>Monitoring financial condition</th>
<th>Mean Rank</th>
<th>N</th>
<th>Z</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Know about bank failures</td>
<td>91.05</td>
<td>178</td>
<td>-0.815</td>
<td>0.415</td>
</tr>
<tr>
<td>Do not know about bank failures</td>
<td>111.38</td>
<td>4</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
(4) Ho: There is no difference in the propensity to run among the Turkish depositors who have knowledge about bank failures and those who have not.

H1: There is a difference in the propensity to run among the Turkish depositors who have knowledge about bank failures and those who have not.

This hypothesis was tested using question numbers 22, 23, 24 and 12 of the Turkish survey. As can be seen from Table 5.17, the z scores are -3.637, -3.456 and -3.384 respectively, and I can therefore reject the null hypothesis that Turkish depositors who have knowledge about bank failures and who have not are the same in terms of propensity to run. The findings indicate that depositors who have knowledge about bank failures are more likely to run. This finding also indicates that some of the people bearing losses act as a warning to others in Turkey. The existence of frequent bank failures in the country leads depositors to have a tendency to run in the case of disturbances in the financial markets.

Table 5.17: The MWW Tests of Hypothesis 4 (Turkey)

<table>
<thead>
<tr>
<th>Take Action</th>
<th>Mean Rank</th>
<th>N</th>
<th>Z</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Know about bank failures</td>
<td>95.14</td>
<td>180</td>
<td>-3.637</td>
<td>0.000</td>
</tr>
<tr>
<td>Do not know about bank failures</td>
<td>15.90</td>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Know about bank failures</td>
<td>94.56</td>
<td>179</td>
<td>-3.456</td>
<td>0.001</td>
</tr>
<tr>
<td>Decrease Savings</td>
<td>18.70</td>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Do not know about bank failures</td>
<td>15.70</td>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Know about bank failures</td>
<td>94.65</td>
<td>179</td>
<td>-3.384</td>
<td>0.001</td>
</tr>
<tr>
<td>Close the Account</td>
<td>15.70</td>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Do not know about bank failures</td>
<td>15.70</td>
<td>5</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
(5) Ho: There is no difference in the propensity to run among the Turkish depositors who have accounts with different types of institutions.

H1: There is a difference in the propensity to run among the Turkish depositors who have accounts with different types of institutions.

This hypothesis was tested by three consecutive tests using the responses from questions 22, 23, 24 and 2. For the sake of the analysis, the institutions were divided into two groups namely, “Major Banking Group” (MBG) banks and “other” banks, according to their asset size. The statistical tests are produced in Table 5.18 and the results are not significant. This indicates that I could not reject the hypothesis that there is no difference in terms of propensity to run among the Turkish depositors who have accounts with different types of institutions. Looking at the mean ranks, it can be concluded that all depositors are prone to run.

Table 5.18: The MWW Test of Hypothesis 5 (Turkey)

<table>
<thead>
<tr>
<th>Take Action</th>
<th>Mean Rank</th>
<th>N</th>
<th>Z</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Take MBG</td>
<td>94.07</td>
<td>176</td>
<td>-1.346</td>
<td>0.178</td>
</tr>
<tr>
<td>Other banks</td>
<td>72.06</td>
<td>9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Decrease MBG</td>
<td>93.63</td>
<td>175</td>
<td>-1.400</td>
<td>0.162</td>
</tr>
<tr>
<td>Other banks</td>
<td>70.56</td>
<td>9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Close the MBG Account</td>
<td>93.24</td>
<td>175</td>
<td>-0.865</td>
<td>0.387</td>
</tr>
<tr>
<td>Other banks</td>
<td>78.06</td>
<td>9</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The following hypotheses were tested using the Kruskal-Wallis test.

(6) Ho: There is no difference in the expectation of being bailed out of Turkish depositors who have accounts with different types of institutions.

H1: There is a difference in the expectation of being bailed out of Turkish depositors who have accounts with different types of institutions.
For the sake of the analysis, the institutions were divided into three groups according to their ownership; state-owned banks, privately-owned banks and SDIF banks. The results are highly significant ($\chi^2=13.870$, df=2, $p=0.001$) and therefore I can reject the null hypothesis that there is no difference in terms of expectancy about bailing out between Turkish depositors who have accounts with different types of institutions. Indeed looking at the mean ranks, depositors who have accounts with state-owned banks most expect to be bailed out (Table 5.19).

<table>
<thead>
<tr>
<th>Type of institution</th>
<th>Mean Ranks</th>
<th>Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>State-owned banks</td>
<td>99.32</td>
<td>136</td>
</tr>
<tr>
<td>Privately-owned banks</td>
<td>76.73</td>
<td>43</td>
</tr>
<tr>
<td>SDIF banks</td>
<td>66.25</td>
<td>6</td>
</tr>
</tbody>
</table>

In order to compare two groups on a variable, which is measured on a nominal scale, the two-sample chi-square test was used. As this test requires an expected frequency of 5 for each category, this condition is checked and when it was violated the Fisher’s exact test was applied.

(7) $H_0$: There is no difference in terms of checking financial information before investing among the Turkish depositors who have knowledge about bank failures and those who have not.

$H_1$: There is a difference in terms of checking financial information before investing among the Turkish depositors who have knowledge about bank failures and those who have not.

The Pearson chi-square statistics comes to 0.739, with an observed probability of 0.390. Since the latter is not smaller than 10 percent ($p<0.10$), 5 percent ($p<0.05$), or 1 percent ($p<0.01$) which are the conventional cut-off points for rejecting the null hypothesis, therefore I can conclude that there is no statistically significant difference between Turkish depositors who have knowledge about bank failures and those who
have not, in terms of their attitude towards checking financial information before investing. However, as the requirement associated with minimum expected frequencies was violated for two cells, the Fisher's exact test was applied and the results are still found to be not significant (p=0.586).

In order to test the hypothesis concerning a population proportion the z-test for a proportion was used. This test was applied because each group has more than 30 cases and the test uses the normal approximation to the binomial to calculate a probability value. The following hypotheses were tested using the z-test for a proportion. In order to apply the test, firstly three adjacent categories, namely "strongly disagree", "disagree", "neutral" and then two categories, namely "agree" and "strongly agree" were combined.

(8) Ho: Turkish depositors who felt competent to assess the financial condition of their banks when they opened their accounts are equal in number to those who did not feel competent.

H1: Turkish depositors who felt competent to assess the financial condition of their banks when they opened their accounts are not equal in number to those who did not feel competent.

According to the findings, I can reject the null hypothesis that \( \pi=0.50 \) as the test is significant (p=0.001). Looking to the observed proportions, I can conclude that the Turkish depositors who feel competent to assess the financial condition of their bank when they open their account is greater than those who do not feel to do so (Table 5.20).

<table>
<thead>
<tr>
<th>Competent to Assess the Financial Condition</th>
<th>Observed Prop.</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group 1</td>
<td>0.38</td>
<td>69</td>
</tr>
<tr>
<td>Group 2</td>
<td>0.63</td>
<td>115</td>
</tr>
</tbody>
</table>
9) **Ho**: Turkish depositors who have the information related to the financial condition of their banks are equal in number to those who do not.

**H1**: Turkish depositors who have the information related to the financial condition of their banks are not equal in number to those who do not.

According to the findings, I can reject the null hypothesis that \( \pi = 0.50 \) as the test is highly significant \((p=0.001)\). Looking to the observed proportions, I can conclude that the Turkish depositors who feel that they have the information related to the financial condition of their banks are greater than the Turkish depositors who do not feel the same way (Table 5.21).

<table>
<thead>
<tr>
<th>Having Information to Monitor</th>
<th>Observed Prop.</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group 1</td>
<td>0.38</td>
<td>69</td>
</tr>
<tr>
<td>Group 2</td>
<td>0.63</td>
<td>115</td>
</tr>
</tbody>
</table>

(10) **Ho**: Turkish depositors who have the necessary skills to be able to monitor the financial condition of their banks are equal in number to Turkish depositors who do not.

**H1**: Turkish depositors who have the necessary skills to be able to monitor the financial condition of their banks are not equal in number to Turkish depositors who do not.

According to the findings, I can reject the null hypothesis that \( \pi = 0.50 \) as the test is highly significant \((p=0.000)\). Looking to the observed proportions, I can conclude that the Turkish depositors who have the necessary skills to be able to monitor the financial condition of their banks are greater than the Turkish depositors who have not (Table 5.22).

<table>
<thead>
<tr>
<th>Having Skills to be Able to Monitor</th>
<th>Observed Prop.</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group 1</td>
<td>0.32</td>
<td>59</td>
</tr>
<tr>
<td>Group 2</td>
<td>0.68</td>
<td>123</td>
</tr>
</tbody>
</table>

Table 5.21: Z Test for a Proportion for Hypothesis 9 (Turkey)

Table 5.22: Z Test for a Proportion for Hypothesis 10 (Turkey)
(11) Ho: Turkish depositors who are monitoring the financial condition of their banks are equal in number to the Turkish depositors who are not.

H1: Turkish depositors who are monitoring the financial condition of their banks are not equal in number to the Turkish depositors who are not.

According to the findings, I can reject the null hypothesis that \( \pi=0.50 \) as the test is highly significant (\( p=0.000 \)). Looking to the observed proportions, I can conclude that the Turkish depositors who are monitoring the financial condition of their banks are greater than the Turkish depositors who are not (Table 5.23).

<table>
<thead>
<tr>
<th>Monitoring the Financial Condition</th>
<th>Observed Prop.</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group 1</td>
<td>0.30</td>
<td>55</td>
</tr>
<tr>
<td>Group 2</td>
<td>0.70</td>
<td>128</td>
</tr>
</tbody>
</table>

The following hypothesis is tested with the Friedman two-way analysis of variance test.

(12) Ho: All the factors are equally important when opening bank accounts.

H1: All the factors are not equally important when opening bank accounts.

The factors that are studied in the test are based on the third question. The test results indicate that the result is highly significant (\( \chi^2=116.710, \text{ df}=6, \ p=0.000 \)). Therefore, I can reject the hypothesis that all the factors are equally important when opening bank accounts. Upon examining the mean ranks, it is clear that the importance of convenience is paramount, followed by availability of other services, financial strength, existing relationship, interest rate, good reputation, and well known name. It is expected that risk averse depositors pay attention to the financial
strength of a bank when opening an account. The results indicate that financial strength is not a primary concern in choosing a depository, with many depositors having other priorities when opening a bank account (Table 5.24).

Table 5.24: The Friedman Two-Way Analysis of Variance Test for Hypothesis 12 (Turkey)

<table>
<thead>
<tr>
<th>Mean Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Convenience</td>
</tr>
<tr>
<td>Variability of other services</td>
</tr>
<tr>
<td>Financial strength</td>
</tr>
<tr>
<td>Existing relationship</td>
</tr>
<tr>
<td>Interest rate</td>
</tr>
<tr>
<td>Good reputation</td>
</tr>
<tr>
<td>Well known name</td>
</tr>
</tbody>
</table>

5.8 Main Implications of the Hypothesis-Testing of the Turkish Survey

The results indicate that knowledge about compensation arrangements does not reduce the attention that the depositors pay to the financial strength of their institution (Hypothesis 1).

The results of the testing also verify that depositors who have knowledge about compensation arrangements have a greater tendency to diversify their savings. This indicates that the depositors who are aware of the compensation arrangements are aware of the indirect costs that occur in the case of bank failures and try to minimise their risks (Hypothesis 2).

Depositors who have knowledge about bank failures do not act differently than depositors who do not know about bank failures in terms of checking financial information before investing and monitoring their banks. This finding raises the issue of the effects of frequent bank failures. It shows that depositors who are operating in an unstable financial environment develop a defence mechanism and make an effort.
to guard their savings by monitoring the financial condition of their bank (Hypothesis 7 and Hypothesis 3).

On the other hand, depositors who have knowledge about bank failures have a greater tendency to run in the case of turmoil in the market (Hypothesis 4). This finding indicates that, despite the existence of deposit insurance, people bearing losses as a consequence of resolution techniques that take a long time to conclude act as a warning to others in Turkey. The existence of frequent bank failures in the country leads depositors to have a tendency to run in the case of disturbances in financial markets.

There is no statistically significant difference between MBG depositors and the rest in terms of a tendency to run in the case of anxiety in the financial markets. However, it is found that both groups are prone to run (Hypothesis 5).

On the other hand, state-owned bank depositors have a higher expectation of being bailed out in the case of failure than the depositors of private banks (Hypothesis 6). The existence of state-owned banks creates an environment where the “too-big-to-fail” principle is in place. At this point, it is also hereby necessary to reemphasise the fact that a perception of “too-big-to-fail” was held by 28.6 percent of the depositors who do not check about the financial condition of their banks. Depositors who have accounts with the state-owned banks expect to enjoy full compensation from the state in the case of failure.

An important condition for an effective system of depositor-imposed market discipline is the availability of relevant information to depositors on a timely basis (Mantripragada, 1992). Moreover, the capacity and the willingness of depositors to evaluate publicly available information on individual bank performance is essential for depositor market discipline. The results of the tests demonstrate the following:

1. The majority of depositors felt competent to assess the financial condition of their bank when they opened their account (Hypothesis 8).
2. The majority of depositors had access to information related to the financial condition of their bank (Hypothesis 9).

3. The majority of depositors claimed that they had the skills to assess the banks' financial conditions (Hypothesis 10).

4. The majority of depositors monitored their banks (Hypothesis 11).

The findings of the hypotheses-testing 8-11 are very important as they show that Turkish depositors fulfil the information prerequisites of market discipline. They claimed that they are competent to assess financial information and have access to the information that is necessary. They also stated that they have the skill to do this and they continuously monitor their financial institutions' positions. Therefore, it is concluded that an important pre-requisite of an effective source of market discipline is fulfilled.

Besides, it is found that financial strength is one of the main concerns in the decision making process while opening accounts (Hypothesis 12).

Therefore, I reach the conclusion that the prerequisites of market discipline are fulfilled by the Turkish depositors.

5.9 Comparisons Concerning the UK and Turkish Survey Results Arising from the Hypothesis-Testing

After analysing the data for the two countries individually, the hypotheses concerning the comparison of the two countries are tested in this section.

The Mann-Whitney-Wilcoxon Test (MWW) was used to test the below-mentioned hypotheses.

(1) Ho: There is no difference in the importance attached to the financial strength of a bank when opening an account among Turkish and British depositors.
H1: There is a difference in the importance attached to the financial strength of the bank when opening an account among Turkish and British depositors.

Since $z=-6.593$, I reject the null hypothesis that the importance of financial strength of a bank when opening an account is the same for both groups. Findings indicate that when opening an account, Turkish depositors attach more importance to the financial strength of a bank than do British depositors (Table 5.25).

Table 5.25: The MWW Test of Hypothesis 1 (Comparison of the UK and Turkish Surveys)

<table>
<thead>
<tr>
<th>Importance of Financial Strength</th>
<th>Mean Rank</th>
<th>N</th>
<th>Z</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Turkey</td>
<td>178.25</td>
<td>181</td>
<td>-6.593</td>
<td>0.000</td>
</tr>
<tr>
<td>UK</td>
<td>114.60</td>
<td>123</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(2) Ho: There is no difference in the importance attached to the safety of principal between Turkish and British depositors.

H1: There is a difference in the importance attached to the safety of principal between Turkish and British depositors.

It can be seen from Table 5.26 that the $z=-4.051$, and therefore I reject the null hypothesis that the importance of safety is the same for both groups. Findings indicate that Turkish depositors attach more importance to the safety of principal than British depositors.

Table 5.26: The MWW Test of Hypothesis 2 (Comparison of the UK and Turkish Surveys)

<table>
<thead>
<tr>
<th>Importance of Safety of Principal</th>
<th>Mean Rank</th>
<th>N</th>
<th>Z</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Turkey</td>
<td>170.64</td>
<td>185</td>
<td>-4.051</td>
<td>0.000</td>
</tr>
<tr>
<td>UK</td>
<td>131.67</td>
<td>124</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
(3) **Ho:** There is no difference in terms of willingness to take financial risk among Turkish and British depositors.

**H1:** There is a difference in terms of willingness to take financial risk among Turkish and British depositors.

Since \( z = -3.994 \), I reject the null hypothesis that both groups have the same attitudes towards taking financial risk. Findings indicate that Turkish depositors are less willing to take financial risk (Table 5.27).

**Table 5.27: The MWW Test of Hypothesis 3 (Comparison of the UK and Turkish Surveys)**

<table>
<thead>
<tr>
<th>Willing to Take Financial Risks</th>
<th>Mean Rank</th>
<th>N</th>
<th>Z</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Turkey</td>
<td>170.32</td>
<td>184</td>
<td>3.994</td>
<td>0.000</td>
</tr>
<tr>
<td>UK</td>
<td>131.03</td>
<td>124</td>
<td>-3.994</td>
<td>0.000</td>
</tr>
</tbody>
</table>

(4) **Ho:** There is no difference in terms of being competent to assess the financial condition of a bank between Turkish and British depositors.

**H1:** There is a difference in terms of being competent to assess the financial condition of a bank between Turkish and British depositors.

Since \( z = -3.917 \), I reject the null hypothesis that both groups have the same competency to assess the financial condition of a bank. Findings indicate that Turkish depositors feel more competent in this subject (Table 5.28).

**Table 5.28: The MWW Test of Hypothesis 4 (Comparison of the UK and Turkish Surveys)**

<table>
<thead>
<tr>
<th>Competent to Assess the Financial Condition</th>
<th>Mean Rank</th>
<th>N</th>
<th>Z</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Turkey</td>
<td>171.45</td>
<td>184</td>
<td>3.917</td>
<td>0.000</td>
</tr>
<tr>
<td>UK</td>
<td>132.21</td>
<td>126</td>
<td>-3.917</td>
<td>0.000</td>
</tr>
</tbody>
</table>
(5) Ho: There is no difference in having access to information to monitor the financial condition of a bank between Turkish and British depositors.

H1: There is a difference in having access to information to monitor the financial condition of a bank between Turkish and British depositors.

Since $z = -6.040$, I reject the null hypothesis that both groups are confident about having access to sufficient information to allow them to monitor the financial condition of a bank. Findings indicate that Turkish depositors can reach more information that enable them to monitor the financial condition of their banks (Table 5.29).

Table 5.29: The MWW Test of Hypothesis 5 (Comparison of the UK and Turkish Surveys)

<table>
<thead>
<tr>
<th>Having Access to Information to Monitor the Financial Condition of a Bank</th>
<th>Mean Rank</th>
<th>N</th>
<th>Z</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Turkey</td>
<td>180.13</td>
<td>184</td>
<td>-6.040</td>
<td>0.000</td>
</tr>
<tr>
<td>UK</td>
<td>119.54</td>
<td>126</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(6) Ho: There is no difference in having skills to monitor the financial condition of a bank between Turkish and British depositors.

H1: There is a difference in having skills to monitor the financial condition of a bank between Turkish and British depositors.

Since $z = -5.382$, I reject the null hypothesis that both groups have the same skills to monitor the financial condition of a bank. Turkish depositors declare that they have the necessary skills to monitor the financial condition of a bank (Table 5.30).
Table 5.30: The MWW Test of Hypothesis 6 (Comparison of the UK and Turkish Surveys)

<table>
<thead>
<tr>
<th>Having Skill to Monitor the Financial Condition of a Bank</th>
<th>Mean Rank</th>
<th>N</th>
<th>Z</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Turkey</td>
<td>176.45</td>
<td>182</td>
<td>-5.382</td>
<td>0.000</td>
</tr>
<tr>
<td>UK</td>
<td>122.80</td>
<td>126</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(7) Ho: There is no difference in monitoring the financial condition of their banks between Turkish and British depositors
H1: There is a difference in monitoring the financial condition of their banks between Turkish and British depositors.

Since $z=-8.795$, I reject the null hypothesis that both groups are monitoring the financial condition of their banks equally. Findings indicate that Turkish depositors are more keen on monitoring their banks' financial conditions (Table 5.31).

Table 5.31: The MWW Test of Hypothesis 7 (Comparison of the UK and Turkish Surveys)

<table>
<thead>
<tr>
<th>Monitoring the Financial Condition of Their Banks</th>
<th>Mean Rank</th>
<th>N</th>
<th>Z</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Turkey</td>
<td>190.96</td>
<td>183</td>
<td></td>
<td></td>
</tr>
<tr>
<td>UK</td>
<td>102.78</td>
<td>126</td>
<td>-8.795</td>
<td>0.000</td>
</tr>
</tbody>
</table>

In order to compare two groups on a variable, which is measured on a nominal scale, the two-sample chi-square test was used. The null hypothesis tested by the two-sample chi-square test is that no difference exists between the two groups with respect to the relative frequency with which group members fall into the various categories of the variable of interest. The observed frequencies have to depart significantly from the expected frequencies to conclude that the two groups differ along the variable of interest (Diamantopoulos and Schlegelmilch, 1997). This test requires an expected frequency of 5 for each category; this condition was checked and when this requirement was violated, the Fisher's exact test was applied.
(8) Ho: There is no difference in terms of knowledge about deposit protection schemes among Turkish and British depositors.

H1: There is a difference in terms of knowledge about deposit protection schemes among Turkish and British depositors.

The Pearson chi-square statistic comes to 135.964, with an observed probability of 0.000; therefore I can conclude that there is a statistically significant difference between Turkish and British depositors’ knowledge about deposit protection schemes. 85.4 percent of Turkish depositors know about the details of deposit protection scheme while only 19.0 percent of British depositors know about the details of their scheme.

(9) Ho: There is no difference in terms of knowledge about bank failures between Turkish and British depositors.

H1: There is a difference in terms of knowledge about bank failures between Turkish and British depositors.

The Pearson chi-square statistic comes to 67.478, with an observed probability of 0.000. However, as the requirements associated with minimum expected frequencies are violated, the Fisher’s exact test was applied but the results were still found to be highly significant (p=0.000). Findings indicate that British depositors are less aware of bank failures in the UK than Turkish depositors are of Turkish bank failures.

(10) Ho: There is no difference in the expectation of being bailed out among Turkish and British depositors.

H1: There is a difference in the expectation of being bailed out among Turkish and British depositors.

The Pearson chi-square statistic comes to 53.019, with an observed probability of 0.000, and I can therefore conclude that there is a statistically significant difference between Turkish and British depositors’ expectations of being bailed out; Turkish depositors have a greater expectation of being bailed out.
5.10 Main Findings of the Comparison Concerning the UK and Turkish Survey

Results Resulting from Hypotheses-Testing

The findings of the two-country comparison have an important role to play in this study as they enable the researcher to evaluate the consequences of different compensation arrangements and financial environments on depositors’ ability to exert market discipline.

According to market discipline theory, risk must be a primary concern for depositors in choosing a depositary for market discipline to work effectively. Therefore, the first leg of the comparison concerns the risk perceptions of the depositors of the two countries. The findings of the study indicate that Turkish depositors attach more importance to the financial strength of a bank when opening an account than do British depositors (Hypothesis 1); and the safety of principal is more important for them than for the British depositors (Hypothesis 2). In addition to this, it was found that Turkish depositors are less willing to take financial risk than British depositors.

The second step of the comparison concerns the idea that depositors having a capacity and willingness to evaluate publicly-available information is essential if they are to be a source of market discipline. The results of the hypothesis-testing suggest that Turkish depositors feel more competent in assessing the financial condition of a bank (Hypothesis 4), and they confirm that they also receive more information than their UK counterparts, allowing them to monitor the financial conditions of their banks more easily (Hypothesis 5). In addition to this, Turkish depositors declare that they have the necessary skills to monitor the financial condition of a bank, while British depositors are very reluctant in this respect (Hypothesis 6). Finally, the last hypothesis on this subject verifies that Turkish depositors are more keen on monitoring their banks’ financial condition than British depositors (Hypothesis 7).

The impact of the compensation arrangements on depositors’ behaviour was another aspect that was studied; their awareness about compensation arrangements and bank
failures were both examined. The results demonstrate that there is a statistically significant difference between Turkish and British depositors' knowledge about deposit protection schemes. Turkish depositors had greater knowledge about compensation arrangements operating in their country (Hypothesis 8). British depositors were also shown to be less aware of the bank failures in their country than Turkish depositors (Hypothesis 9). Finally, Turkish depositors had higher expectations of being bailed out in case of bank failure than their UK counterparts (Hypothesis 10).

5.11 Conclusions

The descriptive analysis and statistical significance testing for the UK and Turkish surveys were incorporated in this chapter. Firstly, the main conditions necessary for depositors to exert market discipline were checked for their existence in the UK and Turkey. The conditions that were evaluated were as follows:

i) There must be a group of depositors whose primary concern is risk when investing,

ii) Depositors must be able to access information about the financial conditions of their banks,

iii) Depositors must be able to assess the information available about the financial conditions of their banks,

iv) Depositors must monitor the financial conditions of their banks.

Upon testing the data for the UK and Turkish depositors, it was found that while Turkish depositors were fulfilling those conditions, the British depositors' ability to exert market discipline was seen as being very limited.

Secondly, I examined whether the extent of market discipline is related to the different regulatory environments and whether certain types of deposit insurance schemes undermine market discipline. According to the results of the analysis, a number of important results emerged.
The findings of the survey analysis reveal the importance of promoting knowledge about the terms and conditions of the available compensation arrangements amongst the public in order to achieve the desired impacts. The co-insurance principle has been a widely-used element of compensation arrangements in the UK since 1982 and the regulators put special emphasis on its disciplinary effect. However, the UK depositors' lack of knowledge of it is an obstacle to reaching the aim of exerting market discipline in the UK and to serving the wider aims of deposit protection.

On the other hand, the pre-conditions for market discipline observed in the results of the survey of Turkish depositors, regardless of the existence of full explicit insurance, could be explained by the lack of credibility of the guarantees and by the delays and other costs entailed in recovering funds from the guarantor. The provision of 100 percent coverage of deposits does not insulate depositors from all possible losses so does not make them indifferent to the risk-taking of their banks' activities.
CHAPTER SIX

AN ECONOMETRIC ANALYSIS OF THE EXISTENCE OF DEPOSITOR MARKET DISCIPLINE IN THE UK AND TURKISH BANKING SECTORS

6.1 Introduction

The results of the surveys, from which the ability of depositors to exert market discipline in the UK and Turkish deposit markets were analysed, were presented in the previous chapter. The results demonstrate that while Turkish depositors are likely to exert market discipline, British depositors’ ability seems very limited as the prerequisites necessary for depositors to exert market discipline do not exist.

The aim of this chapter is to examine the evidence of depositor market discipline in the UK and Turkish banking industries by applying panel data\textsuperscript{12} analysis. In particular, the presence of market discipline is tested by studying whether depositors monitor their banks and punish risky banks by withdrawing their deposits, is tested. Using bank panel data for the UK and Turkish banks for the periods 1989-2000 and 1989-2001 respectively, the relationship between the growth rate of banks’ deposits and bank specific risk variables is modelled. Furthermore, it is investigated whether depositors require riskier Turkish banks to pay higher interest rates. This latter analysis is only applied for the Turkish banking sector for the 1992-2001 period because of the lack of available data for the UK.

The main result that emerges from this empirical analysis is that there is no statistically significant relationship between bank risk-taking and deposit growth in the UK. However, for the Turkish banking sector, the empirical findings indicate that

\textsuperscript{12} The term panel data refers to the pooling of observations on cross-sectional units, i.e. banks in this study, over a specific time period.
Turkish depositors exert market discipline by withdrawing deposits and by requiring higher interest rates from riskier banks.

This chapter proceeds as follows. The next section introduces the background of the study. Section 6.3 presents the empirical study by describing how the model is structured. Research hypotheses, methodology, variables and data are explained in this section. Section 6.4 reports the empirical results. The main findings are summarised in the concluding section.

6.2 Background of the Study

Because of the increase in the number of bank failures during the 1980s, academics and regulators have questioned the system of bank supervision and regulation and discussed whether market discipline could improve the safety and soundness of banking systems (Avery et al., 1988). The discussion on market discipline has also gathered considerable attention as the activities of banks have become increasingly complex and therefore the task of controlling their risk behaviour has become more difficult (Sironi, 2000). Furthermore, the issue of market discipline has gained more importance since the publication of proposals for a new Basle Capital Accord, which recognises the role of market discipline by stating that more transparency and disclosure by banks have the potential to reinforce capital regulation and other supervisory efforts to ensure the safety and soundness of the banking system (BIS, 2000).

Because of the increasing importance of market discipline, academics attempted to evaluate the potential of market players, comprising depositors, debt holders and stockholders, to impose discipline on banks. However, while the importance of market discipline in banking is widely recognised, there is much less consensus among academics about its actual presence (Birchler and Maechler, 2001). Besides, existing published academic studies concerning market discipline are mostly based on the US banking system and there is not much literature for other countries. In addition, depositors are found to be the least studied source in the literature. Therefore, the most important contribution of this study is to fill a gap in the
literature by employing an econometric model and testing the existence of market
discipline in the UK and Turkey, as little is known regarding the degree of market
discipline exercised by depositors in either of these countries.

Although there are other potential market participants, such as stockholders and debt
holders, that could exert market discipline, the behaviour of depositors in the UK and
Turkey are analysed for two reasons. First, there is no debt market for banks in
Turkey and only a few banks' stocks trade on the stock exchange. Therefore,
depositors are the only possible source of market discipline in Turkey. Second, both
British and Turkish regulators put strong emphasis on the importance of depositors in
disciplining bank activities. As a result, in this part of the study, the existence of
depositor market discipline in the UK and Turkish banking systems is empirically
investigated. In principle, depositors can discipline banks that engage in excessive
risk-taking by two routes; first, by demanding higher interest rates, and second by
withdrawing their deposits (Demirgüç-Kunt and Huizinga, 1999). In this analysis,
both of these issues are addressed.

Because the two countries have adopted very different deposit insurance scheme
features, this study is even more interesting. Besides, while the Turkish banking
sector has suffered frequent banking failures in recent years, the financial sector in
the UK is fundamentally strong and, overall, the UK banks are sufficiently profitable
and well-capitalised to be able to absorb the effects of likely macroeconomic shocks
without systemic distress (IMF, 2003).

The Turkish banking sector is a very special case because of a number of
developments that took place in the 1990s. After experiencing a serious financial
crisis in early 1994, the Turkish authorities applied 100 percent coverage for deposit
accounts, both in Turkish lira and in foreign currency, aiming to prevent a deposit
run that could adversely affect the banking system that had already suffered from
financial crisis. However, Turkey has continued to experience frequent banking
problems because of poor governance and excessive risk-taking by banks, abuse by
owners and weak regulatory and supervisory frameworks for banking (OECD, 2002).
Because of these problems, since 1997, 20 private banks\textsuperscript{13} have been the subject of official intervention and have been transferred to the Savings Deposit Insurance Fund (SDIF), of which 17 were transferred after December 1999. In view of the large number of banks transferred to the SDIF, the full coverage deposit protection scheme has been much criticised for creating the moral hazard whereby depositors pay less care when selecting their depository institution and have no real incentive to exercise market discipline.

It is argued that uninsured depositors, who are not protected by a deposit insurance scheme, which might be implicit or explicit, have an incentive to monitor banks' activities as they face default risk and therefore should penalise excessive risk-taking by requiring higher interest rates and/or by withdrawing their deposits (Jordan, 2000). On the other hand, as discussed in the third chapter, because of the non-pecuniary costs that insured depositors might bear, such as waiting for deposit redemption, they can also be a source of market discipline (Park and Peristiani, 1998). Therefore, it is especially relevant to analyse market discipline in Turkey, despite the existence of full coverage.

6.3 Empirical Study

In the literature, there are two main approaches to test the existence of depositor market discipline. First, the price-based approach, where the dependent variable is the deposit interest rate spread; and, second the quantity-based approach, where the dependent variable is the quantity or the growth rate of deposits. There are also a number of studies such as those by Park (1995) and Park and Peristiani (1998) that use a combined approach and examine market discipline by focusing on the relationships between pricing, as well as growth of deposits, and bank risk-taking.

In the price-based approach, which is also called the yield-based approach, market discipline is tested by analysing whether depositors demand a higher interest rate from riskier banks, which indicates a positive relationship between the deposit

\textsuperscript{13} As of year-end 2002, there were 54 banks operating in Turkey.
interest rate and the degree of bank risk-taking. Rather than just considering the nominal interest rate, the studies that have followed the price-based approach generally use yield spreads, which are calculated as the difference between the deposit interest rate and a risk free rate such as a government bill or bond yield. On the other hand, a number of studies use an interest rate spread, which is calculated as the deposit interest rate paid by banks less the median deposit interest rate paid by banks (Jordan, 2000). The majority of the existing studies employed this approach to analyse depositor market discipline.

On the other hand, in the quantity-based approach, market discipline is tested by analysing whether depositors effectively monitor the financial condition of their banks and withdraw their savings when their bank is involved in risky activities. This approach requires a negative relationship between the amount or growth rate of deposits and the degree of bank risk-taking.

In this section, the first model expresses the growth rate of deposits and the second model expresses the interest rate spread as functions of the bank size and a set of publicly available measures of individual bank risk. These models are estimated by employing pooled least squares regressions. The price-based approach is limited to Turkish banks because of the lack of implicit and explicit interest rate data for the UK banks.

This section is divided into four sub-sections. The first sub-section presents the research hypotheses. The second sub-section discusses the research methodology. The models that are used to examine depositor market discipline in the UK and Turkey are presented in this sub-section. The dependent and independent variables are described in the third sub-section. Finally, the fourth sub-section explains the data that are used in the estimations.

14 The median is the central item in a group of observations when they are displayed in either an ascending or a descending order.
6.3.1 Research Hypotheses

There are two main hypotheses underlying this study. Firstly, I examined whether depositors exert market discipline by withdrawing their deposits when the fundamentals of their banks are no longer satisfactory. This was done by testing the statistical relationship between the percentage change in the customers' deposit level and measures of bank risk, as well as some other bank characteristics and control variables. Control variables are included in the model as there might be some other factors in the economy that could affect deposit growth. Secondly, I examined whether depositors exert market discipline by requiring higher interest rates when their banks become riskier, by testing the statistical relationship between the interest rate spread and independent risk and bank specific variables.

This leads to two hypotheses:

(1) H1: There is a negative relationship between deposit growth and bank risk-taking, and
(2) H1: There is a positive relationship between bank deposit interest rates and risk-taking.

Besides these two main hypotheses, in order to investigate depositor market discipline in the UK and Turkey in depth, the following hypotheses were also tested:

(3) H1: Large banks enjoy the "too-big-to-fail" policy, as there is a relationship between size and deposit growth and deposit interest rates.
(4) H1: The introduction of 100 percent deposit insurance in Turkey has an impact on banks' deposit levels and deposit interest rates.
(5) H1: Depositors withdraw deposits and require higher interest rates from failing banks before they have been transferred to the SDIF in Turkey.

While the second, fourth and fifth hypotheses were tested only for the Turkish banking sector, the first and third hypotheses (excluding deposit interest rates) were tested for both countries.
6.3.2 Research Methodology

In this section, I present the empirical methodology used to test the existence of market discipline in the UK and Turkish banking sectors. Firstly, a single multivariate equation model is developed to analyse the relationship between the percentage growth of customer deposits and bank risk, as well as some bank specific variables. Secondly, another single multivariate equation model is developed to investigate the relationship between bank risk-taking and bank deposit interest rates. Both models are estimated by pooled least squares regression analysis. This analysis provides a rich environment for the development of estimations techniques and theoretical results that could not be studied in either cross-sectional or time series settings (Greene, 1997).

In order to analyse the behaviour of depositors, I model the relationship between the percentage growth of customer deposits and bank risk as well as some bank specific variables as:

\[ GROWTH_{jt} = \alpha_0 + \alpha_1 RISK_{j,t-1} + \alpha_2 BANK_{j,t} + \epsilon_{jt}, \]  

such that \( j = 1, \ldots, J \) and \( t = 1, \ldots, T \).

\( J \) is the number of banks and \( T \) is the number of observations. As the number of observations varies across time, the panel is unbalanced. \( GROWTH_{jt} \) represents the percentage change of the bank \( j \)'s customer deposit level between time period \( t-1 \) and \( t \), the vector \( RISK_{j,t-1} \) contains risk variables derived from CAMEL\(^{16}\) ratings that measure the bank \( j \)'s risk exposure in time period \( t-1 \), and the vector of \( BANK_{j,t} \) represents variables that are included in the model in order to control bank and time specific effects. The vector of \( BANK_{j,t} \) is common for time specific effects, i.e. do not change across banks, and the vector of \( RISK_{j,t-1} \) is included with a lag.

\(^{16}\) The acronym CAMEL comes from the first letter assigned for Capital adequacy, Asset quality, Management, Earnings and Liquidity.
considering the fact that bank balance sheet and income statement information is available to the public with a certain delay.

By testing the significance of $\alpha_1$ in equation (1), the existence of market discipline is analysed through the quantity-based approach. If depositors withdraw deposits from riskier banks, $\alpha_1$ should be negative and significant, which indicates the existence of depositor market discipline as depositors punish risky banks by withdrawing their deposits.

However, besides the quantity-based approach, depositor market discipline can also be tested through the price-based approach, as shown in equation (2):

$$SPREAD_{j,t} = \gamma_0 + \gamma_1 RISK_{j,t-1} + \gamma_2 BANK_{j,t} + \varepsilon_{j,t}$$

such that $j = 1, \ldots, J$ and $t = 1, \ldots, T$.

$SPREAD_{j,t}$ represents the spread between bank $j$'s actual 3-month deposit interest rate in time period $t$ and the weighted average of 3-month deposit interest rates of the Turkish banks in time period $t$. In equation (2), if depositors demand higher interest rates from riskier banks, then $\gamma_1$ should be positive and significant in order for it to be concluded that depositors exert market discipline by requiring higher interest rates.

Both models are based on the assumption that depositors withdraw their funds and/or require higher deposit interest rates after bank risk-taking becomes apparent. By taking into account the above clarification, the single multivariate equations are structured below:
a) The single multivariate equation to be estimated for testing the British depositor behaviour is;

\[ GROWTH_{j,t} = a_0 + a_1 SIZE_{j,t} + a_2 CAPITAL_{j,t-1} + a_3 LOAN_{j,t-1} + a_4 PROVTA_{j,t-1} \]
\[ + a_5 OPER_{j,t-1} + a_6 ROE_{j,t-1} + a_7 LIQDEPO_{j,t-1} + a_8 BANK_{j,t-1} + \varepsilon_{j,t} \]  

(3)  

b) The single multivariate equations to be estimated for testing the Turkish depositor behaviour is;

\[ GROWTH_{j,t} = b_0 + b_1 SIZE_{j,t} + b_2 CAPITAL_{j,t-1} + b_3 LOAN_{j,t-1} + b_4 PROVTA_{j,t-1} \]
\[ + b_5 OPER_{j,t-1} + b_6 ROE_{j,t-1} + b_7 LIQDEPO_{j,t-1} + b_8 FULL_{j,t} \]
\[ + b_9 FAIL_{j,t} + b_{10} CRISIS_{j,t} + \varepsilon_{j,t} \]  

(4)  

and

\[ SPREAD_{j,t} = c_0 + c_1 SIZE_{j,t} + c_2 CAPITAL_{j,t-1} + c_3 LOAN_{j,t-1} + c_4 PROVTA_{j,t-1} \]
\[ + c_5 OPER_{j,t-1} + c_6 ROE_{j,t-1} + c_7 LIQDEPO_{j,t-1} + c_8 FULL_{j,t} \]
\[ + c_9 FAIL_{j,t} + c_{10} CRISIS_{j,t} + \varepsilon_{j,t} \]  

(5)  

where;

- **GROWTH**: Percentage change in the level of customer deposits
- **SPREAD**: Spread between bank interest rate and weighted average of sector’s interest rate
- **SIZE**: Logarithm of total assets
- **CAPITAL**: Ratio of equity to total assets
- **LOAN**: Ratio of total loans to total assets
- **PROVTA**: Ratio of provisions to total loans
- **OPER**: Ratio of operational cost to total assets
- **LIQDEPO**: Ratio of liquid assets to customer deposits
- **ROE**: Return on equity (ratio of net income to equity)
- **BANK**: Dummy variable indicating whether an institution is a bank or building society (1 if the institution is a bank and 0 if it is a building society)
FULL: Dummy variable indicating whether there is partial or full deposit insurance coverage (1 if there is full coverage and 0 if there is partial coverage)

FAIL: Dummy variable indicating whether a bank is transferred to SDIF or not (1 if the bank is transferred to SDIF and 0 if it is not)

CRISIS: Dummy variable indicating whether there is a crisis or not (1 if there is crisis and 0 if there is not)

The variables are explained in the following sub-section.

6.3.3 Specification of Variables

This sub-section describes the dependent and independent variables that have been used in the models and explains the hypothesised signs of independent variables.

6.3.3.1 Dependent Variables

In equations (3) and (4), the dependent variable $GROWTH$ represents the percentage change in the level of customer deposits during the period $t-1$ and $t$, for bank $j$. Customer deposits are defined as demand and other deposits, excluding deposits by banks. By examining the growth of deposits, I can observe whether depositors exert market discipline on banks by withdrawing their deposits from riskier banks.

In equation (5), the dependent variable $SPREAD$ represents the difference between banks' actual 3-month deposit interest rates and the weighted average of 3-month deposit interest rates of the Turkish banking sector. The maturity structure of the Turkish deposit market (Table 6.2) formed the basis for using the 3-month deposit interest rate in calculating the $SPREAD$. The main argument of the price-based approach is that differences in deposit interest rates across banks should reflect differences in bank-specific solvency risk if market discipline is effectively enforced. Therefore, by examining the deposit rates that banks pay, I can observe whether depositors exert market discipline on banks in the sense that riskier banks are forced to pay a risk premium to attract depositors.
6.3.3.2 Independent Variables

The vector $RISK_{j,t-1}$ contains risk variables that measure the banks' risk exposure. While some studies employ a probability of default variable as a proxy for the bank-risk-taking, in this study several risk variables are used to test the depositor market discipline. Park and Peristiani (1998) employ a probability of default variable and estimate this probability using a logit model\(^{17}\) as a function of bank performance fundamentals and using the estimated probability directly as an explanatory variable in the model. However, Barajas and Steiner (2000) argue that, it may not always be possible to estimate the probability of default, especially in a period when there are not many actual observations of bank failures. Martinez-Peria and Schmukler (2001) also point out that by including the probability of default directly, it is not possible to determine which of the bank indicators may be providing the strongest signals to depositors that banks are in fact taking on high risks. Therefore, following Barajas and Steiner (2000) and Martinez-Peria and Schmukler (2001), the bank fundamentals themselves are included as explanatory variables in the models to test market discipline.

In the models, following Martinez-Peria and Schmukler (2001), Birchler & Maechler (2001) and Barajas and Steiner (2000), the vector $RISK_{j,t-1}$ is included with a lag to account for the fact that balance sheet and income statement information is available to the public only after a certain delay. Therefore, as depositors have access to year-end financial statements of year $t-1$ in year $t$, explanatory variables are financial characteristics derived from year-end financial statements of the previous year.

Following Martinez-Peria and Schmukler (2001) and Birchler and Maechler (2001), the risk variables are derived from the CAMEL rating system of banks as CAMEL ratings are commonly viewed as summary measures of banks' overall financial condition, and all the categories are measured by some proxy ratios.

\(^{17}\) The logit model is a dummy variable regression model, where the dependent variable is quantitative and taking a value of 1 or 0.
The variables that are included in the models to measure bank risk are presented below (all the variables are ratios, in percent).

**Capital Adequacy:** The ratio of equity to total assets (CAPITAL) is used as an indicator of capital adequacy. Equity includes shareholders funds (including preference share capital) and minority interests in subsidiaries. In the literature, capital ratios are often considered both as an index of bank risk-taking and as the most natural instrument for controlling bank risk exposures (Bruni & Paterno, 1995). As a sound capital base should strengthen depositors’ confidence, I expect a positive relationship between the ratio of equity to total assets and the percentage change in the customer deposit level (GROWTH); and the interest rate spread (SPREAD) is expected to be inversely related to CAPITAL.

**Asset Quality:** In order to measure the quality of assets and loans, two variables are included in the model: first, the ratio of total loans to total assets (LOAN); and second, the ratio of loan loss provisions to total assets (PROVTA). Credit risk-taking plays an important role in analysing the determinants of bank failure and bank loans are generally viewed as risky assets. A large share of loans to assets can be assumed to increase the credit risk of a bank; therefore, a positive relationship between SPREAD and LOAN and a negative relationship between GROWTH and LOAN are expected. On the other hand, provisions for loan losses indicate a measure of loan quality and rising provisions indicate weakening loan quality. Therefore, I expect a positive relationship between PROVTA and SPREAD and a negative relationship between PROVTA and GROWTH.

**Management:** Although there is no objective basis that allows me to rate the management, I have included the ratio of operational cost to total assets (OPER) as a proxy for operational efficiency. However, there is not a specific expected sign for this variable (Demirgüç-Kunt and Huizinga, 1999). OPER would enter the regression, where dependent variable is GROWTH, negatively considering that a high ratio might represent an inefficient management. However, considering that

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18 Loan loss provisions are bad debt provisions charged to the profit and loss account.
banks with high operational costs offer high quality services, it could also be possible to see a positive relationship between OPER and GROWTH. On the other hand, if operational costs reflect bank inefficiency, I would expect to see a positive relationship between OPER and SPREAD and a negative relationship between these variables if increase in operational costs result in high quality of services and lower interest rates.

**Earnings:** In order to account for a bank’s earnings profile, return on equity (ROE), which is the ratio of net income to equity, is included in the models. Depositors are expected to react positively to increases in the return on equity, as a high profit rate should strengthen depositors’ confidence. Park (1995) argues that a bank’s earnings profile is important as current profitability may be a good indicator of a bank’s future performance. Therefore, a positive relationship between ROE and GROWTH and a negative relationship between ROE and SPREAD are expected.

**Liquidity:** Following most of the empirical literature, higher liquidity is considered as an indicator of low risk-taking. In order to account for the degree of liquidity, I include the ratio of liquid assets to customer deposits (LIQDEPO). As a relatively liquid bank might be less vulnerable to a bank run and larger holdings of liquid assets may enable banks to manage financial problems more flexibly, a positive relationship between LIQDEPO and GROWTH, and a negative relationship between LIQDEPO and SPREAD are expected.

The vector of \( BAN_\text{K}_t \) represents some variables that are included in the model in order to control for bank and time-specific effects. For the UK analysis, there are two variables that I include into the model for this purpose, namely SIZE and BANK. For the Turkish analysis, besides SIZE, three dummy variables are used, namely FAIL, FULL and CRISIS.

SIZE is measured by the logarithm of total assets. This variable is included in the model to test the “too-big-to-fail” hypothesis. The literature has exhibited some evidence of a ‘size effect’: rates paid on the deposits of large banks have often been lower than for smaller banks of the same riskiness; and large banks attract more
deposits, for a given deposit rate, as depositors respond to a "too-big-to-fail" effect. The "too-big-to-fail" doctrine indicates that the public perceives that the banking authorities might bail out the large banks in financial difficulties as liquidation of the large banks might adversely affect the financial system as a whole and cause deposit runs in other banks\textsuperscript{19}. Besides, larger banks might be distinguished from smaller banks as they might diversify their asset portfolio better, leading to lower risk, and they might also have a better reputation making it relatively effortless to attract new funds. Therefore, as depositors' belief in the "too-big-to-fail" doctrine would exempt large banks from market discipline and result in an implicit insurance subsidy (Park 1995), it is crucial to understand the behaviour of depositors concerning this issue. If depositors have some degree of certainty of a bailout by the government when large banks become insolvent, they will not consider themselves at risk and therefore will not monitor large banks. As a result, by including the variable $\text{SIZE}$, the effect of the asset size of banks on deposit growth and interest rates are controlled for and it is examined whether large banks benefit from the "too-big-to-fail" policy.

The dummy variable $\text{BANK}$ takes the value of 1 if an institution in the UK sample is a bank, 0 otherwise. In the UK sample, I included data for the building societies that were converted into banks during 1997. Therefore, for the years between 1989 to 1996, the UK sample is a combination of banks and building societies. However, in order to separate them, a dummy variable is included into the model.

In order to differentiate the banks that have been transferred to the SDIF in Turkey, a dummy variable, $\text{FAIL}$, is introduced to capture risk and other factors that may have been particular to the institutions that failed. It is expected that depositors require higher interest rates or withdraw their deposits if they realise that these banks are riskier. Following Jordan (2000), $\text{FAIL}$ takes the value of 1 for the banks transferred to the SDIF in year $t-1$, 0 otherwise.

For the analysis of the Turkish banking sector, two other dummy variables are included in the model, namely $\text{FULL}$ and $\text{CRISIS}$, to control for time specific events.

\textsuperscript{19} The large banks are very likely to hold large amounts of deposits and this might also make it difficult to liquidate large banks as, in such a case, the loss of the insurance fund will be larger.
As explained earlier in this study, prior to 1994 there was only partial deposit insurance coverage available to Turkish depositors and because of the 1994 financial crisis, a new decree came into effect and the insurance limit was extended to cover the whole amount of customers' savings accounts. However, as this full coverage could increase the potential for moral hazard, in order to control for this effect, a dummy variable, FULL, is included in the model to flag the change in the insurance coverage. This dummy variable takes the value of 1 for observations with 100 percent deposit insurance protection and 0 for observations with partial coverage.

In order to control for time-specific events, the variable CRISIS is also included. During the 1990s, Turkey experienced financial crisis in the years 1994, 2000 and 2001. Therefore, in order to control for the impact of these crises, a CRISIS dummy variable included in the model, taking the value of 1 for the years that Turkey experienced a financial crisis and 0 otherwise.

6.3.4 Data

The statistical relationships between the percentage change in the customer deposit level and the measures of bank risk, as well as some bank specific variables, were tested by using pooled cross-sectional data\textsuperscript{20} for the UK and Turkish banks.

Because of data limitations, the UK sample has been kept relatively small. The UK sample comprises the Major British Banking Groups (MBBG), as defined by the British Bankers' Association (BBA). There are 11 banking groups that are categorised as MBBG and they account for around 75 percent of deposits held at UK banks (BBA, 2000). The UK sample includes year-end data for 12 years from 1989\textsuperscript{21} to 2000, with the exception of Lloyds TSB, for which there are only six years data. The banks that constitute the UK sample and data period for each bank are shown in Appendix 5.

\textsuperscript{20} Pooled cross-sectional data is based on observations taken on entities each observed at several points in time. This data combine time series and cross sections.

\textsuperscript{21} The starting years 1989 for the UK and 1988 for Turkey are chosen due to the unavailability of data in earlier years.
Data for the UK banks was obtained from two sources, namely the Annual Abstract of Banking Statistics, which is published by the British Bankers Association (BBA) and the BankStat database. As a third source, bank annual reports for the year-end 1999 and 2000 were also used for a number of banks in order to check the accuracy of the other sources. All of the data sources that I used obtained their data from bank annual reports, which are formed from consolidated accounts and therefore include subsidiary companies. However, this is not seen as an obstacle as the objective of the study is to investigate the behaviour of depositors, who are also expected to use the annual reports to evaluate a bank’s financial condition. On the other hand, using annual reports has one particular disadvantage, as not all the year ends in the sample are the same. While the majority of the banks' financial years end on the 31st of December, there are some exceptions, such as:

- The financial year-end for the Bank of Scotland is 28th/29th of February,
- The financial year-end for the Royal Bank of Scotland is 30th of September prior to 2000 and 31st of December in 2000, and
- Prior to 1996, the financial year-end for Halifax was 31st of January.

The UK data comes from the year-end accounts, irrespective of the year-end date. For example, for 2000 year-end data, I used the data of 30 September 2000 for Royal Bank of Scotland, 28 February 2001 for Bank of Scotland and 31 December 2000 for the other banks. The Royal Bank of Scotland and National Westminster's 2000 figures exclude the results of the acquisition of the latter by the former on 6th of March 2000.

The BBA presents two figures for total assets starting from 1992. Following the introduction of Financial Reporting Standard 2 (FRS2) in December 1992, banks are required to show the liabilities/assets of their long-term assurance funds in their accounts. In this study, total asset figures excluding long-term assurance funds are used in order to be consistent with 1989-91 data. In 2000, FRS15 and FRS16 were adopted. FRS15 has changed the method of valuation and depreciation of freehold and long leasehold properties. FRS16 has changed the reporting of taxes not payable completely by the banking groups (BBA, 2001). Because of these changes, earlier years’ data have been restated by the BBA and, in this study, the restated data have
been used. However, it should also be noted that the impact of these changes on the figures was only minor.

The data set for Turkey represents a carefully constructed information base of a wide range of banks during a period of significant uncertainty in financial markets. The Turkish sample consists of 45 banks\textsuperscript{22}, representing almost 90 percent of total assets and 96 percent of total deposits in the Turkish banking sector as of year-end 2001.

While the sample includes state-owned and privately-owned banks, foreign banks are excluded from the sample, as their share in total deposits is insignificant. Investment banks are also excluded from the sample, as they are not allowed to collect deposits from the public. The share of customer deposits of state, private, SDIF and foreign banks in total customer deposits are shown in Table 6.1.

<table>
<thead>
<tr>
<th>Year</th>
<th>State Banks</th>
<th>Private Banks</th>
<th>SDIF Banks</th>
<th>Foreign Banks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1988</td>
<td>42.4</td>
<td>55.8</td>
<td>-</td>
<td>3.8</td>
</tr>
<tr>
<td>1989</td>
<td>46.1</td>
<td>51.0</td>
<td>-</td>
<td>3.0</td>
</tr>
<tr>
<td>1990</td>
<td>47.4</td>
<td>50.2</td>
<td>-</td>
<td>2.4</td>
</tr>
<tr>
<td>1991</td>
<td>44.0</td>
<td>54.0</td>
<td>-</td>
<td>2.0</td>
</tr>
<tr>
<td>1992</td>
<td>47.4</td>
<td>50.9</td>
<td>-</td>
<td>1.7</td>
</tr>
<tr>
<td>1993</td>
<td>43.5</td>
<td>54.9</td>
<td>-</td>
<td>1.6</td>
</tr>
<tr>
<td>1994</td>
<td>43.8</td>
<td>54.3</td>
<td>-</td>
<td>1.9</td>
</tr>
<tr>
<td>1995</td>
<td>43.3</td>
<td>54.0</td>
<td>-</td>
<td>2.7</td>
</tr>
<tr>
<td>1996</td>
<td>44.1</td>
<td>53.4</td>
<td>-</td>
<td>2.5</td>
</tr>
<tr>
<td>1997</td>
<td>39.9</td>
<td>54.2</td>
<td>2.5</td>
<td>3.4</td>
</tr>
<tr>
<td>1998</td>
<td>40.7</td>
<td>52.4</td>
<td>4.3</td>
<td>2.7</td>
</tr>
<tr>
<td>1999</td>
<td>39.8</td>
<td>46.4</td>
<td>11.1</td>
<td>2.7</td>
</tr>
<tr>
<td>2000</td>
<td>40.3</td>
<td>43.5</td>
<td>12.9</td>
<td>3.2</td>
</tr>
<tr>
<td>2001</td>
<td>29.6</td>
<td>53.8</td>
<td>12.5</td>
<td>4.1</td>
</tr>
</tbody>
</table>


The banks that were transferred to the SDIF in year $t$ are considered as failed banks and excluded from the sample. After these eliminations, the Turkish banks' sample is comprised of 45 banks, of which 4 are state-owned, 21 are privately-owned and 20 are failed banks. The banks that constitute the Turkish sample and the data period for each bank are shown in Appendix 6.

\textsuperscript{22} The number of banks in the sample changes due to bank entry and exit.
The data for the Turkish banks was obtained mainly from the publication entitled "Banks in Turkey", which is an annual financial data report published by the Banks Association of Turkey. All data sets for the Turkish banks include end-December balance sheet and income statement data, and in the calculation of the log of total assets of Turkish banks (SIZE variable), Turkish lira was converted to USD by using the year-end exchange rates.

As mentioned in Section 6.3.2, the study for the Turkish banking sector and market discipline is also examined by focusing on the relationship between pricing and bank risk-taking, from 1992 through to 2001. In order to measure the pricing of deposits, the spread between actual deposit rates of individual banks’ 3-month deposit interest rates and the weighted average of the banking system’s 3-month interest rates is calculated. 3-month deposit interest rates are chosen as in 12 years out of 14, 3-month deposits appear to have the highest percentage share in total deposits. The maturity structure of deposits in Turkey is presented in Table 6.2.

<table>
<thead>
<tr>
<th>Year</th>
<th>Demand Deposit</th>
<th>Total Time Deposit</th>
<th>Time D. 1Month</th>
<th>Time D. 3Month</th>
<th>Time D. 6Month</th>
<th>Time D. 1 Year+</th>
</tr>
</thead>
<tbody>
<tr>
<td>1988</td>
<td>37.9</td>
<td>62.1</td>
<td>7.5</td>
<td>14.4</td>
<td>10.8</td>
<td>29.5</td>
</tr>
<tr>
<td>1989</td>
<td>34.9</td>
<td>65.1</td>
<td>10.3</td>
<td>19.6</td>
<td>12.7</td>
<td>22.5</td>
</tr>
<tr>
<td>1990</td>
<td>35.4</td>
<td>64.6</td>
<td>10.2</td>
<td>20.0</td>
<td>14.0</td>
<td>20.5</td>
</tr>
<tr>
<td>1991</td>
<td>29.4</td>
<td>70.6</td>
<td>10.0</td>
<td>31.9</td>
<td>11.3</td>
<td>17.5</td>
</tr>
<tr>
<td>1992</td>
<td>29.8</td>
<td>70.2</td>
<td>10.5</td>
<td>33.4</td>
<td>10.9</td>
<td>15.4</td>
</tr>
<tr>
<td>1993</td>
<td>29.5</td>
<td>70.5</td>
<td>18.0</td>
<td>28.2</td>
<td>11.4</td>
<td>12.8</td>
</tr>
<tr>
<td>1994</td>
<td>27.0</td>
<td>73.0</td>
<td>12.0</td>
<td>35.8</td>
<td>12.4</td>
<td>12.8</td>
</tr>
<tr>
<td>1995</td>
<td>25.2</td>
<td>74.8</td>
<td>17.2</td>
<td>31.5</td>
<td>14.9</td>
<td>11.2</td>
</tr>
<tr>
<td>1996</td>
<td>26.3</td>
<td>73.7</td>
<td>16.9</td>
<td>30.2</td>
<td>15.7</td>
<td>10.9</td>
</tr>
<tr>
<td>1997</td>
<td>21.3</td>
<td>78.7</td>
<td>21.2</td>
<td>32.8</td>
<td>15.5</td>
<td>9.2</td>
</tr>
<tr>
<td>1998</td>
<td>18.8</td>
<td>81.2</td>
<td>24.1</td>
<td>34.2</td>
<td>14.3</td>
<td>8.6</td>
</tr>
<tr>
<td>1999</td>
<td>16.9</td>
<td>83.1</td>
<td>22.3</td>
<td>32.6</td>
<td>17.0</td>
<td>11.3</td>
</tr>
<tr>
<td>2000</td>
<td>18.5</td>
<td>81.5</td>
<td>33.6</td>
<td>32.8</td>
<td>9.3</td>
<td>5.8</td>
</tr>
<tr>
<td>2001</td>
<td>15.3</td>
<td>84.7</td>
<td>39.4</td>
<td>33.7</td>
<td>5.4</td>
<td>6.2</td>
</tr>
</tbody>
</table>


The starting year 1992 is chosen due to the unavailability of interest rate data in earlier years.
The data for the actual 3-month deposit interest rates of individual banks and the weighted average interest rate of 3-month deposits represents year-end interest rates and were obtained from the Central Bank of Turkey. The UK banks' interest rate data cannot be found in publicly available sources and is therefore unobservable. As a matter of fact, many studies on depositor market discipline do not use actual interest rates but calculate the interest rate on deposits as the total interest expense of deposits in a period divided by the average outstanding value of deposits during the period (some examples of these studies are: Baer and Brewer, 1986; James, 1987; Cargill, 1989; Park, 1995). However, for the UK banks the implicit interest rate cannot be calculated because of the lack of data on the interest expense of deposits.

6.4 Empirical Results

In this section, the empirical findings of the econometric analysis are presented. Based on the analytical framework discussed in Section 6.2, whether depositors react to changes in bank fundamentals is tested by running regressions using year-end data for the UK and Turkish banking systems based on individual bank balance sheet and income statements. The models presented in equations (3), (4) and (5) are estimated by pooled least squares regressions. Empirical results are reported in Tables 6.3, 6.4 and 6.5. For the evaluation of statistical significance, the level of significance for each coefficient is reported in the tables. In order to assess the adequacy of the specification of the models, F tests were performed and reported at the bottom of the tables. Adjusted $R^2$ are also reported at the bottom of the tables.24

The following sub-sections present the findings from the estimation of the models that test for the existence of market discipline in the UK and Turkish banking sectors.

24 The multiple coefficient of determination, which is denoted by $R^2$, denotes how well the model fits the population. The adjusted $R^2$ attempts to correct $R^2$ to more closely reflect the goodness of fit of the model in the population as the model usually does not fit the population as well as it fits the sample from which it is derived.
6.4.1 Depositor Market Discipline in the UK

The pooled least squares estimates of the equation (3) are shown in Table 6.3.

<table>
<thead>
<tr>
<th>Regressor</th>
<th>Coefficient</th>
<th>$t$-statistic</th>
</tr>
</thead>
<tbody>
<tr>
<td>SIZE (log of total assets)</td>
<td>7.491</td>
<td>0.596</td>
</tr>
<tr>
<td>CAPITAL (equity / total assets)</td>
<td>1.635</td>
<td>0.790</td>
</tr>
<tr>
<td>LOAN (total loans / total assets)</td>
<td>1.118</td>
<td>2.683***</td>
</tr>
<tr>
<td>PROVTA (provisions / total assets)</td>
<td>-5.547</td>
<td>-0.730</td>
</tr>
<tr>
<td>OPER (operational cost / total assets)</td>
<td>-0.979</td>
<td>-0.208</td>
</tr>
<tr>
<td>ROE (net income / equity)</td>
<td>0.393</td>
<td>1.163</td>
</tr>
<tr>
<td>LIQDEPO (liquid assets / customer deposits)</td>
<td>1.315</td>
<td>2.759***</td>
</tr>
<tr>
<td>BANK (bank dummy)</td>
<td>-12.761</td>
<td>-2.479**</td>
</tr>
</tbody>
</table>

The $F$ statistic indicates that the hypothesis that the coefficients on the independent variables are not jointly significantly different from zero is rejected at the 1 percent significance level.

The empirical analysis could not provide strong support for the first hypothesis, that deposit growth is related to bank performance fundamentals in the UK. Although the coefficients on the ratio of equity to total assets (CAPITAL) and the net income to equity (ROE) have the expected positive and the ratio of provisions to total assets (PROVTA) have the expected negative signs, they are not significant. Regarding management, the ratio of operational costs to total assets (OPER) has also an insignificant coefficient, which is negative. The coefficient on the ratio of total loans to total assets (LOAN) is statistically significant but does not have the expected sign, which is inconsistent with the analysis. A possible explanation for this result might be the perception of depositors that banks increase their profit by increasing their loan portfolio.
The only evidence of depositor market discipline in the UK comes from the ratio of liquid assets to customer deposits (LIQDEPO), which is found to be positive and to have a highly significant impact on deposit growth. A higher level of liquidity that is associated in a statistically significant manner with an increase in the customer deposit level indicates the positive effect arising from a better ability to survive from unpredicted deposit withdrawal.

Regarding the “too-big-to-fail” hypothesis, the empirical analysis shows a positive coefficient, which is not statistically significant for the UK banks. On the other hand, the coefficient on the BANK variable is negative and statistically significant, indicating that conversion from a building society to a bank appears to affect the decision of depositors.

As a result, the findings do not strongly support the presence of depositor market discipline in the UK, as the majority of bank specific fundamentals do not demonstrate significant relationships with the dependent variable. The only variable that has statistically significant relationship with the growth rate of deposits was found to be the ratio of liquid assets to customer deposits.

The absence of depositor market discipline in the UK may be the result of effective regulatory oversight as regulators take necessary measures before the reaction of market forces and banks adjust their fundamentals in order to comply with the regulators. On the other hand, depositors’ lack of sufficient knowledge and information to judge their banks’ risk-taking behaviour might also had an impact on the results.

6.4.2 Depositor Market Discipline in Turkey

The results of the deposit growth equation (equation 4) for Turkish banks are shown in Table 6.4.
Table 6.4: Pooled Least Squares Estimates of Depositor Market Discipline in Turkey
(Dependent Variable: GROWTH: percentage change of customer deposits)

<table>
<thead>
<tr>
<th>Regressor</th>
<th>Coefficient</th>
<th>t-statistic</th>
</tr>
</thead>
<tbody>
<tr>
<td>SIZE (log of total assets)</td>
<td>115.641</td>
<td>3.972***</td>
</tr>
<tr>
<td>CAPITAL (equity / total assets)</td>
<td>0.995</td>
<td>0.879</td>
</tr>
<tr>
<td>LOAN (total loans / total assets)</td>
<td>0.701</td>
<td>0.805</td>
</tr>
<tr>
<td>PROVTA (provisions / total assets)</td>
<td>10.182</td>
<td>3.493***</td>
</tr>
<tr>
<td>OPER (operational cost / total assets)</td>
<td>53.928</td>
<td>11.879***</td>
</tr>
<tr>
<td>ROE (net income / equity)</td>
<td>-0.037</td>
<td>-0.479</td>
</tr>
<tr>
<td>LIQDEPO (liquid assets / customer deposits)</td>
<td>0.675</td>
<td>1.558</td>
</tr>
<tr>
<td>FULL (100% deposit insurance dummy)</td>
<td>45.901</td>
<td>2.357**</td>
</tr>
<tr>
<td>FAIL (SDIF bank dummy)</td>
<td>-92.624</td>
<td>-2.385**</td>
</tr>
<tr>
<td>CRISIS (crisis dummy)</td>
<td>-53.324</td>
<td>-2.727**</td>
</tr>
</tbody>
</table>

F statistic 31.720
Adjusted R² 0.344
Number of observations 442
Observation Period 1990-2001
Number of banks 45

Note: The t-statistics that are starred emphasise that the coefficients are significantly different from 0 at the 10% (*), 5% (**) and 1% (***) levels.

The F statistic indicates that the hypothesis that the coefficients on the independent variables are not jointly significantly different from zero is rejected at the 1 percent significance level.

Regarding bank performance fundamentals, the variables PROVTA and OPER are found to be significant. However, the variable PROVTA has an unexpected sign, as an increase in the ratio of provisions to total assets has a significant positive impact on the growth rate of customer deposits. The positive and significant coefficient (at the 10 percent significance level) on the variable PROVTA might indicate that Turkish depositors reward those banks deemed to be trying to resolve bad debts by increasing provisions.

Although the coefficients on CAPITAL and LIQDEPO have expected positive signs, these variables are statistically insignificant. On the other hand, the coefficient on LOAN has an unexpected positive sign and the coefficient on ROE an unexpected negative sign but these variables are statistically insignificant.
Concerning the impact of the ratio of operational costs to total assets on deposit growth, the coefficient on \( \text{OPER} \) is positive and statistically significant at the 1 percent significance level, which might be caused by Turkish banks increasing their operational costs in order to offer high quality services and attract more deposits.

The coefficient on \( \text{SIZE} \) is found to have a statistically significant impact on the growth rate of deposits at the 1 percent significance level, which indicates that Turkish depositors view larger banks as being safer and believe that the government would not allow larger banks to fail, as a result of the “too-big-to-fail” policy.

With respect to bank and time specific events, the results indicate that the introduction of the 100 percent deposit protection scheme affected deposit growth positively and significantly, while the growth rate of deposits decreased significantly during the years of financial turmoil.

The statistically significant coefficient on the dummy variable \( \text{FAIL} \) appears with a negative coefficient, in line with the existence of the market discipline hypothesis, which indicates that depositors withdraw their deposits from banks that are going to fail. Therefore, the findings of equation (4) provide strong evidence of depositor market discipline.

The findings for equation (5) also support the existence of depositor market discipline in the Turkish banking sector as failing banks offer higher interest rates on deposits prior to their failure (Table 6.5).
Table 6.5: Pooled Least Squares Estimates of Depositor Market Discipline in Turkey
(Independent Variable: SPREAD: interest rate spread)

<table>
<thead>
<tr>
<th>Regressor</th>
<th>Coefficient</th>
<th>t-statistic</th>
</tr>
</thead>
<tbody>
<tr>
<td>SIZE (log of total assets)</td>
<td>1.661</td>
<td>0.535</td>
</tr>
<tr>
<td>CAPITAL (equity / total assets)</td>
<td>0.052</td>
<td>0.421</td>
</tr>
<tr>
<td>LOAN (total loans / total assets)</td>
<td>-0.118</td>
<td>-1.219</td>
</tr>
<tr>
<td>PROVTA (provisions / total assets)</td>
<td>0.316</td>
<td>1.056</td>
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<tr>
<td>OPER (operational cost / total assets)</td>
<td>0.312</td>
<td>0.660</td>
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<tr>
<td>ROE (net income / equity)</td>
<td>0.013</td>
<td>1.649</td>
</tr>
<tr>
<td>LIQDEPO (liquid assets / customer deposits)</td>
<td>-0.011</td>
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<tr>
<td>FULL (100% deposit insurance dummy)</td>
<td>4.322</td>
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<tr>
<td>FAIL (SDIF bank dummy)</td>
<td>9.495</td>
<td>2.403**</td>
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<td>CRISIS (crisis dummy)</td>
<td>-3.679</td>
<td>-1.865*</td>
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F statistic: 10.450***

Adjusted $R^2$: 0.096

Number of observations: 380


Number of banks: 45

Note: The t-statistics that are starred emphasise that the coefficients are significantly different from 0 at the 10% (*), 5% (**) and 1% (***) levels.

The F statistic indicates that the hypothesis that the coefficients on the independent variables are not jointly significantly different from zero is rejected at the 1 percent significance level.

The findings that are presented in Table 6.5 show that SIZE has a positive impact on the deposit interest rate spread; however, the coefficient on this variable is not statistically significant.

While deposit interest rate spreads are not found to respond significantly to changes in bank specific risk variables and bank size, the banks that failed and were transferred to SDIF are found (at the 5 percent significance level) to have paid higher interest rates. As banks that failed are found to have paid a premium over other banks, this evidence indicates the existence of depositor market discipline in Turkey.

On the other hand, concerning the bank specific risk variables, the findings do not appear to provide statistically significant results. Besides, the coefficients on CAPITAL, LOAN and ROE have unexpected signs. The coefficient on OPER is positive but statistically insignificant. The coefficient on the variable PROVTA has expected positive sign but statistically insignificant as well. Although the coefficient
on the variable LIQDEPO has the expected negative sign, indicating that depositors require lower interest rates from more liquid banks, it is also not statistically significant.

With respect to time-specific events, the results indicate that the deposit interest rate spread increases significantly with the introduction of the blanket coverage, while the spread decreases significantly during financial turmoil years. The finding concerning the increase in the spreads after 1994 when the coverage increased to 100 percent is interesting and creates a conflict with the moral hazard argument. This finding might be caused by the collapse of three Turkish banks during 1994 that resulted in huge losses on depositors and therefore changed the behaviour of depositors with respect to market discipline. The finding concerning the decrease in the spread during financial crisis years is also interesting and might be caused by the increase in interest rates (which resulted in tightened deposit interest rate spreads) and decrease of all banks in order to survive the impact of the crisis.

The findings that are presented in Tables 6.4 and 6.5 are interesting in several respects. First, depositors are found to be significantly affected by the “too-big-to-fail” doctrine, as large banks attract more deposits. Second the only bank specific risk variables that have significant impact on deposit growth are found to be the ratio of provisions to total assets and the ratio of operational costs to total assets. Third, while banks increase their deposits by increasing their operational costs, an increase in operational costs does not have a significant impact on deposit interest rate spreads. Lastly, and more importantly, the estimation results provide support for the presence of market discipline by Turkish depositors, as riskier banks, i.e. failed banks, in the Turkish banking system are found to have experienced slower growth in deposits and to paid higher interest rates.

As a result, Turkish depositors are found to exert some market discipline, as they require higher interest rates from failing banks as well as withdrawing their deposits from those banks prior to their failure. On the other hand, the majority of bank

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25 During 1994, three Turkish banks, namely TYT Bank, IMPEX Bank and Marmara Bank were collapsed.
specific fundamentals do not demonstrate significant relationships with the dependent variables.

6.5 Conclusions

In the literature, depositor market discipline has been generally investigated to assess its impact either on the deposit interest rate or on the quantity of deposits. In this chapter, in order to apply these two approaches to examine depositor market discipline, panel data models that investigate the relationship between depositor behaviour and bank specific risk variables derived from balance sheets and income statements were employed.

The principal findings of the empirical analysis that were presented in this chapter are especially interesting from two points of view. First, the empirical results do not suggest that depositors are very sensitive to bank specific risk variables. Among bank specific risk variables, liquidity seems to be an issue that depositors take into consideration in the UK.

Second, depositors in the Turkish banking system were found to be exerting market discipline. By examining the deposit growth of Turkish banks and deposit interest rates that Turkish banks pay, it was observed that Turkish depositors exert market discipline on banks in the sense that depositors withdrew their funds from failing banks (that were eventually transferred to the SDIF) and these banks were forced to pay a risk premium for funds.

As a conclusion, the empirical analysis supports the hypothesis that depositors in the Turkish banking system exert market discipline while depositors in the UK banking system do not, suggesting that depositors in a more fragile system are more risk-sensitive. The results also create a conflict with the argument that a full deposit guarantee promotes moral hazard behaviour as the existence of depositor market discipline in Turkey suggests that, despite enjoying full protection under an explicit deposit insurance scheme, insured depositors in Turkey still fear the liquidity costs that bank failures can impose.
CHAPTER SEVEN

STRATEGIC CONCLUSIONS
OF THE RESEARCH

7.1 Introduction

Although banks are among the most heavily regulated industries, several developed and developing countries have experienced banking crises. In line with the increase in the number of banking crises, the importance that is attached to market discipline has accelerated. The apparent need for more effective market discipline on banks has continued to receive attention, especially after the publication of the Basel Committee on Banking Supervision’s consultative paper on capital adequacy in 1999, which specifies market discipline as one of the three pillars, along with improved capital standards and risk-based supervision, of bank capital regulation. It is stressed that markets contain disciplinary mechanisms that reinforce regulatory efforts by rewarding those banks which manage risk effectively and penalising those whose risk management is insufficient.

The literature review of market discipline illustrates that there are three possible sources of market discipline, which are depositors, debt holders and equity holders. Depositors are an obvious example of the existence of market discipline in a banking sector where they penalise riskier banks by requiring higher deposit interest rates or by withdrawing their deposits.

In this research, the question of whether depositors can be an effective source of market discipline was examined for the banking sectors of the UK and Turkey, where the design characteristics of deposit insurance schemes are different. Although both countries have an explicit deposit insurance scheme, the main differences are
that the UK scheme is less generous and adopts a co-insurance policy where the depositor bears some losses if institutions fail. On the other hand, Turkey has adopted blanket coverage.

This subject is worth studying as policy-makers have started to encourage more market discipline to fill the gap in bank regulation. Regulators in the UK and Turkey have emphasised the importance of depositor market discipline for their countries. However, for policy purposes, before relying on depositor market discipline to complement bank regulation and supervision, the extent of market discipline has to be ascertained. Therefore, it is very important to investigate the actual presence of depositor discipline in these countries. Furthermore, although market discipline has been investigated in the literature extensively for the US, the empirical results are mixed and there is no evidence of depositor market discipline for the UK and Turkey. This research also contributes to the literature as it combines two approaches to investigate depositor market discipline; as well as the econometric analysis, a survey instrument was applied to find out depositors' ability to exert market discipline.

The objective of this final chapter is to explain the strategic conclusions of the research. The second section highlights the key findings of the research. The policy implications of the research are presented in the third section. The last section provides directions for further research.

7.2 Key Findings of the Research

In this research, a multi-dimensional approach was adopted to examine the existence of market discipline in the UK and Turkey. Regulatory views that were obtained from British and Turkish policy-makers indicate that market discipline is considered crucial and depositors are seen as a source of market discipline in these countries.

There are a number of conditions that must be fulfilled by depositors to effectively discipline banks. The main conditions that must be fulfilled by depositors are: risk should be a primary concern for depositors; they should have sufficient information
and ability to process that information; and finally, depositors should not expect to be bailed out.

The survey analysis that was undertaken aims to examine the ability of depositors to be a source of market discipline in the UK and Turkey. Therefore, in the light of the theoretical discussions that highlight the necessary conditions for depositors to be able to discipline banks, the survey instrument was designed and applied. The main conclusion of the survey analysis for the UK and Turkey is that, while Turkish depositors are likely to exert market discipline, despite the existence of full coverage, British depositors' ability to exert market discipline is found to be very limited. The following conclusions were also reached as a result of the descriptive analysis and hypotheses-testing.

a) The evaluation of preconditions necessary for being a source of market discipline:

It is stated that depositors have to feel themselves at risk in order to feel the necessity to pay attention to where they entrust their funds. Accordingly, I evaluate depositors' risk perceptions from different dimensions. The findings show that risk is not a major concern for UK depositors. It was found that the priority is given to convenience while opening accounts, and the majority of UK depositors did not feel obliged to check any information regarding where they entrust their funds. Lending their savings to well-known names and being an existing customer comes up as the major reasons for not checking any information before investing. Although there were infrequent bank failures and a stable financial system in the UK, surprisingly not many depositors expressed their faith in UK banking regulation, which may suggest their lack of awareness concerning the framework of regulation applied in the country. Besides, it was found that although it is advised by regulators to check for the authorisation of the banks and building societies before investing, which is essential for being under the umbrella of deposit insurance in the case of any failure, very few depositors took that advice.
Another important condition for an effective system of depositor-imposed market discipline is the availability of relevant information to depositors on a timely basis. There are two kinds of information essential for depositors. Firstly, information to estimate the probability of a depository’s insolvency and secondly, information necessary to estimate the losses to themselves in case of an insolvency. The availability of both types of information and its timeliness has great significance, along with the depositors having the necessary sophistication to use that information. The hypothesis-testing regarding the information aspect of depositor discipline leads to the result that British depositors did not able to obtain and evaluate information and did not monitor their banks’ financial condition.

On the other hand, Turkish depositors are found to be risk averse. It was found that, besides convenience and variability of other services, financial strength is an important factor for Turkish depositors when choosing a depository. Besides, a substantial portion of depositors check on banks before investing and use the financial press for this purpose. Existing bank-customer relationships were found to be the major reason for attracting funds from depositors who do not feel obliged to check information before investing. As expected, there were not many depositors that expressed their faith in Turkish banking regulation. In addition to that, the capacity and willingness of Turkish depositors to evaluate available information on individual bank performance was found to be quite substantial.

To conclude, the assessment of the preconditions of market discipline demonstrates that British depositors’ ability to exert market discipline is very limited. On the other hand, Turkish depositors fulfill more conditions to be a source of market discipline.

b) The effect of knowledge of compensation schemes:

Depositor awareness and understanding concerning the compensation arrangements was also investigated in the survey analysis. According to the results, 81.0 percent of the UK respondents did not know about compensation arrangements. On the other hand, that only 14.6 percent of Turkish respondents did not know about compensation arrangements might be due to the frequent banking crises that have led
to a number of bank collapses in Turkey. The importance attached to the financial strength of the bank when opening an account among the depositors who have knowledge about compensation schemes and who have not was investigated, and it was found that, in the UK, depositors who have knowledge about compensation arrangements attach less importance to the financial condition of the banks. On the other hand, I could not detect a statistically significant difference among Turkish depositors on this subject; regardless of the knowledge of compensation arrangements Turkish depositors pay attention to the financial strength of their institution. It was also found that both British and Turkish depositors who know about deposit insurance have a greater tendency to diversify their savings among banks.

c) The effect of knowledge of bank failures:

Knowledge of bank failures in their countries was found to be hold by 64.5 percent and 97.8 percent of British and Turkish depositors respectively, which resulted in a statistically significant difference between the two nations' knowledge about bank failures. The UK regulators put emphasis on the co-insurance principal stating that co-insurance encourages depositors to pay attention where to place their money, since the publicity surrounding a default makes depositors aware of the fact that some people have to bear losses. According to the results of the hypotheses-testing, I could not detect any difference in the tendency to monitor the financial condition of their bank among depositors who have knowledge about bank failures and those who have not in both countries. However, the study shows that, in Turkey, depositors who have knowledge about bank failures had a greater propensity to run in the case of disturbances in the financial markets. I could not find a statistically significant finding for the UK.

d) Attitudes towards being bailed out:

It was found that the majority of depositors in both countries expect to be bailed out, either partially or fully. Depositors who expect to be bailed out did not feel it necessary to pay attention to the financial condition of the institution that they entrust
their money to, and this expectation is an obstacle towards achieving the aims of market discipline.

In addition, it is investigated whether there is a "too-big-to-fail" doctrine in place in these countries. For the UK, results of the hypotheses testing indicate that the depositors of Major British Banking Group banks expect to be bailed out most. On the other hand, the depositors of the state-owned banks in Turkey have a greater expectation of being bailed out, suggesting that the existence of state banks is an obstacle towards achieving the aim of market discipline in Turkey.

The existence of depositor market discipline in the banking sectors of the UK and Turkey has also been examined through econometric analysis and the findings confirm the main conclusions of the survey analysis.

The existence of depositor market discipline was first tested for both countries by employing a quantity-based approach, which examines whether depositors punish risky banks by withdrawing their funds. In this approach, the relationship between the growth rate of banks' deposits and bank-specific variables is modelled. In addition to the quantity-based approach, the price-based approach was also applied (only for Turkish banks). The price-based approach investigates whether depositors ask for higher deposit interest rates from riskier banks. Both approaches were modelled and estimated by employing pooled least squares regressions.

The findings of this econometric analysis do not support the presence of market discipline in the UK. The majority of bank specific variables, which are derived from the CAMEL rating system, did not demonstrate significant relationships with the dependent variable, which is growth of deposits. As the only variable that is significant is the ratio of liquid assets to customer deposits, depositor market discipline in the UK banking system is very doubtful.

On the other hand, I found support for the notion that deposit growth falls for failing banks in Turkey, and Turkish depositors require higher interest rates from those banks prior to their failure. The size of Turkish banks' assets was also found to have
a statistically significant impact on the growth rate of deposits, which is important to
demonstrate depositors' preference towards big banks, in anticipation of being bailed
out in a crisis.

The evidence of market discipline that was found in Turkey, despite its explicit
deposit insurance arrangements which protect all savings deposits, can be explained
by a perceived weakness in the credibility of the guarantees, and by delays and other
costs entailed in recovering funds from the guarantor. The finding that even fully
insured depositors discipline banks in Turkey might be due to a number reasons.
Depositors could be unsure about how well funded the scheme is, especially in the
case of Turkey where the scheme has to be activated frequently due to repeated bank
failures, and face with huge costs. It is also possible that, even if the insurance is
credible, depositors may want to avoid any costs they might face. Repayments
through the insurance fund usually take a long time, imposing liquidity costs on
depositors, coupled with the embarrassment of being stuck at a failed bank.

7.3 Policy Implications

The findings of this research contain interesting implications. I was not able to find
any support for the existence of market discipline in the UK despite of careful design
of compensation arrangements. The results of the UK survey show that UK
depositors do not feel confident about obtaining and assessing information about
their banks. This finding reveals the importance of two points; first, improving the
disclosure of necessary information that depositors need to assess the safety and
soundness of a bank, and second, enhancing financial literacy among depositors.
High quality and timely public disclosure would improve the depositors' risk
assessment of a bank before opening an account for their savings. Also, information
must be made available continuously to depositors to make them aware of the change
in a bank's condition, enabling them to effectively monitor their institution and act
accordingly. The results of the survey also demonstrate that depositors do not feel
able to assess the available information. To do effective monitoring, depositors must
analyse the information being disclosed, understand its nature and correctly assess its
consequences. Therefore, improving financial literacy among depositors is seen as an important step to establishing effective depositor market discipline in the UK.

The regulators in the UK mainly stress the fact that, by the incentive effect of the "co-insurance" element of the compensation scheme, they expect depositors to pay attention to the safety and soundness of their banks. However, the results of the survey analysis indicate that depositor awareness and understanding of the compensation arrangements is very low and many depositors are not aware of the loss they are exposed to in case of a bank failure. Therefore, the features of the available compensation scheme, mainly the amount or percentage of a depositor's money that is not protected in the case of a bank defaulting, must be clearly stated when depositors open a deposit account; and policy-makers should improve the level of awareness and understanding of compensation arrangements.

The empirical findings of this research are also very important for Turkey as they indicate that 100 percent deposit insurance does not eliminate the incentive for depositors to monitor bank activities, which could be explained by a perceived weakness in the credibility of the guarantees and by delays and other costs entailed in recovering funds from the guarantor. The existence of market discipline observed in the Turkish market is not a result of the design features of compensation arrangements but purely due to the high number of bank failures in recent years and depositors' awareness concerning the costs entailed in recovering funds from the guarantor.

The results concerning the failing banks demonstrate that indiscriminately issuing government guarantees and other forms of bailout support rewards bad bankers and penalises good ones. Because such a policy reduces market discipline and distorts risk-taking incentives and imposes unbooked obligations on the national treasury, it promises new and deeper crises in years to come. Therefore, taken into consideration the frequent bank failures in recent years and the high cost of restructuring those banks that were transferred to the SDIF, policy-makers should consider major changes in the compensation arrangements and the way they supervise and regulate banks in Turkey and start by scaling back insurance coverage.
Deposit insurance is enacted in Turkey mainly for avoiding panic withdrawals in case of financial instability. However, the findings show that depositors are prone to run regardless of the blanket coverage; therefore, policy-makers have to be aware of the fact that they cannot secure priority aim and have to be content with the secondary aim of implementing deposit insurance, which is protecting small depositors. Furthermore, although Turkish depositors were found to exert market discipline on failing banks, bank fundamentals do not appear to matter to depositors. This result raises questions about the quality of banks’ published data. For this reason, regulators should assure that banks disclose sound and high quality of information in a timely manner.

As a conclusion on the policy implications of this research, although relying on market discipline has gained importance because of the inadequacy of traditional supervisory tools, it cannot be a sufficient financial safety net by itself and should be a supplement to prudential bank regulation. The findings of this research indicate that Turkish depositors exert market discipline not only by withdrawing their funds but also requiring higher deposit interest rates from failing banks. However, the Turkish case indicates that, as one third of Turkish banks have failed since 1997 despite depositor market discipline, reliance on market discipline cannot necessarily restrain managerial risk-taking and reduce the cost of bank failures on deposit insurance funds. This evidence indicates that inadequacies in supervision and insurer net worth can reduce the credibility of an insurer’s guarantees.

The findings also indicate that in the UK environment, where depositors do not experience frequent bank failures, it is a difficult task to establish a risk concern among depositors.

Therefore, policy-makers should first establish effective bank regulation and supervision and then consider market discipline as another mechanism to maintain the safety and soundness of the banking systems. On the other hand, market discipline could support prudential bank regulation either by revealing new information to bank regulators and acting as an early warning system, or by verifying the already known information and making it easier for them to intervene in banks.
7.4 Directions for Future Research

Effective market discipline involves two steps: first, depositors monitor bank activities and punish riskier banks; second, banks should respond to depositor behaviour. Therefore, a further step of the analysis of market discipline could be the investigation of whether banks effectively respond to signals provided by depositors in a manner consistent with market discipline. However, this analysis should be handled carefully as banks should also respond to regulatory discipline.

In this study, the presence of market discipline in the UK is examined by using a quantity-based approach. The reason for not using a price-based approach for the UK banks is the data limitation, as neither implicit nor explicit interest rates could be found. However, for Turkey, besides applying a quantity-based approach, a price-based approach is also employed, as market discipline could be reflected both in quantity and interest rate effects. Depending on data availability, using a price-based approach could be applied to the UK banking system as further research.

Finally, because this research has analysed only depositor market discipline, risk-sensitive debt and equity holders, who are other potential sources that are capable of providing market discipline, could be looked at in future research.
BIBLIOGRAPHY


203


Dictionary of Banking Terms (1997), Barron’s Educational Series, New York, NY.


“Family Resources Survey Great Britain 1996-97” (1998), DSS.


Official Gazette of The Republic of Turkey, 1 June 2000.

Official Gazette of The Republic of Turkey, 21 December 1999.

Official Gazette of The Republic of Turkey, 5 May 1994.


The Times, 31 July 1997.


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<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Gibraltar</td>
<td>1998</td>
<td>Co-insurance</td>
<td>Yes</td>
<td>Yes</td>
<td>Private</td>
<td>Joint</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Greece</td>
<td>1993</td>
<td>Cut-Off</td>
<td>Yes</td>
<td>Yes</td>
<td>Private</td>
<td>Joint</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Hungary</td>
<td>1993</td>
<td>Cut-Off</td>
<td>Yes</td>
<td>Yes</td>
<td>Joint</td>
<td>Joint</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Iceland</td>
<td>1985</td>
<td>Co-insurance</td>
<td>Yes</td>
<td>Yes</td>
<td>Private</td>
<td>Official</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>India</td>
<td>1961</td>
<td>Cut-Off</td>
<td>Yes</td>
<td>Yes</td>
<td>Joint</td>
<td>Official</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Ireland</td>
<td>1989</td>
<td>Co-insurance</td>
<td>Yes</td>
<td>Yes</td>
<td>Private</td>
<td>Official</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Italy</td>
<td>1987</td>
<td>Cut-Off</td>
<td>Yes</td>
<td>Yes</td>
<td>Joint</td>
<td>Joint</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
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<td>Jamaica</td>
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<td>Cut-Off</td>
<td>Yes</td>
<td>Yes</td>
<td>Joint</td>
<td>Official</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
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<tr>
<td>Japan</td>
<td>1971</td>
<td>Cut-Off</td>
<td>Yes</td>
<td>Yes</td>
<td>Joint</td>
<td>Joint</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Kenya</td>
<td>1985</td>
<td>Cut-Off</td>
<td>Yes</td>
<td>Yes</td>
<td>Joint</td>
<td>Official</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
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<td>1995</td>
<td>Cut-Off</td>
<td>Yes</td>
<td>Yes</td>
<td>Joint</td>
<td>Joint</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Latvia</td>
<td>1995</td>
<td>Cut-Off</td>
<td>Yes</td>
<td>Yes</td>
<td>Joint</td>
<td>Joint</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
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<td>Lebanon</td>
<td>1987</td>
<td>Cut-Off</td>
<td>Yes</td>
<td>Yes</td>
<td>Joint</td>
<td>Joint</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Lithuania</td>
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<td>Co-insurance</td>
<td>Yes</td>
<td>Yes</td>
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<td>Official</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
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<td>Co-insurance</td>
<td>Yes</td>
<td>Yes</td>
<td>Private</td>
<td>Private</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Macedonia</td>
<td>1995</td>
<td>Co-insurance</td>
<td>Yes</td>
<td>Yes</td>
<td>Joint</td>
<td>Joint</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Marshall Islands</td>
<td>1975</td>
<td>Cut-Off</td>
<td>Yes</td>
<td>Yes</td>
<td>Private</td>
<td>Official</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
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<tr>
<td>Mexico</td>
<td>1983</td>
<td>Full</td>
<td>Yes</td>
<td>Yes</td>
<td>Joint</td>
<td>Official</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
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<tr>
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<td>Cut-Off</td>
<td>Yes</td>
<td>Yes</td>
<td>Private</td>
<td>Official</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
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<tr>
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<td>1970</td>
<td>Cut-Off</td>
<td>Yes</td>
<td>Yes</td>
<td>Joint</td>
<td>Official</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
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<tr>
<td>Nigeria</td>
<td>1968</td>
<td>Cut-Off</td>
<td>Yes</td>
<td>Yes</td>
<td>Joint</td>
<td>Official</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
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<td>Norway</td>
<td>1961</td>
<td>Cut-Off</td>
<td>Yes</td>
<td>Yes</td>
<td>Joint</td>
<td>Private</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Oman</td>
<td>1995</td>
<td>Co-insurance</td>
<td>Yes</td>
<td>Yes</td>
<td>Joint</td>
<td>Official</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Peru</td>
<td>1992</td>
<td>Cut-Off</td>
<td>Yes</td>
<td>Yes</td>
<td>Joint</td>
<td>Joint</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Philippines</td>
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<td>Cut-Off</td>
<td>Yes</td>
<td>Yes</td>
<td>Joint</td>
<td>Official</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
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<td>1995</td>
<td>Co-insurance</td>
<td>Yes</td>
<td>Yes</td>
<td>Joint</td>
<td>Official</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
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<td>Portugal</td>
<td>1992</td>
<td>Co-insurance</td>
<td>Yes</td>
<td>Yes</td>
<td>Joint</td>
<td>Official</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
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<td>Republic of Congo</td>
<td>1999</td>
<td>Cut-Off</td>
<td>Yes</td>
<td>Yes</td>
<td>Joint</td>
<td>Joint</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Romania</td>
<td>1995</td>
<td>Cut-Off</td>
<td>Yes</td>
<td>Yes</td>
<td>Joint</td>
<td>Joint</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Slovak Republic</td>
<td>1996</td>
<td>Cut-Off</td>
<td>Yes</td>
<td>Yes</td>
<td>Joint</td>
<td>Joint</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Spain</td>
<td>1977</td>
<td>Cut-Off</td>
<td>Yes</td>
<td>Yes</td>
<td>Joint</td>
<td>Joint</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
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<td>Sri Lanka</td>
<td>1977</td>
<td>Cut-Off</td>
<td>Yes</td>
<td>Yes</td>
<td>Joint</td>
<td>Official</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
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<td>1975</td>
<td>Cut-Off</td>
<td>Yes</td>
<td>Yes</td>
<td>Joint</td>
<td>Joint</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
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<td>Switzerland</td>
<td>1984</td>
<td>Cut-Off</td>
<td>Yes</td>
<td>Yes</td>
<td>Private</td>
<td>Private</td>
<td>Yes</td>
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<td>Yes</td>
</tr>
<tr>
<td>Taiwan</td>
<td>1985</td>
<td>Cut-Off</td>
<td>Yes</td>
<td>Yes</td>
<td>Joint</td>
<td>Official</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Tanzania</td>
<td>1994</td>
<td>Cut-Off</td>
<td>Yes</td>
<td>Yes</td>
<td>Joint</td>
<td>Private</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Trinidad &amp; Tobago</td>
<td>1986</td>
<td>Cut-Off</td>
<td>Yes</td>
<td>Yes</td>
<td>Joint</td>
<td>Official</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
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<tr>
<td>Turkey</td>
<td>1983</td>
<td>Full</td>
<td>Yes</td>
<td>Yes</td>
<td>Joint</td>
<td>Official</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Uganda</td>
<td>1994</td>
<td>Cut-Off</td>
<td>Yes</td>
<td>Yes</td>
<td>Joint</td>
<td>Official</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Ukraine</td>
<td>1999</td>
<td>Cut-Off</td>
<td>Yes</td>
<td>Yes</td>
<td>Joint</td>
<td>Joint</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>1982</td>
<td>Co-insurance</td>
<td>Yes</td>
<td>Yes</td>
<td>Private</td>
<td>Private</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>United States</td>
<td>1934</td>
<td>Cut-Off</td>
<td>Yes</td>
<td>Yes</td>
<td>Joint</td>
<td>Official</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Venezuela</td>
<td>1985</td>
<td>Cut-Off</td>
<td>Yes</td>
<td>Yes</td>
<td>Joint</td>
<td>Official</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
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</tbody>
</table>

Source: Demirgüç-Kunt and Sobaci (2000)
APPENDIX 2: Cover Letter

Loughborough University, Business School is currently undertaking research into the compensation arrangements available to the customers of banks and building societies which fail. As part of this project, this questionnaire seeks to establish customers’ awareness of these arrangements and to survey other aspects of their attitudes and experiences.

We should be grateful if you could spare us ten minutes of your time to fill in the enclosed questionnaire. Your contribution will help to ensure the success of this study.

The responses will be treated with absolute confidentiality. If you have any questions about the research project, please do not hesitate to contact us. If you are interested in receiving a summary of the research findings please fill in your name in the space provided at the end of the questionnaire.

Please attempt to answer all questions and use the pre-paid envelope to return the completed questionnaire to us.

Thank you very much for taking part in this survey.
Loughborough University Business School
Survey of Attitude to Banking

Please circle the number or write your answer as appropriate. When in doubt, indicate the answer that corresponds most closely with your views.

SECTION I: ABOUT YOUR BANK/BUILDING SOCIETY ACCOUNTS
This section seeks to gather information about your relationship with your bank/building society.

1) With how many banks and/or building societies do you currently hold your savings in the United Kingdom? .................

If you hold your savings with more than one bank or building society please circle only the major reason.
1 Different product offer
2 Interest rate
3 Convenience
4 Spreading risk

Please answer the following questions with regard to the account where you hold MOST OF YOUR SAVINGS. Hereafter, both building societies and banks will be referred to as "BANKS".

2) Please specify the name of your bank or building society where you hold most of your savings.

3) How important were the following factors for you in opening the account with your bank?

<table>
<thead>
<tr>
<th>Factor</th>
<th>Not at all Important</th>
<th>Unimportant</th>
<th>Neutral</th>
<th>Important</th>
<th>Very Important</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interest rate</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Convenience</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Financial strength of the bank</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Existing bank relationship</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Well known name (High street bank)</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Good reputation</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Availability of services</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

4) Did you make any attempt to check out any information about the financial condition of your bank before opening the account where you hold most of your savings?

1 Yes
2 No

If your answer is NO, please circle only the major reason below and proceed to QUESTION 6.

1 Being existing customer
2 Well-known name
3 Good reputation
4 Paying high interest rate
5 Don't know how to check
6 Assume big banks are safe
7 Faith in UK regulation
5) If your answer to question 4 was Yes, which of the following did you use as the main source to check the information about the financial condition of your bank? (Please circle only one)

1. Financial press
2. Annual reports
3. Professional advice
4. Other (please specify) .......................................................... ..

6) Two main kinds of deposit-takers, namely banks and building societies, must be authorised by the Financial Services Authority and the Building Societies Commission respectively.

Did you check the authorisation of your bank before opening the account?

1. Yes  
2. No

7) How much do you hold in that account?

1. £9,999 or less
2. £10,000 - £19,999
3. £20,000 and above

**SECTION II: ABOUT YOUR ATTITUDES TOWARDS BANKING**

This section seeks to gather information about your behaviour regarding your bank/building society.

Please indicate your level of agreement or disagreement with statements no. 8 to 12.

<table>
<thead>
<tr>
<th>Statement</th>
</tr>
</thead>
<tbody>
<tr>
<td>8) I felt competent to assess the financial condition of my bank when I opened my account.</td>
</tr>
<tr>
<td>9) I am confident that I have the information necessary to monitor the financial condition of my bank.</td>
</tr>
<tr>
<td>10) I am confident that I have the skills needed to monitor the financial condition of my bank.</td>
</tr>
<tr>
<td>11) I monitor the financial condition of my bank.</td>
</tr>
<tr>
<td>12) I shop for the very best terms before opening accounts.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

13) Have you ever heard or read about any banks which have failed in the United Kingdom?

1. Yes  
2. No

*If your answer is YES, please specify the name(s) of the bank: .......................................................... ..

14) Have you ever lost any money because of a bank failure?

1. Yes  
2. No

*If your answer is YES, please specify the name(s) of the bank: .......................................................... ..
15) Have you heard or read about the Deposit Protection Scheme in the United Kingdom?
   1 Yes  2 No

   If your answer is NO, please proceed to QUESTION 19

16) How much do you think is the limit of protection? Please specify the amount: £ .........................

17) Did the terms of the Deposit Protection Scheme influence your decision when opening the account?
   1 Yes  2 No

18) Have you heard or read about the co-insurance element of the Deposit Protection Scheme in the United Kingdom?
   1 Yes  2 No

   If your answer is YES, please specify what percentage of your deposit, you believe to be protected?
   ..................%

Please indicate your level of agreement or disagreement with statements no. 19 to 21.

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>19) I am willing to take financial risks.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>20) It is a good idea to split my savings among different banks to reduce the risk of losing all my deposits if a bank collapsed.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>21) It is very important for me to be confident that my savings are not at risk.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

22) Have you ever deliberately split your funds amongst banks in order to be safer?
   1 Yes  2 No

23) What is the maximum amount you would leave with one bank?

   Please specify the amount: £ .........................

Please indicate your level of agreement or disagreement with statements no. 24 to 26.

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>24) I would take action if I were concerned about the financial condition of the bank where I hold my savings.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>25) I would decrease the amount of savings if I suspected any deterioration in the financial condition of my bank.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>26) I would close my account immediately on a rumour about my bank being in financial difficulty.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>
27) If your bank failed, which of the following would you expect to happen? (Please circle only one answer.)

1. I would expect to receive only my legal entitlement, if any.
2. I would expect to be bailed out partially.
3. I would expect to be bailed out fully.

SECTION III: ABOUT YOU
This section seeks to gather background information about you so that the results can be categorised.

28) Are you male or female?
1. Male 2. Female

29) What is the highest level of qualification you possess?
1. No Qualifications 2. 'O' Levels (or equivalent) 3. 'A' Levels (or equivalent) 4. First Degree 5. Postgraduate Qualification 6. Professional Qualification

30) What was your age last birthday? ..............

31) Could you please indicate your employment group?

SECTION IV: COMMENTS

If there are any other aspects of deposit insurance you would like to comment on, please do so:

..........................................................................................................................
..........................................................................................................................
..........................................................................................................................
..........................................................................................................................
..........................................................................................................................
..........................................................................................................................

If you would like to receive feedback concerning the study, please fill in your name and address.
Name of respondent ..................................
Address: ......................................................................................................

The responses will be treated with absolute confidentiality.
Please use the pre-paid envelope to return the completed questionnaire.
THANK YOU FOR YOUR CONTRIBUTION
Loughborough Üniversitesi İşletme Fakültesi

"Mudi - Banka İlişkisi" Konulu Araştırmaya Anketi

İlkin çevabınızı içeren ilgili numarayı daire içine alınır ve cevabınızı yazınız. Tereddütte kaldığınız takdirde görüşlerinize en uygun cevabı işaretleyiniz.

BÖLÜM A: BANKA HESABINIZ
Bu bölüm sizin bankanız ile olan ilişkiniz hakkında bilgi toplamak amacıyla tasarlmaktadır.

1) Türkiye’de kaç bankada mevduat hesabınız (vadeli/vadesiz) bulunmaktadır? .................. 
   Eğer mevduatınızı birden fazla bankada tutuyorsanız, lütfen en önemlili nedenini işaretleyiniz.
   1 Ürün Çeşitliliği
   2 Faiz Oranı
   3 Kolay Erişim
   4 Riski dağıtmak

Lütfen aşağıdaki soruları en yüksek tutarda mevduat tuttüğunuz banka hesabınızı göz önünde bulundurarak cevaplayınız.

2) Lütfen en yüksek tutarda mevduat tuttüğunuz bankanın adını yazınız. (TL veya döviz mevduatı)

3) Bankanızda hesap açarken aşağıda yer alan bütün faktörlerin önem derecesi sizin için nedir?

<table>
<thead>
<tr>
<th>Hiç Önemli</th>
<th>Önemli</th>
<th>Fark</th>
<th>Etmez</th>
<th>Önemli</th>
<th>Çok Önemli</th>
</tr>
</thead>
<tbody>
<tr>
<td>Faiz Oranı</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Erişim Kolaylığı</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Güçlü Finansal Yapı</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Mevcut Banka İlişkisi</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Tanınmış Bir Isim Olması</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>İyi Bir Üne Sahip Olması</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Verdiği Hizmetler</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

4) En yüksek tutarda mevduat tuttüğunuz hesabı açmadan önce bankanın finansal durumu hakkında herhangi bir araştırma yaptınız mı?
   1 Evet
   2 Hayır

Eğer herhangi bir araştırma yapmadıysanız lütfen bunun en önemlili nedenini aşağıdaki seçenekler arasından belirleyiniz ve 6. soruya geçiniz. (Lütfen tek bir cevabı işaretleyiniz.)
   1 Bankanızın eski müşterisiyim
   2 Tanınmış bir banka olması
   3 İyi bir üne sahip olması
   4 Yüksek faiz vermesi
   5 Nasıl araştıracamı bilmedim için
   6 Büyük bankalar güvenilir olduğu için
   7 Türkiye'de bankacılık denetimine güvenliğim için

Sf. 1
5) Eğer 4. soruya cevabınız Evet ise bankanızın finansal durumu hakkında araştırmayı yaparken aşağıda belirtilen kaynaklardan en çok hangisinden yararlanırsınız? (Lütfen tek bir cevabını işaretleyiniz.)

1. Yazılı basın yoluyla (Finans dergileri ve gazetelerin ilgili sayfaları)
2. Banka yıllık raportarı
3. Profesyonel tavsiye (Danışmanlık hizmeti)
4. Diğer (Lütfen belirtiniz)

6) En çok mevduatınız bulunduğu hesapta TL veya döviz karşılığı TL ne miktarda para tutuyorsunuz?

1. 10 milyardan az
2. 10 milyar-50 milyar arasi
3. 50 milyar ve üstü

BÖLÜM B: BANKACILIĞA BAKIŞ AÇINIZ
Bu bölüm sizin mudişsi olduğunuz bankaya bakış açınızı öğrenmek amacı taşımaktadır.

Lütfen aşağıda yer alan 7-11 no.lu önermeleri ne biçimde katılıp katılımadığınızı belirtiniz.

<table>
<thead>
<tr>
<th>İşaret</th>
<th>Katılmam</th>
<th>Katıldım</th>
<th>Bilmiyorum</th>
<th>Katıldım</th>
</tr>
</thead>
</table>

7) Hesap açtığım tarihteki mevduatının bulunduğu bankanın mali durumunu değerlendirirme konusunda kendimi yeterli hissettim.

8) Mevduatının bulunduğu bankanın mali durumunu takip edeceğim bilgiye eriştiğime eminim.

9) Bankaların mali durumunu takip edeceğim yeteneğe sahip olduğumu inanıyorum.

10) Mevduatının bulunduğu bankanın mali durumunu takip ediyorum.

11) Hesap açmadan önce en iyi koşulları elde etmek için araştırma yaparım.

12) Türkiye'de hiç batan ve/veya devletin el koyduğu banka duyдумuz mu?

1. Evet
2. Hayır

Eğer cevabınız EVET ise, lütfen hangi banka (veya bankalar) olduğunu belirtiniz.

13) Bugüne kadar hiç batan ve/veya devletin el koyduğu bir bankada mevduatınız var mıydı?

1. Evet
2. Hayır

Eğer cevabınız EVET ise, lütfen hangi banka (veya bankalar) olduğunu belirtiniz.
14) Tasarruf Mevduatı Sigorta Fonu söndür bir fon duyduğunuz mu?

<table>
<thead>
<tr>
<th></th>
<th>Evet</th>
<th>Hayır</th>
</tr>
</thead>
</table>

Eğer cevabınız HAYIR ise, lütfen 17. soruya geçiniz.

15) Bugünkü itibariyle sizce tasarruf mevduatının ne kadarı mevduat sigortası kapsamındadır?

Lütfen miktar belirtiniz.............................. TL.

16) Tasarruf mevduatı sigortasının varlığı mevduat hesabı açıklarken kararınızda etkili oldu mu?

<table>
<thead>
<tr>
<th></th>
<th>Evet</th>
<th>Hayır</th>
</tr>
</thead>
</table>

Lütfen aşağıda yer alan 17-19 no.lu önermelere ne ölçüde katılmış katılmadığınızı belirtiniz.

<table>
<thead>
<tr>
<th>Kesinlikle</th>
<th>Katılmıyorum</th>
<th>Katıldım</th>
<th>Bilmiyorum</th>
<th>Katıldım</th>
<th>Katılmıyorum</th>
</tr>
</thead>
<tbody>
<tr>
<td>17) Mevduat hesabı açıklarken finansal riski göze alabilirim.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>18) Mevduatımı bir bankanın batma riskine karşı farklı bankalar arasında paylaştırmamanın iyi fikir olduğunu düşünüyorum.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>19) Mevduatının herhangi bir risk altında olmadığını emin olmak benim için çok önemlidir.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

20) Mevduatımızın daha güvence olabileceğini düşünerek hiç bilinçli olarak paranız farklı bankalar arasında paylaştırdıınız mı?

<table>
<thead>
<tr>
<th></th>
<th>Evet</th>
<th>Hayır</th>
</tr>
</thead>
</table>

21) Bir bankada tutacağınız en fazla mevduat tutarı nedir?

Lütfen miktar belirtiniz.............................. TL.

Lütfen aşağıda yer alan 22-24 no.lu önermelere ne ölçüde katılmış katılmadığınızı belirtiniz.

<table>
<thead>
<tr>
<th>Kesinlikle</th>
<th>Katılmıyorum</th>
<th>Katıldım</th>
<th>Bilmiyorum</th>
<th>Katıldım</th>
<th>Katılmıyorum</th>
</tr>
</thead>
<tbody>
<tr>
<td>22) Tasarruflarımı tuttuğum bankanın mali yapısı hakkında endişe duyduğunuz takdirde derhal önlemi alırsın.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>23) Bankanın mali yapısının bozulduğu span şüphelen bidi takdirde, mevduatımı azaltma yoluna giderim.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>24) Bankanın mali zorluk içinde olduğu dedikoduusu üzerine hesabı derhal kapattım.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>
25) Bankamızın batması halinde aşağıdaki dakilerden hangisinin olmasını bekleriniz? (Lütfen tek bir cevabı işaretleyiniz.)
   1 Sadece kanuni hakların verilmesini beklerim. 
   2 Kısmen kurtarılmay, mevduatının bir kısmını geri almayı beklerim. 
   3 Tamamen kurtarılmanız, mevduatının tamamını geri almayı beklerim. 

BÖLÜM C: SİZİN HAKKINIZDA
Bu bölüm, verdığınız cevapların kategorize edilebilmesi için sizin hakkınızda bilgi toplamak amacıyla tasarlandı.

26) Cinsiyetiniz:
   1 Erkek  2 Kadın

27) Öğrenim Dereceniz:
   1 İlkokul  2 Ortaokul  3 Ortaokul dengi meslek  4 Lise  5 Lise dengi meslek  6 Yüksekokul / fakülte

28) Son doğum gününüzde kaç yaşınızı bitirdiniz? .........................................................

29) İşgücü durumunuz:
   1 Ücretli / maaslı  2 Yevmiyeli (mevsimlik, arızı, geçici)  3 Kendi hesabına  4 Ücretsiz aile işçisi  5 Emekli  6 Öğrenci  7 İşsiz

BÖLÜM D: YORUMLARINIZ

Eğer tasarruf mevduatı sigortası hakkında belirtmek istediğiniz başka bir husus varsa lütfen yazınız:
.................................................................................................................................................
.................................................................................................................................................
.................................................................................................................................................
.................................................................................................................................................
Bu araştırma sonuçları hakkında bilgi almak istediğiniz takdirde lütfen isim ve adresinizi yazınız:
İsim: .............................................................................................................................
Adres: .............................................................................................................................

Ankete verilen cevaplar kesinlikle çok gizli tutulacaktır. Lütfen cevaplarınızı içeren anket formunu ekte verilen zarfı koymak suretiyle gönderiniz.
KATKILARINIZ İÇİN ÇOK TEŞEKKÜR EDERİZ
## APPENDIX 5

### The UK Sample

<table>
<thead>
<tr>
<th>Bank Name</th>
<th>Data Period</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Abbey National</td>
<td>1989-2000</td>
</tr>
<tr>
<td>2) Alliance &amp; Leicester</td>
<td>1989-2000</td>
</tr>
<tr>
<td>3) Bank of Scotland</td>
<td>1989-2000</td>
</tr>
<tr>
<td>4) Barclays</td>
<td>1989-2000</td>
</tr>
<tr>
<td>6) HSBC (Midland)</td>
<td>1989-2000</td>
</tr>
<tr>
<td>7) Lloyds TSB</td>
<td>1994-2000</td>
</tr>
<tr>
<td>9) Northern Rock</td>
<td>1989-2000</td>
</tr>
</tbody>
</table>
APPENDIX 6

The Turkish Sample

<table>
<thead>
<tr>
<th>Bank Name</th>
<th>Data Period</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>State Owned Banks</strong></td>
<td></td>
</tr>
<tr>
<td>1) Ziraat Bankası</td>
<td>1988-2001</td>
</tr>
<tr>
<td>2) Emlakbank</td>
<td>1988-2000</td>
</tr>
<tr>
<td>3) Halkbank</td>
<td>1988-2001</td>
</tr>
<tr>
<td>4) Vakıfbank</td>
<td>1988-2001</td>
</tr>
<tr>
<td><strong>Private Banks</strong></td>
<td></td>
</tr>
<tr>
<td>5) Adabank</td>
<td>1988-2001</td>
</tr>
<tr>
<td>6) Akbank</td>
<td>1988-2001</td>
</tr>
<tr>
<td>8) AnadoluBank</td>
<td>1997-2001</td>
</tr>
<tr>
<td>9) Denizbank</td>
<td>1997-2001</td>
</tr>
<tr>
<td>10) Fibabank</td>
<td>1988-2001</td>
</tr>
<tr>
<td>11) Finansbank</td>
<td>1988-2001</td>
</tr>
<tr>
<td>14) Oyakbank</td>
<td>1991-2000</td>
</tr>
<tr>
<td>15) Şekerbank</td>
<td>1988-2001</td>
</tr>
<tr>
<td>16) Tekstil Bankası</td>
<td>1988-2001</td>
</tr>
<tr>
<td>17) Turkish Bank</td>
<td>1991-2001</td>
</tr>
<tr>
<td>19) TEB</td>
<td>1988-2001</td>
</tr>
<tr>
<td>20) Garanti Bankası</td>
<td>1988-2001</td>
</tr>
<tr>
<td>21) İmar Bankası</td>
<td>1988-2001</td>
</tr>
<tr>
<td>22) İş Bankası</td>
<td>1988-2001</td>
</tr>
<tr>
<td>23) Yapı Kredi Bankası</td>
<td>1988-2001</td>
</tr>
<tr>
<td>24) Osmanlı Bankası</td>
<td>1988-2000</td>
</tr>
<tr>
<td><strong>SDIF Banks</strong></td>
<td></td>
</tr>
<tr>
<td>27) EGS Bank</td>
<td>1996-2000</td>
</tr>
<tr>
<td>28) İktisat Bankası</td>
<td>1988-2000</td>
</tr>
<tr>
<td>31) Pamukbank</td>
<td>1988-2001</td>
</tr>
<tr>
<td>32) Sitebank</td>
<td>1991-2000</td>
</tr>
<tr>
<td>33) Toprakbank</td>
<td>1992-2000</td>
</tr>
<tr>
<td>36) Demirbank</td>
<td>1988-1999</td>
</tr>
<tr>
<td>38) Esbank</td>
<td>1988-1998</td>
</tr>
<tr>
<td>40) Interbank</td>
<td>1988-1998</td>
</tr>
<tr>
<td>41) Sumerbank</td>
<td>1988-1998</td>
</tr>
<tr>
<td>42) Türkbank</td>
<td>1988-1996</td>
</tr>
<tr>
<td>43) Yaşarbank</td>
<td>1988-1998</td>
</tr>
<tr>
<td>44) Yurtbank</td>
<td>1993-1998</td>
</tr>
<tr>
<td>45) Ulusal Bank</td>
<td>1988-2000</td>
</tr>
</tbody>
</table>