Determinants of Capital Structure:

Evidence from Libya

Thesis submitted in accordance with the requirements of the University of Liverpool for the Degree of Doctor in Philosophy.

By

Fakher Muftah Buferna

The University of Liverpool Management School

July 2005

Abstract

Following on from the pioneering work of Modigliani and Miller (1958) on capital structure, three conflicting theories of capital structure have been developed. They are namely: static trade-off, asymmetric information, and agency cost theories. Capital structure theories differ in terms of their emphases on taxes (the trade-off theory), differences in information (the asymmetric information theory) and agency problems (the agency cost theory).

This study provides evidence of the capital structure theories pertaining to Libyan companies. Libya differs from the developing countries previously studied, as it has no secondary capital market which potentially switches the focus of company financing from a short-term investment to a long-term investment.

This study investigates the determinants of capital structure of Libyan companies utilising data from three different sources: (1) Data from Libyan financial statements over the time period from 1995 to 1999, to examine the determinants of capital structure of Libyan companies, (2) Data collected by questionnaires from 72 Libyan companies in order to examine the impact of managers' preference, beliefs and attitudes on companies' financing decisions and (3) Firm-level data from 13 developing countries: Brazil, Chile, Hong Kong, India, Malaysia, Mexico, Pakistan Singapore, South Africa, South Korea, Taiwan, Thailand and Turkey were also analysed to examine whether institutional differences of the Libyan business environment induce Libyan companies to display different financing behaviour from that of companies in the emerging market countries included in the study.

The results indicate that the static trade-off theory and the agency cost theory are pertinent theories to the Libyan companies' capital structure whereas there was little evidence to support the asymmetric information theory. The companies in the emerging market countries examined in this study seem to follow the agency cost theory and, to small extent, the pecking order theory of capital structure.

The descriptive statistics indicate that there are differences between Libya and the other 13 emerging market countries in terms of using short-term and long-term debt, profitability, assets structure, growth and companies' size. The excessive use of short-term debt compared to long-term debt by Libyan companies, however, was attributed to the absence of a secondary stock market in Libya. The non-existence of a secondary capital market in Libya may also have an impact on agency costs as shareholders, who are unable to offload their shares, might exert pressure on management to act in their best interests.

The study also reveals that there was no indication for the impact of managers personal and business goals and managers' demographic characteristics (level of education, level of experience and age) on capital structure decisions of Libyan companies while managers' risk taking propensity seems to have an impact on the Libyan companies' financing decisions.

Table of Contents

Abstract 2
List of Figures 7
List of Tables 8
Declaration 10
Copyrights 11
Acknowledgements 12
Dedication 13
CHAPTER ONE: THE RATIONALE AND AIMS OF THE STUDY 14
1.0 Introduction 14
1.1 The modern capital structure theory 14
1.2 The rationale for the study 16
1.3 The study aims and objectives 19
1.4 The structure of the study 21
CHAPTER TWO: REVIEW OF THE LITERATURE 24
2.0 Introduction 24
2.1 The Theory of Capital Structure 25
2.1.1 The Static Trade-off Theory 26
2.1.2 The Agency Cost Theory 30
2.1.3 The Asymmetric Information Theory 36
2.2 The Determinants of Capital Structure 38
2.2.1 Capital Structure Studies in the Developed Countries 39
2.2.2 Capital Structure Studies in the Developing Countries 45
2.3 New Directions in Capital Structure Research 48
2.3.1 The Use of Questionnaire and Interview Techniques in Capital Structure Studies 49
2.3.2 The Combination of Different Methods of Data Collection and Analysis in Capital Structure Studies 52
2.4 Conclusion 54
CHAPTER THREE: AN OVERVIEW OF ENTERPRISE FINANCING IN LIBYA 56
3.0 Introduction 56
3.1 Characteristics of the Libyan Economy 57
3.2 The Libyan Transition Economy 59

3.2.1 Period from 1969-1992 60
3.2.2 After 1992 64
3.3 The Components of the Finance Sector 67
3.3.1 The Banking Sector 67
3.3.2 The National Banking Institution 69
3.3.3 The Insurance Companies 70
3.3.4 The Libyan Arab Company for Foreign Investment (LAFICO) 72
3.3.5 The Stock Exchange Market 72
3.4 The Commercial and Tax Laws 73
3.5 The Accounting and Auditing Profession Law 77
3.6 The policy of giving credit 79
3.7 Conclusion 81
CHAPTER FOUR: RESEARCH METHODOLOGY 82
4.0 Introduction 82
4.1 The purpose of the study 82
4.2 Outline of the research project 84
4.2.1 Stage 1: Review of the Literature Related to Capital Structure and the Libyan Economy 85
4.2.2 Stage 2: Regression Analysis of the Libyan data 86
4.2.3 Stage 3: Survey Questionnaire 96
4.2.4 Stage 4: Cross-Country Comparisons 113
4.3 Justification for the research methodology 115
4.4 Conclusion 117
CHAPTER FIVE: DETERMINANTS OF CAPITAL STRUCTURE 119
5.0 Introduction 119
5.1 The Multiple Regression Model 119
5.2 Data and Sample 121
5.3 Empirical Estimation on Sub-Samples 124
5.3.1 Analysis on the Basis of Private and Public Companies 124
5.3.2 Analysis on the Basis of Manufacturing and Non-Manufacturing Companies 133
5.4 Conclusion 139
CHAPTER SIX: ANALYSIS OF QUESTIONNAIRES 141
6.0 Introduction 141
6.1 Data and Sample Characteristics 142
6.2 Capital Structure Practices 146

6.2.1 Sources of Finance 146
6.2.2 Short-term and Long-term Debt 147
6.2.3 Paying Dividends 151
6.2.4 Problems in Obtaining External Finance 152
6.2.5 Problems with Lenders Regarding Loans or Overdraft Facilities. 155
6.3 Financing Policy 157
6.3.1 Debt Policy 158
6.3.2 Issuing Shares Policy 158
6.4 Asymmetric Information Problem 162
6.4.1 Measures of asymmetric information 162
6.4.2 The Choice of Sources of Funds 166
6.4.3 The Choice of Types of Funds 167
6.5 Conclusion 168
CHAPTER SEVEN: TESTING THE NON-FINANCIAL HYPOTHESES..... 170
7.0 Introduction 170
7.1 Pecking order Hypothesis 171
7.2 Signalling Hypothesis 174
7.3 Manager's preferences, perceptions and beliefs towards using debt 177
7.3.1 Manager's Risk Taking Propensity 177
7.3.2 Business and Personal Goals 181
7.4 Manager's demographic characteristics 189
7.4.1 Manager's Age 189
7.4.2 Manager's Knowledge 191
7.4.3 Manager's Experience 192
7.5 The Impact of Company Characteristics on Capital Structure 194
7.6 Conclusion 197
CHAPTER EIGHT: A COMPARISON OF THE QUANTITATIVE AND QUALITATIVE RESULTS 199
8.0 Introduction 199
8.1 Static Trade-Off Assumptions 200
8.2 Agency Cost Assumptions 204
8.3 Asymmetric Information Assumptions 207
8.4 Conclusion 210
CHAPTER NINE: AN EMPIRICAL INVESTIGATION OF CAPITAL STRUCTURE IN DEVELOPING COUNTRIES 211
9.0 Introduction 211

9.1 Environmental Differences and Financing Patterns 213
9.2 Data Collection and Regression Models 216
9.3 Interpretation of the Empirical Results 218
9.3.1 Leverage 220
9.3.2 Returns on Assets 221
9.3.3 Asset Structure 222
9.3.5 Size 223
9.4 Determinants of Financing Patterns 224
9.5 Conclusion 228
CHAPTER TEN: SUMMARY, MAIN FINDINGS, CONTRIBUTIONS AND FURTHER RESEARCH 230
10.0 Introduction 230
10.1 Summary 230
10.1.1 The theoretical part of the study 231
10.1.2 The empirical part of the study 234
10.2 The main findings 237
10.2.1 Financial factors affecting capital structure decisions 237
10.2.2 Non-financial (behaviour) factors affecting capital structure decisions 240
10.3 Contribution to knowledge 241
10.4 Limitations of the study 242
10.5 Further research 243
REFERENCES 245
APPENDICES 256
Appendix (3-1): Gross Domestic Product by kind of Economy Activity, 1969-2000. 256
Appendix (3-2): Growth Rate of Gross Domestic Product by kind of Economy Activity, 1969-2000 257
Appendix (6-1): The English version of the questionnaire 258
Appendix (7-1): High and Low Asymmetric Information Groups 263
Appendix (7-2): Correlation Matrix 264

List of Figures

Figure (1-1): An overview to the chapters 23
Figure (3-1): Gross Domestic Product GDP 1969-2000 (LD million) 62
Figure (6-1): Data and sample Characteristics 144
Figure (7-1): Debt Ratios in Different Risk Taking Groups 180
Figure (7-2): Leverage Ratios against 'Types' of Managers 188
Figure (7-3): Debt Ratios in Age Groups 190
Figure (7-4): Average Debt Ratios and Managers' Level of Education 191
Figure (7-5): Average Debt Ratios and Managers' Experience 193

List of Tables

Table (3-1): The Distribution of Investment between Public and Private sector from 1980-1990 (LD million) 63

Table (3-2): Foreign and Domestic investments were introduced by the Libyan Enterprise for encouraging investment (LD Thousand) 65

Table (3-3): Number of branches and agencies of Libyan commercial banks 68

Table (3-4): Total Assets, Total Deposit, Total Credit and Net Profits for the Commercial Banks (LD million) 71

Table (3-5): Commercial Banks Credit to various Sectors (LD Million) 80

Table (5-1): Industry Classifications of the Sample 121

Table (5-2): Correlation Matrix 123

Table (5-3): Summary of Descriptive Statistics for private and public Companies 126

Table (5-4): Results of OLS Analysis over Different Measures of Leverage for Private and Public Companies 128

Table (5-5): Coefficients for the Explanatory Variables for Private Companies 129

Table (5-6): Summary of Descriptive Statistics for Manufacturing and Non-manufacturing Companies 134

Table (5-7): Results of OLS Analysis over Different Measures of Leverage for Manufacturing and Non-Manufacturing Companies 135

Table (5-8): Coefficients for the Explanatory Variables for Non-manufacturing Companies 136

Table (6-1): Industry and Size Classifications of the Sample 145

Table (6-2): Sources of Finance 146

Table (6-3): The preference between short-term and long-term debt 148

Table (6-4): Factors that affect the maturity of debt 149

Table (6-5): Paying dividends 151

Table (6-6): Survey Responses to the Question: Do you currently face any problem in obtaining an adequate level of external finance? 153

Table (6-7): Problems associated with obtaining external finance 153

Table (6-8): Survey Responses to the Question: Do you have any problem with lenders regarding loans or overdraft facilities? 156

Table (6-9): Problem with Lenders regarding Loans or Overdraft Facilities 156

Table (6-10): Issues that affect the Amount of Debt 160

Table (6-11): Reasons for Issuing Shares 161

Table (6-12): Asymmetric Information between Lenders and Companies 165

Table (6-13): Sources of Funds- The Choices 166

Table (6-14) Types of Funds- The Choices 167
Table (7-1): High and Low Asymmetric Information Groups 172
Table (7-2): The Choice between Types of Funds in Asymmetric Information Groups 173
Table (7-3): Mann-Whitney *U* Test for the Choices of Financing in two Asymmetric Information Groups 174
Table (7-4): Binomial Test for Signalling Hypothesis 176
Table (7-5): Jackson Personality Inventory Items used to measure risk-taking propensity 178
Table (7-6): Risk class based on JPI score 179
Table (7-7): OLS Regression of Debt ratios against Risk Taking Propensity 180
Table (7-8): Business and Personal Goals 182
Table (7-9): Factor Analysis of Business and Personal Goals 183
Table (7-10): Cluster Analysis of Managers Goals 185
Table (7-11): The Three Types of Managers 186
Table (7-12): Kruskal Wallis Test of Debt Ratios and Business Categories 188
Table (7-13): Kruskal Wallis Test of Debt Ratios and Managers' Age 190
Table (7-14): Kruskal Wallis Test of Debt Ratios and Managers' level of Education 192
Table (7-15): Kruskal Wallis Test of Debt Ratios Managers' Experience 193
Table (7-16): Relationship between Company Characteristics and Leverage 194
Table (7-17): Binomial Test for financial determinants of debt ratios 196
Table (7-18): Comparison of Results of Regression Analysis and Questionnaires . 197
Table (8-1): The Expected Signs of the Coefficients for the Three Capital Structure Theories 200
Table (9-1): Summary of Deletions from the Sample 218
Table (9-2): Mean of Leverage Ratios, Profitability, Growth, Tangibility and Size 220
Table (9-3): Results of OLS Analysis of Libyan and Emerging Market Companies 225
Table (9-4): Coefficients for the Explanatory Variables for Libyan Companies 226

Declaration

No portion of this work referred to in this thesis has been submitted in support of an application for another degree or any other qualification of this or any other university or institute of learning.

Fakher M. Buferna

11th of July 2005

Copyrights

Acknowledgements

I am thankful to almighty ALLAH for his guidance and blessing that resulted in the completion of this thesis. I would like to acknowledge my gratitude to many people for their invaluable contribution to this thesis. First, I am forever grateful to my supervisors, Dr Kenbata Bangassa and Dr Lynn Hodgkinson for their guidance, friendly encouragement, suggestions and advice, constructive criticisms, valuable comments and thorough revision of this thesis. My supervisors' guidance and support have helped shaping and producing this study, and have taught me valuable things that will stay with me forever. I am grateful to my dissertation examiners Dr. David Brookfield and Dr. Gulnur Muradoglu for their insightful comments which have helped in the improvement of my understanding of the subject.

Second, my sincere thanks to my mother for her support and continuous prayer during the course of this thesis; my wife, sons (Muftah and Ahmed) and daughter (Danah) for their understanding, support and patience during the course of this thesis. Thanks go also to my brothers who usually encouraged and cheered me up.

Third, I am indebted to Mr Hussein Elgassaly and Dr Mustafa Bakar Mahmud who helped me with preparing my first journey to the UK for studying the Ph.D. I am also grateful to Dr Juma Elhassy, Mr Milad Elsahli, Mr Hassan Eldaragy and Mr Massoud Elshokry for their help in providing data for this thesis. Also my heartiest thanks go to my teachers who taught me in Libya particularly the supervisors of my MSc, Dr Idris Shetewi and Dr Younis Ahshad. My gratitude is also due to my friends, in Libya and the UK, for their support and encouragement during the course of this thesis.

My gratitude is also due to the Accounting Department, Faculty of Economics at Garyounis University, Libya, for the grant they awarded me to undertake this study.

Last but not the least, I wish to extend my sincere thanks to my PhD colleagues; Farid Ullah, Renata Stenka, Abdelsalam Alkizza, Maqsood Iqbal, Issedeeq Saadi, Joseph Wang and Dionysios Polemis who constantly encouraged me throughout the duration of this study.

Dedication

This thesis is dedicated to my mother Souda, to the memory of my father, my stepmother Razena and my brother Naje, to my wife, sons Muftah and Ahmed and daughter Danah.

Chapter One: The rationale and aims of the study

1.0 Introduction

The focus of this thesis is to explain and understand the financing behaviour of Libyan companies. The aims are: firstly, identify the determinants of capital structure and determine which capital structure theory provides a better explanation of the financing behaviour of Libyan companies, secondly, explore the impact of managers' preferences, beliefs and attitudes on the capital structure decisions and finally, analyse differences in the financing patterns between emerging market companies and Libyan companies.

This chapter is divided into four sections. The first section provides a background for the modern capital structure theory while the second section explains the rationale for the study. The study aims and objectives are discussed in section three and the structure of the study is illustrated in the last section.

1.1 The modern capital structure theory

The pioneering work of Modigliani and Miller (1958) on capital structure has established the foundations of capital structure theory and motivated a large number of capital structure studies that attempt to explain and understand the financing behaviour of companies.

MM suggest that the market value of any firm and its cost of capital are completely independent of its capital structure assuming that there are no taxes, transaction costs, information asymmetry, and bankruptcy costs. Accordingly, there is no optimal capital structure.

In their subsequent paper in 1963, MM challenged the assumption of the absence of taxes and they showed that, as a result of the tax advantages, an increase in the level of debt would increase the value of the company. According to this proposition, MM argue that companies could benefit by increasing the amount of debt, even reaching to a 100% debt ratio, if possible.

Due to the fact that the use of excessive amounts of debt is not without cost, Baxter (1967) dropped the assumption of the absence of bankruptcy costs in MM's (1958) propositions. Thus a static trade-off theory was established. The static trade-off theory of capital structure states that optimal capital structure is obtained where the net tax advantage of debt financing balances leverage related costs such as bankruptcy.

In an attempt to identify the effect of the asymmetric information on capital structure, Ross (1977) challenged the symmetric information assumption in MM's (1958) propositions. He assumes that the insider of firms can use their financing decisions to send signals to the outsiders because the outsiders may interpret large levels of leverage as a signal of higher quality. The intuition for this argument is that investors are likely to react positively to an announcement of increased leverage because they perceive that managers will only increase leverage if the company is likely to be able to meet the interest payments and/ or that the firm has investment opportunities over and above that, that can be financed by internally generated funds. This is called the signalling approach of asymmetric information theory.

The other approach of the asymmetric information theory began with Myers and Majluf (1984) and Myers (1984). They emphasises that internal funds and external funds are used hierarchically by managers who will be reluctant to issue new equity,

because investors may perceive the issue as a sign that equity is currently undervalued in the market. Myers (1984) refers to this as a "pecking order theory" which states that firms prefer to finance new investment, first internally with retained earnings, then with debt, and finally with an issue of new equity.

The agency cost theory of capital structure began with Jensen and Meckling (1976) who identified two types of conflicts: conflict between shareholders and managers, and conflict between shareholders and debtholders. The costs arising from these conflicts are often referred to as the 'equity agency cost' and 'debt agency cost' respectively. This theory states that optimal capital structure is determined by minimizing the costs arising from conflicts between the parties involved. As pointed out by Drobetz and Fix (2003), risk shifting (asset substitution), the underinvestment problem and the free cash flow hypothesis are the most important forms of agency problems in financing decisions.

1.2 The rationale for the study

It is generally acknowledged that in spite of the existence of the capital structure theories (static trade-off, agency cost, and asymmetric information theory), there is no precise answer for the two key questions on this subject, normally: (1) how do firms choose their capital structure? , and (2) what are the major determinants of capital structure? The debate surrounding these two questions is often referred to in the literature as the "Capital structure Puzzle" (see for example, Myers, 1984).

Studying capital structure in the Libyan business environment is motivated in part by the institutional differences of the Libyan business environment. Libya differs from other developing countries, as it has no secondary capital market, which might deter investors from taking up new issues. Furthermore, the number of capital structure

studies examining developing countries is relatively small compared to those of the developed countries. Capital structure studies are largely based on data from developed countries. For example, Rajan and Zingales (1995) use data from the G-7 countries, Bevan and Danbolt (2000 and 2002) utilise data from the UK and Antoniou et al. (2002) analyse data from the UK, Germany, and France. Studies examining developing countries include Booth et al. (2001) who analyse data from ten developing countries (Brazil, Mexico, India, South Korea, Jordan, Malaysia, Pakistan, Thailand, Turkey and Zimbabwe), Pandey (2001) who uses data from Malaysia, Chen (2004) who utilises data from China, Omet and Nobanee (2001) who use data from Jordan and Al-Sakran (2001) who analyses data from Saudi Arabia.

This study also addresses some of the drawbacks of the methodology mainly used in previous capital structure studies. The mainstream approach in most previous empirical studies of capital structure has been to estimate regression equations with proxies for dependent and independent variables. These studies test for relationships between leverage variables and other factors. This methodology, however, has been criticised by Hempel (1983) among others, because the explanatory variables are restricted to those which can be quantified. Barton and Gordon (1987) argue that this restriction leads to oversimplification of how the firm works. The quantitative analysis tends to ignore managerial preferences in capital structure decisions, and Barton and Matthews (1989) state that a new paradigm is needed which includes the qualitative factors which have an impact on the firm's financing decisions. Some recent empirical capital structure studies, however, have used questionnaires, such as, Graham and Harvey (2001), Bancel and Mittoo (2002 and 2004) and Brounen et al. (2004).

Consequently, the empirical analysis of this study consists of two parties. Firstly, a systematic combination of regression analysis models and survey questionnaire which was conducted in an attempt to analyse financial as well as non- financial and behavioural factors that affect Libyan firms' capital structure. This combination of data analysis and collection methods in the Libyan business environment may take the methodology in the mainstream capital structure studies a step further by employing survey instruments with regression analysis technique. Furthermore, it would mitigate the problem of the unavailability of "hard" data (financial statements) in Libyan companies.

Secondly, a comparison between Libya and the other emerging market countries included in the sample is conducted and the aim of this comparison are: (1) to identify and, where possible, explain whether institutional differences of the Libyan business environment induce Libyan companies to display different financing behaviour from that of companies in the emerging market companies included in the study, (2) to put Libyan companies' financing behaviour into prospective and (3) the comparative nature of this study provides appropriate empirical knowledge to help identifying the potential impact of Libyan economic reform.

The lack of research on finance in general and capital structure in particular in Libya has motivated this study. To the best of my knowledge, this study is the first of its kind in the Libyan context.

This thesis contributes to the existing literature because it focuses on Libyan companies. Furthermore, this thesis combines two different research methods by utilising survey questionnaire research technique in addition to regression analysis technique. As pointed out by Michaelas (1998), this combination of research

methods can be seen as a 'triangulation method', which involves viewing the same issue from different angles or viewpoints. This combination of research methods will provide a significant contribution to the understanding of capital structure decisions of Libyan companies.

1.3 The study aims and objectives

The principle aim of this study is to empirically investigate the implications of the three categories of capital structure theory (static trade-off, agency costs, and asymmetric information theories) and the factors that affect the capital structure in the Libyan economy.

To achieve the aims of this study, the following three questions were formulated as objectives of this study. These questions are:

1- Which of the three categories of modern capital structure theory (static trade-off, agency costs, and asymmetric information theories) provides a better explanation of the financing behaviour of Libyan companies?

2- How do managers' preferences, beliefs and attitudes influence the capital structure decisions of Libyan companies?

3- Do the factors that affect cross-sectional variability of capital structure in emerging market countries have similar effects on Libyan companies' capital structure?

For the first objective, the basic cross-sectional regressions of three different measures of the company's debt ratio were regressed against four explanatory variables. As pointed out by Bevan and Danbolt (2002) the use of total debt in the analysis of the determinants of leverage may disguise the significant differences

between long-term and short-term debt. Therefore, the debt ratios are: total debt to total assets, short-term debt to total assets, and long-term debt to total assets ratios. The explanatory variables are profitability, tangibility, growth, and firm size. The cross-sectional regression used in this study is based on models used in Rajan and Zingales (1995), and Bevan and Danbolt (2002), with some modifications in both the leverage and explanatory measures.

To achieve the first objective, the relationships between the leverage ratios and the explanatory variables were explored and discussed in order to identify which capital structure theory provides better explanation to the financing behaviour of Libyan companies.

In relation to the second objective, the aim is to explain and understand the impact of managers' preferences, beliefs and attitudes on the capital structure decisions of Libyan companies. To achieve this objective, a questionnaire survey was used to test the impact of managers' risk taking propensity, the influence of business and personal goals and the effect of managers' demographic characteristics on capital structure decisions.

Furthermore, questionnaire data was also used to test some assumptions and conclusions of capital structure, such as, the pecking order theory and the signalling theory of capital structure, which cannot be tested by the available financial statements in Libya.

With respect to the third objective, the regression models that were used to achieve the first objective were also used to conduct a comparison between Libya and the other emerging market countries examined in the study.

This study provides evidence about the financial and non-financial factors that shaped the capital structure of Libyan companies. The results of this study go some way in favour of the trade-off theory and the agency cost theory of capital structure in the Libyan business environment. The findings also suggest that although asymmetric information appears to exist, Libyan companies do not follow Myers' financing pecking order.

Furthermore, managers' risk taking propensity appears to influence capital structure decisions while business and personal gaols and managers' demographic characteristics have no significant effect on Libyan companies' capital structure decisions. This study also reports that there are differences between Libya and the other emerging market countries in terms of the maturity of debt, profitability, assets structure and companies' size.

1.4 The structure of the study

Chapter one, an introductory chapter, provides a brief background of the research area, illustrates the rationale for this study, discusses its aims and objectives and gives an overview of the remaining chapters.

Chapter two reviews the relevant literature on the capital structure theory, the determinants of capital structure studies in both developed and developing countries and recent directions in capital structure research.

Chapter three provides a brief description on the financing policy, the components of the finance sector and enterprise developments in the Libyan business environment. This background is important as it provides a framework within which the study' observations are to be interpreted and understood.

The fourth chapter explains the methodology and the methods of data collection and analysis of this study. The regression analysis technique and the dependent and independent variables are discussed in this chapter. The hypotheses are presented and the statistical techniques for testing the hypotheses are explained and discussed. The basic issues in questionnaire design are also described in this chapter.

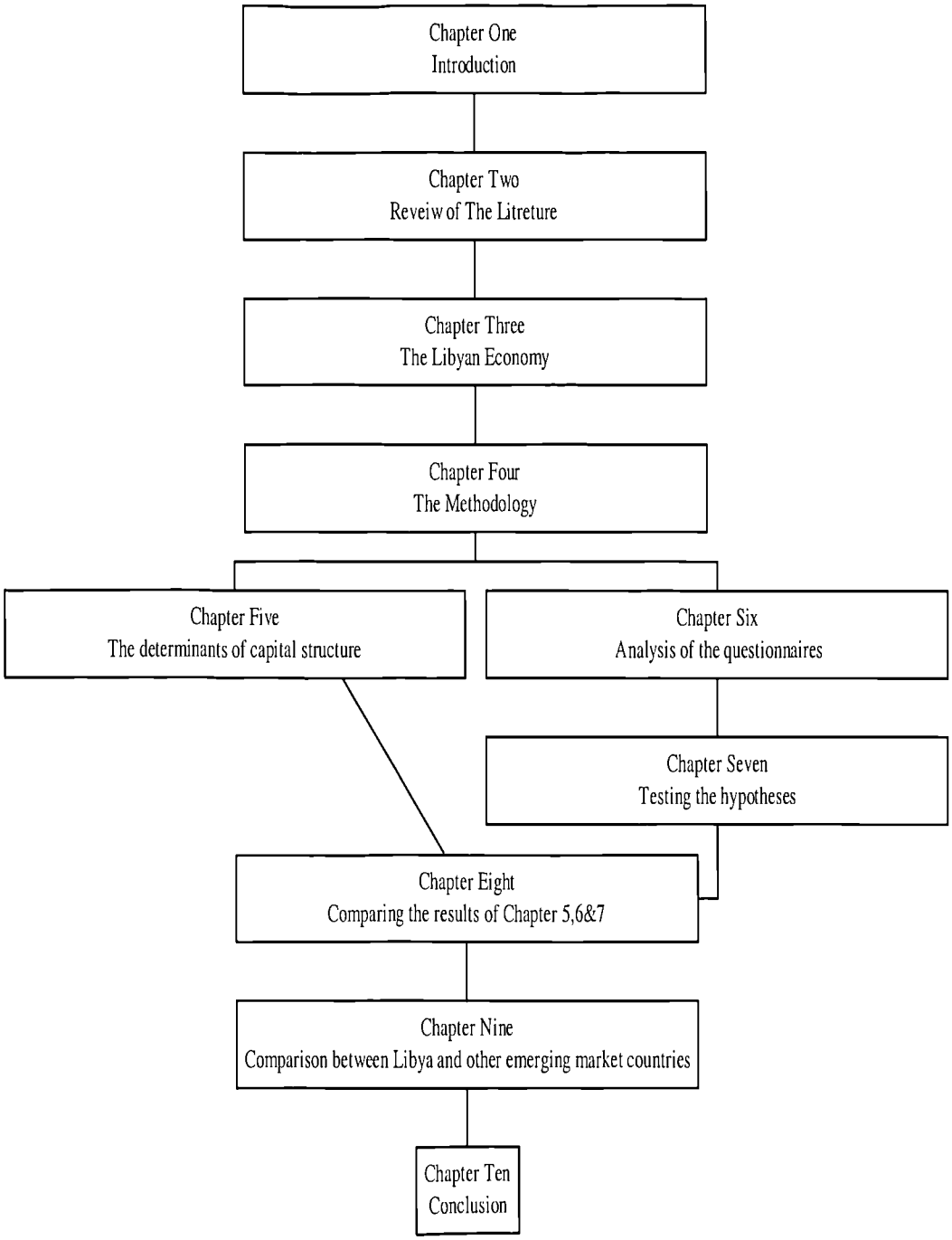
Chapter five deals with the determinants of capital structure in the Libyan business environment. The regression analysis technique was used to test the financial hypotheses by regressing three leverage ratios (total debt, short term debt and long term debt ratio) against four explanatory variables (profitability, tangibility, growth and company size).

The tabulated results of the responses to the questionnaires are analysed in chapter six while the non-financial (behaviour) hypotheses are examined in chapter seven. Chapter eight provides a comparison between the regression analysis results and the questionnaire results in order to check the consistency of the results of the financing behaviour of Libyan companies.

Chapter nine analyses capital structure in developing countries, identifying similarities and differences across companies particularly between Libya and 13 other emerging market countries (Brazil, Chile, Hong Kong, India, Malaysia, Mexico, Pakistan Singapore, South Africa, South Korea, Taiwan, Thailand and Turkey).

Chapter ten, the concluding chapter, is devoted to a summary of the main findings, main limitations of the study, contributions and suggestions for further research in the area. Figure (1-1) presents an overview of the ten chapters.

Figure (1-1): An overview to the chapters



Chapter Two: Review of the Literature

2.0 Introduction

Modigliani and Miller suggested in 1958 that the market value of any firm and its cost of capital are completely independent of its capital structure providing that there are no taxes, transaction costs, information asymmetry, and bankruptcy costs. Accordingly, there is no optimal capital structure. Since then, many financial economists have followed the same direction of the MM (1958) study. However, MM's (1958) propositions have been criticized due to their unrealistic assumptions.

Since then, many researchers have attempted to expand the MM propositions by relaxing the 1958 assumptions. Weston (1989) argues that studies such as Baxter (1967), Ross (1977), Myers and Majluf (1984) and Myers (1984), which have been guided by the MM propositions, attempt to relax imperfections of the logical structure in the MM's model. He summarises the imperfections in the absence of transaction cost, taxes, agency costs, and information asymmetry.

Mustafa (1997) argues that the assumptions arising from MM's (1958) paper have established the foundations of capital structure theory, and have motivated a large number of capital structure studies that attempt to explain and understand the financing behaviour of companies.

Consequently, many viewpoints have been generated by capital structure researchers trying to explain how firms choose their capital structure, and whether there is an optimal capital structure. The main categories of these viewpoints are; the existence of taxes and bankruptcy costs make debt relevant (trade-off theory), the existence of asymmetric information between the managers and investors may provide a

signalling opportunity (asymmetric information theory) and the conflict between parties involved affects the mix of debt and equity (agency cost theory).

This chapter is divided into four sections. The first section explains the modern theory of capital structure while the second section is devoted to the studies of the determinants of capital structure in developed and developing countries. Section three reviews the capital structure studies that are based on survey-based analysis and interviews.

2.1 The Theory of Capital Structure

Following on from the pioneering work of Modigliani and Miller (1958) on capital structure, three conflicting theories of capital structure have been developed. They are namely: static trade-off, asymmetric information, and agency cost theories.

These theories have attempted to explain the differences in debt ratios across companies. The empirical evidence of the main three current capital structure theory is sometimes complementary, and sometimes conflicting. For instance, the static trade off and agency cost theories predict positive relationships between profitability and leverage, whereas the pecking order theory predicts a negative relationship between profitability and leverage.

Studies related to the agency cost and asymmetric information theories have been surveyed in Harris and Raviv (1991), whereas the studies of the static trade-off theory have been surveyed in Bradley et al. (1984). Um (2001) argues that according to these three categories of capital structure theories, the following processes determine the capital structure of the firms:

1- Firms balance off the net tax advantage of debt financing against leverage related costs "e.g., bankruptcy costs" (the static trade off theory).

2- Firms mitigate the conflicts of interests between the parties involved (the agency cost theory).

3- Firms convey inside information to outsiders or mitigate adverse selection effects (the asymmetric information theory).

In conclusion, Myers (2001) argues that there is no general capital structure theory that can explain the financing patterns of all companies but there are several theories that explain the different financing behaviours. Capital structure theories differ, as stated by Myers (2001), in terms of their emphases on taxes (the trade-off theory), differences in information (the pecking order theory) and agency problems (the agency cost theory).

2.1.1 The Static Trade-off Theory

Some studies have challenged the assumption of the absence of bankruptcy costs in MM's (1958) propositions which have given rise to the static trade-off theory. The static trade-off theory of capital structure states that optimal capital structure is obtained where the net tax advantage of debt financing balances off leverage related costs such as bankruptcy. In other words, firms should use debt until the marginal benefit of using more debt equals the marginal cost of using more debt, and the optimal capital structure point locates where the net benefit of using debt is zero. Later MM (1963) challenged the assumption of the absence of taxes and showed that, as a result of the tax shields, an increase in the level of debt would increase the value of the company. According to this proposition, MM argue that companies could benefit by increasing the amount of debt, even reaching to a 100% debt ratio, if

possible[1], but they also argued that shareholders would require a higher return as debt increased to compensate for their increased risk.

The unrealistic MM's (1963) conclusion might be due to the effects of over-leveraging. Over-leveraging occurs when larger fixed interest payments arising due to the greater amount of debt in the firm's capital structure decrease the firm's earnings and will, eventually, cause financial distress for the firm. Baxter (1967) argues that the debt related costs, such as bankruptcy costs, might exceed the debt's tax advantages. With regard to the cost of capital, he argues that the cost of capital curve declines at low amounts of debt but rises where leverage becomes substantial. On the other hand, when leverage is very low, an increase in the debt ratio may not significantly affect the probability of bankruptcy. But above a particular amount of debt any increase in debt is likely to increase the probability of bankruptcy. Therefore, Baxter argues that firms should use debt until the tax advantages of using debt equals the cost of using more debt including expected bankruptcy costs.

In order to identify the relationship between leverage and the probability of failure, Castanias (1983) examines whether the probability of failure is negatively related to leverage. Data were obtained for 36 lines of business to identify the sign of the relationship between leverage and probability of failure by using linear regression analysis. The results supported the negative relationship between the probability of bankruptcy and leverage. This implies that firms that tend to have a high failure rate also tend to have less amount of debt in their capital structure.

Castanias states that indirect bankruptcy costs cannot be estimated, so the bankruptcy costs were excluded from the test.

---

[1] If the company was financed 100% by debt, the debtholders will, in effect, be the shareholders.

Altman (1984 and 2002) argued that indirect bankruptcy costs could be divided into direct and indirect costs and direct costs defined as the costs that can be measured such as lawyers' courts' accounts' and other administrative costs, whereas, he defined indirect costs as those costs that can be only expected, for example, a loss of profits. Altman attempts to estimate the size of indirect bankruptcy costs by measuring the abnormal or unexpected profits (loss) of bankrupt firms as the failure date approaches. He argues that indirect bankruptcy costs are not limited to firms that actually fail, but firms that survive but have high probability of bankruptcy can also incur these costs. The indirect bankruptcy costs might include customer wariness and/or suppliers of materials may ask for additional restrictions, such as, cash on delivery. Altman estimates the expected profits for the period up to three years prior to bankruptcy and these are compared with actual profits (losses) to determine the amount of the indirect bankruptcy costs. He uses two samples consisting of twelve retail and seven industrial firms that were bankrupt over the period 1970-1978. The present value of expected bankruptcy costs, were then compared to the present value of expected benefits from interest payments from leverage. Altman concludes that bankruptcy costs are significant in many cases and exceeded 20% of firm value measured just prior to bankruptcy. The present value of expected bankruptcy costs for many failed firms in the sample is found to exceed the present value of tax benefits from using debt. Therefore, Altman states that bankruptcy costs are an important factor in determining firms' capital structures.

Kwansa and Ho Cho (1995) estimate the size of indirect bankruptcy costs for 10 restaurant companies that were bankrupt between 1980 and 1992. The main aim was to show the impact of indirect bankruptcy costs on firm's capital structure by comparing the trade-off between tax savings from using debt and the cost of financial

distress. The results indicate that indirect bankruptcy costs are significant in absolute terms. Precisely speaking, if the size of the indirect bankruptcy costs is more than the size of the tax savings from debt, the firm will be closer to bankruptcy. They conclude that the trade-off between tax savings and indirect bankruptcy costs can be used as an early warning for financial distress.

By using different measures for probability of bankruptcy, Bradley et al. (1984) develop a model that synthesises the trade-off theory of capital structure. Their results indicate that the probability of bankruptcy (measured by the volatility of firm earnings) is negatively related to leverage in their cross-sectional sample of 851 firms in 25 industries over the time period from 1962 to 1981. In addition, the trade-off theory of capital structure seems to be supported in this study.

Brigham (1992) argues that despite the fact that theoretical and empirical studies have added to the existing knowledge of capital structure, both have failed to produce results that can be used to identify a firm's optimal capital structure. In this regard, Philosophov and Philosophov (1999) develop a probabilistic model in order to obtain a quantitative assessment of optimal capital structure. The probability of bankruptcy is calculated before and after studying individual financial characteristics. In doing so, they use Bayes formula of probability theory and Altman's 1968 model in calculating posterior probabilities of bankruptcy. The prior probability of bankruptcy is calculated as the percentage of corporations that were operating at the beginning of the time interval and became bankrupt during that time interval. These probabilities are then used in a modified formula of discount share valuation to calculate the share value of firms that might go bankrupt at some future time. Philosophov and Philosophov state that optimal capital structure can be

determined by maximising the share value of firm. They conclude that the assessment of firm share value is dependent on the leverage ratio, which is affected by the probability of bankruptcy and firm returns.

2.1.2 The Agency Cost Theory

The agency cost theory states that financing with risky debt creates an agency problem for firms, and optimal capital structure is determined by minimising the costs arising from conflicts between the stakeholders of the firm. The pioneering work of Jensen and Meckling (1976) is considered as the starting point for the majority of studies based on agency cost theory. Jensen and Meckling (1976, p 308) start their work by defining the relationship between a principal and an agent, in this regard they state,

> *"We define an agency relationship as a contract under which one or more persons (the principal(s)) engage another person (the agent) to perform some service on their behalf which involves delegating some decision-making authority to the agent"*

Due to the fact that the principal cannot completely observe the agent's action and due to the amount of information that the managers (the agents) have, the principal will need to limit the aberrant activities of the agent by establishing appropriate motivations for the agent and by incurring monitoring costs.

Jensen and Meckling identified two types of conflicts: conflict between shareholders and managers, and conflict between shareholders and debtholders. The costs arising from these conflicts are often referred to as the 'equity agency cost' and 'debt agency cost' respectively.

Regarding the effect of agency cost on the firm's capital structure, the optimal capital structure, as stated by Jensen and Meckling (1976), can be obtained by balancing off

the costs and the benefits of debt. In other words, optimal capital structure is obtained where managers choose a mix of debt and equity, which minimises the agency costs arising from both conflicts.

Harris and Raviv (1991) argue that a large number of studies based on agency theory use the conflicts introduced by Jensen and Meckling (1976) as a starting point. The conflicts are classified in the following two sections:

2.1.2.1 Conflicts between Shareholders and Managers

The conflict of interest between shareholders and managers is a classic example of the principal-agent problem. The conflict arises due to several reasons. Firstly, it arises because managers hold less than 100% of the residual claims of a company. Such a situation does not allow managers to earn the entire benefit from their profit enhancing activities, at the same time; they have to bear the costs, such as searching for investment opportunities, of these activities. Secondly, the conflict may arise because shareholders cannot, to some extent, observe managerial actions and identify which of these actions will increase their wealth.

Jensen and Meckling (1976) state that expanding the size of their firms is a major aim for managers, but this will occur at the expense of the shareholders if expansion is achieved by investing in negative NPV projects. Therefore, shareholders will limit their manager's access to free cash flow through requiring them to issue debt. The debt might mitigate the conflict between managers and shareholders by motivating managers to work harder, consume fewer perquisites, and make better investment decisions to be in a position to meet the interest payments when they are due. Accordingly this behaviour can reduce the probability of bankruptcy. In this regard, Jenson (1986) argues that debt financing can mitigate the conflict between managers

and shareholders because more debt means high cash outflow, therefore, such a situation will reduce the level of free cash available to managers to execute possible firm value decreasing activities such as the misuse cash by consuming perquisites or making inefficient investment decisions. High debt levels, as stated by Myers (2001), can be useful for the company because the company is more likely to operate more efficiently.

According to Harris and Raviv (1990) one reasons conflict may arise between shareholders and managers might be attributable to their disagreement over operating decisions. For instance, managers are likely to prefer to continue to operate even if shareholders would prefer liquidation, as they do not wish to lose their jobs. They assume that this problem can be mitigated by issuing debt as suppliers of debt financing can force liquidation if the cash flows are poor and interest payments are not made when due. If the company defaults on the debt, the debtholders can force the company into liquidation hence a larger debt level will increase the probability of liquidation. Harris and Raviv argue that managers have limited desire to provide detailed information to investors that could lead to liquidation decision, because they do not wish to lose their jobs. Harris and Raviv added that due to this reason, investors use debt to obtain information and monitor management, and investors collect information from the ability of firms to make the interest and principle payments. They concluded that optimal capital structure is determined by trading off the value created by using debt as a source of information against the cost of default.

In Stulz (1990), as in Harris and Raviv (1990), managers and shareholders disagree over operating decisions, but the two studies differ in how they suggest debt mitigates the disagreement between managers and shareholders. Stulz (1990) argues

that debt can mitigate this disagreement due to the fact that managers will always wish to invest all available funds even if paying out more of the company's surplus cash is better for shareholders. Therefore, using excessive debt may damage free cash flow and reduce the funds that are available for managers to execute new investment opportunities. Under Stulz's argument, thus, optimal leverage ratio can be identified by trading off the benefit and the cost of debt in preventing investment in value decreasing and value increasing projects respectively.

In order to determine the relationship between Chief Executive Officers (CEOs) wealth and shareholders wealth, Jensen and Murphy (1990) argue that shareholders want CEOs to choose which projects to pursue, and which to reject by comparing the expected return with the expected cost of the action. Jensen and Murphy argue that CEOs may be more interested in their private gains from practising particular activities, and they suggest alternative hypotheses which are consistent with an observed relationship between pay and performance. Jensen and Murphy analyse performance pay and top-management incentives for over 2000 CEOs in three samples across five decades and indicate that there is no significant relationship between CEO wealth and shareholders wealth.

2.1.2.2 Conflicts between Shareholders and Debtholders

The conflicts between shareholders and debtholders, according to Harris and Raviv (1991), arise due to the fact that the debt contract gives shareholders an incentive for choosing projects. The debt contract offers that, according to Um (2001), if the project fails, suppliers of debt financing will bear the cost of the failure because of limited liability, whereas, if it is successful, shareholders will capture most of the gains that are above the face value of the debt. Therefore, investing in a very risky

projects, as stated by Parrino and Weisbach (1999), can be in interests of shareholders even if they are firm value-decreasing. On the other hand, as pointed out by Myers (1977), shareholders may not provide new capital even to invest in firm value-increasing projects if the project is low risk, when the firm is likely to go into bankruptcy in the near future. This is because shareholders may bear most of the costs of the investments whilst the value may accrue to debtholders. Parrino and Weisbach (1999), argue that for a company with 20% debt, a low risk project will have to yield a further 0.14 % above the rate of return which gives a zero NPV project to be in interests of shareholders, whereas a very risky project can be in the interests of shareholders even if yields 2.35% lower than the rate of return which gives a zero NPV project.

Harris and Raviv (1991, p 304) state that, *"there are two possible investment projects: a safe, positive NPV project and a risky, negative NPV project"*. They added that returns from the safe projects are enough to repay the firm's outstanding debt whereas returns from the risky projects are sufficient to repay the debt only if the projects are successful. Harris and Raviv contend that debt can be used to finance both projects and the firm will enjoy a lower interest rate on debt, if it can persuade lenders that it will only be investing in safe projects. Furthermore, Harris and Raviv argue that lenders only attempt to identify the firm's actions by looking at the firm's default history. In this regard, Harris and Raviv (1991) argue that firms can build a reputation for only investing in the safe project and not defaulting.

Jensen and Meckling (1976) state that due to limited liability, debtholders will bear the cost if the risky project fails as they will not be paid in full, and shareholders will, therefore, be motivated to accept risky projects even if they are value decreasing.

Graham and Harvey (2001) argue that as shareholders will gain investment return above those required to make the interest and principle payments, and as they have limited liability when returns are insufficient to repay the debt, shareholders prefer to invest in high-risk projects. In this regard, Harris and Raviv (1991, p 301) state,

> *"The cost of the incentive to invest in value-decreasing projects created by debt is borne by the equityholders... This effect, generally called the 'asset substitution effect', is an agency cost of debt financing"*

Consequently, debtholders will provide less debt or they will require higher returns from their money. However, Green (1984) argues that convertible debt can mitigate the asset substitution problem that arises when companies accept projects that are riskier than debtholders would prefer, as convertibles have the option to share in the gains if the risky project is successful.

Myers (1977) reaches the similar conclusions as Jensen and Meckling (1976). He argues that the conflict between shareholders and debtholders could lead shareholders to encouraging managers to pass up profitable projects. This is called the underinvestment problem. He added that the project's potential returns might be high enough to consider the project profitable, but if these gains are not enough to repay the debt, shareholders might get nothing due to lenders' rights to get the positive payoff. Thus, shareholders could encourage managers to reject more value-increasing projects due to larger debt levels.

Underinvestment problems occur when managers avoid safe positive NPV because the value may accrue to debtholders at the cost of shareholders and overinvestment problems occur when managers accept risky projects which have a negative NPV because equity value is increased by the project at the cost of debtholders. According to Parrino and Weisbach (1999), underinvestment problems are likely to be more of

problem when company's cash flows are fluctuating, whereas overinvestment problems often occur for company with stable cash flows.

In addition, Michaelas (1998) argues that both the asset substitution and underinvestment problems lead to the rejection of some profitable projects due to the distribution of payoffs to the suppliers of finance.

2.1.3 The Asymmetric Information Theory

The asymmetric information theory is based on the argument that managers have information that investors do not have. One approach to this theory began with Ross (1977) and Leland and Pyle (1977) who states that firm's debt and equity issuing policies signal information from insiders to outside investors. Another approach to this theory starts with Myers and Majluf (1984) and Myers (1984). They emphasise that internal funds and external funds are used hierarchically by managers who will be reluctant to issue new equity, and, due to information asymmetry, investors perceive equity issues to only occur if equity is either fairly priced or over priced. The main theories derived from this argument are the pecking order theory and the signalling theory.

2.1.3.1 The Pecking Order Theory

The information asymmetry theory of capital structure, as stated by Harris and Raviv (1991), assumes that firm managers have private information about the characteristics of the firm's return stream, which is not known to common investors. Um (2001) argues that information asymmetry costs, such as underestimating the future prospects of the firm, appear when inside managers have better knowledge on the distribution of the risk and the payoffs of the investment projects.

In their pioneering work, Myers and Majluf (1984) suggest that managers will be reluctant to issue equity if they feel it is undervalued in the market and investors will be also aware of managers' reluctance to issue new equity when it is underpriced and will react unfavourably to an issue, as they will assume that equity is currently fairly or overpriced.

Myers and Majluf (1984) argue that if firms finance new projects by issuing underpriced equity, wealth will be transferred from existing shareholders to new investors. Therefore, managers will be inclined to reject the project regardless of its positive net present value. Myers and Majluf (1984) point out that this underinvestment can be avoided if financing sources (for example, retained earnings and debt, which are less susceptible to undervaluation) can finance the new projects. In such circumstances, internal funds and debt will be preferred to equity. Myers (1984) refers to this as a pecking order theory of financing, which states that firms prefer to finance new investment, first internally with retained earnings, then with debt, and finally with an issue of new equity. On the other hand, in an attempt to explain some financing behaviour that is not consistent with the prediction of the static trade-off theory (such as a negative relationship between profitability and leverage), Myers (1984) emphasises that internal funds and external funds are used hierarchically. This is consistent with the pecking order theory of capital structure.

The pecking order theory tries to explain why most profitable companies are more likely to borrow less. The simple explanation is that, profitable firms may have higher levels of retentions and need to rely less on external debt or new equity. The other explanation, as stated by Drobetz and Fix (2003), is that less profitable companies borrow more debt to avoid equity floatation costs.

The pecking order theory is based on managerial incentives rather than the cost of funds. Um (2001) argues that the separation of ownership and management generates an incentive for managers to depend on internal funding sources because they may be inclined to avoid external equity finance due to a potential loss of control. Um added that managers prefer internal financing to avoid capital market intervention. Nuri (2000) argues that the pecking order theory concentrates on the motivations of managers, rather than on capital market valuation principles, and it cannot explain how taxes, bankruptcy costs, and flotation costs affect the companies' debt ratio.

2.1.3.2 The Signalling Theory

Ross (1977) challenged the symmetric information assumption in MM's (1958) propositions. Ross (1977) assumes that the choice of the firm's capital structure signals information from insiders, who have access to more information, to outside investors. Ross added that investors interpret the increase in leverage as a signal of higher quality, as managers will only increase leverage if the company is likely to be able to meet the interest payments and/ or that the firm has investment opportunities over and above what can be financed by internally generated funds. If investors perceive either of these to be the case they are likely to react positively to an announcement of increased leverage. On the other hand, Myers (2001) argues that the announcement of issuing new shares might be perceived by investors as good news if it reveals growth opportunities with positive NPVs but may be perceived as bad news if they perceive managers are issuing overvalued equity.

2.2 The Determinants of Capital Structure

Despite the fact that these three categories of modern capital structure theory (static trade-off, agency cost, and asymmetric information theory) have attempted to explain

the financial structure of firms in general, institutional factors play a major role in the determination of capital structure in different environments. In this regard, Harris and Raviv (1991, p 300) state that,

> *"Finally, with regard to further empirical work, it seems essential that empirical studies concentrate on testing particular models or classes of models in an attempt to discover the most important determinants of capital structure in given environments."*

In addition, Gleason et al. (2000) argue that the legal environment, the tax environment, the economic system, and technological capabilities influence the capital structure of retailers in the 14 European countries they examined.

While capital structure studies are largely based on data from developed countries, there are few studies that provide evidence from developing countries. Some of the studies conducted in developed and developing countries are discussed in the following two sections respectively.

2.2.1 Capital Structure Studies in the Developed Countries

The majority of empirical studies of capital structure employ data from developed countries, mainly from the United States, to identify the factors that affect the capital structure decisions in those countries.

In order to support or refute the theoretical underpinnings of the observed correlations found in the studies that have been conducted on US data, Rajan and Zingales (1995) investigate the determinants of capital structure in other major industrialised countries (G-7). They used cross-sectional regression analysis on data from 1987 to 1991. Their results indicate that the leverage ratios are similar across the G-7 countries. The factors identified by previous cross-sectional studies in the United States to be related to leverage seem to be similarly related in other countries

as well. They conclude that tangibility is positively related to leverage and market-to-book ratio is negatively related to leverage in all G-7 countries. Furthermore, profitability has a negative relationship with leverage, whereas, firm size is positively related to leverage. Future research, as suggested by Rajan and Zingales (1995), should address the relationship between theoretical models and empirical findings by widely applying the models to different situations. Rajan and Zingales also emphasises that further research should be conducted by incorporating the institutional differences between countries when specifying the theoretical models.

In an attempt to expand Rajan and Zingales (1995)'s work, Bevan and Danbolt (2002) examine for the determinants of short-term and long-term debt separately in the UK. They used data from 1988 to 1991 to examine the robustness of Rajan and Zingales' conclusion to variations in the leverage measure by decomposing the analysis into long and short-term debt. When applying the same leverage definitions as Rajan and Zingales, Bevan and Danbolt found that the results were very similar to theirs, but when Bevan and Danbolt decomposed total debt into their sub-components, they found that short-term debt is negatively correlated with tangibility, while long-term debt is positively related to tangibility. Furthermore, the relationship between firm size and short-term bank borrowing is negative, whereas, firm size is positively related with all long-term debt forms and short-term paper debt.

In their study on determinants of capital structure in the UK, Bennett and Donnelly (1993) utilised data for 433 firms over the time period from 1981 to 1984. Regression analysis techniques were used to regress six explanatory variables (profitability, assets structure, non-debt tax shields, growth, earnings volatility and size) against three leverage variables (total debt, short-term debt and long-term debt).

Their findings indicated that earnings volatility, size and assets structure are positively related to the total debt ratio while non-debt tax shields and profitability are negatively related to total debt ratio. Their results also indicated that there are some differences when debt was segregated into its sub-components.

In order to extend the empirical capital structure studies in the UK, Ozkan (2001) examine the determinants of capital structure using GMM regression analysis technique in order to investigate the impact of five explanatory variables (growth, size, non debt tax shields, liquidity and profitability) on leverage ratios. He utilised data for 390 firms over the time period from 1984 to 1996. His results indicated that profitability; growth, liquidity and non-debt tax shields are negatively related to leverage ratios while there is a little support for a positive relationship between firm size and leverage ratios. The results also indicated that firms tend to have a long-term desired leverage ratio and they move towards their target leverage ratios relatively fast.

Despite the fact that the capital structure studies have mainly used data from large firms, Michaelas et al. (1997a) investigate the capital structure of small privately owned firms in the UK. They utilised data gathered from 360 firms from six different industries for the 10 years 1985 to 1994. Two multiple regression analyses with dummy variables were used to test the hypotheses. One of the results indicated that most of the determinants of capital structure presented by capital structure theory are found to be relevant for UK small privately owned firms. The results, however, show that the capital structure of small firms is not stable over time and differences in the industry classification affect the capital structure of small privately owned firms.

Furthermore, the sources of finance used tend to change with macroeconomic conditions.

Michaelas et al. (1999) examine the implications of the theory of capital structure in UK small and medium sized enterprises (SMEs). Data was gathered from 3500 firms over the time period from 1986 to 1995. Panel data regression analysis was used to test 12 hypotheses relating to the static trade-off, agency cost and asymmetric information theories. The results of OLS regression indicated that agency cost and asymmetric information theories are pertinent theories in understanding the financing behaviour of SMEs firms.

Cassar and Holmes (2003) find that that their results supported the static trade-off theory and the pecking order theory when they utilised data from Australian SMEs. Data from 1555 firms were used and five dependent variables (total debt, short-term debt, long-term debt, outside financing and bank financing) were regressed against five explanatory variables (size, asset structure, profitability, risk and growth). The results indicated that assets structure; profitability and growth are important determinants of capital structure in Australian SMEs.

In order to determine the industry effect on capital structure, Nuri (2000) examined the determinants of capital structure and attempted to identify which theory of capital structure provides a better explanation for financing behaviour in the UK hotel and retail industries. He classifies the capital structure theories into two categories; pecking order theory and target adjustment theory. Panel data for 134 retail firms and 22 hotel firms for the time period from 1985 to 1997 were utilised in regression analysis using the Generalised Least Squares (GLS) technique. The explanatory variables that seem to have an impact on capital structure are: profitability, size,

earning volatility, assets structure, non-tax shields, leasing and management contracts. The results indicate that the target adjustment model (trade-off and agency theory) has more support than the pecking order theory. While profitability was the most important explanatory factor for the retail firms followed by non-debt tax shields, the most important explanatory factors for hotel firms are non-debt tax shields, management contracts and profitability.

To examine which factors have an impact on the capital structure of Swiss companies, Gaud et al. (2003) use two different models, a static model and a dynamic model for analysing data for 106 Swiss companies. The dynamic model examined the adjustment speed toward a target debt ratio, and they found that Swiss companies adjust toward a desired debt ratio, but at a slower speed than other countries. The static model was also used to investigate the relationship between leverage ratios and five explanatory variables, namely, profitability, tangibility, growth, size and operating risk. The results indicate that the size, tangibility and business risk are positively related to leverage ratios, whereas, a negative relationship is observed between leverage ratios and both profitability and growth. They conclude that although the results support both the pecking order theory and the static trade-off theory of capital structure, the static trade-off theory has the more support.

Drobetz and Fix (2003) also investigate the determinants of capital structure in Switzerland using a static and a dynamic model, to analysing data for 124 Swiss firms. Ordinary Least Square and censored Tobit regressions are used in order to regress six explanatory variables (profitability, tangibility, growth, size, volatility and non-debt tax shield) against leverage variables. The results of the static regression indicated that tangibility and size are positively related to leverage while growth,

volatility and profitability are negatively related to leverage. On the other hand, the results of a pooled regression analysis, for 90 Swiss firms, illustrated that Swiss firms do adjust to long-term target leverage ratios.

In three different European countries that are characterised by different financial systems and traditions, that is France, Germany and the UK, Antoniou et al. (2002) find that the capital structure decisions of firms are not only affected by its own characteristics, but also by its surrounding environment. They investigate the determinants of the leverage ratios of French, German and British firms using panel data for the time period from 1969 to 2000 for the UK, from 1983 to 2000 for France and from 1987 to 2000 for Germany. The results show that despite the differences in the significance and directions, profitability, size, book-to-market ratio, tangibility, term structure of interest rates and prior changes in share price seem to have a significant effect on the firm's capital structure in all countries. One of the results indicates that the financial environment and tradition of the country play an important role on the strength and the nature of the effect of the above-mentioned determinants of capital structure. They conclude that the firms in all three countries adjust their debt ratios towards their desired capital structure, but of those firms, the quickest to adjust is the French firms.

In order to investigate whether the differences in capital structure are due to country-specific factors or to firm specific factors, Hall et al. (2004) utilise data from 4000 SMEs firms in eight European countries (Belgium, Germany, Spain, Ireland, Italy, Netherlands, Portugal and the UK). They formulated ten hypotheses relating to profitability, growth, tangibility, size and age. The results indicated that there is a difference between the countries surveyed in terms of both capital structure and the

determinants of capital structure. They added that the variations might be attributable to the differences in financial statements reporting style, attitudes to borrowing, relationships with lenders, tax code, and other national economic and social and cultural aspects.

2.2.2 Capital Structure Studies in the Developing Countries

Despite the fact that capital structure choice plays an important role in identifying the inherent benefits and costs with each financing decision, there are few studies on capital structure in developing countries. Of the capital structure studies of developing countries, some have examined South East Asian countries due to the financial crises that South East Asian countries have faced since 1997 whilst others have examined countries which have changed from a command economy to a market economy.

Malaysia was affected by the financial crisis in South East Asia in 1997. Pandey (2001) examines the determinants of capital structure for 106 Malaysian companies utilising data from 1984 to 1999. The time period is divided into four sub-periods of four years each: 1984-1987, 1988-1991, 1992-1995 and 1996-1999. The reason for dividing the time period is to reflect the general economic conditions in Malaysia during these sub-periods. He decomposed total debt into two elements: short-term and long-term debt. The results indicate that the financial crisis in 1997-caused a subsequent increase in debt ratios. Pandey concludes that the explanatory power of the variables is higher for short-term debt ratios than long-term ratios.

Huang and Song (2002) argue that the transition from a command economy to a market economy might have affected Chinese firms' capital structures. In this regard, they investigate the determinants of capital structure in China. They used data from

Chinese listed companies over the time period from 1994 to 2000. Chinese companies have unique features such as; the state is the controlling shareholders of most listed companies, the tax rate does not have any impact on capital structure and Chinese companies have quite low leverage. The results indicate that leverage decreases with profitability and growth opportunities whereas it is related positively to company size. Tangibility is related positively only to the long-term debt ratios. They conclude that the state ownership of some Chinese companies does not prevent these firms from following the same behaviour of private companies.

In her investigation on the determinants of capital structure for 77 Chinese listed firms over the time period from 1995-2000, Chen (2004) states that although some aspects of capital structure theory are portable to China, Chinese firms seem to follow, which it is called, a "new pecking order"; retained earnings, equity, and long-term debt. She added that this new pecking order might be attributable to the institutional differences, firm specific factors and financial constrains in the banking sector.

In order to identify the effect of liberalisation on capital structure, Rao and Lukose (2003) examine the determinants of capital structure of Indian companies in pre-and-post liberalisation periods. The study periods are from 1990 to 1992 and from 1997 to 1999 for pre-and-post-liberalisation periods respectively. Non-debt tax shields, tangibility, profitability, business risk and growth opportunities were regressed against book and market value of leverage. The results indicated that size and risk measures became significant factors in capital structure decisions during the post-reform period.

In order to study the determinants of capital structure in unique economy features, Al-Sakran (2001) investigates the determinants of capital structure in the absence of a corporate tax system in Saudi Arabia. The tax code in Saudi Arabia is based on the total value of shares as a tax base instead of net profit. This code is called Zakat and it equals 2.5% of the total value of shares. Data from 35 companies from different industries were used over the time period from 1993 to 1997. Al-Sakran (2001) argues that the Zakat will make no difference whether a company is financed by equity or debt since both are included in the Zakat base. The results however indicate that leverage ratios have a negative relationship with profitability and growth, whereas, size and government share have a positive relationship with leverage.

In Jordan, Omet and Nobanee (2001) examine data from 32 listed industrial companies over the time period from 1994 to 1998. Two leverage variables (total debt to total assets and total debt to equity) were regressed against five explanatory variables (fixed assets to total assets ratio, cash flow to fixed assets ratio, total assets to equity ratio, current ratio, and the logarithm of fixed assets). The results show that all the explanatory variables are positively related to leverage ratios except for cash flow to fixed assets ratio. Due to the relatively low R^2 in their regressions, they argue that this might be attributable to omitting other explanatory variables, such as, non-financial factors. They conclude that future work should consider the manager's preference, beliefs, and attitudes toward debt and equity.

One of the few studies that report international comparisons of the determinants of capital structure in developing countries is the work of Booth et al. (2001). They examine whether capital structure theory is portable across countries. The study uses panel data from 10 developing countries (Brazil, Mexico, India, South Korea, Jordan,

Malaysia, Pakistan, Thailand, Turkey and Zimbabwe) from 1980 to 1990. They argued that the variables that are relevant for explaining capital structure in developed countries are also relevant in developing countries, but some institutional factors might affect the firm's capital structure in different environments. In this regard, Booth et al. (2001, p118) state,

> *"In general, debt ratios in developing countries seem to be affected in the same way and by the same types of variables that are significant in developed countries. However, there are systematic differences in the way these ratios are affected by country factors, such as GDP growth rates, inflation rates, and development of capital markets."*

In addition, Booth et al's results show that profitability is the most successful explanatory variable among other explanatory variables, and is negatively related to leverage and highly significant. Booth et al. (2001) conclude that although some of the explanatory variables have the expected sign, their overall impact is low and the signs sometimes vary across countries.

2.3 New Directions in Capital Structure Research

The usual methodology of capital structure studies has been to investigate the relationships between leverage variables and the factors that are supposed to have an impact on capital structure. This methodology, however, has been criticised by Hempel (1983) among others, because the explanatory variables are restricted to those, which can be quantified, and, as stated by Barton and Gordon (1987), this restriction leads to oversimplification of how the firm works.

In order to include the qualitative factors, which have an impact on the firm's capital structure decisions, Barton and Matthews (1989) stated that a new paradigm was needed for studying the determinants of capital structure. Barton and Gordon (1987) argue that if the aim is to get a better understanding of capital structure policy,

capital structure models should also include the role of management preferences, beliefs and expectations.

2.3.1 The Use of Questionnaire and Interview Techniques in Capital Structure Studies

Myers (1984) argues that many financial economists argue that both theoretical and empirical work on capital structure has not yielded a consensus about which factors impact on capital structure decisions or how it affects firm performance. In this regard, Barton and Gordon (1987) state that the lack of agreement about which factors have an impact on capital structure decisions might be due to the use of a perspective that is much better suited for explaining economy level phenomena than for explaining firm-level behaviour. The usual approach of capital structure studies, as pointed out by Norton (1990), tends to ignore managerial preferences in capital structure decisions. This implies, as stated by Myers (1984), that capital structure studies may not adequately explain actual financing decisions.

Norton (1990) argues that the survey technique in capital structure studies could be used to test some assumptions and conclusions in the capital structure literature and determine the motivation and limitations that managers could face when considering capital structure decisions. Norton (1990) also argues that as financial economists do not know how firms precisely identify their capital structure, a reasonable research methodology is to investigate how they reach these decisions.

Graham and Harvey (2001) asked 392 CFOs about their firm's cost of capital, capital budgeting and capital structure. Regarding capital structure they found that financial flexibility and credit ratings are the most important factors affecting debt financing. In addition, EPS dilution, recent stock price appreciation and the degree of equity

undervaluation are the most important equity issuance factors. Although the importance of equity undervaluation and financial flexibility support the pecking order theory, the trade-off theory has also some support. They conclude that there is little evidence that signalling, underinvestment costs and assets substitution affect capital structure choice.

Unlike the work of Graham and Harvey (2001) who investigate cost of capital, capital budgeting and capital structure, Bancel and Mittoo (2004) concentrate only on capital structure. For comparison purposes, they keep the format and design of their survey similar to that of Graham and Harvey (2001) but with some additional questions that are likely to be relevant in the European context. Their sample consisted of 720 firms from sixteen European countries but they received only 87 responses (12% response rate). One of the results indicates that financial flexibility; credit ratings and the tax advantage of debt are the most important factors influencing debt policy. Furthermore, EPS dilution is the most important factor in equity issuance decisions in European countries followed by maintaining a target debt-to-equity ratio. On the other hand, the level of interest rates and share prices affect the timing of debt and equity issuance in the European countries examined in the study. In comparison, Bancel and Mittoo argue that although there are some differences between European and US managers, they seem to use similar factors for their financing decisions.

Brounen et al. (2004) complement the study of Bancel and Mittoo (2004), as they extended Bancel and Mittoo's survey to include also capital budgeting and cost of capital of companies in the UK, the Netherlands, Germany and France. Their sample consisted of 6500 public and private firms but only 313 questionnaires were returned.

Regarding capital structure, Brounen et al. argue that the results cast doubt on the validity of the pecking order theory while the static trade-off theory is moderately supported in each country included in the sample.

In order to test the pecking order theory of capital structure, Ang and Jung (1993) test the hypothesis that for firms that experience high incidences of asymmetric information, the preference order of finance, as predicted by Myers, should be observed. They utilised data gathered from 86 Korean firms. The sample was divided into two groups: either the high asymmetric information group or the low asymmetric information group according to the following criteria. (1) Whether or not the lenders tend to underestimate the future prospects of the firm; (2) whether this problem remains after providing confidential financial information about the firm to the lenders; (3) whether the firm will provide extra information to solve this problem and (4) whether the reason for using retained earnings is because of the difficulties of convincing lenders of the profitability of the new investment. High asymmetric information firms are expected to answer 'yes', and low asymmetric information firms are expected to answer 'no' to each of the above-mentioned criteria. The second, third, and fourth criteria are related to whether the asymmetric information problem could be solved through disclosure, the willingness of a firm to solve this problem, and whether the asymmetric information problem is serious enough for the firm to actually use retained earnings respectively. The results indicate that no differences were observed between the two asymmetric information groups of firms. For instance, long-term debt from banks is the preferred source of financing for all groups and equity issuance is preferred when leverage is high.

In comparison between small and large firm's beliefs about capital structure policy, Norton (1990) surveyed financial managers of small firms in order for comparison to be made with the previously published large firms' surveys. His survey was constructed by using questions that had previously appeared in published capital structure studies based on surveys in an attempt to mitigate the problems relating to survey design and to facilitate the comparison between small and large companies. Norton argues that the overlapping areas of agreement between the small and large firms are: both prefer internal to external financing, and have little belief in the importance of bankruptcy costs, agency costs and information asymmetries. On the other hand, the differences are that small firms place less dependence on debt.

Regarding the use of interview survey on capital structure studies, Michaelas et al. (1997b) has been the only study to use interviews pointing out that interviews can be used to study the preference, perceptions, beliefs and attitudes of decision makers when considering capital structure decisions. They conducted seven in-depth interviews with owner-managers of privately held firms of different industries in the UK. Their results indicate that the capital structure of a small firm at any time will be affected by the characteristics of the firm, its manager and of the marketplace. Michaelas et al. (1997b) concluded that future research should combine qualitative and quantitative analyses that will explore both the financial and non-financial determinants of capital structure.

2.3.2 The Combination of Different Methods of Data Collection and Analysis in Capital Structure Studies

The use of survey-based analysis, according to Norton (1990), provides 'soft data' but cannot provide 'hard' conclusions. With regard to the determinants of capital structure, questionnaires and interviews, as stated by Norton (1990), can provide

evidence about factors that affect capital structure choice, which the mathematical models cannot.

Despite the fact that the mathematical models in the finance paradigm provide evidence about the significance and direction of the relationship between different variables, they seem to ignore or at the very least can only proxy managerial preferences of capital structure choice. In addition, the mathematical models often have weaknesses related to model specification, such as, excluding important variables from the model and/or including irrelevant variables in the model.

Consequently, Michaelas (1998) argues that although the use of mathematical models and survey techniques together is unusual in the field of finance research, it can overcome some of the disadvantages inherent with each technique.

In his PhD research, Michaelas (1998) examines how capital structure is affected by different financial and non-financial variables. These variables are firm characteristics (for example, age, size, assets structure and profitability). external characteristics (including broader economic conditions and the tax code) and personal characteristics (such as, management preferences, perceptions, beliefs and attitudes towards external finance). The data utilised was gathered by different data collection methods. Firstly, data was gathered from the financial statements for 3500 privately owned firms in the UK for 10 years from 1986 to 1995. Secondly, thirty face-to-face interviews have been conducted with the owner/directors of small privately owned firms in the UK during March-May 1997. Thirdly, data was collected by sending questionnaires to the owner/directors of the firms included in the sample. The respondents of the questionnaire were asked to fill in their details in order to relate the completed questionnaires with the financial data of the firms

collected by their financial statements. Some hypotheses were tested quantitatively by using regression techniques and other hypotheses were tested qualitatively by utilising data gathered from the interviews and questionnaires.

2.4 Conclusion

The theory of capital structure has been reviewed in this chapter as it has developed since 1958 when Modigliani and Miller (1958) first argued that financial policy is irrelevant to the value of firm. Since then, several attempts have been made to expand the MM propositions by relaxing the MM's (1958) assumptions.

Theories of capital structure (trade-off, agency costs and asymmetric information theory) have been used to explain the variation in debt ratios across firms, industries and countries. These theories suggest that firms select their leverage dependent on balancing off the benefits and the costs that are associated with using debt and equity. In addition, behavioural theory states that managerial experiences, beliefs and attitudes towards using debt and equity have an impact on selecting the firm's capital structure.

In recent years, new directions in capital structure research, such as using survey questionnaire and interviews, have emerged to complement the more usual approach in capital structure studies of using data from financial statements. Combining survey techniques and mathematical models can provide a new research methodology in capital structure research and it may take the methodology, as stated by Michaelas (1998), a step further by employing survey instruments in an attempt to double-check the results of the financial statements data. Furthermore, it may shed more light on financial as well as non- financial and behavioural issues that affect firms' capital structure.

Despite the fact that capital structure theory (static trade-off, agency cost, and asymmetric information theory) has attempted to explain a great deal of the financial structure of firms, in general, there is no consensus about which factors have an impact on capital structure decisions, and the optimal level of debt a firm should have. It might be attributable to the role of institutional factors in the determination of capital structure in different environments such as, the legal environment, the tax environment, the economic system, and technological capabilities. However, an excessive number of the determinants of capital structure studies have focused on developed countries, whereas there are only a limited number of empirical studies focusing on the developing countries.

The review of the different capital structure theories, the determinants of capital structure and the impact of institutional factors on firm's capital structure in different countries, undertaken in this chapter, prepares the way to the next chapter where the Libyan economy's unique features are discussed. The hypotheses that will guide the empirical investigation sections are then presented in chapter four.

Chapter Three: An Overview of Enterprise Financing in Libya

3.0 Introduction

The previous chapter surveyed capital structure studies that have mostly been derived from data from developed countries. Some of studies have been conducted on developing countries, but the countries examined have institutional similarities with the developed economies such as, the existence of a secondary capital market. Libya differs from the developing countries previously examined, as it has no secondary capital market which potentially switches the focus of company financing from a short-term investment to a long-term investment.

In this chapter, some aspects related to capital structure in the Libyan environment have been reviewed in order to provide a framework within which the study' observations are to be interpreted and understood and, on the other hand, to identify the effect of some institutional aspects on capital structure choices, such as the absence of a secondary capital market. Booth et al. (2001) point out that although the debt ratios in developing countries seem to be affected in the same way and by the same variables that are significant in developed countries, country specific-factors, such as, GDP growth rate, inflation rate, and development of capital market are likely to play a vital role in the capital structure decisions in developing countries.

This chapter provides a summary of the characteristics of the Libyan economy. This summary is essential, as capital structure cannot be studied in isolation of the surrounding environment. The surrounding environment consists, *inter alia*, of the legal environment, the characteristics of the capital market, the GDP growth rate, the tax code and the accounting and auditing profession.

This chapter is divided into seven sections. The first section explains the characteristics of the Libyan economy while the second section deals with the reformation of the Libyan economy. The components of the finance sector are illustrated in the third section. Section four explains the commercial and tax codes while the accounting and auditing profession law is illustrated in the fifth sections. The policy of giving credit is explained in the sixth section and section seven concludes the chapter.

3.1 Characteristics of the Libyan Economy

Libya occupies a strategic location in North Africa as it links Eastern with Western Africa and Southern Europe with the rest of Africa. The area of Libya is about 1,776,000 square kilometres, and the Libyan population is estimated at about 5.5 million persons (see, for example, Mahmud, 1997).

Although the Libyan economy is described as a socialist-oriented economy, several attempts have been taken by the state recently to allow individuals to take part in the national economy and to privatise the state owned (public) business organisations in an attempt to gradually move the Libyan economy towards a market economy.

Before discussing the restructuring programs of the Libyan economy, the characteristics of the Libyan economy will be described. According to Alqadhafi (2002), the characteristics of the Libyan economy can be summarised as follows:

1. The Libyan economy depends on oil as a major source of income and almost all foreign currency. The oil and natural gas sector represents about 27 % of the GDP.

2. The public services sector is ranked as the second most important sector in terms of its contribution of the GDP, as it contributes about 22 % of the GDP.

3. The public services sector attracts the largest proportions of manpower, as it employed (excluding health and education) about 229,551 employees/ workers in 1995 (18.5% of the total manpower).

4. Despite the fact that the large part of the budget was allocated to the industrial and the agricultural sector, the contribution of these two sectors to the GDP, as stated by Alqadhafi (2002), is less than desired (the contribution of the Agriculture sector to the GDP did not exceed 5.5 %).

5. The Balance of Payments suffers from fluctuated deficit, as the deficit reached about LD 268.6 million in 1997[2].

6. The Secretary of Finance has adopted the method of financing by deficit. Therefore, the General local debt (the commitments of the Secretary of Finance towards the Central Bank of Libya and commercial banks) reached about LD 7644 million in 1999 (60.87 % of GDP).

Mahmud and Russell (1999), however, argue that Libya does not have an adequately diversified economy due to the low growth rates in the non-oil sectors. Furthermore, the Libyan economy is dominated by the public sector over the economic activity. The latter might be attributable to the socialism ideology that has been adopted since the revolution of 1969.

[2] LD denotes to the Libyan currency, Libyan Dinner, and USD denotes to the USA Dollar.

Some strategic objectives such as, diversification of production and exports, self-sufficiency in food, helping to create job opportunities and reducing disparity between incomes were the aims of all the development plans that were adopted in Libya in the last three decades (see, for example, Bait-Elmal, 1999 and Agnaia, 1996).

On the other hand, since 1992 the private sector has been allowed to take part in certain economic activities. The next section provides a brief discussion of the transition of the Libyan economy.

3.2 The Libyan Transition Economy

Since the last decade, several actions have been taken by the General People's Committee (the Libyan government) in order to reform the Libyan economy. The restructuring of the Libyan economy are likely to be induced, *inter alia*, by shortages of funds which were caused by a decline in oil prices (Saleh, 2001). The other possible reason, as stated by Alqadhafi (2002), is the misuse of economic resources by the public sector.

The economic reform, which occurred in most socialist oriented countries, as stated by Garrod and McLeay (1996), leads to the redesign of financial systems and enhances the autonomy of financial institutions and, as a result, facilitates the allocation of credit.

Keister (2000) argues that during an economic transition, the capital structure of companies might be affected due to the shortage of financing from the state. In this context, Libyan companies may have to begin gradually to borrow from non-state capital sources in order to cover the shortage of financing from the state. The

following sections discuss the nature of the problems from which the economy suffers in an attempt to shed more lights on the reformation of the Libyan economy.

3.2.1 Period from 1969-1992

After the revolution of 1969, the Libyan economy became an economy based on the ideology of socialism as well as state involvement in the organisation and management of the economy. Fayad (2000) argues that the Libyan government mainly adopted the philosophy of socialism in 1975. The philosophy of socialism was adopted in order to control and evaluate economic activities. In this regard, Saleh (2001) argues that, as a result of this socialism ideology, the public sector dominated over economic activity, and, the banks, insurance companies, foreign trade and most of the domestic trade were transferred to the state. Furthermore, Derwish (1997) argues that by 1978, the majority of private companies were taken over by workers' committees, but in 1981 all private business activities came under the control of the state.

Abbas (1987) argues that oil prices increased from USD 2.3 per barrel in 1969 to USD 25 per barrel in 1979, and after this increase in oil price, as stated by Giurnaz (1985), Libyan' oil revenues increased from LD 2.4 billion to about LD 6.5 billion by 1980. The GDP growth rate was 38.8 % in 1980. This situation gave the government the ability to increase spending on development in all sectors. Appendix (3-2) shows the growth rate of the GDP by kind of economy activities.

As mentioned above, Libya depends on oil as a major source of income and almost all of the country's foreign exchange earnings and Libya is relatively poor in other resources (oil and natural gas exports represent 97.6% of total exports, and 31.36% of GDP over the period of time from 1986 to 2000). Dependence on these two

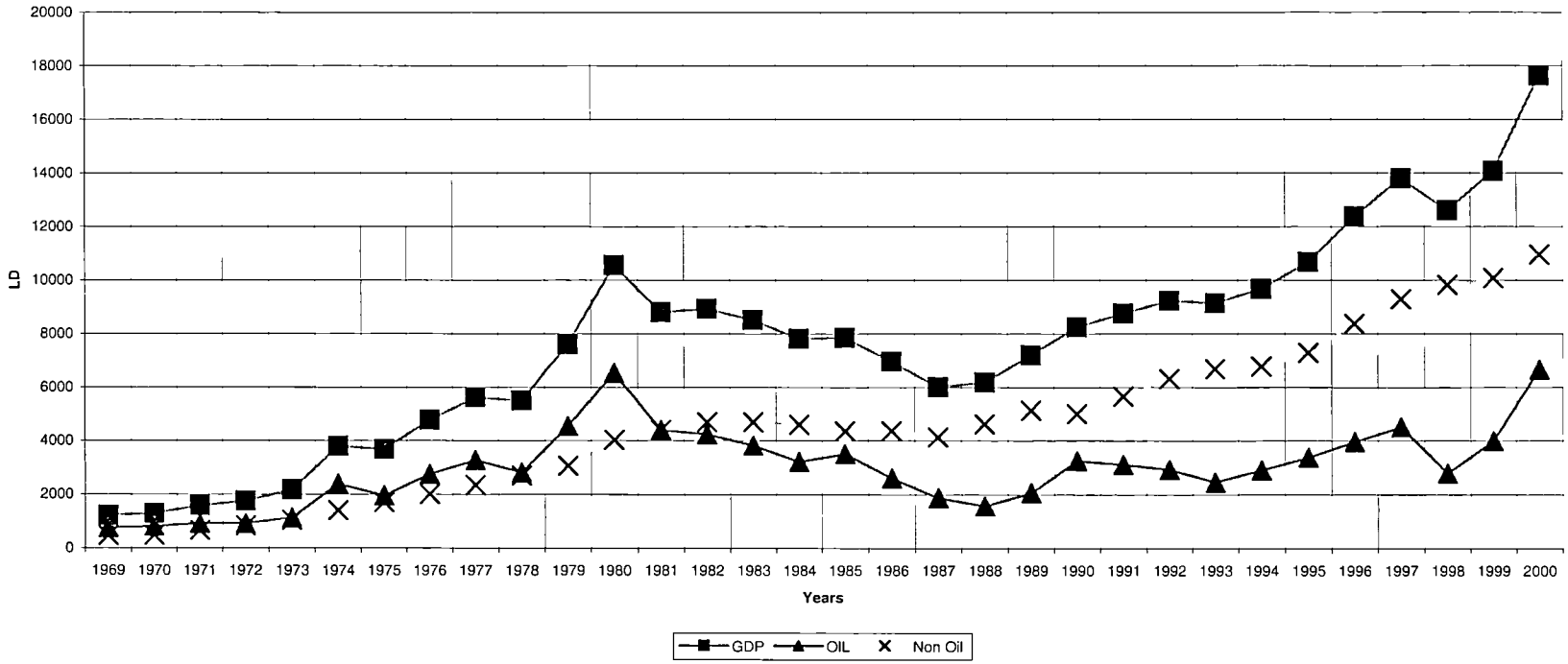
factors is particularly a problem when there is an economic downturn as world oil prices slump.

In this regard, Fisher (1990) argues that during the 1980s, the Libyan economy was deeply affected by the low price of oil. Furthermore, Mahmud and Russell (1999) argue that the trade ban and economic sanctions introduced by the USA government against Libya in 1981 and 1986 respectively have resulted in an end to American imports of Libyan oil and a withdrawal of US companies, which were working in Libya. Mahmud and Russell (1999) state that the US embargo and sanctions resulted in a decline in the production capacity of crude oil due to the fact that most Libyan oil fields consist of ageing American-made equipment and the operating companies were unable to get spare parts.

Due to the decline in oil prices and quantity, Libyan's oil revenues declined from USD 23.3 billion in 1980 to just USD 5 billion in 1988. The GDP recorded a negative growth rate in 1987 (13.6%). Appendix (3-2) shows the GDP by kind of economy activities. The decline in the GDP, as stated by Fayad (2000), was attributed to several political factors, such as, OPEC operations to control prices; oil production and oil exports quantities. According to Abuarroush (1996), this situation caused series cash-flow problems and increased debt repayment problems.

As can be seen in Figure (3-1), GDP increased dramatically from LD 1223 million in 1969 to LD 10553.8 million in 1980, but GDP decreased sharply as it reached LD

Figure (3-1): Gross Domestic Product GDP 1969-2000 (LD million)



Source: General Planning Board, Economics and Social Indicators, 1962-2000.

6011.6 million in 1987. Figure (3-1) also shows that the decline in GDP during this period of time (1980-1987) is due to the severe decrease in GDP from the oil sector, and slight decline in GDP from the non-oil sector.

As mentioned-above, the economic activities during the period of time from 1969 to 1992 were dominated by socialism ideology; therefore, with few exceptions in the agriculture sector, the whole private sector was replaced by public agencies (see, for example, Bait-Elmal 1999).

Table (3-1) shows that the public sector dominated the economic activity during the period of time from 1980 to 1998. It can be seen from Table (3-1) that the role of the private sector in the economy increased over the time period from 1993 to 1998 compared to the other two previous periods. In this regard, Alqadhafi (2002) states that the public sector received about 86.6% of the total investment, while the private sector received about 13.4% over the time period from 1976 to 1990.

Table (3-1): The Distribution of Investment between Public and Private sector from 1980-1990 (LD million)

Time Period	Public sector		Private sector	
	Amount	Percentage	Amount	Percentage
1980-1987	13923.3	92%	1211.7	8%
1988-1992	4856.4	90.2%	527.6	9.8%
1993-1998	7893.7	85%	1386.2	15%

Source: Alsharif (2003) p 22.

Alqadhafi (2002) states that the annual reports of People's Board for follow-up during 1989- 1990 stated that there was a misuse of economic resources by the public sector. The report indicated that in the manufacturing sector, which employs more than 47000 employees, only 17 out of 250 factories achieved production exceeding 60% of their maximum capacity and in the agriculture sector, 98 out of 175 projects had stopped production. In this regard, Fayad (2000) states that the

Libyan economy was affected by the world recession in the 1980s and, therefore, the Libyan government was unable to fund its development plans and, as a consequence, many projects were cancelled.

On the other hand, Alqadhafi (2002) argues that the lower return on capital is the most serious problem in the Libyan economy. He states that the reasons for this problem might be the justification of the economic projects which were on the basis of social or political factors. The social and political factors, as stated by Alqadhafi (2002), are: (1) some projects are located in remote areas from the market and (2) some productive unities are also established away from raw material resources.

In an attempt to remedy these problems, several actions were taken by the General People's Committee (the government). These actions included liquidation and transfer of subordination. As a result, some productive unities and projects were sold to the private sector and some of the agricultural projects and productive unities were transferred to the Secretary of Livestock and the Secretary of Industry respectively, but decreasing productivity is still continuing in these factories and with projects according to Alqadhafi (2002).

3.2.2 After 1992

In 1992, the state reforms began to implement general economic and industrial reforms, including reform of the banking sector. Since 1992, Libya has started the policy of privatisation for its state owned (public) companies as well as encouraging the establishment of private companies. The overall aim of this policy, as stated by Saleh (2001), was to reduce public spending and gradually withdraw government subsidies, and to encourage private initiatives in different sectors. The public companies are defined as the companies that the state owns more than 50% from

their shares, whereas, the private companies are known as companies owned by individuals, families and/or institutions.

In 1992, the government passed Act number 9 of 1992 to enhance and regulate the private sector activities in the nation. The act permits the establishment of private business activities owned and managed by families and individual entrepreneurs. The act also allows the selling of publicly held companies to private investors, which has resulted in the emergence of some private companies. According to this Act, the state wants to transfer its role from sole owner to that of a shareholder with limited liability and limited responsibility or fully privatise the state owned companies. In this regard, in the industrial sector, the ownership of 147 productive units were transferred to employees as part of the quasi-privatisation process (see for example, Saleh, 2001).

In addition, there was a move to encourage foreign investments in the Libyan market as evidenced by Act number 5 of 1997. According to law No, 5 of 1997, 63 projects have been given permission to start, but only 19% of these projects were successful, while 32 % of the projects are still under construction. The remaining projects (49%) have not been started yet as shown by Table (3-2).

Table (3-2): Foreign and Domestic investments were introduced by the Libyan Enterprise for encouraging investment (LD Thousand)

	Number of Projects		Investment Costs			
	Number	%	Foreign Investment		Domestic Investment	
			Amount (USD)	%	Amount (LD)	%
Achieved Projects	12	19	180426	21	28355	7
Under construction	20	32	100481	12	23141	5
Projects have not started yet	31	49	569203	67	381011	88
Total	**63**	**100**	**850110**	**100**	**432507**	**100**

Source: the Libyan enterprise for encouraging investment- Report on 14/4/2003.

On the other hand, the corrective efforts of restructuring the Libyan economy were hampered; *inter alia*, by the UN sanctions against Libya. The UN sanctions had been imposed on Libya in 1992 and suspended later in 1999 after two suspects wanted for the 1988 bombing of a USA airline were handed over for trial. In accordance with Security Council resolution 1506 (2003), the UN sanctions against Libya were lifted.

Although Mahmud and Russel (2002) argue that Libya has successfully exploited its own petroleum resources and the UN sanctions against Libya were futile in the oil and natural gas sector, the Libyan mission to the UN reported in a letter to the Security Council in March 2000 that the implication of Security Council resolutions 748 (1992) and 883 (1993) has affected all infrastructure development programmes and plans and, therefore, the Libyan economy has been negatively affected by these sanctions[3].

According to this letter, Libya quantified the cost of the sanctions at USD 33.602 billion from 15th of April 1992 to 5th of April 1999. This includes USD 1.430 billion in the health sector, USD 1.495 billion in agriculture, USD 6.610 billion in the Livestock sector, USD 3.713 billion in transport and communications, USD 5.850 billion in mining and industry, USD 8.627 billion in trade sector, and 5.877 billion in the energy sector.

Figure (3-1) shows that GDP increased gradually during the sanction period, although the GDP from the oil sector was fluctuating. Furthermore, after 1998, GDP increased sharply, due to the sharp increase in the GDP from oil sector. It might be also attributable to the suspension of the UN sanctions against Libya on 4th of April 1999.

[3] Libyan Mission to the UN- Report dated on 8th of March 2000.

The finance sector usually plays a vital role in financing business operations in the state. The next section describes the components of the finance sector and their developments.

3.3 The Components of the Finance Sector

The finance sector is usually divided into a currency market and a capital market. The currency market in Libya consists of six commercial banks and the capital market consists of four specialised banks and some other financial institutions. The commercial banks (the currency market) are: the Commercial Bank, Jamhoriya Bank, Ummah Bank, Wahda Bank and Commerce and Development Bank. The capital market consists of four specialised banks (the Agriculture Bank, Development Bank, Savings and Real Estate Investment Bank and Libyan Arab Foreign bank) and the National Banking Institution, the Insurance Company of Libya, the United Company for Insurance and the Libyan Arab Company for Foreign Investments.

3.3.1 The Banking Sector

Following the government nationalising all banks in 1970, the banking system is highly centralised and has been under state control, but the banking sector has witnessed some important developments during the last decade. As a part of the reformation of the economy, Law No 1 of 1993 was issued in order to allow the establishment of private banks, therefore, the first private commercial bank was opened for business in Benghazi in June 1996 (the Bank of Commerce and Development). Furthermore, Law No 1 of 1993 allows foreign banks to open branches, agencies or have representatives in Libya.

Alqadhafi (2002) states that three of the six commercial banks are owned entirely by the state; they are the National Commercial Bank, the Jamhoriya Bank, and the

Ummah Bank. He added that the Central Bank of Libya owns 70.5% and 87% of Wahda Bank and Sahara Bank respectively, while individuals own the rest of capital. The Bank of Commerce and Development is privately owned. Table (3-3) shows the distribution of 269 branches and agencies of the commercial banks.

Table (3-3): Number of branches and agencies of Libyan commercial banks

Municipalities/ banks	Commercial	Jamhoriya	Ummah	Wehda	Sahara	Commerce and Development*	Total
Tripoli	13	20	16	16	11	2	78
Benghazi	5	6	2	14	8	2	37
Sirte	6	10	7	12	4	2	41
Zawia	4	6	7	7	5	1	29
Jabel	5	7	7	8	1	-	28
Sebha	8	3	5	1	4	-	34
Jabel Akhdar	13	6	1	9	5	1	35
Total	**54**	**58**	**45**	**68**	**38**	**8**	**269**

Source: Alqadhafi (2002), p 108.
*The number of branches and agencies of the Commerce and Development Bank was updated from its web site.

The four specialised banks are owned fully by the state. They are; the Libyan Arab Foreign Bank, the Agriculture Bank, the Development Bank, and the Savings and Real Estate Investment Bank.

The Libyan Arab Foreign Bank deals with all international banking operations while the Agriculture Bank aims to provide financial facilities to people engaged in agriculture and animal activities particularly in the drought seasons. The Development Bank aims to provide loans to productive projects in the industrial, agriculture, and tourist sectors, whereas, the Savings and Real Estate Investment Bank aims to provide loans for building and buying houses for the citizens (see, for example, Alqadhafi, 2002).

3.3.2 The National Banking Institution

The National Banking Institution was established according to law No, 1 of 1997. The main aim of the National Banking Institution is to supervise and control the national banks according to Alqadhafi (2002).

A series of private banks called national (native) banks were opened in different areas in order to promote regional economic development. The first national bank was opened in Misurata city in December 1996. Until 2000, 44 national banks were opened in different regional areas. Alqadhafi (2002, p 107) summarised the aims of the National Banking Institution as follows:

> *"Borrowing from public quarters and financial institution to finance projects through the national banks,*
> *Management of the borrowed financial resources,*
> *Carrying out studies that serve the activities of the national banks,*
> *Provision of assistance and counselling to the national banks,*
> *Ensuring that the national banks observe the articles and rules of the Banking Law and legal precautions."*

Fayad (2003) argues that the Libyan banks suffer from surplus in liquidity. In this regard, he states that the liquid surplus reached about LD 1323.9 million in 2000, and the cash, which is available in the banks, exceeds what is required as the cash legal reverse by 144%. Fayad (2003) also argues that the reason for that may be the absence of a secondary capital market, as the Libyan banks do not have enough investment opportunities in the local market.

The Jamhoriya bank, as shown in Table (3-4), is the biggest bank in terms of total assets, total deposits and total credit in 2000, while the Wehda bank is the most profitable bank in 1999 and 2000. Furthermore, the Commerce and Development bank, which is a private bank, has grown rapidly as its assets had increased by more than 100% in 2000 compared to the previous year.

Fan et al. (2003) argue that in a country that has a large banking sector; companies are more likely to use more short-term debt than long-term debt due to the monitoring capabilities of banks. Therefore, the previous discussion on the banking sector may help in understanding and explaining some aspects of the debt policy in Libya.

3.3.3 The Insurance Companies

Fayad (2003) argues that before 1969, there were 24 foreign insurance agencies and four domestic insurance companies working in Libya, and after the revelation of 1969, all 24 foreign insurance agencies were stopped and the four domestic insurance companies were merged into two companies. Furthermore, the General People's Committee issued a decision on 23/12/1980 for merging the two insurance companies under the name of the Insurance Company of Libya, and until 1996 it was the only insurance company that performed the insurance activity in Libya.

In accordance with the reformation of the Libyan economy, and to encourage the private sector to take part in the restructuring process, the United Company for Insurance was established in 1996. The state owns 65% of its capital, while private investors own 35% of its capital.

Table (3-4): Total Assets, Total Deposit, Total Credit and Net Profits for the Commercial Banks (LD million)

	Commercial		Jamhoriya		Ummah		Wehda		Sahara		Commerce and Development		National Banking Institution	
	1999	**2000**	**1999**	**2000**	**1999**	**2000**	**1999**	**2000**	**1999**	**2000**	**1999**	**2000**	**1999**	**2000**
Total Assets	2018.4	1822.8	1948.6	2032.3	1536.7	1677.9	1941.6	1969.3	1587.8	1716.6	174.4	315.2	166.6	237.1
Total Deposits	1514	1311.7	1566.4	1625.8	1261.1	1392.3	1553.3	1537.3	1217.7	1301.7	130.8	258.6	91.6	184.6
Total Credit	810.9	813.3	1119.2	1024.6	763.8	895.5	590.6	731.1	800.8	884.8	13.3	21.6	34.4	59.4
Net Profits	26.4	32.6	24.4	32.7	5.4	12.7	32.1	36	31	32.5	2.4	7	0.4	0.6

Source: Data gathered by the researcher of this study from Abdalmalek, J., (2004) "The development of banks in Libya", Bulletin of Commerce and Development, Vol 30.

The insurance companies can use the money that is gathered from their insurance activities for financing new investment. Fan et al. (2003) state that in countries that have a larger insurance industry, the companies are more likely to use less short-term debt. Fan et al. (2003) argue that due to the long-term obligations of the insurance companies, they can hold longer-term securities and lend long-term debt. In view of that and the small insurance industry, Libyan companies are more likely to use more short-term debt due to the small size of the insurance sector.

3.3.4 The Libyan Arab Company for Foreign Investment (LAFICO)

LAFICO was established in 1981. It is fully owned by the state and its capital is about LD 500 million. LAFICO now has investment in more than 45 countries in the industrial, agricultural, transportation, fishing, and mining sectors. Furthermore, it owns companies' shares in other countries. Fayad (2003) argues that although LAFICO concentrates on investing in projects out of Libya, it has lent hard currency to some Libyan companies.

3.3.5 The Stock Exchange Market

Most finance textbooks define the stock exchange market as the place where companies and other institutions that require funds to finance their activities come together with individuals and institutions that have money to invest. The existence of an efficient capital market, as stated by Borda and McLeay (1996), will help in improving the allocation of financing sources, comparing the investment opportunities, diversifying portfolios and more importantly, converting shares to cash when required.

Generally speaking, there are two types of stock exchange markets namely, a primary market, and a secondary market. The primary market is a market where

shares are issued. Banks usually play a major role in primary markets. A secondary market is a place where shares already in circulation are traded. In Libya, there is only a primary market available. This may present a major barrier for Libyan companies to raise capital needed for investment.

Financial economists (Keister, 2000, Demirgucs-Kunt and Levine, 1996 and Ratcliff, 1980 among others), emphasise the importance of a secondary capital market. They pointed out that benefits resulting from the existence of a secondary capital market are: (1) encouraging innovation and private enterprises, (2) economically allocating the resources and (3) smoothing the progress of the privatisation. Furthermore, Alqadhafi (2002) stresses the importance of the creation of a secondary capital market as it will encourage and facilitate privatisation programmes and attract foreign investors for trading shares in Libya.

Firms in Libya can obtain funds by issuing new shares through banks as well as raising credits mainly from banks. The non-existence of a secondary stock exchange in Libya, however, deters the extent of raising funds when needed for various purposes. Libyan companies will therefore, tend to finance their investment opportunities externally from banks and internally from their retained earnings (for more details see annual report of People's Board for follow-up, 2000).

3.4 The Commercial and Tax Laws

La Porta et al. (1998) argue that the legal system is divided into a few legal families or traditions. In this regard, they argue that commercial laws come from two traditions: common law, which is English in source and civil law, which comes from Roman law. The civil tradition has three major families: French, German, and

Scandinavian and La Porta et al argue that the civil legal tradition is the oldest, the most influential and the most dominant tradition around the world.

According to La Porta et al. (1998), most Arab countries, particularly the Northern African countries adopted the French law principles in their commercial law and Kilani (1988) argues that Libyan commercial law has also been based on the principles of the French law.

La Porta et al. (1997 and 1998) argue that the legal system based on common law offers investors better protection than those based on civil law, and that the French civil-law countries generally have the weakest legal protection of investors in terms of shareholders rights, debtholders rights, and the enforcement of law.

In Libya, the commercial law was issued in 1953 in order to regulate business activities. The Libyan Commercial Law divided the businesses into four types: general partnership, simple limited partnership, limited partnership with shares and joint stock companies.

According to Articles 445 to 451 of the commercial law, general partnership companies are defined as those companies which are owned by partners who are jointly legally responsible for their business debt, while simple partnership companies are to be operated by one or more active partners who have unlimited liability for their company's debt and by one or more inactive partners whose their liability do not exceed their contributions to the capital. Whereas, limited partnership companies are defined as those companies where liability is limited to the full payment of their shares (see, for example, Saleh, 2001).

According to the commercial law, Libyan companies are required to have three bodies: an Administration Board, a General Assembly and a Watching Committee. The Administration Board runs the company in the light of the general policy that should be adopted by the General Assembly, while the Watching Committee are required to make sure that the company's management enforces its activities in accordance with the rules. The General Assembly consists of a company's shareholders, and it is usually considered as the place where the shareholders can exercise their rights, such as, voting for directors and on major company issues.

Brealey and Myers (2003) argue that companies usually have one type of shares and each share has one vote, but sometimes a company has different types of shares, which differ in their rights to vote. In other words, the basic principle for voting is one-share-one-vote, but there are many ways to avoid this principle. In this regard, La Porta et al. (1998) state that companies can issue shares with non-vote, low- and high vote, founders' share with high voting rights, and shares whose power of vote increases when they are held longer. In Libya, there is another way out of the one-share-one-vote principle; it can be argued that it is one-person-one-vote, as companies restrict one vote that any given shareholders can exercise at the General Assembly meeting, regardless of how many shares he or she has[4].

The most basic right of debtholders is to repossess collateral. This right is hampered in some countries. In this regard, La Porta et al. (1998) state that the repossession of collateral might lead to the liquidation of a firm, which might be viewed as socially undesirable. This would be especially true when economies have adopted the

[4] The researcher is a member of the board of directors of the Gamenuis national bank, and the voting process was carried out according to one-person-one-vote principle.

socialism ideology that aims, *inter alia*, to provide job opportunities and these job opportunities would be lost if the company was liquidated.

A legal reserve is considered to be the most common debtholders' right in all civil-law countries (Libya among them). Accordingly, companies are required to maintain a certain level of capital to avoid automatic liquidation. Libyan companies are required to maintain a certain level of capital as a legal reserve, which is 5 % of annual net profit before tax until it reaches one fifth of paid-in capital (see, for example, Mahmud, 1997).

La Porta et al. (1997) argue that the legal environment influences the size of the capital market, which, in turn, affects capital structure decisions. In this regard, La Porta et al. (1998) state that the legal protection to investors, which includes the content of the law and the quality of its enforcement, is one of the most important treatments to mitigate agency problems.

Libya, a French-civil-law country, may have inadequate protection for investors compared to other civil-law traditions and, as a result, Libyan companies may suffer more from agency problems. This may imply that these companies are more likely to use short-term debt as the shorter maturity limits the potential expropriation of debtholders' right and are less likely to use equity in accordance with suggestion of Fan et al. (2003).

La Porta et al. (1998) argue that the concentration of ownership of shares in a company indicates the investor's protection, as more concentrated ownership of shares leads to poor investor's protection.

In Libya, for example, Article 5 of Act No 9 of 1992 indicated that the maximum individual share ownership, in companies with less than LD 0.5 million, less than LD 1.0 million, less than LD 20 million, and more than LD 20 million, should not exceed 12, 10, 8, 5 percent of the total shares respectively. This can be viewed as more protection to the small investors but at the same time, it can be also viewed as unfriendliness of the law to investors.

Tax systems differ, *inter alia*, in terms of whether the interest payments and dividends payments are tax-deductible and whether the interest payments and dividends payments are taxed at both the corporate and personal level (see, for example, Fan et al., 2003). According to the Libyan Tax Law No, 64 interest payments on debt are tax-deductible, but dividends on equity are not tax-deductible at the company level. This tax treatment of interest payments on debt might affect capital structure choice of Libyan companies, and, renders, debt financing more attractive than equity financing in accordance with the suggestion of Fan et al. (2003).

3.5 The Accounting and Auditing Profession Law

Kilani (1988) argues that Libyan companies follow accounting practices consistent with North American Generally Accepted Accounting Principles (GAAP). This is partly because foreign firms in Libya were mainly from the UK and the USA and partly because American accounting textbooks and methods are used in the accounting education system in the Faculties of Economics and Commerce at the Libyan Universities (see, for example, Mahmud, 1997).

Accounting and Auditing Profession Law No 116 was issued in 1973, resulting in the establishment of the Libyan Charter Accountants and Auditors Union. Law No 116

of 1973, aims, as stated by Saleh (2001), to regulate the accounting profession and to follow up the international developments in accounting and auditing professional through organising and participating national and international seminars and conferences.

The Libyan Charter Accountants and Auditors Union is criticised, because it has done little work for issuing or adopting accounting standards in Libya. In this regard, Bait Elmal et al. (1988), surveyed the accounting standards and principles applied by Libyan companies and they found that the accounting standards and principles applied by Libyan companies differed from company to company. They attributed the differences to differences in the accountants' professional and educational backgrounds. Perhaps, this is not surprising as the aim of accounting systems in most socialist orientated economies, as stated by Garrod and McLeay (1996), is to provide financial statistics for use in higher-level budgets rather than providing information to outsiders at the level of firm.

Another drawback is that Libyan accountants are not required to pass an exam to be authorised as chartered accountants and auditors. The law No 116 of 1973 requires accountants to have at least a BSc in accounting to be allowed to practise accounting and auditing services.

Charter accountants and auditors play a vital role in certifying the company's accounts in order to enhance their reliability, which in turn mitigate the asymmetric information problems between the parties involved (see, for example, Fan et al. 2003). On the other hand, Fan and Wong (2002) state that auditors play a vital monitoring role to mitigate agency conflicts between controlling owners and minority shareholders. With regard to capital structure choices, Fan et al. (2003)

state that in countries that have a strong audit function, companies are more likely to have lower leverage and longer maturity debt than companies with weaker audit function.

In the light of the above-mentioned drawbacks of Accounting and Auditing Profession Law and the weaknesses of accounting practises in Libya, one may expect Libyan companies are more likely to have higher leverage and shorter maturity debt in accordance with suggestion of Fan et al. (2003).

3.6 The policy of giving credit

As discussed above, the banking sector is considered, compared to other components of the finance sector, as a larger sector while the insurance sector and other financial institutions are relatively small. On the other hand, the commercial law, as it is adopted the French civil law principles, does not provide adequate legal protection of investors.

The combination of the above-mentioned factors with the absence of a secondary capital market in Libya, may lead Libyan companies to adopt a particular financing policy. Therefore, it can be argued that Libyan companies are more likely to be financed by debt over equity and especially by short-term debt financing.

The Libyan government adopted a policy of giving credits to various sectors in order to enhance and improve the social and economical situation of the country. Table (3-5) presents the level of credit provided by the Libyan commercial banks for different investment purposes.

As can be seen in Table (3-5), the total amount of credit has almost doubled from LD 3053.3 million in 1990 to LD 6057.6 million in 2001. It is apparent from Table (3-5) that loans to economic activities also raised dramatically in the first quarter of 2002.

Table (3-5): Commercial Banks Credit to various Sectors (LD Million)

End of	Loans to Economic Activities	Housing Loans	GMR Loans*	Social Loans	Total
1990	1784.3	1125.5	81	62.5	3053.3
1991	1784.1	1202	81	85.2	3152.3
1992	1917	1259.1	112	104.2	3392.3
1993	2133.4	1279.5	170	127.3	3710.2
1994	2296.1	1310.1	230	149.9	3986.1
1995	2462.7	1343.5	373	102.3	4281.5
1996	1877.9	1389.7	373	274.4	3915
1997	2072	1326	373	394.9	4165.9
1998	2290.8	1360.4	373	506	4530.2
1999	2647.9	1459.7	373	723	5203.6
2000	2802.9	1468.9	373	939.2	5584
2001	3156	1436.9	373	1091.7	6057.6
2002 Q1	3090.9	1478.9	373	1167.1	6109.9

*GMR: Means the Great Man-made River Project

Source: Central Bank of Libya.

This increase in the level of credit may be attributable to the policy that has been adopted by the government for giving credit to the different economic activities. The main aim of this policy, as stated by Saleh (2001) was to reduce public spending and government subsidies. Libyan public companies have been changed by this policy from the form of not-for- profit companies to profit-maximising companies. In this regard, Alqadhafi (2002) argues that the shortage of cash flow in most Libyan public companies has led those companies to borrow from commercial banks to cover their expenses, and, as a result, many companies are exposed to high level of debt.

In summary, the Libyan economy is in a transition period, and during this economic transition, the capital structure of Libyan companies might be affected due to the shortage of financing from the state. Therefore, the Libyan economy has gradually moved towards the direction of a market economy.

Subsequently, there is a need to study the capital structure of Libyan companies in the light of the reformation of the economy and the absence of a secondary capital market.

3.7 Conclusion

The characteristics and the developments of the Libyan economy have been reviewed in this chapter since the revolution of 1969 in order to provide a framework within which the study' observations are to be interpreted and understood. As pointed by Fan et al. (2003), the *characteristics of the companies and the institutional* environment are considered to be the most important factors for explaining and understanding the capital structure decisions in different contexts.

The severe decline in world oil prices in 1980s and the effect of the UN sanctions against Libya during the 1990s have been explained in order to clarify the crises that Libya faced in the 1980s and 1990s. The discussion then moved on to describe the restructuring programs of the Libyan economy as they marked the beginning of a period that changed Libyan public companies from the form of not-for-profit companies to profit-maximising companies.

The review of the legal system, the tax system and the accounting and auditing profession law highlighted the legal determinants of capital structure in Libya. The next chapter will discuss the methodology of this study.

Chapter Four: Research Methodology

4.0 Introduction

In the previous two chapters the theory of capital structure, the determinants of capital structure and the features of the Libyan economy were reviewed and discussed. In this chapter, the research hypotheses are formulated in the light of capital structure theories, characteristics of the Libyan economy and some non-financial and behaviour factors. This research project utilises balance sheets, income statements and survey questionnaire to collect data; thus, the hypotheses are examined using different research methods in collecting and analysing data. This chapter illustrates the methodology of this research project.

This chapter is divided into four sections. The first section explains the purpose of the study while the second section illustrates the stages of the research. Section three provides justification for the research methodology and section four concludes the chapter.

4.1 The purpose of the study

Gaud et al. (2003) argues that the debate as to which theory of capital structure provides a better explanation of the capital structure choices of firms is still unresolved. Despite the fact that capital structure theories have attempted to explain firms' capital structure decisions, firm-specific factors and macroeconomic conditions influence firms' capital structure in different environments. In this regard, Gleason et al. (2000) argue that the legal environment, the tax environment, the economic system, and technological capabilities influence the capital structure in the fourteen European community member countries examined in their study. Furthermore, Korajczyk and Levy (2003) argue that both macroeconomic conditions

and firm-specific factors have an effect on firms' financing choices. As stated by Antoniou et al. (2002), the capital structure decisions of firms are not only affected by its own characteristics, but also by its surrounding environment. The surrounding environment may affect the firms' capital structure for different reasons, such as, the deterioration or the improvement in the state of the economy, the existence of a secondary capital market and/or the size of the banking sector.

Other empirical studies at the international level, however, have reported conflicting results, for example, Booth et al. (2001) state that although debt ratios in developing countries seem to be affected by the same factors that are significant in developed countries, the macroeconomic conditions such as GDP growth rates, inflation rates and the development of capital markets play an important role in determining firms' capital structure. Rajan and Zingales (1995), however, suggest that future research should proceed in two ways. Firstly, by continuing to develop the relationship between theoretical models and empirical findings by widely applying the models to different situations, and secondly, by incorporating the institutional differences between countries when specifying the theoretical models.

Booth et al. (2001) conducted their study on developing countries, which have some similarities to developed countries such as the existence of a secondary capital market. The importance of studying capital structure in the Libyan environment however is attributable to two reasons. Firstly, Libya's macroeconomic conditions may differ significantly from other countries in terms of GDP growth rates and inflation rates. The most unique feature of the Libyan economy is the absence of a secondary capital market which might deter investors from making long-term investment in equity or debt. Secondly, the UN sanctions and the decline in oil prices

in the 1990s may have a vital impact on the Libyan economy and its financing policy. As discussed in chapter three, the UN sanctions have, *inter alia*, hampered foreign capital and investments from entering the Libyan market. Such a situation may decrease the mount of funds that are available for Libyan companies' financing.

Subsequently, there is a need to study the capital structure of Libyan companies, and to investigate how Libyan companies can overcome the problem of a lack of a secondary capital market in their business environment and the impact of the UN sanctions on Libyan firm's capital structure. Effectively, there is a need to explain and understand the financing behaviour of Libyan companies.

Therefore, the main aim of this research project is to answer these three questions:

1- Which of the three categories of modern capital structure theory (static trade-off, agency costs, and asymmetric information theories) provides a better explanation of the financing behaviour of Libyan companies?

2- How do managers' preferences, beliefs and attitudes influence the capital structure decisions of Libyan companies?

3- Do the factors that affect cross-sectional variability of capital structure in emerging market countries have similar effects on Libyan companies' capital structure?

4.2 Outline of the research project

This study applies quantitative models to examine the hypotheses by utilising data extracted from the financial statements of Libyan companies. In order to test some behaviour (non-financial) factors, data were gathered by survey questionnaires that were forwarded to Libyan companies. Finally, data from 13 developing countries:

Brazil, Chile, Hong Kong, India, Malaysia, Mexico, Pakistan, Singapore, South Africa, South Korea, Taiwan, Thailand and Turkey were obtained from Datastream and were utilised in an attempt to analyse and, where possible, explain differences in the financing patterns between emerging market companies and Libyan companies.

The quantitative approach was adopted in order to understand and explain the financing behaviour of Libyan companies and to analyse the differences, if any, of financing patterns between Libya and the other 13 emerging market countries. The quantitative approach can utilise data from relatively large number of companies rather than just examining a small number of cases. The results of testing a large number of companies allow generalising the findings. The quantitative approach is described as an extensive approach, which employs less detail and more generality. Accordingly, it is believed that the quantitative approach is an appropriate methodology for this research project.

This research project tests the hypotheses that are derived according to the theory of capital structure, characteristics of the Libyan economy, and the impact of managers' preferences, beliefs and attitudes towards debt and equity. The research project involves four main stages, each of which are summarised below.

4.2.1 Stage 1: Review of the Literature Related to Capital Structure and the Libyan Economy

The studies of determinants of capital structure in both developed and developing countries were reviewed in order to determine the factors that have been used to explain the financing behaviour and which of these factors has an effect on firm's capital structure.

New directions in capital structure research, which focus on the use of questionnaire and interviews, were also reviewed. Furthermore, as pointed out by Michaelas (1998), the combination of different methods of data collection and analysis in capital structure studies provides a "triangulation" approach.

Chapter three discusses the unique features of the Libyan economy including (1) its dependency on oil as a major source of income and foreign exchange earnings, (2) the absence of a secondary capital market and (3) the impact of the UN sanctions. The Acts related to the reformation of the Libyan economy were also reviewed in chapter three in order to a get comprehensive picture of enterprise development in Libya.

4.2.2 Stage 2: Regression Analysis of the Libyan data

Despite the differences in the reporting style for accounting information in financial statements in Libyan companies, this accounting information allows for the calculation of variables, which have previously been identified, as relevant to capital structure decisions.

4.2.2.1 Choice of explanatory variables for analysis

Both theoretical and empirical capital structure studies have generated results that attempt to explain the determinants of capital structure. As a result of these studies some broad categories of capital structure determinants have emerged. In this regard, Titman and Wessels (1988), and Harris and Raviv (1991) point out that the choice of suitable explanatory variables is potentially debatable. This is due to the possibility for model misspecification, such as, excluding important variables from the model and/or including irrelevant variables in the model.

In this research project, I concentrate on four key variables identified in studies by Rajan and Zingales (1995), and Bevan and Danbolt (2000 and 2002). The selected explanatory variables are: tangibility, size, profitability, and the level of growth opportunities. Generally speaking, the selection of explanatory variables is primarily guided by the results of previous capital structure studies. In particular, these four explanatory variables are identified as important factors in the G-7 countries (Rajan and Zingales, 1995), as well as in ten developing countries (Booth et al., 2001).

The following describes these explanatory variables and sets out the hypotheses. The hypotheses are developed in the light of the trade-off, agency cost, and asymmetric information theories.

Profitability

It is widely accepted that the past profitability of a firm, and consequently the amount of earnings available to be retained, should be an important determinant of capital structure. Profitability is measured by the ratio of profit before tax to total assets. As high profits increase the debt capacity of a firm, companies will choose to increase their debt to take advantages of tax deductibility. Um (2001) states that high profit levels also lower the probability of bankruptcy giving rise to higher incentives to use tax shields, thus leading to a higher level of debt. The static trade off theory, thus, states that there is a positive relationship between profitability and financial leverage.

On the other hand, Bevan and Danbolt (2002) state that the more profitable firms should hold less debt, because high levels of profits provide a high level of internal funds. Consistent with this argument, the pecking order theory states that firms use internal funds before external funds to finance their investments opportunities. In

other words, firms prefer raising capital, first from retained earnings, second from debt, and finally from issuing new equity. Consistent with the pecking order theory, work of Titman and Wessels (1988), Rajan and Zingales (1995), Antoniou et al. (2002) and Bevan and Danbolt (2002) in developed countries, Booth et al. (2001), Pandey (2001), Um (2001), Huang and Song (2002), Wiwattanakantang (1999), and Al-Sakran (2001) in developing countries all find a negative relationship between leverage ratios and profitability. Consequently, the null hypothesis is as follows:

H1: *There is no significant relationship between the leverage ratios and Profitability.*

A positive relationship between debt and profitability is consistent with the static trade-off theory, whereas a negative relationship between debt and profitability is consistent with the pecking order theory.

Growth

Um (2001) argues that the motivation for an association between growth and financial leverage is to the extent that growth results in funding pressure for investment opportunities. Firms will finance their investment opportunities by internal funds or/and by external funds. Previous studies (Rajan and Zingales, 1995; Bevan and Danbolt, 2002, among others) have used market-to-book ratio as a measure of growth[5]. It is not possible, however, to compute this ratio in this study due to the absence of a secondary capital market in Libya; hence the market value of equity cannot be ascertained. In this study, I measure the growth of the firm by the

[5] The ratio of the book value of total assets (TA_{BV} less the book value of equity E_B plus the market value of equity E_{MV}, to the book value of total assets TA_{BV}).

$$\frac{TA_{B.} - E_{BV} + E_{MV}}{TA_{BV}}$$

percentage change in total assets, in accordance with Um (2001), Fattouh et al. (2003) and Al-Sakran (2001).

Myers (1977) argues that shareholders in growing companies may take action contrary to the interests of debtholders. In addition, lenders may require some limitations on lending to such companies. Titman and Wessels (1988) point out that the cost associated with the agency relationship between shareholders and debtholders is likely to be higher for firms in growing industries. Firms in such industries have more flexibility in their choice of future investments. Therefore, companies with valuable growth opportunities are more likely to have low debt ratios as pointed out by Myers (2001).

Consistent with these predictions, Titman and Wessels (1988), Chung (1993), Rajan and Zingales (1995), Barclay et al. (1995) and Barclay and Smith (1996) find a negative relationship between growth and the level of leverage on data from developed countries. In developing countries, the studies show conflicting results, for instance, Al-Sakran (2001) finds a negative relationship between growth and the level of leverage in Saudi Arabia, whereas, Booth et al. (2001) argue that this relation is generally positive in all countries in their sample, except for South Korea and Pakistan. Furthermore, Pandey (2001) finds a positive relationship between growth and both long-term and short-term debt ratios in Malaysia. The use of short-term sources of debt, however, may mitigate the agency problems, as any attempt by shareholders to extract wealth from debtholders is likely to restrict the firms' access to short-term debt in the immediate future. Therefore, the null hypotheses should be formulated as following:

H2: There is no significant relationship between the leverage ratios and growth opportunities.

A positive relationship between debt and growth is consistent with the pecking order theory, whereas a negative relationship between debt and growth is consistent with the agency cost theory.

Tangibility

Debt agency costs arise due to a conflict of interest between debt providers on one side and shareholders and managers on the other side (Jensen and Meckling, 1976). Managers have the motivation to invest funds in risky business for shareholders' interest, because if the investment fails, limited liability of shareholders may mean that lenders are likely to bear the cost. Jensen and Meckling (1976) argue that the use of secured debt might reduce the agency cost of debt. It is well known that debt can be secured by collateral. The agency cost approach of Jensen and Meckling (1976) is consistent with the asymmetric information approach of Myers (1984) that issuing debt secured by collateral reduces the asymmetric information related costs in financing. The difference in information sets between the parties involved may lead to the moral hazard problem (hidden action) and/or diverse selection (hidden information), so debt secured by collateral may mitigate asymmetric information related cost in financing[6]. In addition, the static trade-off theory suggests a positive relationship between tangibility and leverage, as the company is less likely to be forced into liquidation if debtholders can seize assets if the company defaults on its

[6] Scapens (1991) contends that lack of direct observation or imperfect understanding of outsiders, regarding manager's effect, causes moral hazard problem. In addition, Scapens (1984) argues that the adverse selection problem appears when the outsiders can observe the manager's action but do not know the basis of manager's decisions.

debt. Thus, firms with satisfactory collateral can obtain more secured debt, as the lenders will feel safe by taking assets as collaterals. In line with Rajan and Zingales (1995) tangibility is measured by the ratio of fixed assets to total assets. It is widely accepted that the collateral value of assets can be a major determinant of the level of debt finance available to companies.

For instance, whilst the work of Wiwattanakantang (1999) in Thailand, and work of Um (2001) in South Korea report a positive relationship between tangibility and leverage, other studies such as Booth et al. (2001) in ten developing countries, and Huang and Song (2002) in China, find that tangibility is negatively related to leverage. It is argued, however, that this relation depends on the type of debt.

Nuri (2000) argues that companies with a high fixed asset ratio tend to use more long-term debt. Bevan and Danbolt (2000 and 2002) also find a positive relationship between tangibility and long-term debt, whereas a negative relationship is observed for short-term debt and tangibility in the UK. Pandey (2001) finds that both short-term and long-term debt is negatively related to tangibility in Malaysia. However, the null hypothesis is as following:

***H3**: There is no significant relationship between the leverage ratios and tangibility.*

A positive relationship between debt and tangibility is consistent with the debt agency cost explanation and the asymmetric information theory. This is because issuing secured debt could reduce the presence of asymmetric information between managers and investors. Um (2001), however, suggests that if a firm's level of tangible assets is low the management, for monitoring cost reasons, may choose a high level of debt to mitigate equity agency costs. Therefore, a negative relationship between debt and tangibility is consistent with an equity agency cost explanation.

Size

Antoniou et al. (2002) argue that several studies find that the size of a firm is a good explanatory variable for its leverage ratio. It is believed that larger firms have a lower probability of bankruptcy than smaller firms. In addition, the larger firms may have easier access to capital markets than smaller firms. Furthermore, Um (2001) argues that firm size may proxy for the debt agency costs (monitoring cost) arising from conflicts between managers and investors. Um (2001) emphasises that the monitoring cost is lower for the large firms than for small firms, therefore, larger firms will be induced to use more debt than small ones. Rajan and Zingales (1995, p 1451) state that,

> *"The effect of size on equilibrium leverage is more ambiguous. Larger firms tend to be more diversified and fail less often, so size...may be an inverse proxy for the probability of bankruptcy."*

Bevan and Danbolt (2002) also argue that large firms tend to hold more debt, because they are regarded as being "too big to fail" and therefore receive better access to the capital market. Hamaifer et al. (1994) argue that large firms are able to hold more debt than small firms, because large firms have a higher debt capacity. Michaelas (1998) argues that smaller companies tend to have less long-term debt, but probably more short-term debt than larger companies.

Interestingly, empirical studies find mixed evidence. Wiwattanakantang (1999), Booth et al. (2001), Pandey (2001), Al-Sakran (2001), and Huang and Song (2002) find a significant positive relationship between leverage ratios and size in developing countries. While Rajan and Zingales (1995) find a positive relationship between size and leverage in G-7 countries, Titman and Wessels (1988) state that the size factor affects mainly the small companies and they have concluded that there is positive

correlation between the size of the firm and the total debt ratio and the long-term debt ratio. On the other hand, Bevan and Danbolt (2002) report that size is found to be negatively related to short-term debt and positively related to long-term debt. Remmers et al. (1974) find no size effect.

Several measures of firm size have been used in previous researches. Ferri and Jones (1979) report that four different measures of firm size are used to represent the size of the firm; total sales, total assets at book value, the average level of sales over a particular time interval, and the average level of assets over a particular time interval. Rajan and Zingales (1995) use the natural logarithm of sales to proxy for size but as there were more observations for total assets than sales in my dataset, following Al-Sakran (2001), Pandey (2002), Gonenc (2003) and Cassar and Holmes (2003), size is measured by the natural logarithm of assets.

Despite some inconsistencies in the empirical evidence, the majority of empirical studies suggest a positive relationship between size and leverage ratio. On the other hand, some studies cast doubt about the positive relationship between short-term debt and size. Bevan and Danbolt (2000 and 2002) report a negative relationship between size and short-term debt.

Consequently, the null hypotheses would be as following:

H4: *There is no significant relationship between the leverage ratios and company size.*

A positive relationship between debt and company size is consistent with the trade-off and the debt agency cost theories. This is because larger companies may have a lower probability of bankruptcy and lower monitoring costs than smaller firms.

4.2.2.2 Empirical analysis

The basic empirical model is a cross-sectional regression of the three different measures of the company's debt ratio against four explanatory variables. Bevan and Danbolt (2002) argue that capital structure studies have emphasised that the analysis of the determinants of leverage based on total debt may disguise the significant differences between long-term and short-term debt. Therefore, the debt ratios are: total debt to total assets, short-term debt to total assets, and long-term debt to total assets ratios. The explanatory variables are: profitability, tangibility, growth, and firm size.

The cross-sectional regression used in this study is based on models used in Rajan and Zingales (1995), and Bevan and Danbolt (2002), with some modifications in both the leverage and explanatory measures.

4.2.2.3 Model Development

Rajan and Zingales (1995) use the following model:

$$\textbf{Leverage (Firm}_i\textbf{)} = \alpha + \beta_1 \textbf{Tangible Assets}_i + \beta_2 \textbf{Market to Book Ratio}_i + \beta_3 \textbf{Log Sales}_i + \beta_4 \textbf{Return on Assets}_i + \varepsilon_i$$

Where:

Leverage is the ratio of debt to capitalization, when equity is measured at book value and measured at market value;

α is the intercept;

Tangible Assets is measured by the ratio of fixed assets to total assets;

Market to Book ratio is the ratio of the book value of total assets less the book value of equity plus the market value of equity, to the book value of total assets;

Log Sales is a proxy for the size of a company as measured by the natural logarithm of sales;

Return on assets is the ratio of profit before interest, tax and depreciation to the book value of total assets;

ε_i is the random error term.

Bevan and Danbolt (2002) use the debt components, short-term and long-term debt in applying the Rajan and Zingales' model and Michaelas (1998) uses total debt, short-term debt and long-term debt ratios in his study of UK privately held companies.

Due to the absence of a secondary capital market in Libya, the market value of equity is unavailable. Furthermore, due to the limitation of some items in our data, some additional adjustments need to be made to the Rajan and Zingales, and Bevan and Danbolt' models in order to employ them in the Libyan context. These adjustments on the models are described as follows:

$$Z_i = \alpha_i + \beta_{1n} X_n + \beta_{2n} D + \beta_{3n} X_n D + \varepsilon_i$$

Where:

z_i (Leverage) is computed as the ratio of total debt to total assets, long-term debt to total assets, and short-term debt to total assets, in alternative estimations;

X_n denotes the explanatory variables as following (n=1, 2, 3 and 4):

Profitability is the ratio of profit before tax to the book value of total assets;

Growth is measured by the percentage change in the value of assets;

Tangibility is measured by the ratio of fixed assets to total assets, and

Size is measured by the natural logarithm of total assets

D denotes the dummy variable which equals 1 if the firm is a private firm, and 0 if the firm is a public firm;

α_i is the intercept, and

ε_i is the random error term.

4.2.3 Stage 3: Survey Questionnaire

This stage involved the administration of a survey questionnaire. The questionnaire is a commonly used tool for collecting data because it is flexible and can be used to collect data cheaply from different research areas. However, writing a good questionnaire to serve the study objectives is not an easy task, because it has been found that badly written and designed questionnaires are usually associated with low response rates (Al-Qudah, 1991). Also it may not achieve the objectives of the research if it is badly written.

The decision to use a survey questionnaire is for three reasons. Firstly, the questionnaire is a cheaper way of putting questions to many people. Secondly, the questionnaire allows for asking very specific questions and collecting data that may be difficult to obtain otherwise. Thirdly, the combination of a survey questionnaire and mathematical models can, as stated by Michaelas (1998), provide a new research methodology in capital structure research, and it can overcome some of the disadvantages inherent with each individual technique for collecting and analysing data.

The questionnaire was developed after reviewing the capital structure literature and after studying the questionnaires that were conducted by previous studies in capital structure including Graham and Harvey (2001) Michaelas (1998) and Ang and Jung

(1993). The benefit from taking questions from other works, as pointed out by Norton (1990), is to mitigate much of the difficulties inherent in survey design and any potential criticisms of the questionnaire and the ability to compare results. Furthermore, for facilitating comparability, an effort was made to keep the format and design of our questionnaire similar to that of Graham and Harvey (2001), Michaelas (1998) and Ang and Jung (1993) but with modifications as relevant to the Libyan context.

The first draft of the questionnaire was circulated to group of PhD students in the University of Liverpool Management School for feedback, and the sensitivity of the questions was also tested by Libyan accounting and finance PhD students in UK universities, including Sheffield Hallam University, the University of Salford and the University of Liverpool. The questionnaire was revised following their suggestions.

The aims of the questionnaire are as follow:

1- To identify different aspects of Libyan companies' financial policies such as sources of finance, availability of the overdraft facilities, firms' dividend policy and financing issues and problems.

2- To identify the factors that might affect the amount of debt and firm's decisions to issue shares.

3- To determine whether asymmetric information exists in the Libyan business environment.

4- To gain an understanding of Libyan Managers' preferences, perceptions and beliefs towards capital structure.

In summary, the questionnaire focuses on three aspects: current practices on capital structure (actions), manager's preferences and attitudes toward using debt and equity (beliefs) and demographic information about the respondents.

4.2.3.1 The Basic Issues in Questionnaire Design

In order to achieve the aims of the questionnaire, several basic issues should be considered. Sudman and Bradburn (1983) argue that a well-designed questionnaire can make the tasks of both participants and researchers easier and reduces errors. In this regard, Nachmias and Nachmias (1981) argue that some aspects such as, a cover letter, high-quality paper and adequate spacing between questions and sections are factors to be considered in designing the questionnaire. The front cover letter should contain a study title and the name of the study sponsor. The issues of questionnaire' size, amount of background information and types of questions were also considered important aspects affecting the likelihood of achieving a high response rate are discussed below.

Overall size

Although Scott (1961) states that there is no effect of the size of questionnaire on the response rate, many researchers such as, Bancel and Mittoo (2002) and Bryman (2001) report that short questionnaires receive higher response rates. Therefore, the questionnaire of this study consists of 17 questions and the length of the questionnaire was limited to four pages. PhD students in the University of Liverpool Management School took, on average, about 20 minutes to complete the questionnaire.

Amount of background information

Background information helps respondents to understand questions and encourage them to give meaningful responses. The questionnaire of this study includes general instructions to the respondents in order to help them select the appropriate answer. Pallant (2001) argues that the instructions of the questions are very important for the respondents to properly answer the questionnaire.

Type of questions

Closed and closed choice questions were used, as they are quick to answer and their answers could be written in quantitative form for data analyses purposes. Pallant (2001) states that the combination of both closed and closed choice questions works best, because they may clarify the meaning of questions for respondents. Closed and closed choice questions were used in order to get quantitative data that cannot be collected from financial statements. Three types of questions have been used in the questionnaire. The first type employed a point ordinal scale (Four point Likert scale), asking respondents to rate their agreement/disagreement with, or importance/ unimportance of, different statements.

The use of a four-point scale instead of a five-point scale is to avoid neutral answers such as "do not know" or "cannot decide". The second and third types of questions involved asking the respondents to rank the importance of a given list of alternative answers and to fill-in the blanks respectively.

In other questions the respondents were asked to tick the answer that best describes them and their companies at the end of the questionnaire. The variation in

respondents and companies' characteristics potentially allows for a better understanding the respondents' capital structure practices.

The questionnaires were distributed in person to the respondents for two reasons. Firstly, the postal services are not good enough to send postal questionnaires to all sectors of the economy in all Libyan cities and secondly, to improve the response rate.

To improve the response rate to the questionnaire, it was accompanied by a covering letter which emphasised the importance of the survey, assured anonymity and stated the sponsorship of the study. According to Scott (1961) official sponsorship may increase the response rate.

I mainly targeted those companies (55 companies) for distributing questionnaires for which financial statements (financial data) were utilised in the regression analysis stage. But questionnaires were also distributed to a further 95 companies.

4.2.3.2 Testing Some Assumptions and Conclusions of Capital Structure

As Norton (1990) suggests, some assumptions and conclusions in capital structure cannot be tested using data extracted from financial statements, such as the signalling and the agency theory of capital structure. In addition, testing the pecking order theory of capital structure requires other kinds of financial statements that are not available in Libya, such as, funds flow statements and dividends statements. Therefore, the survey questionnaire was used to test the following hypotheses of capital structure in the Libyan business environment.

Testing the Pecking Order Theory

Myers and Majluf (1984) argue that the information asymmetry between managers and investors induces managers to prefer to finance new investment opportunities first by retained earnings, second by debt and finally by equity.

To empirically test the pecking order theory of capital structure by using mathematical models, data should be gathered from balance sheets, income statements, funds flow statements and dividends statements (Frank and Goyal, 2003 and Shyam-Sunder and Myers, 1999). It is not possible; however, to test the pecking order theory of capital structure by using mathematical models in Libya due to the lack of funds flow and dividends statements. On the other hand, Chirinko and Singha (2000) argue that testing the pecking order theory using methodology introduced by Shyam-Sunder and Myers (1999) generates misleading deductions when evaluating the patterns of external financing and argue that alternative tests are needed to identify the determinants of capital structure.

The starting point for testing the pecking order theory is the existence of asymmetric information between the managers and the investors. In this regard, Chirinko and Singha (2000) state that the central friction in the pecking order theory is the existence of the asymmetric information between managers and less informed outsiders. Ang and Jung (1993) state that the existence of asymmetric information is not often identifiable from financial statements. Therefore, due to this reason and the unavailability of funds flow statements and dividends statements of Libyan companies, the survey questionnaire was used to test the pecking order theory of capital structure in Libyan companies.

The responding companies were divided according to their answers into two groups. The companies that answered 'Agree' to question 12a (we feel that lenders tend to underestimate the future prospects of our firm) were classified into high asymmetric information group and *vice-versa* for the low asymmetric information group. The high asymmetric information group companies are more likely to follow Myers' pecking order than the low asymmetric information group, in accordance with Ang and Jung (1993).

Consequently, the fifth null hypothesis is:

H5: *There is no significant difference between the high asymmetric information group companies and the low asymmetric information group in following Myers' pecking order.*

Following Ang and Jung's (1993) methodology, the hypothesis should be accepted when high asymmetric information group does not follow Myers' pecking order or when both high and low asymmetric information groups follow the same financing behaviour.

Testing the Signalling Information Theory

Ross (1977) argues that inside managers can use the financing decisions to send signals to the market because the managers of firms have access to more information than investors. In other words, firms attempt to signal inside information to investors by announcing financing decisions in order to reduce information asymmetries. Ross (1977) added that investors might perceive the announcement of increasing leverage as a signal of high quality.

The intuition for this argument is that managers will only increase leverage if the company is likely to be able to meet the interest payments and/ or that the firm has investment opportunities over and above what can be financed by internally generated funds. If investors perceive either of these to be the case, they are likely to react positively to an announcement of increased leverage.

The survey questionnaire of this study was used to test the signalling theory of capital structure in Libyan companies. Therefore, the null hypothesis (H6) and associated secondary hypotheses are:

H6: *Libyan companies do not announce their debt policy to send signals to their employees, costumers, suppliers, competitors and investors about companies' stability and prospects.*

In order to test this hypothesis, four secondary hypotheses were formulated as follow:

H6.1: *Libyan companies do not limit their debt to send signals about their companies' stability.*

H6.2: *Libyan companies do not increase their debt to get concessions from their employees.*

H6.3: *Libyan companies do not increase their debt to inform their competitors about the impossibility for reducing the output.*

H6.4: *The use of debt does not give investors a better impression of companies' prospects than issuing shares.*

Asking such questions would be useful for testing the signalling information theory in the Libyan context. This is because Libyan companies might use their debt policies to send signals to their stakeholders, employees and competitors about their companies' stability and prospects.

Testing the impact of manager's preferences, perceptions and beliefs on capital structure decisions

This stage utilised data from two types of companies, private and public companies. Previous capital structure studies (Michaelas, 1998 and Norton, 1990) state that the capital structure decisions in privately owned companies are strongly determined by behavioural issues. The separation of ownership and management is not clear in Libyan private companies, as most of Libyan private companies are family owned and operated. Therefore, manager's behavioural issues such as, manager's preferences, perceptions and beliefs may have a vital impact on the capital structure decisions of these private companies.

Huang and Song (2002) state that state ownership does not prevent public companies from following the same behaviour of private companies in terms of external financing. Consequently, the survey questionnaire was used to test the impact of manager's preferences, perceptions, and beliefs on capital structure decisions in Libyan companies. The issues arising from the behaviour consideration in relation to the capital structure decisions are:

Manager's Risk Taking Propensity

It is well known that risky projects should yield, on average, higher expected returns, so, as pointed out by Michaelas (1998), the characteristics of return are directly related to financial risk. Furthermore, Weston and Brigham (1979) argue that the

firm's capital structure represents the financial risk that firms could face. Therefore, Barton and Gordon (1987) propose that the top management's risk taking propensity will affect the firm's capital structure. They added that since the majority of financial risk might come from financing policies, firm's capital structure would be related to management's attitude towards risk. A high level of leverage suggests that either managers are confident that interest payments can be met or they have a relatively high risk-taking propensity hence it is likely that managers with a preference for high risk will choose a relatively high level of leverage. As stated by Barton and Gordon (1987), the large amount of risk that the managers can bear might lead to the large amount of debt in firm's capital structure. Thus the next null hypothesis is:

H7: *There is no significant relationship between the leverage ratios and manager's risk taking propensity.*

Mangers' risk taking propensity is measured in this study by utilising the Jackson Personality Inventory. Four questions were used to measure manager's risk taking propensity. These questions are: (1) Does your company encourage you to take business risks when there is another option? (2) Does your company encourage you to take risks so long as the potential gains are high? (3) Does you company usually hesitate in putting itself in uncertain situations even if the expected returns are high? and (4) Does your company encourage you to borrowing money for a business deal so long as it should be profitable?

The respondents were asked to specify their agreement/disagreement on four items related to risk-taking propensity on a four-point Likert scale. Risk-taking propensity was measured by adding the total score from the four items for each respondent. Each respondent can score a maximum of 16 (4 x 4) and a minimum of 4 (4 x 1).

Business and Personal Goals

Private and public companies have differing goals. Michaelas (1998) argues that owners/directors of private companies would like to have a control on strategic decisions of their companies, whereas, public companies have different goals from private ones, these goals are; providing job opportunities, and goods and services to domestic markets.

Furthermore, due to the willingness for maintaining control and autonomy, capital structure might be affected by their managers' goals. In this regard, Barton and Gordon (1987) state that the capital structure decision is considered a strategic decision and therefore, the company's debt position should attempt to assist top management's goals. Jensen and Meckling (1976) argue that managerial control is affected more by restrictive debt contracts than with issuing equity in the large companies. It might be attributable to the fact that managers of the large companies do not mainly have ownership control.

Barton and Gordon (1987) argue that while the finance paradigm suggests that the goal of shareholders wealth maximization is the only goal for top management, studies of Grabowski and Mueller (1972) and Pfeffer and Salancik (1978) found that managers may have other goals than profitability such as, growth and the desire to reduce levels of uncertainty.

Given that the owners/directors of Libyan private companies have both managerial and ownership control, they may be concerned with a loss of managerial control due to dilution of shares and restrictive debt contracts.

Consequently, the capital structure decisions may be influenced by business and personal goals. Thus, the use of the survey questionnaire allowed for formulating and testing the following hypothesis:

H8: There is no significant relationship between the leverage ratios and business and personal goals.

To test this hypothesis, the respondents were asked to specify their agreement or disagreement with the importance of the following strategic goals for the future of their companies including increase profitability, expand the firm, repay borrowing, providing job opportunities, providing domestic market with goods and services and maintain control.

Manager's demographic characteristics

Cassar (2004) argues that manager' demographic characteristics, such as, age, gender, experience and education level might provide additional predictive power in explaining financing behaviour. Age, experience level and education level are found to be of importance in many decisions within the firm in general and financing decisions in particular (Fredrickson, 1985; Cassar, 2004 and Donaldson and Lorsch, 1983). Cassar (2004) states that experience and education level obtained may provide signals of better human capital and, therefore, might lead to easier access to debt capital. Scherr et al. (1993) found leverage is negatively related to manager's age and experience. Michaelas (1998) also found that leverage is negatively related to manager's age and positively related to the manager's level of education.

In this research project, three managers' demographic characteristic variables were analysed in order to provide some additional predictive power in explaining the financing behaviour of Libyan companies. They are age, experience and education

level. Experience is measured by the number of years experience in the current job as a manager. The null hypothesis (H9) is:

H9: *There is no significant relationship between the leverage ratios and manager's demographic characteristics.*

In order to test this hypothesis, three secondary hypotheses were formulated regarding age, experience and education level as follows:

H9.1: *There is no significant relationship between the leverage ratios and manager's age.*

H9.2: *There is no significant relationship between the leverage ratios and manager's level of education.*

H9.3: *There is no significant relationship between the leverage ratios and manager's work experience in a similar position.*

4.2.3.3 The Statistical Techniques used to Test the Hypotheses

This section describes the statistical methods used to test the hypotheses of the survey analysis stage (H5, H6, H7, H8 and H9). The hypotheses examine the pecking order behaviour, the signalling theory, the impact of manager's risk taking propensity, the impact of manager's goals and the influence of manager's demographic characteristics on the capital structure decisions of Libyan companies.

Generally speaking, the statistical techniques are classified into two main groups: parametric and non parametric. Pallant (2001) argues that parametric techniques assume that the sample is normally distributed, and each of the different parametric techniques (such as t-test, ANOVA, and Pearson correlation) also have other

additional assumptions. Normality of distribution is not assumed, however, for non-parametric techniques such as, Kruskal-wallis, Mann-Whitney *U*, Binomial and Chi-square and, therefore, the assumptions of non-parametric techniques are less likely to be violated (see, for example, Freund and Wilson, 1993 and Tabachnick and Fidell, 1989).

Due to the nature of the above-mentioned hypotheses, two types of statistical techniques are needed. The techniques are: techniques that can be used to explore the differences between groups and techniques that can be used to explore the relationship between variables.

Many of the variables use in this study's data set are not normally distributed. Some are positively skewed whilst others are negatively skewed. Non-parametric techniques are more suitable where normality of the distribution cannot be assumed as stated by Pallant (2001).

Consequently, the statistical tests used to investigate the hypotheses and analysis the results are mostly non-parametric tests. The tests that were used to examine the hypotheses are discussed below.

Chi-square test for independence

This test can be used to explore the relationship between two categorical variables, and each of these variables can have two or more categories. Therefore, the Chi-square test for independence was used to investigate whether there is a significant relationship between companies' types (ownership, industries and size). This test might be useful in interpreting the results of the analysis based on sector, industry and size.

Mann-Whitney U Test

The two-sample Mann-Whitney *U* test was used to test the fifth hypothesis. It is used to investigate whether there is a difference between the "high asymmetric information" group companies and the "low asymmetric information" group companies in terms of following Myers' pecking order variables: such as: retained earnings, levels of debt, and equity. This test was used to check whether the medians of the two groups were equal.

Binomial Test

A one sample Binomial test measures whether the proportion of successes on two-level categorical dependent variables significantly differs from their hypothesised proportion. In order to test whether Libyan companies use their financing decisions to send signals to their suppliers and customers, investors, employees and competitors (H6), Binomial test was used to identify whether the proportion of the respondents who believe that the debt policy is used to send signals to the parties involved are significantly different from the hypothesised proportion (50%).

The Binomial test was also performed to re-test the four hypotheses that were tested by the regression analysis technique by using Libyan data. In this regard, Binomial tests were used to examine whether the proportion of the respondents, who believe that the high fixed assets, size, growth and profitability will increase the level of leverage, is significantly different from the hypothesised proportion (50%).

Regression Analysis

Statistical textbooks (for example, see, Burton et al. 1999 and Mann, 1995) define regression analysis as a statistical tool that is usually used to learn more about the relationship between independent or explanatory variable(s) and dependent variables.

Following Michaelas' (1998) methodology, a simple regression model was used to examine hypothesis 7, which investigates the significance of the relationship between average debt ratios and manager's risk taking propensity, which was measured by Jackson personality inventory (JPI) scores.

Jackson Personality Inventory (JPI)

Jackson Personality Inventory (JPI), as stated by Jackson (1976), is usually used to measure variables of personality such as, complexity, cooperativeness, sociability, social confidence, responsibility, and risk taking propensity. In this context, JPI has been used to measure risk-taking propensity. Due to the nature of the Libyan environment, four out of the eight items that were used by Michaelas (1998) were selected to measure the risk-taking propensity of Libyan managers. Items relating to investing in the stock market were excluded due to the absence of a secondary capital market in Libya.

Principal Components Analysis (PCA)

PCA is a method of identifying patterns in data and expressing the data in order to identify their similarities and differences. Furthermore, as stated by Stevens (1992), PCA is used to reduce the number of dimensions and to group the data based on theoretical and/or substantive grounds without much loss of information. In other words, Sharma (1996) argues that PCA is used for developing new variables that are

linear combinations of the original data. Everitt and Dunn (1991) state that PCA can be used to summarise the data with little loss of information and, therefore, providing new variables, which might be useful in simplifying later analysis. As stated by Everitt (1981), PCA can be used to determine how many clusters there are in the data. PCA was thus used to investigate hypothesis 8 (There is no significant relationship between the leverage ratios and business and personal goals) by producing new combinations of business and personal goals. The number of components generated by PCA can then shape the basis for the use of cluster analysis.

Cluster Analysis

Cluster analysis is an explanatory data analysis tool, which produces classifications from initially unclassified data. Researchers, as stated by Everitt and Dunn (1991), are usually interested in getting a classification for variables of their interest to be placed into a small number of homogenous groups or clusters. Furthermore, Everitt (1981) argues that cluster analysis can be used in order to simplify the presentation of a large set of data and to generate hypotheses. In this regard, cluster analysis was used to classify the respondents into relatively homogeneous groups or clusters based on their business and personal goals in order to investigate whether different manager's types establish different financing strategies.

Kruskal- Wallis Test (KW)

The Kruskal-Wallis test is used to compare the scores on some variables for three or more groups. As pointed by Pallant (2001), the KW test uses the ranks of the data rather than their numeric values to calculate the statistic. The scores are converted to ranks and the mean rank of each group is compared.

The KW test was used to examine hypothesis 8 which investigates whether different manager's types, which are identified by using principal components analysis and cluster analysis, establish significantly different financing strategies.

The KW test was also performed in order to investigate the impact of manager's demographic characteristics (age, level of education and level of experience) on capital structure decisions, hypothesis 9.

4.2.4 Stage 4: Cross-Country Comparisons

This stage investigates whether institutional features of the Libyan business environment induce Libyan companies to display different financing behaviour from that of the other emerging market companies included in the sample. The investigation also aims to analyse and, where possible, explain differences in the financing patterns between emerging market companies and Libyan companies.

Firm-level data from 14 developing countries: Brazil, Chile, Hong Kong, India, Malaysia, Mexico, Pakistan Singapore, South Africa, South Korea, Taiwan, Thailand, Turkey and Libya, were utilised in order to examine the financing patterns in these developing countries. Libya differs from other developing countries included in the sample, as it has no secondary capital market. Libya also differs in terms of companies' ownership, regulations and the enforcement of law and corporate governance.

Glen and Singh (2003) argue that the comparison of the financing patterns between countries is extremely valuable. They added that as the economic reform in developing countries is on the national and international agenda, the comparison of the financing patterns between countries might provide empirical guidelines to execute such economic reformation. In this regard, due to the fact that the economic

reform in Libya requires a body of empirical knowledge, this stage attempts to further that knowledge by providing a comparison with emerging market countries in order to put Libyan companies financing patterns into prospective.

Cross-sectional regression models were used to investigate the differences in determinants of financing patterns between Libya and emerging market countries. The cross-sectional regression used in this study is based on models used in Rajan and Zingales (1995) with some modifications in both the leverage and explanatory measures. The data was collected from the Datastream database for all the years from 1995- 1999.

The Libyan data used in this stage is based on the entire sample of the fifty-five companies. In other words, the sample in this stage is not segregated into different sub-samples.

To measure the dependent (leverage) variables and explanatory variables used in this stage, I use the same measures that were used in the regression analysis of the Libyan data (stage 2).

The hypothesis tested in this section is based on the premise that the institutional features of the Libyan business environment may induce Libyan companies to display different financing behaviour. Therefore, the null hypothesis was formulated as follows:

H.10: *There is no significant difference in the financing behaviour between Libyan companies and other emerging market companies.*

4.3 Justification for the research methodology

The mainstream approach in most previous empirical studies of capital structure has been to estimate regression equations with proxies for dependent and independent variables. These studies test for relationships between leverage variables and other factors. Hempel (1983) criticises this methodology due to the fact that the explanatory variables are restricted to those, which can be quantified, and, as stated by Barton and Gordon (1987), this restriction leads to oversimplification of how the firm works and to ignore managerial preferences of financing choices. Thus, as stated by Barton and Matthews (1989), a new paradigm is needed which includes the qualitative factors which have an impact on the firm's financing decisions.

Barton and Gordon (1987) argue that if the aim is to get a better understanding of capital structure policy, capital structure models should include the role of management preferences, beliefs and expectations. Furthermore, Matthews et al. (1994) argue that analysis of capital structure decisions should incorporate strategic management, decision sciences, and social psychology to build a conceptual model for understanding capital structure decisions. Furthermore, a new paradigm is needed due to the fact that some of the conclusions of the agency, pecking order and signalling theories, as pointed out by Norton (1990), are difficult to test without using a survey-based analysis.

Graham and Harvey (2001) argue that survey based analysis, similar to analysis based on mathematical models, can utilise a large sample and broad cross-section of firms. In addition, a survey can allow for asking very specific and qualitative questions.

The survey approach provides further information about how firms operate. For example, Bancel and Mittoo (2002) state that the survey approach allows the collection of data that may be difficult to obtain otherwise. Furthermore, Norton (1990) states that questionnaires can provide evidence about factors that affect capital structure choice that mathematical models cannot. Norton added that the survey technique in capital structure studies could be used to test some assumptions and conclusions of capital structure theory and determine the motivation and limitations that managers could face when considering capital structure decisions.

Norton (1990) argues that as long as financial researchers do not know how firms choose their capital structure, a possible and reasonable research approach is to enquire how they take their decisions. In addition, Norton (1990) emphasise that some of the conclusions of the agency and signalling theories are difficult to test without using a survey instrument. He added that the ability to obtain information about manager's attitudes and beliefs on one side and the problem of unavailability of "hard" data on the other side provide the most justification for the use of survey instruments in financial research.

According to Norton (1990) the survey provides 'soft data' but cannot provide the hard conclusions. Despite the fact that, the use of mathematical models and survey questionnaire together is unusual in the field of finance research, Michaelas (1998) argues that the use of the survey based analysis with the mathematical models may introduce a new research methodology in the capital structure research and this can overcome some of the disadvantages inherent with each individual technique. This combination is sometimes called a 'triangulation method', which involves viewing

the evidence from different angles or viewpoints [7] (see, for example, Fielding and Fielding, 1986).

Consequently, the combination of survey questionnaire and mathematical models can provide a significant contribution to the understanding of capital structure differences. The empirical analysis in this study uses a systematic combination of regression analysis models and survey questionnaire.

4.4 Conclusion

This chapter describes the research methodology and methods that have been used to test the hypotheses of this study. These hypotheses examined the effect of profitability, growth, tangibility and size on the capital structure of fifty-five Libyan companies by utilising data extracted from their balance sheets and income statements. The results provided evidence of the significance, direction and magnitude of the effect of the explanatory variables and empirically examined whether the static trade-off theory, the agency cost theory and the asymmetric information theory are the relevant capital structure theories to the Libyan business environment.

In the survey questionnaire stage, data from seventy-two Libyan companies were gathered by survey questionnaire. The results of the regression analysis stage were, then, merged with the results of the survey questionnaire stage in order to shed more light on financial as well as non- financial and behavioural issues that affect Libyan

[7] Denzin (1978) identifies four types of triangulation. First, data triangulation: the use of different data sources; second, investigator triangulation: the use of different researchers or evaluators; third, theory triangulation: the use of multiple perspectives to interpret a single set of data; finally, methodological triangulation: the use of multiple methods to study a single problem.

firms' capital structure. The combination of different research methods in collecting and analysing data is one of the contributions of this study.

The Cross-country comparison stage utilised data from 14 developing countries including Libya. The results of this stage analysed and explained the differences in the financing patterns between Libya and the other developing countries included in the sample. The results also provided a body of empirical knowledge, which might be used in the current economic reform in Libya.

The next chapter presents the results from the regression analysis models developed to empirically examine the first four hypotheses about the determinants of capital structure in Libyan private and public companies and Libyan manufacturing and non-manufacturing companies. The following two chapters then present the results from the analysis of the data collected by the questionnaires that serve to examine the other five non-financial hypotheses and re-examine the hypotheses that were tested by the regression analysis models for Libyan companies. The last hypothesis regarding the cross-country comparison will be examined in chapter nine.

Chapter Five: Determinants of Capital Structure

5.0 Introduction

In the methodology chapter, the first four hypotheses have been formulated in the light of capital structure theories and the characteristics of the Libyan economy. Those hypotheses are examined in this chapter by utilising data extracted from the balance sheets and income statements of fifty-five Libyan companies. The cross-sectional regression analysis is based on models used in Rajan and Zingales (1995) and Bevan and Danbolt (2002).

In Libya, the determinants of capital structure have not been investigated to date. This is the main purpose of this chapter. By carrying out this investigation, I hope to shed further light on the capital structure issues. The findings of this chapter indicate that profitability; tangibility, growth opportunities and company size play a determinant role in the capital structure decisions of Libyan companies.

This chapter is organized as follows: section one presents the multiple regression models that have been used to analyse the data and examine the hypotheses, and some statistical procedures were taken as a remedy for ensuing econometric problems. An overview of the data and sample is presented in section two. Section three describes the empirical estimation on the sub-samples (private and public companies, and manufacturing and non-manufacturing companies). Section four concludes the chapter.

5.1 The Multiple Regression Model

In chapter four, the regression analysis model used below is described; a brief recap of the model is now provided. The model of this study is based on the models of

Rajan and Zingales (1995), and Bevan and Danbolt (2002). Due to the limitation of data, some modifications were made to both the leverage and explanatory variables. In addition, dummy variables are used in the regression analyses to identify differences due to the types of companies (for example, private and public companies, and manufacturing and non-manufacturing companies).

Michaelas (1998) argues that the vast majority of capital structure studies are cross-sectional and use the ordinary least square (OLS) technique. Therefore, I used the OLS technique to analyse the data in this research.

Three multiple regression models with dummy variables were used to test the hypotheses. In the first regression total debt to total assets was used as the dependent variable, in the second regression the dependent variable was the ratio of short-term debt to total assets. The ratio of long-term debt to total assets was used as the dependent variable in the third regression. The three dependent variables were, in turn, regressed against four explanatory variables, which are proxies for profitability, growth, tangibility and size. Two dummy variables were used. The first dummy had a value of 1 if the company was a private company; otherwise it had a value of zero. The second dummy variables had a value of 1 if the company was involved in non-manufacturing operations otherwise it had a value of zero.

Some statistical proccdurcs, which can mitigate the problems related to econometrics issues, were used. For example heteroscedasticity might be attributable to cross-sectional scale differences as a result of having large as well as small companies in the same sample. The problem of heteroscedasticity is likely to be common in cross-sectional data because cross-sectional data usually deals with members of population

at a given point of time, such as companies, industries, and these members may be of a different size.

Heteroscedasticity problems include ways of addressing, dividing the total sample into different sub-samples, and running separate regressions or by using a deflator. Total assets have been used as a deflator in the regression analysis model which is in accordance with the suggestions of Bevan and Danbolt (2000 and 2002). This study also uses White (1980) heteroscedasticity-consistent standard errors and covariance for mitigating heteroscedasticity in calculating the statistics. These procedures are adopted to improve the reliability of the results of this study.

5.2 Data and Sample

Due to the lack of an appropriate database, the data used in this chapter are gathered from the Tax Offices in the capital city of Tripoli and Benghazi city. In a few cases, in order to have as complete as possible data sample, data was collected from the companies themselves in order to provide some of the missing financial statements data. In all cases hard copies of companies' financial statements were collected to complete the data.

Table (5-1): Industry Classifications of the Sample

Industry	Number of companies		Total
	Private	Public	
Manufacturing	2	11	13
Agriculture	1	3	4
Construction	8	4	12
Wholesale	2	4	6
Hotels	5	0	5
Transportation	2	2	4
Services	3	4	7
Petroleum	0	4	4
Total	**23**	**32**	**55**

The data sample, as shown in Table (5-1), consists of fifty-five companies from eight-industry classifications. The data set contains information on companies that submitted their balance sheets and income statements to the above-mentioned Tax Offices. The criteria used for choosing the companies were the availability and quality of data for a time period of 5 years (1995-1999). This provides a panel database of 257 cases[8].

In an attempt to make the database of Libyan companies as complete as possible, companies from both the public and the private sectors were selected. The sample consists of thirty-two public companies, and twenty-three private companies. The sample includes both sound companies and companies in financial distress. This combination is necessary as the probability of bankruptcy may feature heavily in a firm's financing decisions.

Cross-sectional Data

Three types of data are available for empirical analysis; time series, cross-sectional, and panel data. In time series data, the data is collected for the same entity over a period of time, whereas, cross-sectional data is collected for several numbers of entities at a given point of time. In panel data there are elements of both time series and cross-sectional data.

The cross-sectional data, as stated by Bryman (2001), requires collecting data on more than one case at one point in time in order to get a set of quantitative data. Bryman argues that cross-sectional data is usually connected with two or more than

[8] The researcher gathered the data in person from the Tax Offices in Libya

two variables that are then tested to determine the significance and directions of the association.

Table (5-2) provides a correlation matrix of the cross-sectional sample of the 257 observations. The data was averaged over the five years to smooth the leverage and explanatory variables.

The results show that growth and size are related to profitability, while tangibility has a negative relationship with profitability. This implies that larger companies and growing companies tend to have higher profitability, whereas, profitable companies tend to have less tangible assets.

Table (5-2): Correlation Matrix

Variables	Profitability	Tangibility	Growth	Size	Short-term debt ratio	Long-term debt ratio
Tangibility	**-0.227**					
Growth	**0.039**	**-0.051**				
Size	**0.102**	**-0.039**	**-0.180**			
Short-term debt ratio	**-0.082**	**0.025**	**0.118**	**-0.417**		
Long-term debt ratio	**0.002**	**-0.242**	**-0.066**	**0.026**	**-0.304**	
Total debt ratio	**-0.085**	**-0.073**	**0.096**	**-0.424**	**0.919**	**0.093**

Note: Profitability is defined as the ratio of earnings before tax to total assets. Growth is measured by the percentage change in total assets. Tangibility is defined as the ratio of fixed assets to total assets. Size is measured by the natural logarithm of assets. Short-term debt ratio refers to the ratio of short-term debt to total assets. Long-term debt ratio refers to long-term debt to total assets. Total debt ratio refers to the ratio of total debt to total assets.

Despite the fact that this correlation matrix ignores joint effects of more than one variable on leverage, the tangibility and growth variables have a positive correlation with short-term debt, and a negative correlation with long-term debt. Profitability and size have a negative correlation with short-term debt and total debt ratios. This implies that (1) Growing companies and companies with high levels of tangible

assets tend to use short-term debt rather than long-term debt. (2) Large and profitable companies are less likely to use short-term debt and tend to use less debt overall.

5.3 Empirical Estimation on Sub-Samples

The results of some empirical studies in capital structure are consistent with two or more theories. This might be attributed, as stated by Myers (2001), to the fact that each of these theories works for a sub-sample. He added that testing a hypothesis by segregating the sample into sub-samples might be useful.

Despite the fact that investigations of accounting and finance phenomenon in different sectors/groups, as stated by Akbar (2001), is a longstanding practice in the accounting and finance literature, there are few studies that examine the determinants of capital structure in different sectors/groups. Nuri (2000) and Al-Sakran (2001) however have examined the determinants of capital structure in different industrial sectors. Nuri (2000) examines the determinants of capital structure in the UK hotel and retail industries, whereas, Al-Sakran (2001) analyses the relationship between leverage ratios and their determinants in five different sectors (Industrial, Cement, Service, Electricity, and Agriculture sector) in Saudi Arabia. Following these two studies, the total sample of this study is reorganised and split into different sub-samples due to the differences of features between sectors and groups. These sub-samples are as following:

5.3.1 Analysis on the Basis of Private and Public Companies

Libya has two types of companies in terms of ownership structure, namely public companies and private companies. The public companies are defined as companies where the state owns more than 50% of their shares, whereas, the private companies

are where the companies majority is owned by individuals, families and/or institutions.

There are some differences between private and public companies in terms of goals, employment of staff, and receipt of the government subsidies. In this regard, Sun et al. (2002) argue that public companies differ in terms of choice of social and political goals over profit maximization; they added that the private companies are more concerned about the ability to perform in the employing of staff than public companies. On the other hands, Sun et al. (2002) and Dewenter and Malatesta (2001), among others, provide empirical support for the proposition that public ownership is less efficient than private ownership.

Dewenter and Malatesta (2001) report that the leverage of public companies tends to exceed that of private companies. They added that this is because public companies may borrow at favourable rates due to loan guarantees that are provided through government ownership.

Consequently, investigating the determinants of capital structure in both Libyan private and public companies may provide a usefulness comparison for the factors that affect the capital structure of these two types of companies.

Table (5-3) summarizes statistics for the various explanatory variables and leverage measures for the entire sample of Libyan companies, and two sub-samples (private companies and public companies). From these results, it can be seen that Libyan companies have a low rate of profitability (1.7%). The growth rate on average is 13.48%, and private companies tend to have a higher average growth rate than the public ones. The public companies have, on average, higher tangible assets than

private companies. As expected, the public companies are bigger than the private companies.

Table (5-3): Summary of Descriptive Statistics for private and public Companies

	Profitability	Growth	Tangibility	Size	Short-term debt ratio	Long-term debt ratio	Total debt ratio
Entire Sample							
Mean	0.017	13.485	0.187	15.563	0.466	0.073	0.539
Median	0.000	8.830	0.141	15.515	0.410	0.010	0.508
Maximum	0.372	114.220	0.723	19.640	1.491	0.589	1.546
Minimum	-0.181	-33.770	0.003	11.683	0.005	0.000	0.034
Std. Dev.	0.084	30.279	0.149	2.208	0.344	0.135	0.329
Private Firms							
Mean	0.005	24.073	0.170	13.520	0.587	0.074	0.662
Median	0.000	19.760	0.133	13.539	0.676	0.005	0.680
Maximum	0.108	114.220	0.674	15.978	0.941	0.589	1.019
Minimum	-0.181	-33.770	0.003	11.683	0.044	0.000	0.231
Std. Dev.	0.072	38.627	0.151	1.201	0.244	0.141	0.204
Public Firms							
Mean	0.026	5.875	0.199	17.032	0.379	0.072	0.451
Median	0.002	7.160	0.150	17.101	0.266	0.017	0.334
Maximum	0.372	71.610	0.723	19.640	1.491	0.560	1.546
Minimum	-0.130	-29.100	0.012	13.470	0.005	0.000	0.034
Std. Dev.	0.092	19.881	0.149	1.467	0.381	0.133	0.374

Note: Profitability is defined as the ratio of earnings before tax to total assets. Growth is measured by the percentage change in total assets. Tangibility is defined as the ratio of fixed assets to total assets. Size is measured by the natural logarithm of assets. Short-term debt ratio refers to the ratio of short-term debt to total assets. Long-term debt ratio refers to long-term debt to total assets. Total debt ratio refers to the ratio of total debt to total assets.

The ratio of total debt on average is 53.9% of total book value of assets. The vast majority of the debt is, however, of a short-term nature (46.7% on average) but private companies have higher levels of short-term debt than public companies which result in private companies having higher average debt ratios than the public ones. The level of long-term debt is very similar for both private and public companies.

Discussion of Results

This section provides the results of the regression analysis. As can be seen from Table (5-4), the independent variables provide high explanatory power as indicated

by adjusted R^2 values of 0.95, 0.88 and 0.51 for the three models respectively. This means that the first model explains 95% of the variation in leverage, whereas the chosen explanatory variables explain 88% of leverage in the second model and the third model explains 51% of the variation in leverage.

The approach to interpreting the results is as follows. First, a coefficient which is significantly greater (less) than zero implies a positive (negative) relationship. Second, a dummy interaction coefficient, which is significantly different from zero, indicates whether there is a significant difference in the relationship between the variable and leverage for the public and private firms. The implied coefficients for the explanatory variables for private companies given the regression output in Table (5-4) are shown in Table (5-5). Finally, Wald tests are used to determine whether the combined coefficients in Table (5-5) are significantly different from zero.

Table (5-4): Results of OLS Analysis over Different Measures of Leverage for Private and Public Companies

The Variables	Total debt ratio	Short-term debt ratio	Long-term debt ratio
Intercept	-0.002***	-0.001***	-0.005***
	(-3.93)	(-4.11)	(2.70)
Profitability	3.70***	3.81***	-0.10
	(8.01)	(7.32)	(-1.29)
Growth	-0.02***	-0.02***	0.001
	(-4.58)	(-4.29)	(1.12)
Tangibility	0.02	0.01	0.009
	(0.07)	(0.04)	(0.15)
Size	0.07***	0.07***	0.0003
	(12.91)	(11.45)	(0.28)
D	-0.0001	0.0002*	0.0004**
	(-1.53)	(1.83)	(-2.07)
*D*Profitability*	0.061	0.606	-0.551
	(0.158)	(1.01)	(-0.90)
*D*Growth*	0.002***	0.004***	-0.002
	(4.00)	(3.301)	(-1.19)
*D*Tangibility*	-0.08	0.62***	-0.71***
	(-0.55)	(2.89)	(-2.99)
*D*Size*	-0.01**	-0.05***	0.03**
	(-2.26)	(-4.26)	(2.33)
Adj R^2	0.95	0.88	0.51
F	133.33***	46.77***	7.49***
Obs	55	55	55

Notes:
All dependent and independent variables are scaled by total assets.
*, **, and ***, significant at the l0, 5, and 1% level, respectively.
Profitability is defined as the ratio of earnings before tax to total assets. Growth is measured by the percentage change in total assets. Tangibility is defined as the ratio of fixed assets to total assets. Size is measured by the natural logarithm of assets. Short-term debt ratio refers to the ratio of short-term debt to total assets. Long-term debt ratio refers to long-term debt to total assets. Total debt ratio refers to the ratio of total debt to total assets.
D denotes a dummy variable, which takes a value of 1 if the company is a private company and a value of 0 if the company is a public company.
t-statistics are in parentheses.

Table (5-5): Coefficients for the Explanatory Variables for Private Companies

The Variables	Total debt ratio	Short-term debt ratio	Long-term debt ratio
Intercept	-0.0003***	0.0001	-0.0009**
	(3.33)	(2.63)	(4.26)
Profitability	3.76***	4.42***	-0.65
	(38.83)	(30.69)	(1.14)
Growth	-0.02***	-0.02**	-0.001
	(16.71)	(11.92)	(0.22)
Tangibility	-0.05	0.64	-0.70***
	(0.02)	(1.90)	(8.10)
Size	0.05***	0.01	0.04**
	(84.93)	(1.59)	(5.59)

Notes:
All dependent and independent variables are scaled by total assets. *, **, and ***, significant at the 10, 5, and 1% level, respectively.
Profitability is defined as the ratio of earnings before tax to total assets. Growth is measured by the percentage change in total assets. Tangibility is defined as the ratio of fixed assets to total assets. Size is measured by the natural logarithm of assets. Short-term debt ratio refers to the ratio of short-term debt to total assets. Long-term debt ratio refers to long-term debt to total assets. Total debt ratio refers to the ratio of total debt to total assets.
F-statistics are in parentheses.
Wald tests were used to compute F-statistics.

Profitability:

As can be seen in Tables (5-4) and (5-5) profitability is a significant explanatory variable for the total and short-term debt ratios. Profitability is not a significant explanatory variable for long-term debt ratios indicating that profitability influences the maturity structure of debt as well as the overall level of debt. The positive relationship between short-term debt and profitability provides support for the static trade-off theory. Given that the vast majority of debt in Libyan companies is from short-term sources (see Table (5-3)), there is fairly strong support for the static trade-off theory. As a company's profitability increases, they are able to increase their short-term debt. That is companies with higher profits will have a higher debt capacity and will, therefore, be able to borrow more, and take advantage of any tax deductibility. The relationship between leverage and profitability is similar for both private and public firms.

Growth:

The negative signs for the regression coefficients for the growth variables in both the public and the private companies indicate that growing companies do not rely on debt to finance their new investment opportunities. This may imply that growing companies have enough internal funds for their financing needed but, more likely, it may imply that as growing companies tend to be more risky, they prefer to use less debt. The coefficient for growth is significantly less negative for private companies than for public companies as shown by the significant positive interaction coefficient for growth in Table (5-4), the relationship, however, between growth and short-term debt is still significantly negative for private companies as shown in Table (5-5).

The results are consistent with findings reported by (Antoniou et al., 2002; Rajan and Zingales, 1995 and Al-Sakran, 2001) and inconsistent with findings reported by (Bevan and Danbolt, 2002 and 2000; Pandey, 2001 and Booth et al., 2001). Accordingly, the negative signs for growth variables support agency cost theory. The cost associated with agency relationship and financial distress are relatively high in growing companies, thus, lenders tend to demand higher rates of interest and managers may thus be unwilling to increase debt. The results are also consistent with agency cost theory; that debtholders prefer "safe" assets when they provide their funds to firms.

Tangibility:

There is no significant relationship between tangibility and short or long-term debt for public companies which suggests that public companies do not use their fixed assets as collateral for obtaining more debt. This may imply that as the state has the majority of ownership in these companies, the debtholders take government

involvement as collateral instead of the firms' fixed assets. The other possible explanation could be that if financial institutions (banks) treat public companies more favourably, the public companies may not be required, to some extent, to offer their assets as collateral in order to get more debt.

Although the coefficient for the relationship between tangibility and short-term debt is more positive and significant for private companies than for public companies as shown by the significant positive interaction coefficient for tangibility in Table (5-4), the implied coefficients shown in Table (5-5) are not significantly different from zero. With regard to long-term debt, private companies differ significantly from public companies. Long-term debt is negatively related to tangibility for private companies, but no relationship between long-term debt and tangibility is detected for public companies. It is a surprising result, because fixed assets are usually used as collaterals in order to obtain long-term debt finance. The possible explanation is that long-term finance is, more likely, used by the public companies for purposes other than investment in new projects and the purchase of fixed assets.

Despite the fact that the public companies have a high proportion of fixed assets compared to private companies, the tangibility coefficients of the public companies are not significant. This may imply that information asymmetries and agency problems are less significant in the public companies than private ones.

The regression coefficients show that tangibility has a bigger effect on leverage ratios for private companies than public ones. It might be attributable to the absence of a secondary capital market when companies might borrow funds from banks; therefore, tangibility of assets seems to be more important for Libyan private

companies than public ones, as tangible assets increase the security to lenders and, at the same time, decrease information asymmetries and moral hazard problems.

Size:

The relationship between size and the short-term debt ratio is positive for the public companies, whereas no significant relationship between size and long-term debt ratio is detectable. The dummy interaction coefficients are significantly different for the private companies. In particular, the relationship between short-term debt and size is significantly less positive for private companies as shown in Table (5-4). The possible explanation is that as the public companies are larger than private ones lenders may prefer to finance the public companies.

The coefficient for long-term debt is significant and more positive for private companies than for public companies as shown by the interaction coefficient for size in Table (5-4), and the coefficient is significantly different from zero as shown in Table (5-5).

The results in Table (5-4) and (5-5) suggest that the trade-off theory seems to have a greater explanatory power in explaining the effect of company size on the leverage ratios in Libyan companies as indicated by the significant positive coefficients in Table (5-4) and Table (5-5). The results seem to be consistent with the argument of Rajan and Zingales (1995), when they consider the company size as an inverse proxy for the probability of bankruptcy. This argument implies that larger companies are regarded as "too big to fail", and will, therefore, have more debt capacity than smaller ones.

In summary, profitability is positively related to short-term debt ratios, and it influences the maturity structure of debt. The results also indicate that profitable Libyan companies are externally financed and prefer short-term debt sources. In the main, public companies use both short-term and long-term debt, whereas growing companies tend to rely on their internal funds. In general, larger companies tend to have higher leverage. Tangibility has a bigger effect on leverage ratios in private companies than public ones. This result may reflect the effect of the absence of a secondary capital market on the capital structure of Libyan private companies. The trade-off theory and the agency cost theory seem to be supported in the Libyan business environment while there is little support for the asymmetric information theory.

5.3.2 Analysis on the Basis of Manufacturing and Non-Manufacturing Companies

Manufacturing and non-manufacturing companies differ from each other due to firm-specific characteristics. Antoniou et al. (2002) argue that manufacturing and non-manufacturing companies have some differences with respect to their assets structure and the degree of weakness to the changes in capital markets. Due to this reason, the factors that may affect capital structure decisions may be different in these two sectors. In order to investigate this issue, the sample was split into manufacturing and non-manufacturing companies[9].

As can be seen from Table (5-6), the manufacturing companies have a higher rate of profitability (0.042) than non-manufacturing companies (0.009). Furthermore, the manufacturing companies have more tangible assets than the non-manufacturing

[9] Akbar (2001) defines manufacturing companies as those companies, which produce goods through different ways and the non-manufacturing companies otherwise. Therefore, I follow the same definition for manufacturing and non-manufacturing companies.

companies and they are bigger than non-manufacturing companies. On the other hand, non-manufacturing companies have a higher average growth rate than the manufacturing companies.

Table (5-6): Summary of Descriptive Statistics for Manufacturing and Non-manufacturing Companies

	Profitability	Growth	Tangibility	Size	Short-term debt ratio	Long-term debt ratio	Total debt ratio
Entire Sample							
Mean	0.017	13.485	0.187	15.563	0.466	0.073	0.539
Median	0.000	8.830	0.141	15.515	0.410	0.010	0.508
Maximum	0.372	114.220	0.723	19.640	1.491	0.589	1.546
Minimum	-0.181	-33.770	0.003	11.683	0.005	0.000	0.034
Std. Dev.	0.084	30.279	0.149	2.208	0.344	0.135	0.329
Manufacturing Firms							
Mean	0.042	2.509	0.249	17.478	0.335	0.026	0.361
Median	0.008	7.680	0.282	18.047	0.291	0.003	0.326
Maximum	0.372	23.490	0.351	19.069	0.636	0.165	0.696
Minimum	-0.149	-33.770	0.069	13.036	0.116	0.000	0.116
Std. Dev.	0.120	16.493	0.096	1.832	0.179	0.047	0.203
Non-manufacturing Firms							
Mean	0.009	16.883	0.168	14.971	0.506	0.087	0.594
Median	0.000	8.905	0.114	14.952	0.468	0.025	0.627
Maximum	0.188	114.220	0.723	19.640	1.491	0.589	1.546
Minimum	-0.181	-32.170	0.003	11.683	0.005	0.000	0.034
Std. Dev.	0.070	32.831	0.158	1.979	0.373	0.150	0.342

Note: Profitability is defined as the ratio of earnings before tax to total assets. Growth is measured by the percentage change in total assets. Tangibility is defined as the ratio of fixed assets to total assets. Size is measured by the natural logarithm of assets. Short-term debt ratio refers to the ratio of short-term debt to total assets. Long-term debt ratio refers to long-term debt to total assets. Total debt ratio refers to the ratio of total debt to total assets.

The growth rate across the total sample, on average, is 13.48%, and non-manufacturing companies have a higher average growth rate than the manufacturing ones. Regarding the debt ratios, non-manufacturing companies have, on average, higher debt ratios than manufacturing companies. This may be due to the higher level of short-term debt that non-manufacturing companies use.

Discussion of Results

Table (5-7) shows that the adjusted R^2 values are relatively high and thus the independent variables provide high explanatory power. The adjusted R^2 are equal to 0.96, 0.90 and 0.80 for the three models respectively.

Table (5-7): Results of OLS Analysis over Different Measures of Leverage for Manufacturing and Non-Manufacturing Companies

The Variables	Total debt ratio	Short-term debt ratio	Long-term debt ratio
Intercept	0.00001*	-0.00001**	0.00002***
	(1.78)	(-2.22)	(3.42)
Profitability	12.93	-15.42	28.36
	(0.86)	(-0.93)	(1.42)
Growth	-0.02	0.003	-0.02
	(-0.64)	(0.21)	(-1.53)
Tangibility	63.18*	-64.14	127.33*
	(1.76)	(-1.17)	(1.84)
Size	-1.38*	1.44	-2.83*
	(-1.79)	(1.23)	(-1.89)
D	1.99***	-3.01***	5.00***
	(3.68)	(-3.03)	(4.89)
*D*Profitability*	-13.27	16.40	-29.68
	(-0.88)	(0.99)	(-1.48)
*D *Growth*	2.52	0.22	2.30
	(0.69)	(0.16)	(1.36)
*D*Tangibility*	-63.30*	64.81	-128.12*
	(-1.76)	(1.18)	(-1.85)
*D*Size*	1.26*	-1.17	2.44*
	(1.64)	(-1.01)	(1.66)
Adj R^2	0.96	0.90	0.80
F	148.62***	61.50***	26.30***
Obs	55	55	55

Notes:
All dependent and independent variables are scaled by total assets.
*, **, and ***, significant at the 10, 5, and 1% level, respectively.
Profitability is defined as the ratio of earnings before tax to total assets. Growth is measured by the percentage change in total assets. Tangibility is defined as the ratio of fixed assets to total assets. Size is measured by the natural logarithm of assets. Short-term debt ratio refers to the ratio of short-term debt to total assets. Long-term debt ratio refers to long-term debt to total assets. Total debt ratio refers to the ratio of total debt to total assets.
D denotes a dummy variable, which takes a value of 1 if the company is a manufacturing company and a value of 0 if the company is a non-manufacturing company.
t-statistics are in parentheses.

The significance of the dummy interaction coefficients indicates whether there is a significant difference between manufacturing and non-manufacturing companies. The implied coefficients for the explanatory variables for non-manufacturing

companies given the regression output above are shown in Table (5-8). The Wald test examines whether the combined coefficients in Table (5-8) are significantly different from zero.

Table (5-8): Coefficients for the Explanatory Variables for Non-manufacturing Companies

The Variables	Total debt ratio	Short-term debt ratio	Long-term debt ratio
Intercept	1.99***	-3.01***	5.00***
	(5.97)	(9.18)	(23.94)
Profitability	-0.34**	0.98*	-1.32***
	(0.73)	(3.11)	(10.13)
Growth	2.50*	0.233	2.28
	(3.53)	(0.02)	(1.85)
Tangibility	-0.12	0.67***	-0.79***
	(0.78)	(10.18)	(36.89)
Size	-0.12*	0.27***	-0.39***
	(2.74)	(10.60)	(21.66)

Notes:
All dependent and independent variables are scaled by total assets. *, **, and ***, significant at the 10, 5, and 1% level, respectively.
Profitability is defined as the ratio of earnings before tax to total assets. Growth is measured by the percentage change in total assets. Tangibility is defined as the ratio of fixed assets to total assets. Size is measured by the natural logarithm of assets. Short-term debt ratio refers to the ratio of short-term debt to total assets. Long-term debt ratio refers to long-term debt to total assets. Total debt ratio refers to the ratio of total debt to total assets.
F-statistics are in parentheses.
Wald tests were used to compute F-statistics.

Profitability:

Table (5-7) and Table (5-8) show that when the type of industry dummies are used profitability is not a significant explanatory variable for the debt ratios for manufacturing companies. Profitability is however, positively related to short-term debt and negatively related to long-term debt for non-manufacturing companies as shown in Table (5-8). The negative relationship between long-term debt ratios and profitability provides some support for the pecking order theory and the positive relationship between short-term debt and profitability provides support for the static trade-off theory. This suggests that as a company's profitability increase; they are able to increase their short-term debt.

Growth:

The coefficient for growth is not significantly related to either the short-term or the long-term debt ratios, for either the manufacturing or the non-manufacturing companies. Growing non-manufacturing companies, however, tend to have higher total debt.

Tangibility:

There is a significant positive relationship between tangibility and long-term debt for manufacturing companies. It indicates that the manufacturing companies rely on fixed assets for obtaining more long-term debt, whereas, no significant relationship is observed between tangibility and short-term debt.

The coefficient for the relationship between tangibility and long-term debt is significantly negative for non-manufacturing companies as shown by Table (5-8) and there is a significant difference between manufacturing and non-manufacturing companies as shown by the negative interaction coefficient for tangibility in Table (5-7). On the other hand, there is no significant difference between manufacturing and non-manufacturing companies in terms of the relationship between short-term debt and tangibility although significant positive relationship between short-term debt and tangibility is detected. This may imply that non-manufacturing companies prefer short-term debt to long-term debt when offering their fixed assets as collateral. The possible explanation is as long as non-manufacturing companies have less long-term investments (such as, plants, manufacturing unites) than manufacturing companies, they might match the maturity of their debt with the life of their assets.

The results provide support for the existence of significant agency costs in non-manufacturing companies. According to Myers (1977) investment decisions can be affected by the use of long-term debt when shareholders might perceive that the gains from new investment will be used to pay off existing debtholders. This situation might lead shareholders to encouraging managers to pass up profitable projects. He added that short-term debt could be used to mitigate the conflict between shareholders and debtholders.

Size:

The relationship between size and the long-term debt ratio is negative for the manufacturing companies, whereas no significant relationship between size and short-term debt ratio is detected for non-manufacturing companies. This may imply that larger manufacturing companies tend to resist long-term debt. With regards to the dummy interaction coefficients, the non-manufacturing companies significantly differ from manufacturing companies in terms of the relationship between long-term debt and company size. The relationship between long-term debt and company size is still, however, significantly negative for non-manufacturing companies but the relationship between short-term debt and company size is significantly positive as shown in Table (5-8). Given that the vast majority of debt in Libyan companies is from short-term sources (see Table (5-6)), there is fairly strong support for the static trade-off theory. As a company size increases, they are able to increase their short-term debt. That is larger companies will have a lower probability of bankruptcy and will, therefore, be able to borrow more, and take advantage of tax deductibility.

5.4 Conclusion

The findings of this chapter contribute towards a better understanding of financing behaviour in Libyan companies. In addition, a combination of different capital structure theories and models that used in previous studies examining other countries were tested to see if they fit the Libyan data. In particular, the chapter examines whether the trade-off theory, agency cost theory, and asymmetric information theory influence the financing behaviour of Libyan companies.

The analysis when dummies were used to identify private and public companies suggests that both the static trade-off theory and the agency cost theory are pertinent theories whereas there was little evidence to support the information asymmetry theory.

The analysis where dummies were used to identify manufacturing and non-manufacturing companies indicates no significant relationship between debt ratios and profitability for manufacturing companies, but a significantly positive relationship for the short-term debt ratio and a significantly negative relationship for the long-term ratio with profitability in non-manufacturing companies. This may imply that non-manufacturing companies support the static trade-off theory as the vast majority of debt in Libyan companies is from short-term resources. The relationship between company size and the short- term debt for non-manufacturing companies may provide further support for the static trade-off theory.

The lack of high-quality databases might constitute the major barrier on conducting capital structure research in Libya. Consequently, there is a need to develop validated databases as more data becomes available in future, and use such databases in

examining and identifying additional variables that could have an influence on financing behaviour of Libyan companies.

Consequently, the combination of survey-based analysis and analysis based on statistical models in studying capital structure is needed to mitigate the problem of unavailability of data and, on the other hand, to investigate some assumptions and conclusions of capital structure that can not be tested by the available financial statements in Libya.

The difficulties of investigating some conclusions of capital structure (such as, the pecking order theory, signalling theory, and manager's preferences, beliefs and attitudes toward using debt and equity) by financial statements data that are available in Libya prepare the way to the next two chapters where the hypotheses of the pecking order behaviour, signalling theory of capital structure, and manager's preference, beliefs and attitudes toward using debt and equity will be tested and discussed.

Chapter Six: Analysis of Questionnaires

6.0 Introduction

In chapter five, some hypotheses have been examined by regression analysis techniques in order to determine the relationships between leverage ratios and a number of characteristics of companies include profitability, tangibility, growth and size. In this chapter, I discuss a survey conducted to describe the current practice regarding capital structure in Libyan companies and, at the same time, provide a background in order to investigate the remaining non-financial hypotheses. These hypotheses are formally tested in chapter 7.

Several factors were hypothesised to impact on capital structure from a review of the relevant literature and previous published capital structure studies, which adopted questionnaires. Those factors deal with the implications of the different capital structure theories including the trade-off, agency cost, and asymmetric information theories, and the effects of managers' preferences and beliefs towards using debt and equity. To test for the relevance of these theories, respondents were asked about their opinions on the capital structure decisions of their companies.

This chapter is divided into five sections. The first section describes the data and sample characteristics while the second section deals with the current capital structure practices and the problems that Libyan companies face with their lenders. Financing policies are discussed in the third section. Section four illustrates the asymmetric information problems between Libyan companies and their investors, while section five concludes the chapter.

6.1 Data and Sample Characteristics

The data used in this chapter were gathered by questionnaires. In an attempt to make the sample as representative of the Libyan companies as possible, companies from different sectors of the economy were selected. Out of 150 copies of questionnaires that were sent out, 72 were completed and returned, giving a response rate of 48%.

Figure (6-1) presents the summary information about the companies in the sample. The sample consists of 39 public (state-owned) companies and 33 private companies from different industries. Manufacturing and mining constitutes 31.9 % of the sample while non-manufacturing companies constitutes 68.1%. The companies range from small (25% of the responding companies have assets of less than 1 million Libyan Dinner LD) to very large (18.1% have assets of at least 40 millions LD). In subsequent analysis, I refer to companies with assets less than 1 million LD as "small". Nearly half of the responding companies are over 20 years old. Another 27.8% are between 11 and 20 years old. 22.2% are between of 10 and 5 years old. The rest are less than 5 years old.

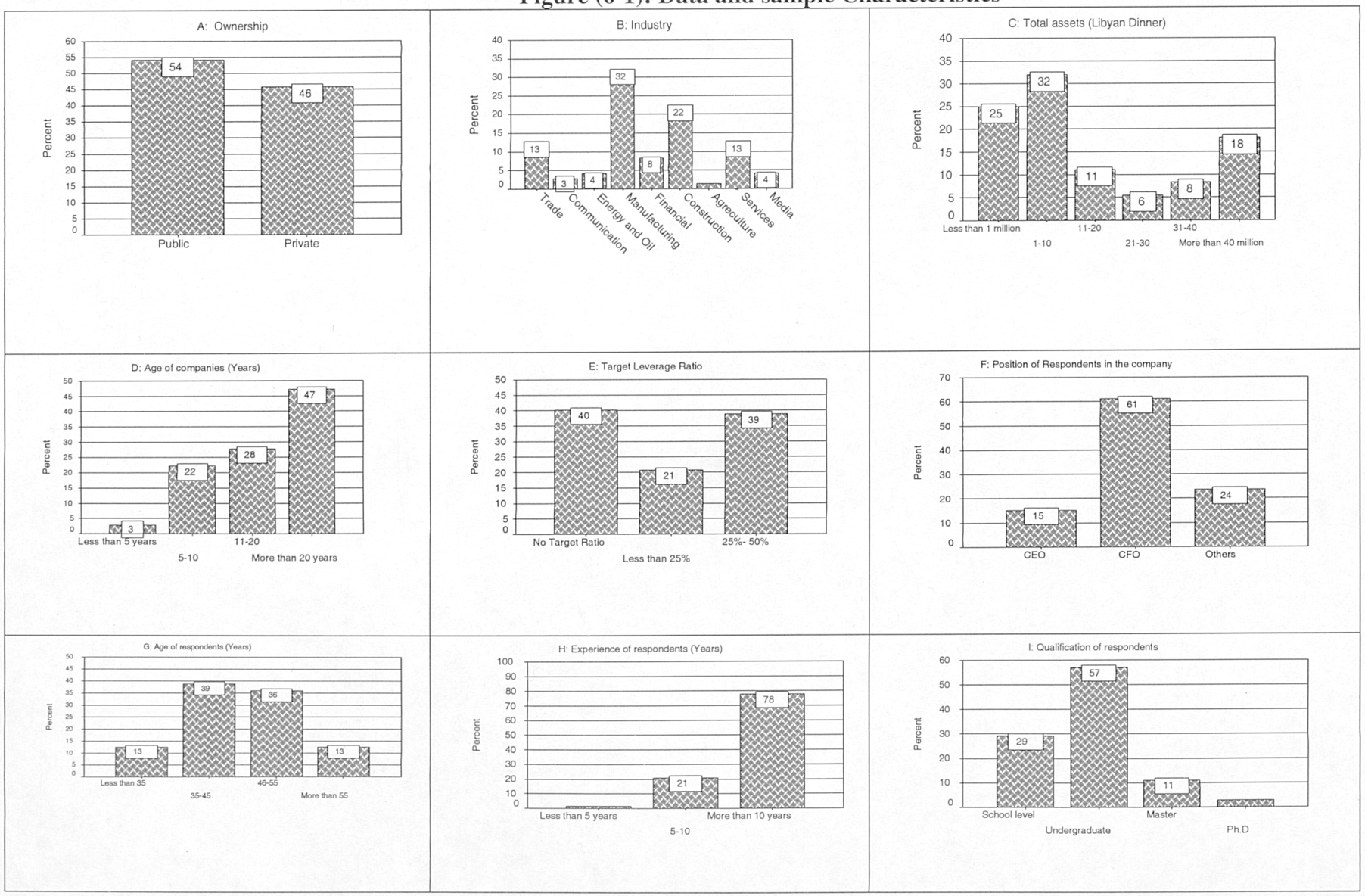
The descriptive statistics also show approximately 21% of the respondents would prefer to have leverage ratios (the ratio of total debt to total assets) below 25%, while 38.9% of the respondents target leverage ratios are between 25% and 50%. The rest (40.3%) do not have desired leverage ratios.

The letters and questionnaires were addressed to Chief Finance Officers (CFOs) and Chief Executive Officers (CEOs) but, in some cases, other officers completed the questionnaires. Approximately 61% of the respondents are CFOs, while 15% are CEOs. The remaining respondents represent other management positions (24%).

According to the age classification, 12.5% of the respondents are less than 35. A further 38.9% are between the ages of 35 and 45. Approximately 36% are between the ages of 46 and 55. The remaining respondents are over 55 years old.

The responses to the questionnaire suggest that the respondents do not change careers frequently. Approximately 78% of the respondents have been in their careers or similar posts more than 10 years; another 20.8% have been in their careers or similar posts between 5 and 10 years. The remaining respondents have been in their careers or similar posts less than 5 years. Nearly 57% of the respondents have an undergraduate degree as their highest qualification. Another 11.1% have master degrees and 2.8% have PhD degrees. The remaining 29.2% have school level qualifications.

Figure (6-1): Data and sample Characteristics



In order to gain a rich description of the capital structure practices, the responses were analysed based on sector (public and private companies), industry (manufacturing and non-manufacturing) and size (smaller and larger). In doing that, Chi-square tests for independence were conducted in order to identify whether there is a significant difference between the company's sector, industry and size. The Chi-Square test indicates that there are significant differences between companies' ownership, industry, and size. On the other hand, there is no significant difference between companies' size and industry. Table (6-1) shows the classification of the sample in terms of industry and size. Of responding Libyan public companies 53.8% is manufacturing companies and 94.9% is also considered as larger companies while the vast majority of responding private companies (93.3%) is non-manufacturing companies from different sizes.

Table (6-1): Industry and Size Classifications of the Sample

	Public	**Private**	**Chi-Square test for independence** *P-Value*
Manufacturing	**21** (53.8%)	**2** (6.1%)	**0.00***
Non-manufacturing	**18** (46.2%)	**31** (93.9%)	
Total	**39** **(100%)**	**33** **(100%)**	
Large	**37** (94.9%)	**17** (51.5%)	**0.00***
Small	**2** (5.1%)	**16** (48.5%)	
Total	**39** **(100%)**	**33** **(100%)**	

Manufacturing companies as those companies, which produce goods through different ways and the non-manufacturing companies otherwise. Small companies are defined as those companies, which have less than one million Libyan Dinners of assets. *P*-values marked with * indicate the significance difference.

The results of some empirical studies in capital structure are consistent with two or more theories. The reason for that, as stated by Myers (2001), is that each of these theories works for sub-sample. Therefore, the responses are analysed based on sector

(public and private), industry (manufacturing and non-manufacturing) and size (small and large).

6.2 Capital Structure Practices

6.2.1 Sources of Finance

Michaelas (1998) argues that companies will be more dependent on bank credit as they develop. The respondents of the questionnaires were, therefore, asked to explain how they financed their investments. The responses are summarised in Table (6-2).

Table (6-2): Sources of Finance

Rank	% Used or used to a very large extent	Mean score	Sector		Industry		Size	
			Public	Private	Manu	Others	Small	Large
c) Bank overdraft	73.6	3.15	3.20	3.09	2.95	3.24	3.16	3.25
f) Retained earnings	63.9	2.94	2.92	2.96	3.08	2.87	3.05	2.90
a) Trade credit	59	2.75	2.35	3.21	2.17	3.02	3.27	2.57
b) Bank loans	50	2.51	2.79	2.18	2.21	2.65	1.94	2.70
d) External equity	37.5	2.13	1.17	3.27	1.30	2.53	3.16	1.79
e) Government subsidies	8.3	1.23	1.43	1.00	1.39	1.16	1.00	1.31
g) Foreign sources	8.3	1.20	1.20	1.21	1.13	1.24	1.27	1.18
h) Affiliated companies	4.2	1.15	1.12	1.18	1.04	1.20	1.05	1.18

Respondents are asked to rate on a scale of 1 (not used) to 4 (used to a very large extent). Manu denotes manufacturing companies, and others denote non-manufacturing companies. Small companies are defined as those companies, which have less than one million Libyan Dinners of assets. The letters represent the rank of the statements in the questionnaire.

Table (6-2) provides evidence of the percentage of companies employing particular sources of finance and the mean of the rankings reported by the respondents as to the usage of the particular source of finance. Bank overdraft is the most widely used source of finance in percentage terms and has the higher overall ranking.

There are some differences in the average rankings for the sub-samples, but bank overdrafts are used more than the other sources of finance by public companies, companies in the non-manufacturing sector and large companies.

Private companies rely more heavily on trade credit and, not surprisingly external equity. Non-manufacturing companies use trade credit as their main source of finance. This might be attributable to their dependence on purchasing.

These results support the findings of Alqadhafi (2002) in that as most Libyan public companies suffer from shortages of cash flow, they use bank overdraft in an attempt to cover their expenses. The other possible explanation might be that Libyan banks treat public companies more favourably because the banks take government involvement in companies' ownership as more reliable collateral and, thus, they are more willing to extend overdraft facilities to public companies.

The policy adopted by the Libyan government might be responsible for reducing the use of government subsidies. The Libyan government issued Act No 9 of 1992 to introduce some liberalisation measures including the privatisation of business operations. The overall aim of these measures, as suggested by Saleh (2001), was to reduce public spending and gradually withdraw government subsidies.

6.2.2 Short-term and Long-term Debt

Short-term debt finance is often used to minimise the agency problems between shareholders and debtholders because if shareholders attempted to expropriate funds from debtholders, borrowers would insist on short-term to minimise these wealth expropriation attempts by restricting company's access to short-term debt in the immediate future.

The respondents were, therefore, asked to specify whether they have a preference between short-term and long-term debt finance and to identify why they would raise short-term and long-term debt finance. As illustrated in Tables (6-3), almost 50% of the respondents indicated that they prefer to use short-term debt, while only 11% of respondents prefer to use long-term debt. About 26% of the respondents prefer to use mix of short and long-term debt. The remaining respondents do not reveal any preference.

Table (6-3): The preference between short-term and long-term debt

	All %	Sector		Industry		Size	
		%Public	%Private	%Manu	%Others	%Small	%Large
Prefer short-term finance	50	41	60.6	34.8	57.1	66.7	44.4
Prefer long-term finance	11	12.8	9.1	17.4	8.2	11.1	11.1
Prefer to have a mix of short and long-term finance	26.5	23.1	30.3	17.4	30.6	22.2	27.8
No Preference	12.5	23.1	0	30.4	4.1	0	16.7

Manu denotes manufacturing companies, and others denote non-manufacturing companies. Small companies are defined as those companies, which have total assets less than one million Libyan Dinners.

As can be seen in Table (6-3), 41% of the respondents in public companies prefer short-term debt finance, while 60.6% of the respondents in private companies have the same preference. The inability to offload shares in a secondary capital market may have more impact on agency costs for private companies than on agency cost for their counterparts. Managers of such companies might be encouraged by shareholders, due to inability to offload their shares, to expropriate funds from debtholders to themselves. Therefore, their preference for using short-term debt might be due to borrowers insisting on short- term debt to minimise attempts by shareholders to expropriate wealth from debtholders.

In order to specify the preference between short-term and long-term debt finance, respondents were asked to indicate the factors driving their choice. As shown in Table (6-4), respondents indicated that debt is used for strategic or tactical reasons as 48.6% of the sample were raising short-term debt to capture the returns from new projects for shareholders. This indicates that agency problems may be an issue between shareholders and debtholders.

Table (6-4): Factors that affect the maturity of debt

Rank	% Important or very important	Mean score	Sector		Industry		Size	
			Public	Private	Manu	Others	Small	Large
b) We borrow short-term debt so that returns from new projects can be captured more fully by shareholders	48.6	2.44	1.51	3.54	1.69	2.79	3.55	2.07
a) Matching the maturity of our debt with the life of our assets	36.1	2.06	2.20	1.90	2.13	2.04	2.16	2.03
c) We borrow long-term debt to minimise the risk of having to refinance in "bad time"	36.1	2.11	2.23	1.96	2.17	2.08	1.77	2.22

Respondents are asked to rate on a scale of 1 (Not important) to 4 (very important). Manu denotes manufacturing companies, and others denote non-manufacturing companies. Small companies are defined as those companies, which have less than one million Libyan Dinners of assets. The letters represent the rank of the statements in the questionnaire.

On the other hand, 36.1% of companies choose to match the maturity of their debt with the maturity of their assets, which may explain the preferences between short and long-term debt. The same percentage of respondents indicated that issuing long-term debt to minimise the risk of having to refinance in bad times is also considered as a reason for preference between short-term and long-term debt.

There are some differences in preference and reasons for preference between long and short-term debt based on the sub-sample. For example, compared to public

companies, private companies are more concerned about the use of short-term debt for strategic or tactical reasons than the public companies as they tend to issue short-term debt to capture returns from new projects for shareholders, which is perhaps not surprising given their higher dependence on equity than public companies. Private companies were less concerned about matching principles and about issuing long-term debt to minimise the risk of having to finance in bad times than the public companies.

As private companies tend to be non-manufacturing (see, Table (6-1)), consequently they tend to have less fixed assets such as, plants and heavy equipments. This might explain why these companies were less concerned about matching principles. Regarding their less concern about issuing long-term debt to minimise the risk of having to finance in bad times, private companies seem to be more affected by the absence of a secondary capital market than their counterparts as the non-existence of a secondary capital market might prevent investors from raising long-term finance.

Non-manufacturing companies consider moderately issuing short-term debt to capture returns from new projects for shareholders as indicated by a score of 2.79, but there is little evidence that they consider either the matching principle or issuing long-term debt to avoid refinancing in bad times. There is also little evidence to explain the preference between short-term and long-term debt for manufacturing companies. For smaller companies, the most important reason for raising short-term debt is that the use of short-term borrowing might allow returns from new projects to be captured by shareholders. On the other hand, there is little support for the matching principles for the smaller companies sub sample, and no support for issuing long-term debt to minimise the risk of refinance in bad times.

According to the participants, private companies appear to be more influenced by agency problems as they place a higher value to the use of short-term debt in order to capture the returns from new projects for shareholders interest, but perhaps it is not surprising as they have a greater dependency on equity.

6.2.3 Paying Dividends

Sharpe and Nguyen (1995) argue that paying dividends may reduce the asymmetric information between investors and managers, and, as stated by La Porta et al. (1998), without paying dividends, it might be difficult to companies to raise external equity.

Respondents, therefore, were asked to specify whether they pay dividends and what form of payment they pay. Table (6-5) illustrates that 52.8% of the responding companies indicated that they pay cash dividends while 44.4% of the respondents do not pay any dividend. The remaining respondents pay shares as dividends.

Table (6-5): Paying dividends

Rank	All %	Sector		Industry		Size	
		%Public	%Private	%Manu	%Others	%Small	%Large
Paying cash as dividends	52.8	35.9	72.7	47.8	55.1	61.1	50
Paying no dividends	44.4	64.1	21.2	52.2	40.8	38.9	46.3
Paying shares as dividends	2.8	0	6.1	0	4.1	0	3.7

Manu denotes manufacturing companies, and others denote non-manufacturing companies. Small companies are defined as those companies, which have total assets less than one million Libyan Dinners.

Private companies pay more dividends than public ones as 72.7% of the responding private companies indicated that they pay cash dividends against 35.9% of the responding public companies. This is, in part, because the private companies have a greater dependency on equity. Of the responding public companies, 64.1% indicated that they do not pay dividends. This will, in part, be due to the fact that some of the public companies are fully owned by the state, for example, The Secretary of

Industry currently has thirty-one companies, and 23 out of them are fully owned by the state (Saleh, 2001).

On the other hand, 21.1% of respondents in private companies do not pay dividends. The possible explanation is that those companies do not have sufficient profits for distribution. Compared to manufacturing companies, non-manufacturing companies pay more dividends than manufacturing ones. In addition, smaller companies pay more dividends than larger companies.

The absence of a secondary capital market might explain why only 2.8% of the respondents pay shares as dividends. Additional shares may well be less attractive than cash as the shareholders will not have opportunity to convert the shares to cash.

The later findings are inconsistent with the literature, where larger companies usually pay more dividends than smaller companies. It might be attributable to ownership structure of the responding companies as, 68% of the responding larger companies are public companies, while approximately 89% of the responding smaller companies are private companies giving that the private companies are more likely to pay more dividends than the public companies.

6.2.4 Problems in Obtaining External Finance

Respondents were asked to specify whether they have experienced any problems in obtaining an adequate level of external finance. The vast majority (84.7%) of the respondents indicated that they do face problems in raising external finance. As can be seen in Table (6-6), there are little differences in responses between public and private companies and between smaller and larger companies while non-manufacturing companies face more problems in obtaining external finance than manufacturing companies.

Table (6-6): Survey Responses to the Question: Do you currently face any problem in obtaining an adequate level of external finance?

	All %	Sector		Industry		Size	
		%Public	%Private	%Manu	%Others	%Small	%Large
Yes	84.7	84.6	84.8	73.9	89.8	83.3	85.2
No	15.3	15.4	15.2	26.1	10.2	16.7	14.8

Manu denotes manufacturing companies, and others denote non-manufacturing companies. Small companies are defined as those companies, which have total assets less than one million Libyan Dinners.

Respondents were asked to indicate the importance of a list of problems that could be linked to obtaining external finance. The responses are summarised in Table (6-7).

Table (6-7): Problems associated with obtaining external finance

Rank	% Agree or Strongly agree	Mean score	Sector		Industry		Size	
			Public	Private	Manu	Others	Small	Large
b) Deterioration in the state of the economy	81.9	3.83	3.81	3.85	3.76	3.86	3.86	3.82
c) Absence of stock market	77.8	3.72	3.69	3.75	3.47	3.81	3.60	3.76
h) Inability in getting enough debt	62.5	3.16	3.09	3.25	3.11	3.18	3.00	3.21
d) The suppliers of finance are in small and/or undeveloped sector	56.9	2.98	3.57	2.28	3.52	2.77	2.60	3.10
g) Inability in convincing lenders of the profitability of the investments	51.4	2.75	2.60	2.92	2.47	2.86	3.26	2.58
a) Lack of collateral (security)	50	2.78	3.03	2.50	3.35	2.56	2.60	2.84
e) Poor relationships with banks	29.2	2.04	1.72	2.42	1.94	2.09	2.73	1.82
f) Lack of good trading record	16.7	1.57	1.24	1.96	1.41	1.63	2.00	1.43

Respondents are asked to rate on a scale of 1 (strongly disagree) to 4 (strongly agree). Manu denotes manufacturing companies, and others denote non-manufacturing companies. Small companies are defined as those companies, which have less than one million Libyan Dinners of assets. The letters represent the rank of the statements in the questionnaire.

The most important overall problem associated with obtaining external finance is the deterioration in the state of the economy as indicated by 81.9% of the respondents with an average rating of 3.83. As the profitability of a firm may be influenced by the state of the economy, the deterioration in the state of the economy may affect the amount of earnings available to be retained and consequently the firms' capital structure.

The absence of a secondary capital market is ranked as the second most important problem in obtaining external finance followed by an inability to issue sufficient debt. Poor relationships with lenders and the lack of a good trading record are ranked as the least important problems in obtaining external finance.

There are some differences based on sector as shown in Table (6-7). For example, although it surprising that public companies are influenced more than the private companies by an undeveloped finance sector, they are less influenced by poor relationships with lenders. The public companies may have good relationships with lenders due to government intervention guarantees. The responses to the problems listed in Table (6-7) indicate that the public companies and the private companies face nearly the same problems in obtaining external finance. This is consistent with Huang and Song' (2002) results which indicate that state ownership does not prevent public companies from displaying the same behaviour as private companies in terms of external financing.

According to the responses analysed, non-manufacturing companies are more affected by the deterioration in the state of the economy and the absence of a secondary capital market than manufacturing companies, while manufacturing companies appear to suffer more from an undeveloped finance sector than non-

manufacturing companies. It might be attributable to the size of manufacturing companies, as 39.1% of the responding manufacturing companies have assets of more than 40 million LD, while only 8.2% of the responding non-manufacturing companies have assets more than 40 millions LD.

Furthermore, compared to smaller companies, larger companies are more influenced by an undeveloped finance sector than their smaller counterparts, but less affected by poor relationships with lenders.

It is apparent from Table (6-7) that responding companies are more influenced by problems that reflect the supply-side of finance (the deterioration in the state of the economy and the absence of a secondary capital market) than by problems that reflect the demand-side (lack of collateral, poor relationships with lenders, and the lack of a good trading record). Atkin and Glen (1992) argue that in a country without a secondary capital market, the range of financing options available to companies is very limited.

6.2.5 Problems with Lenders Regarding Loans or Overdraft Facilities.

Michaelas (1998) and Churchill and Lewis (1983) argue that businesses will have different financial needs as they develop and they will increasingly rely more on funds from bank. Respondents were, therefore, asked to specify whether they have any problems with their lenders regarding loans or overdraft facilities. Of the responding companies, 54.2% indicated that they do have problems with their lenders regarding loans or overdraft facilities, while the rest (45.8%) did not.

Table (6-8): Survey Responses to the Question: Do you have any problem with lenders regarding loans or overdraft facilities?

	All %	Sector		Industry		Size	
		% Public	% Private	% Manu	% Others	% Small	% Large
Yes	54.2	48.7	60.6	43.5	59.2	50	55.6
No	45.8	51.3	39.4	56.5	40.8	50	44.4

Manu denotes to manufacturing companies, and others denotes to non manufacturing companies. Small companies are defined as those companies, which have less than one million Libyan Dinners as assets.

There are some differences based on sector, industry and size. Private companies seem to have more problems with lenders regarding loans or overdraft facilities than public companies. Manufacturing companies have fewer problems with lenders than non-manufacturing ones, while there is little difference between smaller and larger companies about-facing problems with lenders regarding loans or overdraft facilities.

In order to identify the problems with lenders that Libyan companies could face regarding loans or overdraft facilities, respondents were, therefore, asked to indicate the importance of a list of problems. The responses are summarised in Table (6-9).

Table (6-9): Problem with Lenders regarding Loans or Overdraft Facilities

Rank	% Reason or major reason	Mean score	Sector		Industry		Size	
			Public	Private	Manu	Others	Small	Large
e) Red tape (Bureaucracy)	48.6	3.71	3.73	3.70	3.70	3.72	4.00	3.63
c) Charges too high	43.1	3.23	2.78	3.65	2.70	3.41	4.00	3.00
f) Interest rate too high	40.3	3.23	3.52	2.95	3.40	3.17	2.00	3.60
a) Loan application rejected	36.1	2.97	2.52	3.40	2.80	3.03	3.66	2.76
d) Relationship difficulties	16.7	1.94	2.31	1.60	2.40	1.79	1.33	2.13
b Approached by another ender	9.7	1.58	1.26	1.90	1.40	1.65	1.66	1.56
g Bank mistakes	9.7	1.51	1.42	1.60	1.60	1.48	1.66	1.46

Respondents are asked to rate on a scale of 1 (not reason) to 4 (major reason). Manu denotes manufacturing companies, and others denote non-manufacturing companies. Small companies are defined as those companies, which have less than one million Libyan Dinners of assets. The letters represent the rank of the statements in the questionnaire.

Table (6-9) reports that the most important problem with lenders regarding loans or overdraft facilities is bureaucracy as 48.6% of the responding companies indicated that red tape is the most important problem they face. The second most important problem is the charges on loans or overdraft facilities as 43.1% of the respondents consider the charges that on their loans or overdraft facilities as reason or major reason.

Compared to private companies, public companies are less influenced by charges and the rejection of loan application problems than private companies, but the public companies are more affected by the interest rate than the private companies. It may reflect the effect of economic transition in Libya, as during the economic transition, as stated by Keister (2000), companies have to begin gradually to borrow from non-state capital sources in order to cover the shortage of financing from the state.

According to the responses analysed by industry, non-manufacturing companies are more influenced by banking charges and the rejection of loan application problems than the manufacturing companies while manufacturing companies are more affected by the interest rate problem than the non-manufacturing companies.

Smaller companies are more influenced by red tape, banking charges and the rejection of loan application than the larger companies while the larger companies are more affected by the interest rate more than the smaller companies.

6.3 Financing Policy

In the following sections, I asked the respondents about their opinions on various factors that are likely to influence the capital structure policies of companies.

6.3.1 Debt Policy

I asked the respondents some questions related to the debt policy. Table (6-10) presents the summary of the responses. The static trade-off theory, as stated by Brounen et al. (2004), suggests companies are concerned with balancing the costs of financial distress against the tax advantages of debt. These two influences were reported to be important by 66.7% and 45.8% of the respondents respectively. These choices of debt policy indicate to strong support for the static-trade-off theory.

Factors that relate debt to strategic or tactical reasons such as bargaining for concessions from employees, sending signals to competitors about the impossibility of reducing companies' outputs, and giving investors a better impression about companies' future prospects are rated as less important factors that affect debt policy in Libyan companies. This can be interpreted as being inconsistent with Ross' (1977) signalling theory which indicates that investors interpret the increase in leverage as a signal of higher quality.

Limiting total debt or using short-term debt can mitigate agency problems between parties involved. Of the respondents, 45.8% limit their amount of debt to capture profits from new projects for shareholders. Furthermore, growth opportunities are also ranked as an important factor for issuing debt by 72.2% of the responding companies particularly for public companies. This may provide further support for the agency cost theory of capital structure.

6.3.2 Issuing Shares Policy

Libyan companies issue shares for various reasons but to fulfil the legal requirements regarding capital is ranked as the most important reason. Private companies place higher values on this reason probably due to their higher dependency on equity.

About 82% of the responding companies ranked the need to issue shares when their profits are not sufficient to support their activities as the second most important reason for issuing shares. It can be also argued that there is more supply-side effects influencing financing policy than demand-side effects in the Libyan business environment as the respondents place a high value on the factor relating to the inability to obtain funds using other sources of finance.

Table (6-10): Issues that affect the Amount of Debt

Rank	% Reason or major reason	Mean score	Sector		Industry		Size	
			Public	Private	Manu	Others	Small	Large
h) We use debt when our recent profits (internal funds) are not sufficient to fund our activities	93.1	3.75	3.74	3.75	3.78	3.73	4.00	3.66
b) Growth opportunities	72.2	3.04	3.10	2.96	3.17	2.97	2.94	3.07
a) The potential costs of bankruptcy, or financial distress	66.7	2.88	3.00	2.75	2.47	3.08	2.44	3.03
j) The Interest rate	65.3	2.95	3.46	2.36	3.08	2.89	2.33	3.16
c) We limit debt so our customers/ suppliers are not worried about our firm going out of business	50	2.61	2.15	3.15	2.39	2.71	3.11	2.44
d) We limit our borrowing so that profits from new /future projects can be captured fully by shareholders and do not have to be paid out as interest to debtholders	45.8	2.45	1.84	2.18	2.13	2.61	3.00	2.27
e) The tax advantage of interest deductibility	45.8	2.19	2.33	2.03	2.13	2.22	1.66	2.37
i) A high debt ratio helps us bargain for concessions from our employees	33.3	1.94	2.00	1.87	2.17	1.83	1.83	1.98
f) If we use debt our competitors know that we are very unlikely to reduce our output	16.7	1.56	1.84	1.24	1.95	1.38	1.55	1.57
g) Using debt gives investors a better impression of our firm's prospects than issuing shares	11.1	1.47	1.61	1.30	1.82	1.30	1.61	1.42

Respondents are asked to rate on a scale of 1 (not reason) to 4 (major reason). Manu denotes to manufacturing companies, and others denotes to non-manufacturing companies. Small companies are defined as those companies, which have less than one million Libyan Dinners as assets.

Table (6-11): Reasons for Issuing Shares

Rank	% Agree or strongly agree	Mean score	Sector		Industry		Size	
			Public	Private	Manu	Others	Small	Large
f) Fulfil some legal requirements regarding the capital	83.3	3.45	3.25	3.69	3.26	3.55	3.88	3.31
a) Whether our recent profits have been sufficient to fund our activities	81.9	3.40	3.17	3.66	3.30	3.44	3.50	3.37
i) Inability to obtain funds using other sources of finance	69.4	3.11	2.53	3.78	2.82	3.24	3.66	2.92
h) Issuing shares give investors a better impression of our firm's prospects than using debt	69.4	3.06	2.51	3.72	2.52	3.32	3.77	2.83
g) Shares are our "least risky " source of funds	47.2	2.36	2.15	2.60	2.43	2.32	2.94	2.16
c) Shares are our cheapest source of funds	33.3	1.98	2.23	1.69	2.30	1.83	1.77	2.05
e) Diluting the holding of certain shareholders	27.8	1.87	1.61	2.18	1.82	1.89	2.33	1.72
j) Earning per share dilution	23.6	1.69	1.69	1.69	1.86	1.61	1.72	1.68
d) Maintaining a target debt-to-equity ratio	20.8	1.61	1.66	1.54	1.86	1.48	1.66	1.59
b) Providing shares as dividends	16.7	1.69	1.71	1.66	1.60	1.73	1.50	1.75

Respondents are asked to rate on a scale of 1 (strongly disagree) to 4 (strongly agree). Manu denotes to manufacturing companies, and others denotes to non-manufacturing companies. Small companies are defined as those companies, which have less than one million Libyan Dinners as assets.

6.4 Asymmetric Information Problem

6.4.1 Measures of asymmetric information

Ang and Jung (1993) use four measures in order to identify the asymmetric information problem. In doing so, they asked the respondents these four questions:

(1) Do you feel that banks tend to underestimate your firm's future prospects?

(2) Does this problem remain after providing confidential information to the bank?

(3) Are you willing to provide extra information in order to enhance your relationship with the banks and mitigate the underestimation problems? and

(4) Are retained earnings used to finance new investments because it is hard to convince the bank of the profitability of the new investments?

Following Ang and Jung's (1993) methodology, I asked several questions in order to determine whether the asymmetric information problem exists between companies and their lenders. I asked respondents to specify whether they feel that lenders tend to underestimate the future prospects of their companies and if it affects the amount of finance made available to them. Of the responding companies, 68.1% indicated that lenders (usually banks) have a limited understanding of the future prospects of their companies. This suggests that the asymmetric information problem may exist between those companies and their lenders.

Public and larger companies seem to be less concerned about asymmetric information as shown in Table (6-12). Therefore, it can be argued that the asymmetric information problems may become more series problems in the Libyan environment as the portion of smaller and private companies will increase due to the policy of privatisation for public companies as well as the establishment of private companies. The public and larger companies appear to have better-established

banking relationships and probably, as a result, face lower asymmetric information than private and smaller ones.

One possible explanation is that as the state owns the majority of public companies' shares and these companies tend to be large, the lenders take government involvement as reliable collateral. The other possible explanation might be that banks, which are usually state owned, treat public companies favourably from private companies. Also banks will usually have more information about the public companies activities than the private companies' activities.

Approximately 60% of the respondents indicated that the underestimation problem could not be solved through disclosure. Again, it can indicate the asymmetric information problem. Row b in Table (6-12) illustrates that the responding private companies tend to be more influenced by the underestimation problem than their public counterparts and that their problems may not be solved by providing confidential information. It may imply that the personal relationship between private companies' managers and bank managers is more important for reducing the asymmetric information than providing more information disclosure. It also may imply that the large part of asymmetric information problems may not be attributable to the lenders' lack of information.

Row c in Table (6-12) shows that 26.4% of the respondents are not willing to provide extra information in an attempt to reduce this information asymmetry. It means that the vast majority of the responding companies are willing to provide extra information and enhance their relationship with lenders. This result, however, indicates that the asymmetric information between companies and lenders is a significant problem in the Libyan environment.

Supporting the previous argument that the asymmetric information problem is significant in the Libyan business environment, 65.3% of the responding companies indicated that retained earnings were used to finance new investments because they found it hard to finance these new investments from banks.

In summary, the discussion above indicates that the asymmetric information problem exists in Libyan companies. In the next chapter, I will investigate whether Libyan companies follow Myers' pecking order under the effects of the asymmetric information problems. According to Myers and Majluf (1984), the asymmetric information problems occur when investors are less informed than managers about the value of the companies' assets and, therefore, the market might under price the equity.

Table (6-12): Asymmetric Information between Lenders and Companies

Measures of asymmetric information	% Agree or strongly agree	Mean score	Sector		Industry		Size	
			Public	Private	Manu	Others	Small	Large
a) We feel that lenders tend to underestimate the future prospects of our firm	68.1	3.01	2.84	3.21	3.08	2.97	3.33	2.90
b) This problem (underestimating the future prospects of the firm) remains after our firm provided confidential information to the lenders	59.7	2.76	2.69	2.84	2.86	2.71	3.00	2.68
c) We will not provide extra information at all in an attempt to alleviate the lender's underestimation of the future prospect of our firm	26.4	1.76	1.69	1.84	1.82	1.73	1.94	1.70
d) If retained earnings are used to finance new investments, this is because we find it hard to convince lenders of the profitability of the new investment	65.3	2.90	2.79	3.03	2.82	2.93	3.11	3.83

Respondents are asked to rate on a scale of 1 (strongly disagree) to 4 (strongly agree). Manu denotes to manufacturing companies, and others denotes to non-manufacturing companies. Small companies are defined as those companies, which have less than one.

6.4.2 The Choice of Sources of Funds

As can be seen in Table (6-13), the respondents indicated that retained earnings were their first choice of sources of funds, while funds from banks and suppliers are ranked as their second and third choice, respectively. Funds from affiliated companies, government and foreign sources are ranked as the least preferred choice of funds.

Table (6-13): Sources of Funds- The Choices

Sources of funds	All	Sector		Industry		Size	
	Rank	Public	Private	Manu	Others	Small	Large
Retained earnings	1	1	1	1	1	1	1
Banks	2	2	2	2	2	4	2
Suppliers	3	3	3	3	3	3	3
Affiliated firms	4	4	5	4	4	5	4
Private sources	5	5	4	5	5	2	5
Government	6	6	6	6	6	6	6
Foreign sources	7	7	7	7	7	7	7

The numbers in the table denote to the choices of sources of funds.

There are some differences based on sector, industry and size. For example, compared to larger companies, smaller companies ranked funds from private sources and banks as their second and fourth choices respectively while the public companies ranked funds from banks and private sources as their second and fifth choice respectively. It might imply that banks have more preference to lend public companies than private companies. This is because banks may take the government's involvement in the public companies ownership as collateral. On the other hand, smaller companies appear to be more interested in funds from private sources than the larger companies. This is not surprising, as the smaller companies tend to be in private sector.

6.4.3 The Choice of Types of Funds

Table (6-14) shows that the responding companies indicated that they prefer retained earnings as the first choice followed by bank overdrafts and trade credit from suppliers. Short-term bank loans, long-term bank loans and new shares are ranked as their last choices respectively. This may imply that Libyan companies prefer to be financed in the order of inside funds, out side trade credit from suppliers, out side debt, and out side equity. It also can be seen, to some extent, as an indication of the existence of the asymmetric information problem.

Table (6-14) Types of Funds- The Choices

Types of funds	All Rank	Sector		Industry		Size	
		Public	Private	Manu	Others	Small	Large
Retained earnings	1	1	1	1	1	1	1
Bank overdraft	2	2	2	2	2	2	2
Trade credit from suppliers	3	5	3	5	3	3	3
Short-term bank loans	4	3	5	3	4	5	4
Long-term bank loans	5	4	6	4	5	6	5
New Shares	6	6	4	6	6	4	6

The numbers in the table denote to the choices of sources of funds.

There are some differences based on sector, industry and size. For example, compared to the public companies, the private companies appear to be more interested in the funds from trade credit and new equity than the public companies while short and long-term bank are more preferred by the public companies. Manufacturing companies prefer to be financed in the order of inside funds, out side debt, out side trade credit from suppliers, and out side equity while the order of inside funds, out side trade credit from suppliers, out side debt, and out side equity is more favoured by non-manufacturing companies.

Smaller companies and larger companies differ in the preference of external equity. While the smaller companies ranked the new shares as their fourth choice, the larger companies ranked it as their last choice.

In the main, smaller and private companies on one hand, and larger and manufacturing companies on the other hand, are, to a very large extent, following the same order of financing. Therefore, smaller companies are more likely to be in the private sector, and manufacturing companies tend to be in the public sector.

6.5 Conclusion

This chapter examined the factors influencing capital structure in Libyan companies using evidence provided by questionnaires. The analysis of the responses to the questionnaires has several implications for capital structure theory.

The responses indicated that the most important source of finance is bank overdraft, followed by retained earnings and trade credit. Government subsidies are considered an unimportant source of finance even for the public companies. It may reflect the policy that has been adopted by the Libyan government for producing some liberalisation measures including privatisation of businesses, reducing public spending and gradually withdrawing government subsidies.

The responses also point out that short-term debt is preferred over long-term debt possibly duc to the existence of agency problems, as the respondents indicated that they borrow short-term debt so that returns from new projects can be captured more fully by shareholders, rather than debtholders.

The deterioration in the state of the economy and the absence of a secondary capital market are considered as the most important problems associated with obtaining

external finance. It may imply that Libyan companies are more influenced by problems that reflect such supply-side effects rather than by problems that reflect demand-side effects such as poor relationships with banks and the lack of a good trading record.

The respondents indicated that they do not use debt policy and share issues for strategic or tactical reasons, as there is little evidence that Libyan companies use debt policy to send signals to their investors about their future prospects, or use shares issues in order to dilute the holding of certain shareholders.

In the main, there appears to be information asymmetries between Libyan companies and banks, which affect the amount of funds that are made available to them. Furthermore, the responses indicated that the large part of the asymmetric information problem might not be attributable to the lenders' lack of information, as they argued that providing more information disclosure could not solve the asymmetric information problem.

The next chapter presents the results from the analysis of the data collected by the questionnaires that serve to examine the hypotheses that cannot be tested by utilising financial statements data. The hypotheses examine the pecking order and signalling theories, managers' risk taking propensity, business and personal goals and managers' demographic characteristics. Furthermore, the hypotheses that were tested in chapter five using regression analysis techniques will be re-examined in order to compare the relationships between profitability, tangibility, growth and company size as experienced by managers.

Chapter Seven: Testing the Non-financial Hypotheses

7.0 Introduction

A number of hypotheses were examined in chapter five by investigating the relationship between leverage ratios and a number of characteristics of companies. Some factors that affect capital structure choices are not easy to quantify and thus cannot be identified using financial figures, such as, management preferences, beliefs and attitudes towards using debt and equity. Potentially relevant qualitative factors are selected based on a review of the capital structure literature.

In the previous chapter, the responses, question by question were analysed, but in this chapter some qualitative factors will be investigated and discussed based on the responses analysed in chapter six. In order to test some hypotheses, debt ratios from Libyan companies' financial statements will be also utilised. Furthermore, the hypotheses that were tested by regression analysis technique in chapter five will be re-examined using the questionnaires data.

This chapter is divided into six sections. The first section deals with the pecking order hypothesis. The second section investigates the signalling hypothesis. The impact of managers' preferences, perceptions and beliefs towards using debt are tested in section three. The hypotheses relating to the impact of manager's demographic characteristics on using debt are discussed in the fourth section. Section five re-examines the hypotheses that were tested by the regression analysis in chapter five, while the last section concludes the chapter.

7.1 Pecking order Hypothesis

The pecking order theory assumes that firms do not target a specific debt to equity ratio. Myers and Majluf (1984) argue that firms prefer to use external funds only when internal funds are insufficient. They added that the preference of internal funds over external funds might be attributable to the asymmetric information problems between managers and investors, which may cause under valuation for external equity. Therefore, according to this theory, firms might be financed first by retained earnings, then by debt and finally by issuing shares. Myers (1984) referred to this preference as pecking order financing behaviour.

Due to the fact that the starting point for testing the pecking order theory is the existence of asymmetric information between managers and investors as pointed out by Ang and Jung (1993), Chirinko and Singha (2000) and Graham and Harvey (2001), the respondents were asked to specify whether they believed asymmetric information existed between their companies and their lenders.

As explained in chapter six, four measures of asymmetric information were identified and the responding companies were divided, according to these measures, into two sub-samples, "high asymmetric information group companies" and "low asymmetric information group companies". Due to the fact that the results of using each of these four measures are nearly similar (see appendix (7-1)), only the results of the analysis of using the first measure of asymmetric information are presented and discussed.

Table (7-1): High and Low Asymmetric Information Groups

Rank	All %	Sector		Industry		Size	
		%Public	%Private	%Manu	%Others	%Small	%Large
High asymmetric information group	68.1	64.1	72.7	78.3	63.3	77.8	64.8
Low asymmetric information group	31.9	35.9	27.3	21.7	36.7	22.2	35.2

Manu denotes manufacturing companies, and others denotes to non-manufacturing companies. Small companies are defined as those companies, which have less than one million Libyan Dinners of assets.

Respondents were asked to specify to what extent they feel that lenders (usually banks) have limited understanding of the future prospects of their companies and if they believed this leads to an underestimation of the future prospects of their companies and restrict the amount of finance made available to them.

Of the responding companies, approximately 68% indicated that lenders tend to underestimate the future prospects of their companies; therefore, they are classified as high asymmetric information group of companies, while the rest (nearly 32%) indicated the opposite; therefore they were classified as the low asymmetric information group of companies.

In order to test the pecking order hypothesis, the financing pecking order for each asymmetric information group was examined. The pecking order theory, as indicated by Michaelas (1998), suggests that companies should use internally available funds first, followed by short-term debt, then long-term debt, and finally external equity. As stated in the methodology chapter, the high asymmetric information group companies are more likely to follow Myers' pecking order than low asymmetric information group companies.

Table (7-2): The Choice between Types of Funds in Asymmetric Information Groups

Types of funds	All rank		Sector				Industry				Size			
			Public		Private		Manu		Others		Small		Large	
	H	L	H	L	H	L	H	L	H	L	H	L	H	L
Retained earnings	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Bank overdraft	2	2	2	2	2	2	2	2	2	2	2	2	3	2
Trade credit from suppliers	3	3	5	5	3	3	5	3	3	3	3	3	2	3
Short-term bank loans	4	4	3	3	4	5	3	4	4	4	5	5	4	5
Long-term bank loans	5	5	4	4	5	6	4	5	5	5	4	4	6	6
New Shares	6	6	6	6	6	4	6	6	6	6	6	6	5	4

H denotes to high asymmetric information group and L denotes to low asymmetric information group. The numbers in the table denote to the choices of sources of funds.

Table (7-2) shows that the first choice for the high asymmetric information group companies is retained earnings followed by bank overdraft and trade credit from suppliers. Short-term debt, long-term debt and new shares are ranked as the least important types of finance respectively. Table (7-2), however, shows that the high asymmetric information group companies displays the same financing choices of the low asymmetric information group. In other words, the two asymmetric information groups prefer to be financed in the order of retained earnings, bank overdraft, credit from suppliers, short-tem debt, long-term debt, and issuing shares.

There is little evidence that sector, industry and size affect the financing pecking order in both high and low asymmetric information group companies as they appear to display nearly the same financing pecking order as shown by Table (7-2).

It is apparent from Table (7-2) that the responding companies prefer to be financed in the order of inside funds, outside debt, and outside equity. It can be viewed as an indication for supporting the pecking order theory of capital structure, but, as the low asymmetric information group companies displays the same financing pecking order behaviour of high asymmetric information group companies, it can be argued that

whilst the pecking order assumptions are supported, the choices does not appear to be due to the existence of asymmetric information.

Table (7-3): Mann-Whitney *U* Test for the Choices of Financing in two Asymmetric Information Groups

	1st choice	2nd choice	3rd choice	4th choice	5th choice	6th choice
Mann-Whitney *U*	540.500	547.500	536.500	575.500	548.000	477.500
Z	-.0495	-0.369	-0.497	-0.006	-0.344	-1.232
Sig	0.621	0.712	0.619	0.995	0.731	0.218

The Mann-Whitney *U* test was performed to identify whether the previous tabulated results were statistically significant. The results (as shown in Table (7-3)) show that the probability value (Sig) is not less than or equal to 0.05, therefore the results are not significant. In other words, there is no statistically significant difference in the ranking between the two asymmetric information groups; thus, the usual explanation of asymmetric information influences the pecking order theory is not supported. An alternative interpretation may be that the low asymmetric information group companies ranked issuing shares as the last choice due to the absence of secondary capital market in Libya and not because of concerns over underpriced equity.

Therefore, the fifth null hypothesis is rejected.

Hypothesis 5: Accepted

H5: There is no significant difference between the high asymmetric information group companies and the low asymmetric information group in following Myers' pecking order.

7.2 Signalling Hypothesis

Ross (1977) and Leland and Pyle (1977) argue that companies use debt and equity to send financial signals to investors about their future prospects. Inside managers can use financial decisions (such as the financing decision) to send signals to the market in order to reduce information asymmetry. It is expected that managers will only

increase leverage if the company is likely to be able to meet the interest payments and/ or that the firm has investment opportunities over and above what can be financed by internally generated funds. If investors perceive either of these to be the case they are likely to react positively to an announcement of increased leverage.

Half of the respondents indicated that they use debt policy for tactical reasons in order to send signals about the stability of their companies to their customers and suppliers. Private and smaller companies appear to particularly favour this strategy.

The use of debt to help bargain concessions from employees is ranked as a relatively unimportant factor for using debt as only 33.3% of the respondents consider this factor as a reason or major reason for using debt.

There is little evidence that the responding companies use their debt policy in order to send signals to their competitors to inform them that it is very unlikely that they will be reducing their output.

Of the responding companies, 11.1% indicated that issuing debt give their investors better impression of their companies' prospects than issuing shares.

The previous tabulated results as shown in Table (6-10), however, needed to be supported in order to make it clear whether the secondary hypotheses H6.1, H6.2, H6.3 and H6.4 should be rejected or accepted. The Binomial test was performed for each secondary hypothesis. The four point Likert scale were recoded in two scales, 1= not reason and 2= reason, in order to perform the Binomial test.

As can be seen in Table (7-4), the asymptotic significant value for the first statement is 1.00, which is above the conventional cut-off for statistical significance (0.05). This implies that the proportion of respondents who believe that the debt policy can

be used to send signals to their customers and suppliers about their companies' stability does not significantly differ from the hypothesised value of 50%. By that standard, the hypothesis H6.1 cannot be rejected. It implies that the responding companies do not use their debt policy to send signals to their customers and suppliers about their companies' stability and prospects.

Table (7-4): Binomial Test for Signalling Hypothesis

	Response	Observed Proportion.	Test Proportion.	Sig
We limit debt so our customers/ suppliers are not worried about our firm going out of business.	No Yes	0.50 0.50	0.50	1.000
A high debt ratio helps us bargain for concessions from our employees.	No Yes	0.83 0.17	0.50	.000
If we use debt our competitors know that we are very unlikely to reduce our output.	Yes No	0.33 0.67	0.50	.007
Using debt gives investors a better impression of our firm's prospects than issuing shares.	No Yes	0.89 0.11	0.50	.000

With regard to the secondary hypotheses H6.2, H6.3 and H6.4, the proportions of the respondents who believe that the debt policy can be used to send signals to employees, competitors and investors are 0.17, 0.33 and 0.11 respectively. These proportions are significantly lower than the test proportion; therefore, hypotheses H6.2, H6.3 and H6.4 also cannot be rejected. Due to the acceptance of the secondary hypotheses H6.1, H6.2, H6.3 and H6.4, the primary hypothesis H6 is accepted. It can be argued that the responding companies do not announce their debt policy in order to send signals to their employees, costumers, suppliers, competitors and investors about their companies' stability and prospects.

Hypothesis 6: Accepted

Libyan companies do not announce their debt policy to send signals to their employees, costumers, suppliers, competitors and investors about companies' stability and prospects

7.3 Manager's preferences, perceptions and beliefs towards using debt

Michaelas (1998) argues that capital structure decisions will be governed by manager's preferences, perceptions and beliefs towards external finance as businesses develop and more funds are needed. Some qualitative factors are involved in the capital structure choice, such as managers' risk taking propensity and business and personal goals. These factors have been investigated in the following two sections.

7.3.1 Manager's Risk Taking Propensity

Weston and Brigham (1979) argue that firm's capital structure represents the financial risk that firm could face. In other words, as stated by Barton and Gordon (1987), the amount of funds that could be borrowed by the companies depends, to some extent, on the amount of risk these companies can bear, and, therefore, the top management's risk taking propensity will affect the firm's capital structure. Subsequently, as pointed out by Michaelas (1998), companies that are run by more risk-taking managers might have more debt than companies that are run by risk averse managers. Palmer (1971, p 32) defines risk-taking as "*the willingness to commit to a course of action which may result in rewards or penalties associated with success or failure*".

The Jackson Personality Inventory (JPI) has been used to measure risk-taking propensity. Jackson (1976) used the JPI in order to measure sixteen variables of personality such as, complexity, cooperativeness, sociability, social confidence, responsibility, and risk taking propensity. Due to the nature of the Libyan environment, four out of the eight items that were used by Michaelas (1998) were selected to measure the risk-taking propensity of Libyan managers. Items relating to

investing in the capital market were excluded due to the absence of a secondary capital market in Libya. The JPI items used in this study are presented in Table (7-5).

Table (7-5): Jackson Personality Inventory Items used to measure risk-taking propensity

Question: To what extent do you agree or disagree with the following statements? Please rate on a scale from 1 to 4, where 1= Strongly Disagree & 4= Strongly Agree
1 Does your company encourage you to take business risks when there is another option?
2 Does your company encourage you to take risks so long as the potential gains are high?
3 Does your company usually hesitate in putting itself in uncertain situations even if the expected returns are high?
4 Does your company encourage you to borrowing money for a business deal so long as it should be profitable?

The respondents were asked to specify their agreement/disagreement on four items related to risk-taking propensity on a four-point Likert scale. Risk-taking propensity was measured by adding the total score from the four items for each respondent. Each respondent can score a maximum of 16 (4 x 4) and a minimum of 4 (4 x 1). Items 1, 2 and 4 in Table (7-5) are positive statements (the higher the score the higher the risk taking), while item 3 is negative statement (the higher the score the lower the risk taking). Therefore, the responses to item 3 are reversed in order to make all the responses positive. So a response of 1 is treated as 4, a response of 2 is treated as 3, response of 3 is treated as 2 and a response of 4 is treated as 1.

Jackson (1976) argues that lower JPI scorers are unlikely to bet, even in less uncertain situations whereas, higher JPI scorers take economic chances and enjoy adventures that have an element of risk .The respondents were classified into three risk classes. Risk class 1, is the lowest scorers (score of 4-8), Risk class 2 those scoring 9-12, and Risk class 3 is the highest scorers (score of 13-16) in accordance with the suggestions of Michaelas (1998).

Table (7-6) shows that 34.7% of the respondents fall within Risk class 1, while 31.9% in Risk class 2, and the remaining 33.3% in Risk class 3. The respondents in the

private companies seem to be more risk taking than the respondents in the public companies as 42.4% of the respondents in the private companies fall within Risk class 3 against 25.6% of the respondents in the public companies. Compared to manufacturing companies, the respondents in non-manufacturing companies indicated that they tend to take more risk than the respondents of manufacturing companies as 38.8% of the respondents in non-manufacturing companies fall within Risk class 3 while 21.7% of the respondents in the manufacturing companies fall within Risk class 3. The respondents in smaller companies have the biggest risk-taking propensity among the other types of companies as 50% of the respondents in the smaller companies fall within the Risk class 3. However, the results of Chi-Square tests indicate that these differences are not statistically significant as the Chi-Square values, shown in Table (7-6), are larger than the alpha value of 0.05.

Table (7-6): Risk class based on JPI score

Risk class	All %	Sector		Industry		Size	
		%Public	%Private	%Manu	%Others	%Small	%Large
Risk class 1	34.7	38.5	30.3	30.4	36.7	27.8	37
Risk class 2	31.9	35.9	27.3	47.8	24.5	22.2	35.2
Risk class 3	33.3	25.6	42.4	21.7	38.8	50	27.8

Manu denotes to manufacturing companies, and others denotes to non-manufacturing companies. Small companies are defined as those companies, which have less than one million Libyan Dinners of assets. The Chi-Square values are 0.323, 0.122 and 0.218 for the difference between risk classes and company' ownership, risk classes and industries and risk classes and company size respectively.

It is apparent from Figure (7-1) below that there is a positive relationship between debt ratios and risk taking propensity. Risk class 1, which is described as low risk takers, has also lower average debt ratio (0.4), and Risk class 2 has bigger average debt ratio than Risk class 1, while Risk class 3, the high risk takers, has the highest average debt ratio among other Risk classes (0.7).

Figure (7-1): Debt Ratios in Different Risk Taking Groups

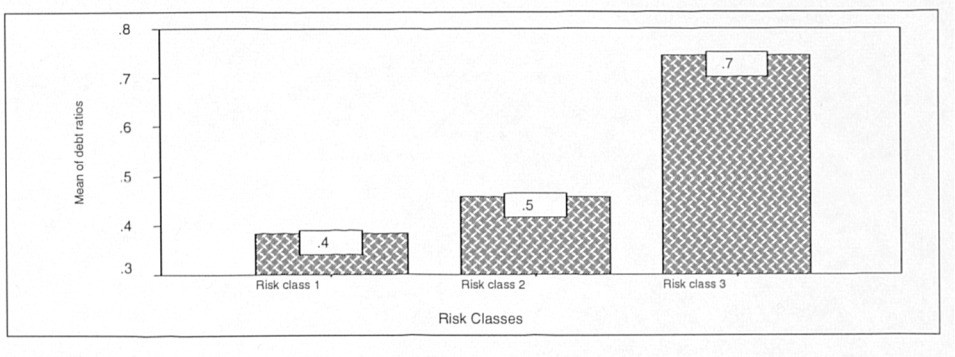


Table (7-7) investigates the significance of the relationship between average debt ratios and the JPI score. The dependent variable (total debt to total assets ratio) is regressed against the JPI scores as a proxy for risk taking propensity. As can be seen from Table (7-7) that there is a positive significant relationship between JPI scores and debt ratios at a 1% level of significance.

Table (7-7): OLS Regression of Debt ratios against Risk Taking Propensity

	Dependent Variables= Total Debt to Total Assets			
Independent Variables	Regression Coefficient	Standard Error	t-statistics	Significance
Constant	0.156	0.141	1.100	0.276
JPI Score	3.502	0.012	2.849	0.006
R^2	0.133			
Adjusted R^2	0.116			
F-Statistic	8.117			0.006

Number of observations=55

According to the responses analysed, the companies that are run by more risk-taking managers are more likely to have more debt than those companies that are run by less risk-taking managers. These results are consistent with the findings of Michaelas (1998). Subsequently, null hypothesis (H7) is rejected due to the existence of a positive relationship between manager' risk-taking propensity and leverage in the responding companies.

Hypothesis 7: Rejected

There is evidence to suggest that there is a significant relationship between leverage ratios and manager's risk taking propensity.

7.3.2 Business and Personal Goals

Barton and Gordon (1987) argue that most textbooks presume that the goal of shareholders wealth maximization is the only goal for top management, but studies of Grabowski and Mueller (1972) and Pfeffer and Salancik (1978) stated that managers might have other goals than profitability such as, growth and maintaining control.

If growth is the main goal of a company, a company might borrow more debt in order to finance its new projects or, due to the agency problem, this company might reduce the debt finance. On the other hand, if the company was more concerned with increasing profitability, it might use less debt to avoid interest payments or use more debt to take any advantages of tax deductibility.

The next hypothesis examines the impact of business and personal goals on capital structure decisions. Respondents were asked to specify their business and personal goals concerning the future of their companies.

As can be seen in Table (7-8) the most important goal is to repay borrowing as 64% of the participants considered this goal as important or very important. The second most important goal is profitability followed by providing the domestic markets with goods and services. Expanding the firm, maintaining control and providing job opportunities are ranked as the least important goals.

There are some differences based on sector, industry and size. For example, compared to the private companies, public companies are most concerned about providing domestic markets with goods and services than private ones. The goals of maintaining control are more concerned with private and smaller companies than

public and larger companies, which may reflect the ownership structure of private and smaller companies, as most of these companies are family- business.

Table (7-8): Business and Personal Goals

Rank	% Important or very important	Mean score	Sector		Industry		Size	
			Public	Private	Manu	Others	Small	Large
c) Repay borrowing	64	3.63	3.51	3.78	3.56	3.67	3.66	3.62
a) Increase profitability	59	3.48	3.43	3.54	3.39	3.53	3.05	3.62
e) Providing domestic market with goods and services	49	3.04	3.46	2.54	3.56	2.79	3.05	3.03
b) Expand the firm	43	2.75	2.58	2.93	2.69	2.77	2.66	2.77
f) Maintain control	33	2.36	2.54	3.12	2.13	2.46	3.11	2.11
d) Providing job opportunities	25	2.02	2.10	1.93	2.39	1.85	1.72	2.12

Respondents are asked to rate on a scale of 1 (not important) to 4 (very important). Manu denotes to manufacturing companies, and others denotes to non-manufacturing companies. Small companies are defined as those companies, which have less than one million Libyan Dinners of assets.

The previous tabulated results in Table (7-8) did not readily allow for statistic examination of hypothesis 8 (There is no significant relationship between the leverage ratios and business and personal goals). Therefore, principal components analysis (PCA) and cluster analysis are employed to reduce the number of business and personal goals in order to use them for examining the impact of business and personal goals on capital structure decisions.

PCA in this context takes a large number of responses and reduces them into a small number of business types, based on business and personal goals. Westhead (1990) and Birley and Westhead (1990) state that PCA analysis is useful in terms of reducing the number of variables under investigation thus providing a new set of data. In this regard, Michaelas (1998, p 262) states that PCA aims to achieve the following objectives:

> *" to produce new combinations of the original data..., which may then be used as a new independent and orthogonal reference axis (or variables) in a typology of owner /director goals using cluster analysis;*
> *to reduce the number of variables under investigation;*
> *for the explanatory purpose of detecting and identifying groups of interrelated variables".*

The six items of the business and personal goals were subjected to principal components analysis (PCA). The PCA assumptions for the suitability of data for factor analysis are: (1) the Bartlett's test should be significant ($p < 0.05$), (2) the Kaiser-Meyer-Olkin (KMO) value is at least 0.60 and (3) in the correlation matrix should be some coefficients of 0.3 and above. According to the results, the PCA assumptions are not violated as the correlation matrix shows that three coefficients have 0.3 or above (see appendix (7-2)), the KMO measure of Sampling Adequacy is 0.601, and the Barlett's test of Sphericity is statistically significant, which supports the factorability of the correlation matrix.

Table (7-9): Factor Analysis of Business and Personal Goals

Business and Personal Goals	Varimax Rotated Components Loading		
	Factor 1 'Control Oriented'	Factor 2 'Social Oriented'	Factor 3 'Life-Style Ventures'
Maintain control	0.846		
Expand the firm	0.607	0.473	
Increase profitability	0.308	0.706	
Providing domestic market with goods and services		0.732	
Repay borrowing			0.849
Providing job opportunities		0.491	0.645
Eigenvalues	1.749	1.206	1.107
% of variance	26	21.1	20.5
Cumulative % variance	26	47.1	67.6

Extraction method: Principal Components Analysis
Number of observations= 72

The Principal components analysis identified three components with eigenvalues exceeding 1, explaining 67.6% of the total variance. The first components accounting

for 26%, the second, 21.1% and the third, 20.5% of the variance in the rotated solution by using Varimax method as shown in Table (7-9).

The first component, which accounted for 26% of the total variance, is dominated by the goal of maintaining control. The goals of expanding the firm and increasing profitability also are loaded most heavily on this component, but not as strongly as the first one. Thus, I have named this component "Control Oriented". Component 2 is termed as "Social Oriented", with high positive loadings on the goal of providing domestic markets with goods and services. Other goals, such as, increasing profitability, providing job opportunities and expanding the firm were also loaded most heavily on this component, though not as strongly as the first one. The last component is dominated by the repay-borrowing goal, as it is loaded most heavily on this component. This component, therefore, is termed as "Life-Style Venture".

Michaelas (1998) argues that principal components analysis is useful in that it describes the pattern of each single basic factor, but PCA cannot classify the respondents into groups based on their goals. In order to identify relatively homogeneous groups of companies based on managers' goals, cluster analysis was performed. Clusters memberships were identified based on three components of respondents' goals that have similar goals.

The clusters were labelled by comparing the cluster mean for each business and personal goal with the global mean of that goal. In doing so, cases where the cluster means for a variable (goal) differ by more than half of a standard deviation from the respective global mean are highlighted as suggested by Openshaw (1983), Westhead (1990), Birley and Westhead (1990), and Michaelas (1998). These processes are

important in the task of naming the clusters. The results are summarised in Table (7-10).

Table (7-10): Cluster Analysis of Managers Goals

Business/Personal Goals	Cluster			Global Mean	Standard Deviation
	1	2	3		
Increase profitability	4.00	3.86	2.67	3.48	1.11
Expand the firm	↓ **1.58**	↑ **3.56**	2.13	2.75	1.42
Repay borrowing	↓ **2.42**	3.89	3.88	3.63	0.86
Providing job opportunities	↓ **1.00**	↑ **2.81**	1.38	2.02	1.36
Providing goods and services	↑ **3.75**	↑ **3.54**	↓ **1.58**	3.04	1.01
Maintaining control	1.83	2.36	↑ **2.81**	2.36	0.85
Number of cases	**12**	**36**	**24**	**72**	

Note: Cluster means that deviate by more than one half standard deviation from respective global mean is highlighted. Where: ↑ to the left of each cluster mean indicates that the respective mean is above the global mean, and ↓ indicates that the respective mean is below the global mean.

Cluster 1: Providing domestic markets with goods and services dominated the first cluster and comprises 12 managers. This cluster describes respondents who are more interested in providing domestic markets with goods and services, but are less interested in repaying borrowing, expanding the firm and providing job opportunities. Therefore, I named this cluster Social Oriented Managers.

Cluster 2: Expanding the firm, providing domestic markets with goods and services and providing job opportunities dominated the second cluster, which comprises 36 managers. The managers in this cluster are more interested in expanding their firms. Providing goods and services to the domestic markets and providing job opportunities may positively affect the achievement of the goal of expanding companies as managers in this cluster are more interested in those goals as well. Therefore, this cluster is termed as Growth Oriented Managers.

Cluster 3: Control Oriented Managers, describes those managers whose prime business goals are to maintain control and those managers who are less interested in providing goods and services to domestic markets.

Table (7-11) shows that half of the responding companies are 'Growth oriented', while only 16.7% of those companies are more concerned with social objectives. The other one third of those companies is more concerned with maintaining control.

There are some differences based on sector, industry and size. For example, compared to managers of private companies, managers of public companies are more concerned about social goals while managers of private companies are more concerned about maintaining control than managers of the public companies.

Table (7-11): The Three Types of Managers

	All %	Sector		Industry		Size	
		%Public	%Private	%Manu	%Others	%Small	%Large
Social Oriented	16.7	25.6	6.1	21.7	14.3	11.1	18.5
Growth Oriented	50	51.3	48.5	47.8	51	55.6	48.2
Control Oriented	33.3	23.1	45.5	30.4	34.7	33.3	33.3

Manu denotes manufacturing companies, and others denote non-manufacturing companies. Small companies are defined as those companies, which have less than one million Libyan Dinners of assets. The Chi-Square values are 0.033, 0.727 and 0.744 for the difference between managers' types and company' ownership, managers' types and industries and managers' types and company size respectively.

The possible explanation is that although most Libyan public companies have changed from the form of not-for- profit companies to profit-maximising companies, the social objectives, such as, providing goods and services to the domestic markets, are still among the most important goals of these companies. The Chi-Square value, for the relationship between managers' types and companies' ownership (0.033), is smaller than the alpha value of 0.05 as shown in Table (7-11). This means that the

proportions of social oriented managers, growth oriented managers and control oriented managers in the public companies are significantly different to that of the private companies.

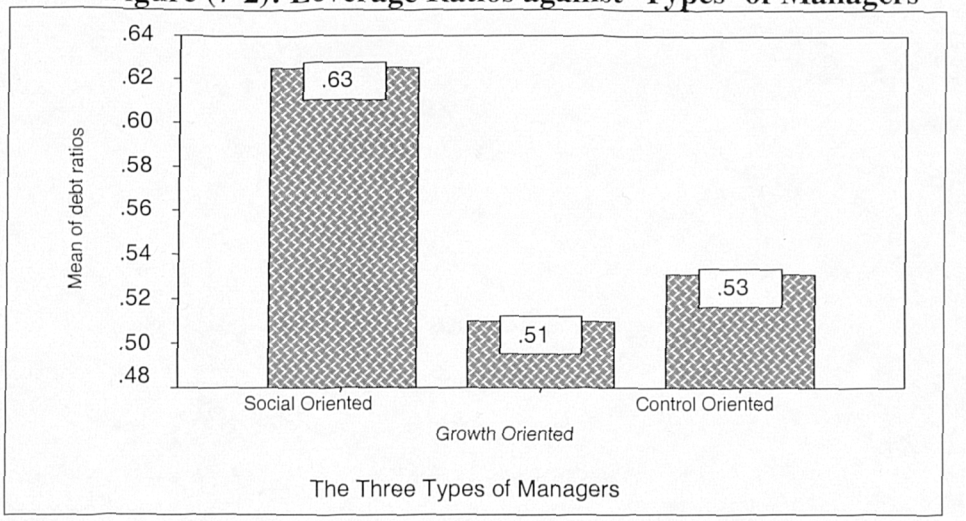
According to the responses analysed, the managers of manufacturing companies are more concerned about social goals than the managers of non-manufacturing companies while the managers of manufacturing and non-manufacturing companies appear to have similar concerns about growth and maintaining control goals. On the other hand, the managers of larger companies are more interested in social goals but less concerned about growth goals than the managers of smaller companies.

The Chi-Square values that are shown in Table (7-11), however, indicated that there are no significant differences between managers' types in manufacturing and non-manufacturing sector and between managers' types in smaller and larger companies as the Chi-Square values are larger than the alpha value of 0.05.

In order to investigate whether different managers' types establish significantly different financing strategies, average leverage ratios between businesses, which are run by the above three groups of managers, are compared.

Figure (7-2) shows that businesses that are run by 'Social Oriented Managers' reveal higher leverage ratios (63%) than the other groups. 'Control Oriented Managers' businesses rank second with an average leverage ratio of 53%. Businesses are run by 'Growth Oriented' Managers' reveal lower leverage ratios (51%) than the other groups.

Figure (7-2): Leverage Ratios against 'Types' of Managers



In an attempt to examine whether these differences are statistically significant, Kruskal-Wallis (KW) was used. KW test allows for the comparison of scores of more than two groups of variables. Scores are converted to ranks and then the mean rank for each group is compared.

Table (7-12): Kruskal Wallis Test of Debt Ratios and Business Categories

	The Three Types of Managers	N	Mean Rank
Debt ratios	Social Oriented	11	31.32
	Growth Oriented	25	26.04
	Control Oriented	19	28.66
Chi-Square		0.879	
df		2	
Significant		0.644	

Number of observations=55

As can be seen in Table (7-12), there is no a statistically significant difference for the use of debt across the three groups of companies. These results are inconsistent with the findings of Michaelas (1998).

It can be argued that business and personal goals do not influence the capital structure decisions, and, therefore, the hypothesis (H.8) cannot be rejected.

Hypothesis 8: Accepted
There is no significant relationship between the leverage ratios and business and personal goals.

7.4 Manager's demographic characteristics

Managers' demographic characteristics, such as, age, level of experience and level of education might provide additional predictive power in explaining the financing behaviour. Cassar (2004) argues that experience and education level obtained may provide signals of better human capital and, therefore, might lead to easier access to debt markets. In addition, Michaelas (1998) argues that the more informed manager might use more debt than less informed ones. Therefore, debt ratios should be positively related to manager's level of education and manager's level of experience. Level of education was used as a proxy of manager's knowledge and the number of years that manager has spent in current company or similar posts is used as proxy for level of experience. Michaelas (1998) reports that the debt ratio is negatively related to the manager's age, because younger managers would be more energetic and more willing to use debt than older managers.

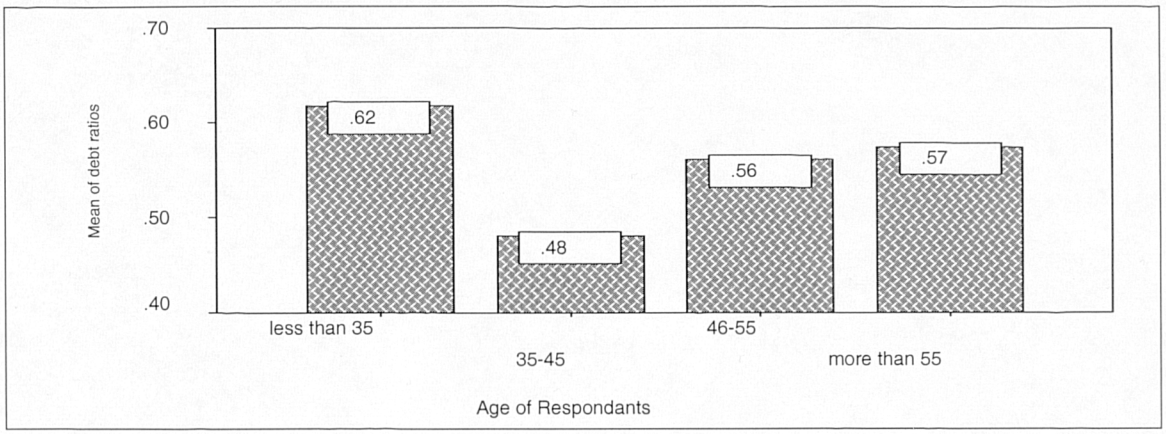
Three secondary hypotheses were formulated and examined in order to investigate whether there are significant relationships between debt ratios and managers' demographic characteristics (age, level of education, and level of experience). The Kruskal-Wallis (KW) test was used in order to compare debt ratios with managers' demographic characteristics.

7.4.1 Manager's Age

In an attempt to examine the relationship between debt ratios and managers' age, respondents were asked to specify in which age group they belonged, and their age groups were compared to their debt ratios. Figure (7-3) plots average debt ratio of 55 companies, which their financial statements data were utilised in chapter five, against the age groups of the respondents of the same companies.

As illustrated in Figure (7-3), the use of debt is high when managers are less than 35 years old, then debt ratios decrease sharply when managers' age are between of 35 and 45, the debt ratios increase gradually as managers become older that 46 years.

Figure (7-3): Debt Ratios in Age Groups



As can be seen in Table (7-13), although the mean rank for the four groups of age suggest that the older group (+55) has the highest debt ratios, there is no statistically significant difference for the use of debt across the groups.

Table (7-13): Kruskal Wallis Test of Debt Ratios and Managers' Age

	Age of respondents	N	Mean Rank
Debt ratios	Less than 35	7	29.43
	35-45	20	25.50
	46-55	21	28.90
	More than 55	7	31.00
Chi-Square		.856	
df		3	
Significant		.836	

Number of observations=55

This result is inconsistent with Michaelas' (1998) results, where he found that leverage ratios are negatively related to the manager's age in the UK privately held companies. Therefore, the first secondary hypothesis (H9.1) cannot be rejected; there is no significant relationship between the leverage ratios and manager's age

7.4.2 Manager's Knowledge

The next hypothesis deals with the effect of manager's level of education on the leverage ratio. In order to investigate the relationship between debt ratios and managers' level of education, respondents were asked to specify their level of education and, then, the level of education are related to their debt ratios.

As can be seen in Figure (7-4), companies that are run by a manager with a university degree or higher qualifications (undergraduate, master and PhD) show evidence of lower leverage ratios than companies which are run by less formally educated managers (school level).

Figure (7-4): Average Debt Ratios and Managers' Level of Education

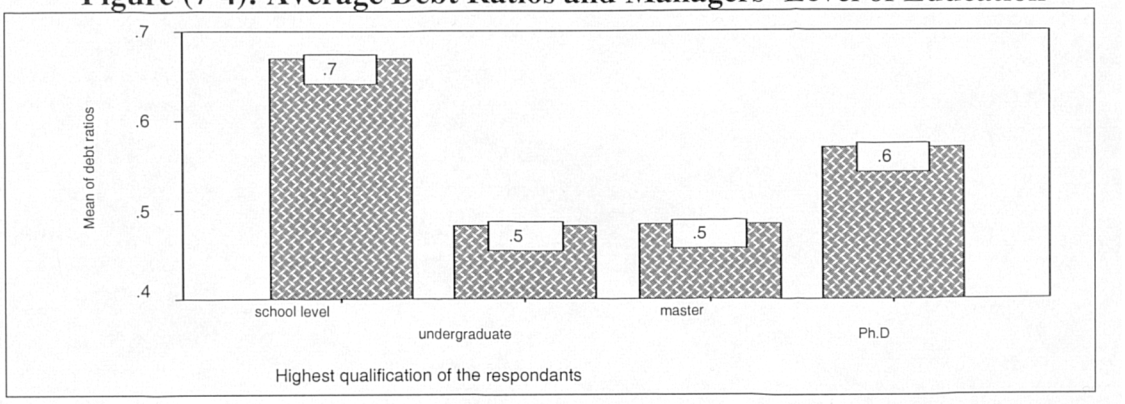


Table (7-14) investigates the significance of the relationship between average debt ratios and managers' qualifications. As can be seen in Table (7-14), the companies that are run by low formally educated managers (school level) use more debt than companies that are run by high formally educated managers (undergraduate, master and PhD) as shown by mean rank for the levels of education, but this relationship is not significant. Therefore, managers' levels of education do not significantly influence the level of debt in the responding companies.

Table (7-14): Kruskal Wallis Test of Debt Ratios and Managers' level of Education

	Education Qualification of managers	N	Mean Rank
Debt ratios	School level	16	32.28
	Undergraduate	29	26.28
	Master		24.75
	PhD		31.75
Chi-Square		1.918	
df		3	
Significant		0.590	

Number of observations=55

These results, however, contradict the results of Michaelas (1998) when he found the manager's level of education is positively related to leverage in the UK privately held companies.

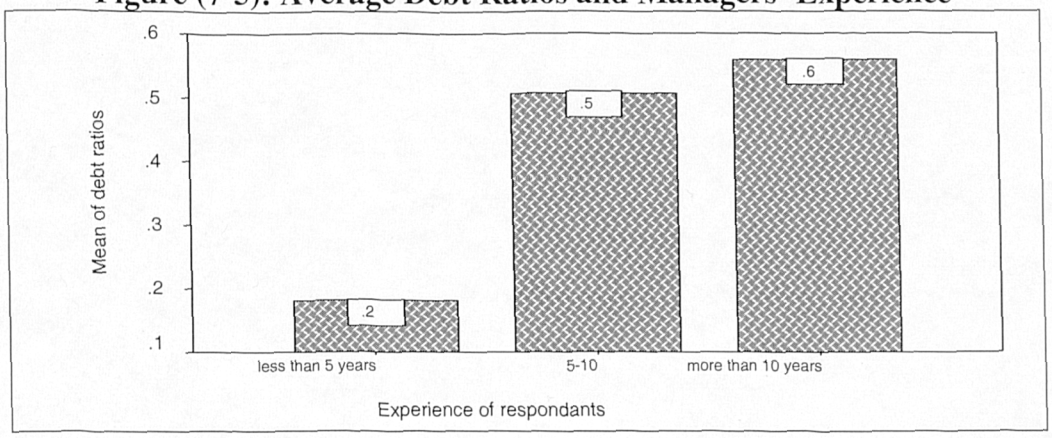
Subsequently, the secondary hypothesis (H9.2) cannot be rejected due to the lack of a significant relationship between managers' level of education and leverage of the responding companies.

7.4.3 Manager's Experience

The last secondary hypothesis (H 9.3) deals with the effect of managers' experience on the leverage ratios. Michaelas (1998) argues that negative experience with the use of debt will create negative attitudes towards the use of debt, and the positive experience with the use of debt will create positive attitudes towards the use of debt and increase the likelihood of debt financing. In an attempt to examine the relationship between debt ratios and managers' experience, respondents were asked to specify in which experience group they belonged, and their experience were compared to their debt ratios.

As shown in Figure (7-5), the use of debt is low when managers have experience less than 5 years, then debt ratios increase gradually as managers' experience increase. It can be argued that the managers who do not change careers frequently are more likely to use more debt.

Figure (7-5): Average Debt Ratios and Managers' Experience



A Kruskal Wallis test was performed in order to examine the significance of this relationship. As can be seen in Table (7-15), there is no significant relationship between average debt ratios and managers' experience, although the mean rank for the three groups of experience suggest that the companies that are run by more experienced managers have the highest debt ratios.

Table (7-15): Kruskal Wallis Test of Debt Ratios Managers' Experience

	Experience of respondents	N	Mean Rank
Debt ratios	Less than 5 years	1	9.00
	Between 5-10 years	12	27.54
	More than 10 years	42	28.58
Chi-Square		1.473	
df		2	
Significant		0.479	

Number of observations=55

It could be concluded that managers' experiences have no effect on the use of debt in the responding companies, and, therefore, the secondary hypothesis (H9.3) cannot be rejected.

Due to the acceptance of the three secondary hypotheses H9.1, H9.2 and H9.3, the primary hypothesis H9 cannot be rejected.

Hypothesis 9: Accepted
There is no significant relationship between the leverage ratios and manager's demographic characteristics.

7.5 The Impact of Company Characteristics on Capital Structure

As explained in chapter five, some proxy variables reflecting profitability, growth, tangibility and size were used to determine whether a relationship exists between those variables and leverage ratios by conducting regression analysis. It was shown in the analysis on the basis of private and public companies that profitability and firm size are positively related to leverage ratios while growth is negatively related to leverage ratios. Tangibility appears to be positively related to leverage ratios in public companies and negatively related to leverage ratios in private companies, but these two relationships are not statistically significant.

In an attempt to re-examine the relationship between the above-mentioned determinants of capital structure and leverage ratios, respondents were asked to specify whether they agree or disagree with some statements about those company characteristics. The purpose was to compare the regression analysis results (as shown in chapter five) with the beliefs of business managers.

Table (7-16): Relationship between Company Characteristics and Leverage

Rank	% Increase or strongly increase	Mean score	Sector		Industry		Size	
			Public	Private	Manu	Others	Small	Large
d) Increase in the value of fixed assets	80.6	3.31	3.33	3.30	3.13	3.40	3.11	3.38
c) Increase in the Size of firm	73.6	3.19	3.30	3.06	3.34	3.12	2.88	3.29
b) Increase in Growth rate	68.1	3.00	2.97	3.03	3.17	2.91	2.88	3.03
a) Increase in Profitability	66.7	2.94	2.92	2.96	2.91	2.95	2.94	2.94

Respondents are asked to rate on a scale of 1 (Strongly decrease) to 4 (Strongly increase). Manu denotes to manufacturing companies, and others denotes to non-manufacturing companies. Small companies are defined as those companies, which have less than one million Libyan Dinners of assets.

Table (7-16) shows the survey response to the question: to what extent do you think each of the following increase /decrease your leverage ratio? (Increase in the value of fixed assets, increases in the size of firm, increases in growth rate and increase in profitability). In other words, Table (7-16) shows the respondents' agreement/disagreement to the effect of increasing these variables (profitability, growth, tangibility and size) on leverage ratios. Fixed assets is ranked as the most important determinant of using debt as nearly 80% of the responding companies indicated that an increase in fixed assets will increase the debt ratios. Company size, growth rate and profitability are also considered as important determinants of increasing debt. It can be argued that the higher the fixed assets, size, growth rate and profitability, the higher leverage ratios. Therefore, there are positive relationships between firm characteristics (profitability, growth, tangibility and size) and leverage ratios of the responding companies.

In order to support the previous tabulated results, A Binomial test was performed for each hypothesis (H1, H2, H3 and H4). The four point Likert scale were recoded in two scales, 1= decrease and 2= increase in order to perform the Binomial test. The results of the Binomial test indicated that the higher fixed assets, size, growth rate, and profitability the higher debt ratio at a significant level of 1%.

Table (7-17) shows that the asymptotic significance for each statement is below the conventional cut-off for statistical significance (0.05). It means that the proportion of the respondents, who believe that the high fixed assets, size, growth rate, and profitability will lead to the higher debt ratio significantly differ from the hypothesised value of 50%. By that standard, hypotheses H1, H2, H3 and H4 are rejected.

Table (7-17): Binomial Test for financial determinants of debt ratios

		Category	Observed Proportion.	Test Proportion.	Sig
Increase in Profitability	Group 1	Decrease	0.33	0.50	.007
	Group 2	Increase	0.67		
Increase in Growth rate	Group 1	Decrease	0.32	0.50	.003
	Group 2	Increase	0.68		
Increase in the Size of firm	Group 1	Increase	0.74	0.50	.000
	Group 2	Decrease	0.26		
Increase in the value of fixed assets	Group 1	Decrease	0.19	0.50	.000
	Group 2	Increase	0.81		

It is apparent from Table (7-17) that profitability, growth, size and tangibility, according to the responses analysed, are positively related to debt ratios. It can be concluded that the primary hypotheses H1, H2, H3 and H4 are rejected due to the existence of positive relationships between profitability, growth, tangibility and company size and leverage.

Hypotheses H1, H2, H3 and H4: Rejected

H1: There is no significant relationship between the leverage ratios and profitability.

H2: There is no significant relationship between the leverage ratios and growth opportunities.

H3: There is no significant relationship between the leverage ratios and tangibility.

H4: There is no significant relationship between the leverage ratios and company size.

Table (7-18) compares the relationship between different companies' characteristics as described by the respondents with the relationships predicted by the regression analysis. In agreement with the regression analysis results, the results of the Binomial tests indicated that profitability; tangibility and company size are positively related to leverage ratios. On the other hand, the regression analysis results indicated that there is a negative relationship between growth rate and leverage ratios, while the Binomial test reveals a positive relationship between growth opportunities and leverage ratios.

Table (7-18): Comparison of Results of Regression Analysis and Questionnaires

Company Characteristics	Public Companies		Private Companies	
	Relationship with leverage ratio predicted by regression analysis	Relationship with leverage ratio according to respondents	Relationship with leverage ratio predicted by regression analysis	Relationship with leverage ratio according to respondents
Profitability	Positive	Positive	Positive	Positive
Growth rate	**Negative**	Positive	**Negative**	Positive
Tangibility	Positive	Positive	Positive	Positive
Size of firm	Positive	Positive	Positive	Positive

As can be seen in Table (7-18), the relationships predicted by the regression analysis are in agreement with the beliefs of respondents for 3 out of the 4 variables examined in the table. This may provide some support for the regression analysis results presented in chapter five.

7.6 Conclusion

This chapter examined the hypotheses using evidence provided by the questionnaires, but in order to test some hypotheses, debt ratios from companies' financial statements were also utilised.

The investigation shows that although there are significant information asymmetry problems between the responding companies and their banks, the usual interpretation of the pecking order hypothesis is not supported. On the other hand, the responding companies do not use their debt policy for sending signals to the market about company' prospects and stability.

The investigation also illustrates that capital structure decisions appear to be affected by manager's risk-taking propensity, as the average debt ratios are significantly related to managers' risk taking propensity. The responding companies that are run

by high-risk takers are more likely to have more debt than those companies that are run by low-risk takers. On the other hand, business and personal goals, and managers' demographic characteristics do not appear to have a significant impact on the capital structure decisions of the responding companies.

With the exception of growth, the relationships predicted in the regression analysis are very similar to the relationships suggested by the respondents. In agreement with the regression results, the respondents indicated that profitability, tangibility, and company size are positively related to leverage ratios.

The next chapter presents the results from the regression analysis models developed to empirically examine the first four hypotheses about the determinants of capital structure and the results from the analysis of the data collected by the questionnaires in the Libyan context. In other words, the aim of the next chapter is to present the most important findings in an attempt to present the results grouped by theoretical assumptions and concepts such as the trade-off theory, the agency cost theory and the asymmetric information theory of capital structure.

Chapter Eight: A Comparison of the Quantitative and Qualitative Results

8.0 Introduction

This chapter provides further evidence of the capital structure theories pertaining to the Libyan environment by bringing together the results of the regression analyses and the results of the questionnaires.

In the previous three chapters, the results of the regression analysis technique and the results of the questionnaire survey were discussed in more detail, but in this chapter the most important findings will be discussed in an attempt to present the results grouped by the theoretical assumptions and concepts of the trade-off theory, the agency cost theory and the asymmetric information theory of capital structure.

This chapter is divided into four sections. The first section deals with the static trade-off theory. Section two illustrates the results relating to the agency cost theory while the third section explains the results that are related to the asymmetric information theory. The last section concludes the chapter.

To identify which of the capital structure theories is relevant in the Libyan context, the significance and the direction of the coefficients of four variables (tangibility, size, profitability, and the level of growth opportunities) identified in chapter five are discussed. Furthermore, the results of the questionnaires in chapter six and chapter seven are also used to support the regression analyses results.

To aid identification of the pertaining capital structure theories Table (8-1) sets out the expected signs of the coefficients for the four explanatory variables identified as potential determinants of capital structure of Libyan companies.

Table (8-1): The Expected Signs of the Coefficients for the Three Capital Structure Theories

Proxy	Static trade-off Theory	Asymmetric information Theory	Agency cost Theory
Profitability	+	-	?
Tangibility	+	+	+/-
Growth	?	+	-
Size	+	?	+

A positive sign "+" indicates that the theory suggests a positive relationship between the variable and the measure of leverage, whereas a negative sign "-"indicates that the theory suggests a negative relationship between the variable and the measure of leverage. "?" means that there is no clear prediction.

8.1 Static Trade-Off Assumptions

The intuition for a positive relationship between profitability and debt is that as high profits increase the debt capacity of a company, companies will choose to increase their debt to take advantages of tax deductibility. On the other hand, high profit levels also lower the probability of bankruptcy giving rise to higher incentives to use tax shields, thus leading to a higher level of debt. The static trade off theory, thus, states that there is a positive relationship between profitability and leverage.

It is believed that larger firms have a lower probability of bankruptcy than smaller firms and the larger firms may have easier access to capital markets than smaller firms. Furthermore, larger firms have higher debt capacity than smaller companies; therefore, a positive relationship between company size and leverage can be interpreted as being consistent with the static trade-off theory.

Firms with high levels of tangible assets will be in a position to provide collateral for debts. If the company then defaults on the debt the assets will be seized but the company may be in a position to avoid bankruptcy. It is expected, therefore, that

companies with high levels of tangible assets are less likely to default and will take on relatively more debt resulting in a positive relationship between tangibility and financial leverage.

In the main, if the static trade-off theory holds, significant positive slope coefficients are expected for the profitability, tangibility and size explanatory variables. The results of the regression analysis when dummies were used to identify private and public companies indicate that there is strong evidence for the static trade-off theory for total and short-term debt as evidenced by the coefficients for profitability and size coefficients. The conflicting results to the static trade-off theory are that although the slopes for the tangibility variable are positive they are not significantly different from zero.

The analysis where dummies were used to identify manufacturing and non-manufacturing companies indicate that there is no support for the static trade-off theory for total and short-term debt as evidenced by the coefficients for profitability, tangibility and size coefficients while there is a little support for the static trade-off theory for long-term debt as evidenced by the coefficient for tangibility in manufacturing companies.

For non-manufacturing companies there is some evidence for the static trade-off theory for short-term debt as evidenced by the coefficients for profitability, tangibility and size coefficients. The conflicting results to the static trade-off theory are that negative slopes for long-term debt as evidenced by the coefficients for profitability, tangibility and size. The positive relationship between short-term debt ratios and profitability, tangibility and size may provide support for the static trade-

off theory of capital structure in non-manufacturing companies as the vast majority of debt in Libyan companies is from short-term resources.

On the other hand, the static trade-off theory of capital structure states that the optimal debt-equity ratio is determined by balancing off the benefit of debt with the costs. Furthermore, tax and bankruptcy issues are considered as the most important factors that affect capital structure decisions. In this regard, Graham and Harvey (2001) state that the tax savings of interest deductibility and the risk of potential bankruptcy are the benefit and cost of debt financing.

With respect to bankruptcy costs, the respondents were asked to specify whether bankruptcy costs affect the amount of debt in their companies as shown in Row a of Table (6-10) in chapter six. Of the responding companies, 66.7% indicated that the potential costs of bankruptcy have an impact on the amount of debt for the company.

Due the fact that adding debt to a company capital structure decreases its tax liability and increases the after tax profits, the responding companies were asked to specify whether they consider the tax advantage of interest deductibility when raising debt. Libyan companies appear to place a reasonable value on the tax advantage of interest deductibility as 45.8% of responding companies indicated that they do consider the tax advantage of interest deductibility in debt financing.

There are some differences in the responses based on sector, industry, and size. For example, compared to the private companies, the public companies are more concerned about potential bankruptcy costs and the tax advantage of interest deductibility. Non-manufacturing companies also place a higher value on the potential costs of bankruptcy and the tax advantage of interest deductibility than the manufacturing companies. Larger companies are more concerned about the potential

costs of bankruptcy and the tax advantage of interest deductibility than smaller companies.

This may imply that the responding public, non-manufacturing and larger companies are more concerned than their counterparts to the risk of bankruptcy and the tax advantage of interest deductibility when raising debt finance, which can be viewed as an indication for supporting the trade-off theory of capital structure.

The relationship between leverage ratios and a number of characteristics of companies reflecting profitability, tangibility, growth and size as described by the respondents indicated that profitability, tangibility and company size are positively related to leverage ratios (see Table (7-18)) which can be interpreted as being consistent with the trade-off theory of capital structure.

According to the trade-off theory, the company sets a target capital structure and gradually moving towards it in order to achieve a particular leverage ratio. In this regard, Drobetz and Fix (2003) state that the existence of target debt ratio can be interpreted as being consistent with the trade-off theory. Of the respondents approximately 60% have desired leverage ratios (see Figure (6-1E). This may provide additional support for the static trade-off theory of capital structure.

The static trade-off theory does not predict a relationship between growth and leverage whereas a negative coefficient is observed when dummies were used to identify private and public companies suggesting that the static trade-off theory is not the only relevant capital structure theory for Libyan companies.

8.2 Agency Cost Assumptions

Titman and Wessels (1988) argue that the cost associated with the agency relationship between shareholders and debtholders is likely to be higher for firms in growing industries. The growing companies tend to invest in risky projects and, therefore, lenders may require some limitations on lending to such companies. It is due to the fact that if the investment fails, the lenders are likely to bear the cost because of limited liability of shareholders. In other words, a negative relationship between debt and growth can be interpreted as an indication for the existence of agency problems.

Using secured debt can mitigate debt agency problems. The debt can be secured by collateral. Firms with satisfactory collateral can obtain more secured debt, as the lenders will feel safe by taking assets as collaterals. Um (2001), however, suggests that if a firm's level of tangible assets is low the management, for monitoring cost reasons, may choose a high level of debt to mitigate equity agency costs. Therefore, a negative relationship between debt and tangibility is consistent with an equity agency cost explanation (Um, 2001).

Um also argues that firm size may proxy for the debt agency costs (monitoring cost) arising from conflicts between managers and investors. Um (2001) emphasises that the monitoring cost is lower for the large firms than for small firms, therefore, larger firms will be induced to use more debt than small ones.

The agency cost theory predicts a positive significant and a negative significant slope for size and growth variables, respectively and either a significant positive or negative slope (depending on the nature of the agency cost) for the tangibility variable.

The results of regression analysis when dummies were used to identify private and public companies show a negative relationship is evident between financial leverage and growth for total and short-term debt. The positive relationship between profitability and leverage, which gives support for the static trade-off theory, also supports the agency cost theory. However, a significant relationship does not exist between tangibility and leverage for short-term or total debt. A significant negative relationship between long-term debt and tangibility is observed for private companies, which provides further support for the agency cost theory. Whilst there is little evidence of which theory drives companies to issue long-term debt for public companies, private companies, as discussed above, appear to be influenced by the agency cost theory.

The analysis when dummies were used to identify manufacturing and non-manufacturing companies shows that there is some support for the agency cost theory for long-term debt and total debt as evidenced by the coefficients for tangibility coefficients in manufacturing companies.

The results also show that there is strong support for both equity agency problems and debt agency problems in non-manufacturing companies as evidenced by the positive significant and a negative significant slope for short-term debt and long-term debt respectively for tangibility coefficients while growth coefficients are mainly insignificant. Furthermore, there is also an additional support for the existence of a debt agency problem as evidenced by the positive significant coefficient for short-term debt for size in non-manufacturing companies.

Myers (1977) argues that investment decisions can be affected by the use of long-term debt because the conflict between shareholders and debtholders might lead

managers to pass up profitable projects. This is because shareholders might perceive that the gains from new investment will be used to pay off existing debtholders rather than increase their own wealth. Myers argues that the conflict between shareholders and debtholders could be minimised by limiting total debt, or using short-term debt.

Respondents were asked to specify whether their choice between short term and long-term debt, and their total debt policy, is related to their desire to capture profits from new projects for shareholders, not debtholders. Table (6-4) in chapter six, showed that debt is used for strategic or tactical reasons as nearly half of the responding companies indicated that issuing short-term debt was in order to capture returns from new projects for shareholders. Furthermore, respondents again were asked to specify whether they limit their borrowing to allow profits from new projects to be captured more fully by shareholders and approximately 46% supported this argument. The results suggested that agency problems were an important factor in companies' capital structure choices, particularly for small firms.

The cluster analysis results indicate that companies that are run by growth oriented managers tend to have lower leverage ratios compared to other businesses that are run by social oriented managers and control oriented managers. Given that growth-oriented managers run 50% of the responding companies, there is fairly strong support for the existence of significant agency cost problems in Libyan companies (see Table (7-11) and Figure (7-2)), thus providing support for the agency cost theory of capital structure.

Although the respondents however indicated that an increase in the growth opportunities will increase the leverage ratios as shown in Table (7-18), which disagrees with the other results, it can be said that the results are mainly consistent

with the findings of regression analysis technique, when agency problems were found to be significant factors in capital structure choice for both private and public companies.

The high proportion of short term to long term debt used by Libyan companies also gives support for the agency cost theory as the conflict between shareholders and debtholders is less of a problem when short term debt is used. This, coupled with the regression results, suggests that agency costs may be a real problem for Libyan firms. The inability to offload shares in a secondary market may encourage shareholders to exert pressure on management to expropriate funds from debtholders to themselves.

8.3 Asymmetric Information Assumptions

Myers and Majluf (1984) and Myers (1984) state that the choice of a firm's capital structure is aimed to mitigate inefficiencies in the firm's investment decisions that are caused by information asymmetry. Myers (1984) argues that issuing debt secured by collateral reduces asymmetric information related costs in financing. This may imply that the firm's debt capacity should increase with the proportion of tangible assets. Therefore, a positive relationship between tangibility and debt can be interpreted as an indication for the existence of asymmetric information problems between managers and investors.

Um (2001) argues that growing companies funding pressure for investment opportunities is likely to exceed their retained earnings and, according to the pecking order, are likely to choose debt rather than equity. Therefore, a positive relationship between growth and debt can also be viewed as an indication for the existence of asymmetric information problems.

In the main, the asymmetric information theory predicts a positive significant slope for tangibility and growth variables and a negative significant slope for profitability variables. The results of regression analysis when dummies were used to identify private and public companies show that there is little support for the asymmetric information theory which predicts a positive significant slope for the growth and tangibility variables and a negative significant slope for the profitability variables. The results suggest that none of these relationships exist for either the public or the private companies, but when dummies were used to identify manufacturing and non-manufacturing companies, tangibility is positively related to long-term debt in manufacturing companies and positively related to short-term debt in non-manufacturing companies. This may imply that non-manufacturing companies are more influenced by asymmetric information problems than manufacturing companies due to the existence of significantly positive relationship between the tangibility and short-term debt giving that the vast majority of the debt is of a short-term nature.

One approach to the asymmetric information theory began with Myers and Majluf (1984) who state that if investors are less informed than managers about the value of the firm's assets, the market might under price the equity. This situation might lead managers to finance their new investment by using financing sources which are less susceptible to undervaluation (for example, retained earnings and debt). Therefore, a negative relationship between debt and profitability is expected.

The results of the regression analysis when dummies were used to identify private and public companies show that a negative relationship between the leverage and profitability is not detected. This can be viewed as being inconsistent with the pecking order approach of asymmetric information theory. On the other hand, when

dummies were used to identify manufacturing and non-manufacturing companies, there is a little evidence for supporting the pecking order theory in non-manufacturing companies due to the existence of negative relationship between profitability and long-term debt.

Several questions were asked relating to the pecking order theory. Respondents were asked to specify whether they use debt when their recent profits (internal funds) are not sufficient to fund their companies' activities and 93.1% of the respondents indicated that they do use debt when their retained earnings are insufficient (see Table (6-10)). Furthermore, the responses analysed indicated that any increase in the proportion of fixed assets would result in an increase in leverage ratios as described by the respondents as shown in Table (7-18). It can be seen as an indication for the existence of asymmetric information problems in Libyan companies.

The signalling approach of asymmetric information theory, which starts with Ross (1977), indicates that investors interpret an increase in leverage as a signal of higher quality. The respondents were asked to indicate whether they use debt policy in order to send signals to the market about company' prospects and stability. The responses indicated only that a small proportion of the respondents supported this argument, which can be viewed as being inconsistent with the signalling approach of asymmetric information theory of capital structure (see Table (7-4)).

The investigation shows that although there are significant information asymmetry problems between the responding companies and their lenders, the usual explanation of the pecking order hypothesis is not supported because there is no difference in ranking the types of finance between the respondents who believed that their lenders

tend to underestimate their companies' future prospects and the respondents who did not as shown in Table (7-3).

It can be argued that the lack of support for the pecking order theory (also referred to as the asymmetric information theory) might be due to the following two reasons. Firstly, the absence of a secondary capital market and consequently the possibility for converting the shares to cash may constitute a major barrier for investors to buy shares regardless whether these shares are fairly priced, under priced or over priced. Secondly, the absence of a secondary capital market, which potentially switches the focus of company financing from a short-term investment to a long-term investment, might also explain why short-term financing is more used by Libyan companies than long-term financing.

8.4 Conclusion

In this chapter the implications of the theories of capital structure to Libyan companies were examined and compared using evidence provided by questionnaires and regression analyses in order to double-check the results.

The results of both the regression analyses and the questionnaire survey provide some support for the trade-off and the agency cost theories of capital structure, whereas little support is found for the asymmetric information theory.

This chapter combines the results of the regression analyses and the questionnaire survey, which in part suggest the lack of a secondary capital market influences the capital structure of Libyan companies. To test this proposition further the next chapter provides a comparison between the financing patterns of the Libyan companies and 13 other emerging market companies which do have a secondary capital market.

Chapter Nine: An Empirical Investigation of Capital Structure in Developing Countries

9.0 Introduction

This chapter analyses capital structure in developing countries identifying similarities and differences across companies particularly between Libya, which has no secondary capital market and other emerging market countries which do[10]. The main focus of this chapter is to analyse and, where possible, explain differences in the financing patterns between emerging market companies and Libyan companies.

This chapter uses firm-level data to examine the capital structure of companies in 14 developing countries: Brazil, Chile, Hong Kong, India, Malaysia, Mexico, Pakistan Singapore, South Africa, South Korea, Taiwan, Thailand, Turkey and Libya. Libya's business environment differs from other developing countries included in the sample, as it has no secondary capital market. The non-existence of a secondary capital market might restrict Libyan companies from taking up long-term investment. Libya and the other countries included in this sample also differ in terms of companies' ownership, regulations and the enforcement of law and in corporate governance. The company's business environment, such as, tax law and the range of choices available by domestic financial system, as stated by Atkin and Glen (1992), play a major role in companies' capital structure decisions. These issues will be discussed in the following sections.

Some studies in capital structure have used cross-country comparisons based on data from developed countries. For example, Rajan and Zingales (1995) used data from

[10] A developing country, as defined by the World Bank, is a country with GDP per capita less than USD 9361 in 1998 and the emerging stock market, as defined by the International Finance Corporation (IFC), is a stock market located in a developing country.

the G-7 countries, Antoniou et al. (2002) analysed data from the UK, Germany, and France and Hall et al. (2004) used data from European SMEs while Booth et al. (2001) analyse the finance patterns for ten developing countries (Brazil, Mexico, India, South Korea, Jordan, Malaysia, Pakistan, Thailand, Turkey and Zimbabwe), from 1980 to 1990. They argued that although institutional factors might affect the firm's capital structure in different environments the variables that are relevant for explaining capital structure in developed countries are also relevant in developing countries.

Using a similar sample as Booth et al. (2001), Singh et al. (1992) and Atkin and Glen (1992) also examine the financing behaviour of eight developing countries (Mexico, India, Jordan, Malaysia, Pakistan, Thailand, Turkey and Zimbabwe) and they found similar results. They find that companies in their samples tend to rely more on external finance particularly external equity but these companies will issue more debt as the capital markets develop.

This chapter provides further evidence of whether institutional differences in the Libyan business environment induce Libyan companies to display different financing behaviour from that of companies in the other emerging market countries included in the sample. The comparative nature of this chapter provides relevant empirical knowledge to help identifying the potential impact of Libyan economic reform.

This chapter is divided into five sections. The first section explains the environmental differences between Libya and the emerging market countries included in the sample. Section two describes the data and methods of analysis adopted in the chapter. Section three presents and discusses the empirical findings

while the results of the regression analysis are reported in the fourth section. Section five concludes the chapter.

9.1 Environmental Differences and Financing Patterns

Glen and Singh (2003) argue that some specific economic characteristics such as, poor protection for investors, inadequate competition and high levels of debt may lead to expropriation of minority shareholders, ignoring profits and over-investment. Atkin and Glen (1992) contend that companies' capital structure differs from one country to another due to the objectives of the company and/or the differences in their business environment, such as, different tax laws, and differential inflation and level of economic growth.

There are some differences between Libya and the other emerging markets countries that are pertinent to the analysis. First, Libya has no secondary stock market. Atkin and Glen (1992) argue that in a country without a secondary stock market, the range of financing options available to companies are more limited than a country with a well-established secondary stock market. Second, most Libyan companies are state-owned companies while, as pointed out by Glen and Singh (2003), most emerging market companies tend to be family owned. Xie (2000) also argues that the majority of companies in East Asian countries (Hong Kong, South Korea, Malaysia, Singapore, Taiwan and Thailand) are family-owned and operated. Managers of family-owned companies, according to Glen and Singh (2003), may be inclined to avoid external equity finance due to a potential loss of control while the state-owned companies, as pointed out by Dewenter and Malatesta (2001), may focus more on external financing because the lenders may take government involvement in companies' ownership as more reliable collateral.

Third, there are differences between Libya and the other emerging market countries in terms of the enforcement of law and corporate governance. La Porta et al. (1997) argue that environmental differences, such as, the legal environment, the size of the capital market and ownership structure have an important impact on capital structure decisions. La Porta et al. (1998) argue that commercial laws come from two traditions: common law; which is English in source; and, civil law, which comes from Roman law. The civil tradition has three major families: French, German, and Scandinavian and La Porta et al. argues that the civil legal tradition is the oldest, the most influential and the most dominant tradition around the world. According to Reynolds and Flores' (1989) classification, the legal system in Hong Kong, India, Malaysia, Pakistan, Singapore, South Africa and Thailand are based on English common law whereas the legal system in countries such as Brazil, Chile, Indonesia, Mexico and Turkey are based on French civil law. The legal system in South Korea and Taiwan are based on German civil law. La Porta et al. (1998) argue that most Arab countries, particularly the Northern African countries adopted the French law principles in their commercial laws and Kilani (1988) argues that Libyan commercial law has also been based on the principles of the French law. La Porta et al. (1998) argue that French-civil-law countries provide the weakest legal protection to investors in terms of shareholders rights, debtholders rights and the enforcement of law and also have less developed capital markets than the Anglo-Saxon common law countries.

The most basic right for shareholders is voting for directors and on major company issues. The main right for the debtholders is to repossess collateral. Only in six countries included in the sample (Malaysia, Pakistan, Singapore, Brazil, Chile and South Korea) can shareholders exercise their right to vote according to the one-share-

one-vote principle. In Libya, a shareholder is restricted to only one vote at the General Assembly, regardless of how many shares he or she has. Having one vote regardless of the number of shares might be seen as unfriendliness of law to major investors as this may result in expropriation of the majority of shareholders' voting rights to directors.

Legal reserve is considered to be the most common debtholders' right in all civil-law countries (Libya among them). Accordingly, Libyan companies are required to maintain a certain level of capital as a legal reserve, which is 5 % of annual net profit before tax until it reaches one fifth of paid-in capital (see, for example, Mahmud, 1997). The Libyan commercial law seems to be more focused on a legal reserve as a debtholders' right rather than giving them the right to repossess collateral. Instead of providing a certain level of capital as a legal reserve, companies in Hong Kong, India, Malaysia, Pakistan, Singapore, Indonesia and South Africa are required to provide other kinds of protection for debtholders, such as; automatic claim on assets; secured debtholders being paid first; and management removal on reorganisation. Companies in the other countries in the sample; Thailand, Brazil, Chile, Mexico, Turkey, South Korea and Taiwan are also required to maintain a certain level of capital as a legal reserve.

La Porta et al. (1998), argue that the efficiency and integrity of the legal system and its independence are considered as major remedies to agency problems. In other words, it is expected, as stated by Fan et al. (2003), that debt will be used relatively more than equity and short-term debt will also be used relatively more than long-term debt when the legal system has less integrity and is less independent. Using short-term debt might mitigate the agency problems, as stated by Kim and Lee

(2003), because short-term debt can reduce free cash flow problems. The agency problems can be also mitigated by using short-term debt, as companies' access to short-term sources might be restricted in the immediate future if shareholders attempted to influence managers to expropriate wealth from debtholders to themselves.

Economic downturn and weaker corporate governance, as stated by Kim and Lee (2003), may cause serious agency problems. The Libyan economy had experienced a serious crisis during 1990s due to some reasons such as the UN sanctions and the sever decline in the oil prices. Furthermore, French civil law countries (Libya among them) are known, as stated by La Porta et al. (1998) to have weaker corporate governance. Accordingly, Libyan companies may suffer more from agency problems and, as a result, these companies are more likely to use short-term debt (the shorter maturity limits the potential to expropriate debtholders' rights) and are less likely to use outside equity.

In order to examine whether environmental differences between Libya and the other emerging market countries induce Libyan companies to display different financing patterns from that of companies in the other emerging market countries included in the sample, the following section presents data and methods of analysis adopted in the chapter.

9.2 Data Collection and Regression Models

The data used in the analysis is constructed by merging information from two sources. These two sources are: the Datastream database (emerging market data) and Libyan Tax Offices (Libyan data). The criteria used for choosing the Libyan companies were the availability and quality of data for a time period of 5 years

(1995-1999) and consequently, the data of the other emerging market companies included in the sample were restricted to the same time period. The criteria used for choosing the emerging market countries were the availability of a reasonably large sample of companies over the time period from 1995 to 1999. Developing countries from every continent were included in the sample. In order to mitigate survivorship bias, dead companies are also included in the sample. All data are measured in nominal local currency and averaged over the five years to smooth the leverage and explanatory variables.

Since some extreme values for variables in the dataset might cause some problems in least square regression, as pointed out by Akbar and Stark (2003), extreme values (outliers) were deleted. In line with Akbar (2001) and Easton and Harris (1991), the criteria for identifying extreme values is the top and bottom 0.5% of values for total debt ratio, short-term debt ratio, long-term debt ratio, total assets, profitability, tangibility, growth and size and these were deleted from the sample (see, for example, Rees, 1997). Table 1 shows the final number of companies that originally fulfilled the data criteria and the number of companies remaining after deleting the extreme values (outliers).

In order to reduce potential econometric problems, such as heteroscedasticity problems, total assets were used as a deflator in accordance with the suggestions of Bevan and Danbolt (2000 and 2002). This chapter also uses White's (1980) heteroscedasticity-consistent standard errors and covariance for mitigating heteroscedasticity in calculating the statistics.

Table (9-1): Summary of Deletions from the Sample

Country	Datastream Group	Total firms	Firms fulfilling the criteria	Outliers	Final Sample
Brazil	M15	550	52	5	47
Chile	M3	229	56	3	53
Hong Kong	M19	987	127	5	122
India	M5	1228	116	2	114
Malaysia	M20	944	175	12	163
Mexico	M18	148	40	5	35
Pakistan	M7	270	40	1	39
Singapore	M8	572	75	4	71
South Africa	M9	414	68	9	59
South Korea	M17	1782	136	10	126
Taiwan	M13	1166	41	4	37
Thailand	M12	459	158	5	153
Turkey	M10	298	35	2	33
Total		9047	1119	67	1052

In line with chapter five, three regression models with dummy variables were used. The dependent (leverage) variables used for alternative estimations are: total debt to total assets, short-term debt to total assets and long-term debt to total assets. These three dependent variables were regressed against the four explanatory variables, which are proxies for profitability, growth, tangibility and size. Dummy intercept and dummy interaction variables were used to identify significant differences in the relationships between leverage and the explanatory variables for Libyan and the other emerging companies.

9.3 Interpretation of the Empirical Results

McLaney (1997) argues that industrial and commercial development in developing countries is often hampered by the absence of a secondary capital market and

subsequently by the lack of long-term finance. The absence of a secondary capital market might prevent potential long-term investors from taking up shares or loan stocks, as they will not have the opportunity to convert their investments to cash whenever they wish to do so.

Although the difference in accounting and disclosure practices between countries, as stated by Bancel and Mittoo (2004), is a major problem in the cross-country research, this section attempts to identify and, where possible, explain: (1) whether there is any difference between Libya and other developing countries in terms of using short term debt and long-term debt, (2) whether returns on assets in Libyan companies are higher or lower than emerging market counterparts, (3) whether growth rates in Libyan companies are higher or lower than the growth rates of other emerging market, (4) whether the assets structure in Libyan companies is fundamentally different from the asset structure of other emerging market companies, and (5) whether companies in Libya are larger or smaller than other emerging market companies. In other words, this section investigates whether statistics generated from financial statements about leverage levels, profitability, asset structure, growth and company size differ between emerging market companies and Libyan companies and whether these differences can be explained and related to specific factors. These factors may be firm-specific factors, and/ or factors relating to the macro-economic environment, such as, the tax system, legal system and system of corporate governance. Table (9-2) provides summary information of leverage ratios, profitability, growth, tangibility and size.

Table (9-2): Mean of Leverage Ratios, Profitability, Growth, Tangibility and Size

Country	No. of Firms	Total debt ratio	Short-term debt ratio	Long-term debt ratio	Profitability	Growth	Tangibility	Size
Libya	55	0.53	0.46	0.07	0.01	0.13	0.18	15.56
Brazil	47	0.31	0.14	0.17	-0.001	0.10	0.52	14.30
Chile	53	0.24	0.08	0.16	0.07	0.12	0.52	18.91
Hong Kong	122	0.23	0.11	0.12	0.02	-0.01	0.48	15.46
India	114	0.32	0.12	0.20	0.08	0.13	0.41	15.60
Malaysia	163	0.25	0.15	0.10	0.03	0.09	0.43	13.60
Mexico	35	0.28	0.07	0.21	0.08	0.19	0.56	16.75
Pakistan	39	0.28	0.17	0.11	0.08	0.08	0.40	14.55
Singapore	71	0.26	0.11	0.15	0.02	0.02	0.47	13.18
South Africa	59	0.13	0.05	0.08	0.10	0.09	0.39	14.40
South Korea	126	0.50	0.28	0.22	-0.006	0.08	0.42	20.60
Taiwan	37	0.27	0.13	0.14	0.03	0.09	0.39	16.83
Thailand	153	0.46	0.30	0.16	0.02	0.02	0.43	15.07
Turkey	33	0.23	0.14	0.09	0.12	0.45	0.30	24.68
Mean		**0.32**	**0.17**	**0.15**	**0.04**	**0.08**	**0.42**	**15.96**

Note: Profitability is defined as the ratio of earnings before tax to total assets. Growth is measured by the percentage change in total assets. Tangibility is defined as the ratio of fixed assets to total assets. Size is measured by the natural logarithm of assets. Short-term debt ratio refers to the ratio of short-term debt to total assets. Long-term debt ratio refers to long-term debt to total assets. Total debt ratio refers to the ratio of total debt to total assets.

9.3.1 Leverage

Table (9 2) shows summary data for three debt ratios (total debt to total assets, short-term debt to total assets and long-term debt to total assets) for the 14 developing countries.

Based on total debt ratio, Libya seems to have the highest total debt to total assets ratio (53%). Chile, Hong Kong, Malaysia, South Africa and Turkey seem to fall into a low-debt group; a middle group consisting of Brazil, India, Mexico, Pakistan,

Singapore and Taiwan; and a high-debt group consisting of South Korea and Thailand.

According to the components of total debt, Libya has the highest short-term debt ratio (46%) and the lowest long-term debt ratio (7%). McLaney (1997) states that the non-existence of a secondary market might make the raising of long-term finance impossible or at least make potential long-term finance very expensive. In this context, the high proportion of short term to long-term debt used by Libyan companies may be partly attributed to the absence of a secondary exchange market in Libya.

9.3.2 Returns on Assets

The profitability of companies is of mainly central importance in economies based on a capitalist ideology as stated by Glen and Singh (2003). The past profitability of a firm, and consequently the amount of earnings available to be retained, is one of the important determinants of capital structure.

The differences in accounting standards adopted in each country and their impact on income calculation make comparisons of companies' profitability difficult in addition to difference due to real profitability. Due to these accounting differences, "real" differences in profitability and the diversity of economic systems between countries included in the sample, there is a wide range in reported profitability. For example, Turkey has a profitability ratio of 12% compared to -0.006% of South Korea.

Libyan companies' average profitability (0.01%) is below the profitability ratios of the other emerging market companies except for Brazil (-0.001%) and South Korean companies (-0.006%). Alqadhafi (2002) reports that the lower returns of Libyan

companies might be related to a misuse of economic resources due to state control resulting in lower productivity, higher production costs and lower quality of productions.

9.3.3 Asset Structure

Jensen and Meckling (1976) argue that the use of secured debt might reduce the agency cost of debt. The agency cost approach of Jensen and Meckling (1976) is consistent with the asymmetric information approach of Myers (1984) in that issuing debt secured by collateral reduces the asymmetric information related costs in financing. Tangibility of assets, the ratio of fixed assets to total assets, can also provide information on a company's operational decisions. For example, a low level of fixed assets may indicate over-investment in inventory.

As can be seen in Table (9-2), companies in Mexico, Brazil and Chile hold the highest levels of fixed assets to total assets followed by East Asian companies (Hong Kong, Malaysia, Thailand and South Korea).

Table (9-2) also shows that there is a noticeable difference in the level of fixed to total assets between Libyan companies and other emerging markets companies. Libyan companies hold a much lower level of fixed assets to total assets (18%). This may imply that Libyan companies hold high levels of cash, inventory and/or trade receivables. Alqadhafi (2002) reports that despite the fact that the total assets of 170 state-owned companies in Libya exceed Libyan Dinner 21 billion (roughly USD 65 billion), these companies are still unable to cover their operational expenses. This might reflect an overinvestment problem in these companies according to Alqadhafi (2002), which argues that the lower return on capital is the most serious problem in the Libyan economy. This may also indicate that Libyan companies suffer from

overinvestment problems[11]. The later, as stated by Kim and Lee (2003), is more likely to occur during economic crisis due to the rare of good investment opportunities.

9.3.4 Growth

Table (9-2) indicates that companies in all countries are growing, as evidenced by positive growth rates in their total assets, except for Hong Kong. Turkey has highest growth rate of 45%. The countries seem to fall into a low growth group, consisting of Singapore and Thailand (0.02); a middle group consisting of Brazil (0.10), Malaysia (0.09), Pakistan (0.08), South Africa (0.09), South Korea (0.08) and Taiwan (0.09) while the higher growth group consists of Libya (0.13), Chile (0.12), India (0.13) and Mexico (0.19).

Libyan companies' assets grow at an average rate of 13%, a relatively high growth rate compared to the other emerging market countries. The reason for this high growth rate might be attributed to the economic reform that the Libyan government began to implement in 1992. The establishment of privately held companies, which tend to grow rapidly in their early years, and the opening of the national economy for foreign investment might explain why Libyan companies have a higher growth rate of assets.

9.3.5 Size

Researchers in capital structure such as Antoniou et al. (2002) argue that the size of a firm is a good explanatory variable for its leverage ratio. Due to the fact that larger firms are more likely to have a lower probability of bankruptcy than smaller firms,

[11] Jensen and Meckling (1976) state that due to limited liability, debtholders will bear the cost of failure, if the risky project fails as they will not be paid in full, and shareholders will, therefore, be motivated to accept risky projects even if they are value decreasing.

according to Bancel and Mittoo (2004), larger firms may have easier access to capital markets than smaller firms, and, have a higher debt capacity (see for example, Rajan and Zingales, 1995 and Bevan and Danbolt, 2002). As stated by Rajan and Zingales (1995), larger firms are likely to be more diversified. Therefore, larger firms will be induced to use more debt than smaller ones.

As measured by the natural logarithm of total assets, the countries seem to fall into a low size group, consisting of Singapore, Brazil, Pakistan, Malaysia and South Africa; a middle group consisting of Libya, Hong Kong, India, Mexico, Taiwan and Thailand while the large size group consists of Turkish, Korean, and Chilean companies.

9.4 Determinants of Financing Patterns

The cross-sectional regression models with dummies were used to investigate differences in the determinants of financing patterns between Libya and the other emerging market countries included in the sample.

Due to the difficulties in segregating the emerging market companies into public (state-owned) and private companies, the analysis has been conducted on the basis of the entire sample. Therefore, the analysis of the Libyan data has been also conducted on the basis of the entire sample. Table (9-3) presents the results of the estimated relationships between alternative leverage measures and predetermined explanatory variables. The implied coefficients for the explanatory variables for Libyan companies output in Table (9-3) are shown in Table (9-4). The Wald tests examine whether the combined coefficients in Table (9-4) are significantly different from zero.

Table (9-3): Results of OLS Analysis of Libyan and Emerging Market Companies

The Variables	Total debt ratio	Short-term debt ratio	Long-term debt ratio
Intercept	0.00002	-0.00001	0.00003***
	(1.34)	(-1.46)	(4.44)
Profitability	-0.62**	-0.44**	-0.18
	(-2.37)	(-2.27)	(-1.51)
Growth	-0.22**	-0.31***	0.09**
	(-3.62)	(-6.28)	(2.54)
Tangibility	-0.04	-0.18**	0.13***
	(-0.53)	(-2.26)	(3.18)
Size	0.02***	0.02***	0.0001
	(5.66)	(6.79)	(0.08)
D	-0.00001***	0.00003	-0.0001*
	(-2.82)	(0.41)	(-1.82)
*D*Profitability*	4.09***	4.88***	-0.78
	(5.49)	(4.50)	(-0.78)
*D*Growth*	-0.96	-2.59*	1.63
	(-1.12)	(-1.77)	(1.18)
*D*Tangibility*	1.45***	1.30***	0.15
	(4.45)	(3.02)	(0.39)
*D*Size*	0.03***	0.01	0.01
	(5.31)	(1.37)	(1.58)
Adj R^2	0.88	0.87	0.40
F	975***	850***	81***
Obs	1107	1107	1107

Notes:
All dependent and independent variables are scaled by total assets.
*, **, and ***, significant at the 10, 5, and 1% level, respectively.
Profitability is defined as the ratio of earnings before tax to total assets. Growth is measured by the percentage change in total assets. Tangibility is defined as the ratio of fixed assets to total assets. Size is measured by the natural logarithm of assets. Short-term debt ratio refers to the ratio of short-term debt to total assets. Long-term debt ratio refers to long-term debt to total assets. Total debt ratio refers to the ratio of total debt to total assets.
D denotes a dummy variable, which takes a value of 1 if the company is a Libyan company and a value of 0 if the company is an emerging market company.
t-statistics are in parentheses.

Table (9-4): Coefficients for the Explanatory Variables for Libyan Companies

The Variables	Total debt ratio	Short-term debt ratio	Long-term debt ratio
Intercept	0.00001**	0.00002	0.00002
	(6.25)	(0.05)	(1.88)
Profitability	3.47***	4.44***	-0.97
	(24.79)	(17.31)	(0.94)
Growth	-1.18	-2.91**	1.72
	(1.94)	(3.95)	(1.57)
Tangibility	1.40***	1.12***	0.28
	(20.12)	(7.00)	(0.54)
Size	0.05***	0.03***	0.01
	(119.74)	(10.42)	(2.58)

Notes:
All dependent and independent variables are scaled by total assets. *, **, and ***, significant at the 10, 5, and 1% level, respectively.
Profitability is defined as the ratio of earnings before tax to total assets. Growth is measured by the percentage change in total assets. Tangibility is defined as the ratio of fixed assets to total assets. Size is measured by the natural logarithm of assets. Short-term debt ratio refers to the ratio of short-term debt to total assets. Long-term debt ratio refers to long-term debt to total assets. Total debt ratio refers to the ratio of total debt to total assets.
F-statistics are in parentheses.
Wald tests were used to compute F-statistics.

Discussion of Results

The static trade-off theory predicts a significant positive slope coefficient for the profitability, tangibility and size explanatory variables. For Libyan companies there is strong evidence (as can be seen in Table (9-4)) for the static trade-off theory for total and short-term debt as evidenced by the coefficients for profitability, tangibility and size.

Although a significant positive relationship between leverage and size is observed, the relationships between profitability and leverage and tangibility and leverage are significantly negative for total debt[12] and short-term debt for the other emerging market companies in the sample. This suggests that the static trade-off theory is not the relevant capital structure theory for these emerging market companies.

[12] The relationship between tangibility and leverage is negative, but not significantly different from zero for total debt.

The asymmetric information theory predicts significantly negative relationships between profitability and leverage and significantly positive relationships between leverage and tangibility and leverage and growth. The negative relationship between profitability and leverage, however, is the only relationship consistent with the asymmetric information theory for the emerging market companies for short-term debt; hence there is little support for this theory. These results support the findings of Xie (2000) who argues that the financing patterns of companies in developing countries are not consistent with the pecking order theory of capital structure. The only significant relationship relevant to the asymmetric information theory for the Libyan company sample is a positive relationship between leverage and tangibility suggesting that this theory is also not relevant to the capital structure decisions of Libyan companies.

If the agency cost theory holds, a positive significant and a negative significant slope for size and growth variables are expected respectively, and either a significant positive or significant negative slope (depending on the nature of the agency costs) for the tangibility variable is also expected. For both Libyan companies and emerging market companies there is strong evidence for the existence of agency cost problems as evidenced by the significantly positive coefficient and the significantly negative coefficient for growth and tangibility.

Libyan companies seem to be affected by debt agency problems, as evidenced by the significant positive slope coefficients for tangibility for total debt and short-term debt. The lack of a secondary capital market and the ability to offload shares may encourage shareholders to exert pressure on management. Such pressure may include expropriating funds from debtholders; hence the presence of debt agency

problems is expected. The other emerging market companies seem to be affected by equity agency problems when issuing short-term debt and by debt agency problems when issuing long-term debt as evidenced by significant negative and significant positive slope coefficients for short-term and long-term debt respectively for tangibility. Debt agency problems may be less severe with short-term debt as it reduces the potential for expropriation from debtholders to shareholders. Debtholders can withhold further financing if expropriation is expected.

Whilst there is no evidence of which theory drives Libyan companies to issue long-term debt as evidenced by the lack of significant coefficients for long-term debt in Table (9-4), emerging market companies' choice of long-term debt appears to be, in part, influenced by the asymmetric information theory.

9.5 Conclusion

The findings of this chapter contribute towards a better understanding of differences in financing behaviour between Libyan companies and other developing countries by comparing the theories appearing to influence the capital structures of the companies in these countries.

The descriptive statistics indicate that there are differences between Libya and the other emerging market countries in terms of using short-term and long-term debt, profitability, assets structure, growth and companies' size. Some of these differences could be attributed to the absence of a secondary capital market in Libya such as, the excessive use of short-term debt compared to long-term debt by Libyan companies while the other differences could be attributed to the agency problems (overinvestment problems) such as the lower return on assets and lower level of fixed assets to total assets of Libyan companies.

The chapter reveals that the financing patterns of Libyan companies can be interpreted as being consistent with the static trade-off and the agency cost theories of capital structure. The emerging market companies' financing behaviour can be interpreted as being consistent with the pecking order and the agency cost theories of capital structure. The results and conclusions obtained in this chapter and the previous chapters will be summarised in the next concluding chapter.

Chapter Ten: Summary, Main Findings, Contributions and Further Research

10.0 Introduction

This chapter provides a summary of the previous chapters of this thesis and links their main conclusions. It is divided into five sections. The first section provides a summary of the research objectives, theoretical concepts, and different research stages and methods conducted to achieve the research objectives. The second section presents the main findings that emerge from the theoretical and empirical analysis undertaken while the third section explains the contributions of the study to the existence knowledge. Section four discusses the limitations of the study while section five illustrates the need for more longitudinal studies.

10.1 Summary

Most determinants of capital structure studies have focused on developed countries (for example, Rajan and Zingales, 1995; Bevan and Danbolt, 2000 and 2002; Hall et al., 2004, and Antoniou et al., 2002) while there are only a limited number of empirical studies focusing on developing countries (for example Booth et al., 2001, Pandey 2001, Chen, 2004, Omet and Nobanee, 2001 and Al-Sakran, 2001). This study reduces the gap by analysing a capital structure question from the Libyan setting. Libya differs, *inter alia*, from the developing countries previously studied, as it has no secondary capital market which potentially switches the focus of company financing from a short-term investment to a long-term investment and it also differs in terms of investors' protection and corporate governance.

The main objectives of this research were: (1) to identify the determinants of capital structure of Libyan companies, (2) to explore the impact of managers' preferences, beliefs and attitudes on the capital structure decisions in the Libyan business

environment, and (3) to examine whether institutional differences of the Libyan environment induce Libyan companies to display different financing behaviour from that of other emerging market companies.

Theoretical and empirical investigation was undertaken in order to achieve the research objectives. Chapters 2, 3 and 4 represent the theoretical part of the study while chapters 5, 6, 7, 8 and 9 represent the empirical part. The following two sections summarise the theoretical and the empirical parts of the study.

10.1.1 The theoretical part of the study

The aim of the theoretical part of the study was to provide a theoretical framework within which the study' observations are to be interpreted and understood. The theoretical part consisted of three chapters: chapter 2 presented a review of the relevant literature on capital structure. Chapter 3 was devoted to describing the financing policy, the components of the finance sector and enterprise developments in the Libyan business environment. Chapter 4 explained the research methodology and methods.

The theory of capital structure has been reviewed as it has developed since Modigliani and Miller's (1958) paper. The main three current categories of capital structure theory (the trade-off, the agency costs and the asymmetric information theories) have been used to explain the variation in debt ratios across firms, industries and across countries. The determinants of capital structure studies in both developed and developing countries have been also reviewed in order to identify the most common determinants of capital structure and to review the different techniques that were used to examine the determinants of capital structure in other countries.

The review of the relevant literature on capital structure indicated that there is no capital structure study to the author's knowledge conducted in the context where there is no secondary capital market. The studies of capital structure, which adopted questionnaires and interviews, were also reviewed. The review of the different capital structure theories, the determinants of capital structure and the impact of institutional factors on firm's capital structure in different countries, undertaken in chapter two, prepared the way to chapter three where the Libyan economy's unique features were discussed.

In chapter three, the characteristics and the developments of the Libyan economy were reviewed since the Libyan revolution of 1969. As stated by Fan et al. (2003), Korajczyk and Levy (2003), Antoniou et al. (2002) and Rajan and Zingales (1995), the characteristics of the companies and the institutional environment are considered important factors in explaining and understanding the capital structure decisions in different contexts. The focus was on the economic reform programs of the Libyan economy as they marked the beginning of a period that changed Libyan public companies from the form of not-for- profit companies to profit-maximising companies.

The Libyan business environment is characterised by the absence of a secondary stock market, a relatively large banking sector (compared to other components of the finance sector) and lower quality of law enforcement in terms of investor's protection. The Libyan commercial law, as stated by Kilani (1988), is based on the principles of the French civil law, which is considered the weak in terms of providing a legal protection to investors than common civil law, German civil law and Scandinavian civil law (see, for example, La Porta et al., 1997 and 1998).

Furthermore, Libyan auditors, as stated by Saleh (2001) and Bait Elmal et al. (1988) do not play their role in certifying the company's accounts, and therefore, Libyan auditors might not mitigate the asymmetric information problems and the conflict between controlling owners and minority shareholders.

The research methodology and methods were described in chapter four. The methodology of the study consisted of four stages. Stage 1 was devoted to reviewing the literature of capital structure. Stage 2 presented the cross-sectional regression used to analyse Libyan financial data (chapter 5) while stage three involved the administration and analysis of a survey questionnaire (chapter 6 and chapter 7). Stage 4 focuses on comparing the financing patterns between Libyan companies and other emerging market companies (chapter 9). The aim of the last stage was to put Libyan companies' financing patterns into prospective.

The regression analysis of the Libyan financial data (stage 2) involved applying Rajan and Zingales' (1995) and Bevan and Danbolt' (2002) models, with some modifications to both the leverage and explanatory measures. The aim of this stage was to empirically examine the effect of profitability, growth, tangibility and size on the capital structure of fifty-five Libyan companies by utilising data extracted from their balance sheets and income statements.

Due to the fact that some assumptions and conclusions of capital structure cannot be tested by utilising the available financial statements in Libya (Libyan companies do not introduce cash flow statements and dividends statements), stage 3 (the survey questionnaire stage) involved testing the pecking order theory and the signalling theory by using data gathered by questionnaires. Furthermore, the investigations of the impact of managers' risk taking propensity on the use of debt, the effect of

business and personal goals on the capital structure decisions and the impact of managers' demographic characteristics on financing decisions were also illustrated in this stage. Data from seventy-two Libyan companies were gathered by survey questionnaire.

In order to put Libyan companies financing patterns into prospective, a comparison between Libya and other emerging market countries was conducted. To perform this comparison, Rajan and Zingales' (1995) and Bevan and Danbolt' (2002) models were applied. Firm-level data from 14 developing countries (Brazil, Chile, Hong Kong, India, Malaysia, Mexico, Pakistan Singapore, South Africa, South Korea, Taiwan, Thailand, Turkey and Libya) were utilised to examine the capital structure of companies in these countries.

10.1.2 The empirical part of the study

The regression analyses examines different capital structure theories and models (the trade-off theory, agency cost theory, and asymmetric information theory) in order to see whether they are relevant for explaining the financing behaviour in the Libyan context where there is no a secondary stock exchange market.

The results of the regression analysis for Libyan companies, when dummies were used to identify private and public companies indicated that there is strong evidence for the static trade-off theory for total and short-term debt as evidenced by the coefficients for profitability and size coefficients. The agency cost theory is also supported; however, the results indicated that there is no support for the asymmetric information theory.

The results of the regression analysis for the Libyan data where dummies were used to identify manufacturing and non-manufacturing companies indicated that there is

no support for the static trade-off theory for manufacturing companies but some evidence for the static trade-off theory for non-manufacturing companies is detected as evidenced by the coefficients for short-term debt for profitability, tangibility and size coefficients. There is also some support for the agency cost theory and the asymmetric information theory.

The lack of high quality financial statements might constitute a major barrier on conducting capital structure research in Libya. Consequently, there is a need to conduct capital structure research by using different type of data sources. Due to the fact that the regression analysis of the Libyan financial data only partly answers some of the aims of this study and the problem of unavailability of financial statements in Libya, survey-based analysis was used to mitigate the problem of unavailability of "hard" data and, on the other hand, to investigate some assumptions and conclusions of capital structure that cannot be tested by the available financial statements in Libya.

Chapter six describes the results of the responses while the investigation of the hypotheses of the pecking order theory, the signalling theory, and manager's preferences, beliefs and attitudes toward using debt and equity were conducted in chapter seven.

The responses analysed indicated that the most important source of finance is a bank overdraft, followed by retained earnings and trade credit. The responses also pointed out that short-term debt is preferred over long-term debt. The deterioration in the state of the economy and the absence of a secondary stock market are considered as the most important problems associated with obtaining external finance.

Although the participants indicated that the asymmetric information problems exists between Libyan companies and banks, they indicated that the large part of the asymmetric information problems might not be attributed to the lenders' lack of information, as they argued that providing more information disclosure could not solve the asymmetric information problems.

In chapter seven, an investigation of the non-financial and behaviour hypotheses was conducted by utilising data collected by the questionnaires and debt ratios from companies' financial statements. The hypotheses included the pecking order hypothesis, signalling hypothesis, managers' risk taking propensity hypothesis, business and personal goals hypothesis and managers' demographic characteristics hypothesis.

The investigation revealed that the usual interpretation of the pecking order hypothesis is not supported. The use of debt policy and share issues for sending signals to the market is not supported, as there is little evidence that Libyan companies use debt policy to send signals to their investors about their future prospects, or to use share issues in order to dilute the holding of certain shareholders.

The investigation illustrated that the responding companies that are run by high- risk takers are more likely to have more debt than those companies that are run by low-risk takers. Otherwise business and personal goals, and managers' demographic characteristics do not appear to have a significant impact on the capital structure decisions of the responding companies.

The aim of chapter eight is to present the most important findings of the regression analysis of the Libyan financial data and the analysis of the responses in an attempt to present the results grouped by theoretical concepts such as the trade-off theory, the

agency cost theory and the asymmetric information theory of capital structure. The results of the regression analysis of the Libyan financial data and the analysed questionnaires provide support for the trade-off and the agency cost theory of capital structure.

Chapter nine attempted to provide a better understanding of the differences of the financing behaviour between Libyan companies and other developing countries included in the sample by comparing the theories appearing to influence the capital structures of the companies in these countries. Some differences are related to: the use of short-term and long-term debt, profitability, assets structure, growth and companies' size. The findings supported the results of chapter five as the static trade-off and the agency cost theories of capital structure are relevant capital structure theories for Libyan companies while the companies in other emerging market countries seem to follow the agency cost theory and, to small extent, the pecking order theory of capital structure.

10.2 The main findings

Based on the literature review and theoretical and empirical analysis, several main findings emerged. These findings are summarised under two main titles associated to the Libyan companies' financing behaviour. The following two sections were devoted to financial and non-financial (behaviour) factors that affect capital choices.

10.2.1 Financial factors affecting capital structure decisions

Some financial figures have been found to be important factors affecting capital structure decisions of Libyan companies. The important findings are summarised as follows:

1- The investigation revealed that the characteristics of the financing sector, the absence of a secondary capital market, the legal system, and auditing system affect a firm's financing decisions in Libya, as the vast majority of debt financing is a short-term nature. The ratio of total debt on average is 53.9% of total book value of assets. The vast majority of the debt is of a short-term nature (46.7% on average). Contrary to the suggestions of Dewenter and Malatesta (2001), who suggest public companies will have higher levels of debt than private companies due to government guarantees, private companies have higher levels of short-term debt than public companies, which results in private companies having higher average debt ratios than the public ones.

2 - The most successful variable among all the explanatory variables for private and public companies is profitability. Profitable Libyan companies tend to be externally financed and prefer short-term debt sources.

3 - Tangibility is the most successful variable among all explanatory variables for manufacturing and non-manufacturing companies while its relationship with leverage ratios is stronger for private companies than public ones.

4 - Growing companies tend to rely on their internal funds particularly growing public and private companies. The growth variable has no effect on leverage ratios for manufacturing and non-manufacturing companies.

5- Libyan companies have the highest short-term debt and the lowest long-term debt compared to the other emerging market companies examined in the study. This may be attributed to the non-existence of a secondary capital market in Libya.

6- The profitability of Libyan companies (0.01%) is below the profitability ratios of the other emerging market companies included in the sample except for Brazil and South Korea. Libyan companies hold a much lower level of fixed assets to total assets (18%) compared to the other emerging market companies examined in the study. It may imply that Libyan companies hold high levels of cash, inventory and /or trade receivables.

7- Libyan companies' assets have grown at an average rate of 13%, a relatively high growth rate compared to the other emerging market countries while Libyan companies seem to be in the middle group in terms of the companies' size compared to the other emerging market countries.

8 - The static trade-off theory and the agency cost theory are pertinent theories to a Libyan business environment while there is little evidence to support the asymmetric information theory while the companies in the emerging market countries examined in the study seem to follow the agency cost theory and, to small extent, the pecking order theory of capital structure.

9 - Agency costs may be a real problem for Libyan companies. It might be due to the inability to offload shares in a secondary capital market, as shareholders might be encouraged to exert pressure on management to expropriate funds from debtholders to themselves.

10- The lack of high-quality databases (financial statements) might constitute the major barrier on conducting capital structure research in Libya. Consequently, there is a need to develop validated databases as more data becomes available in future, and use such databases in examining and identifying additional variables that could have influence on financing behaviour of Libyan companies.

10.2.2 Non-financial (behaviour) factors affecting capital structure decisions

Although the vast majority of capital structure studies have focused on examining the effect of financial factors (for example, profitability, growth, tangibility and size) on capital structure decisions, new direction of capital structure studies have emerged in order to investigate the impact of non-financial and behaviour factors on capital structure choices (see, for example, Barton and Gordon, 1987; Norton, 1990; Matthews et al., 1994; Michaelas, 1997b and 1998; Graham and Harvey, 2001 Bancel and Mittoo, 2002 and 2004 and Brounen et al., 2004).

As illustrated earlier, the reasons for using survey-based analysis in this study were to test some assumptions of capital structure that cannot be tested by using financial data and to mitigate the problems of unavailability of financial statements data in the Libyan environment.

In line with the responses analysed and the test of the non-financial hypotheses, some findings were extracted:

1- Libyan companies preferred to use short-term debt to long-term debt. It might be attributed to the desire for mitigating the agency cost problems, as any attempt by shareholders to extract wealth from debtholders is likely to restrict the firms' access to short-term debt in the immediate future.

2- The problems reflect supply-side effects such as the deterioration in the state of the Libyan economy and the absence of a secondary capital market are considered as the most important problems associated with obtaining external finance rather than the problems reflect demand-side effects (poor relationships with banks and the lack of a good trading record).

3- The pecking order hypothesis was rejected, as there is no statistically significant difference in ranking the types of funds due to the existence of asymmetric information problems. It might be due to the inability to offload shares rather than under valuation of equity.

4- The signalling theory of capital structure has not been supported as the respondents indicated that they do not use debt policy and shares issues for strategic or tactical reasons.

5- Companies in Libya that are run by more risk-taking managers are more likely to have more debt than those companies that are run by less risk-taking managers.

6- Although business and personal goals of Libyan managers do not significantly affect their capital structure decisions, companies that are run by growth oriented managers use less debt than companies that are run by social oriented managers or control oriented managers.

7- Libyan managers' demographic characteristics (age, level of education and level of experience) have no significant impact on capital structure decisions.

10.3 Contribution to knowledge

The findings of the study hopefully contribute towards a better understanding of companies' financing behaviour of Libyan companies. The study added to the existing literature of capital structure in the following aspects:

1- Theoretically, a combination of different capital structure theories and models that were used in studies examining other countries were tested to see if they fit Libyan data. In particular, the research examines whether the trade-off theory, agency cost theory, and asymmetric information theory are relevant to the

financing behaviour of Libyan companies. Furthermore, the behaviour theory was also used to explain and understand the financing behaviour of Libyan companies.

2- Methodologically and methodically, a combination of different methods of data collection and analysis provided a rich investigation of the financing behaviour of Libyan companies.

3- Empirically, this study is the first study that used financial statements data in accounting and finance research within the Libyan context.

4- The study contributed to the limited studies on capital structure in developing countries in general. In addition, this study is the first of its kind in Libya where there is no a secondary capital market.

10.4 Limitations of the study

The limitations of this study are categorised into theoretical, empirical and methodological. Theoretically, the research focuses more on the main three current categories of capital structure theory (the static trade-off, asymmetric information and agency cost theories) than on the behaviour theory of capital structure.

Empirically, the lack of high-quality databases is a major barrier to conducting capital structure research in Libya. The shortage of high-quality data prevents the examination and identification of additional variables that could influence the financing behaviour of Libyan companies.

Regarding the perception of questionnaires, this study also has the following limitations. Firstly, due to the fact that the questionnaires were collected through the assistance of many author's friends, as the questionnaires were distributed and

collected in person, the test for non-response bias was not performed due to the difficulties in separating the early and late responses. Secondly, due to the lack of official statistics about the precise number of companies and the number of companies in each industry which work in Libya, it is difficult to ascertain whether the sample are fairly representative of the entire population of Libyan companies.

Methodologically and methodically, the adoption of a static model for analysing the leverage ratios may capture a part of the capital structure picture of Libyan companies because some factors are time sensitive. However, this study partially accounts for leverage adjustments by taking the year average of the leverage and explanatory variables in line with Rajan and Zingales (1995) and Titman and Wessels (1988). However, despite its limitations, the findings and the adopted methodology of the study might shape the basis for further research in the area.

10.5 Further research

The limitations of this study provide some guidance for future research that could be perceived as possible extensions to the present research. Firstly, the adoption of the static cross sectional approach might capture a part of picture of the determinants of capital structure due to the possibility for masking the potential effect of time on some determinants of capital structure (see, for example, Michaelas, 1998). However, as pointed out by Antoniou et al. (2002), there is a need for conducting a dynamic analysis of leverage ratios in order to understand the dynamism of its determinants in line with Fischer et al. (1989), Jalilvand and Harris (1984), Bevan and Danbolt (2000) and Ozkan (2001). In this regard, Ameer (2003) argues that due to economic reform in developing countries, it is essential to conduct dynamic analysis of capital structure in order to identify the influence of such economic reform on capital structure. Hence a dynamic analysis of leverage ratios is needed in

order to identify whether Libyan companies react to random events in the business environment and the nature of adjustment process.

Secondly, as more data becomes available in future, such data can be used for examining and identifying additional variables that could have influence on financing behaviour and, therefore, more longitudinal studies are needed in order to investigate the determinants of capital structure over a longer period of time.

Finally, there is a need for further studies that examine the determinants of capital structure over different economic cycles. For example, due to the suspension of the UN sanctions against Libya in 1999, a longitudinal study may be conducted to describe how the UN sanctions affect the capital structure behaviour of Libyan companies by comparing the findings before and after the suspension of the UN sanctions in 1999 as more data becomes available in future.

References

Abbas, H., (1987) Industrial Development and Migrant Labour in Libya, unpublished PhD thesis, Manchester University.

Abdalmalek, J., (2004) "The development of banks in Libya", Bulletin of Commerce and Development, Vol 30 (In Arabic).

Abuarroush, M., (1996) A Cross-Cultural Study of Locus of Control and Self-Esteem as Related to Socio Cultural Factors among Libyan and British Postgraduate Student, unpublished PhD thesis, Manchester University.

Agnaia, A., (1996) "Assessment of management training needs and selection for training: the case of Libyan companies", *International Journal of Manpower,* Vol 17, issue 1, pp 31-51.

Akbar, S., (2001), "Valuation Relevance and Disaggregations of Earning and Book Value: Some UK Evidence", unpublished PhD thesis. Manchester Business School, Manchester University.

Akbar, S., and Stark, W., (2003) "Deflators, Net Shareholder Cash Flows, Dividends, Capital Contributions and Estimated Models of Corporate Valuation", *Journal of Business Finance & Accounting*, Vol 30, issue 9&10, pp 1211-1233.

Alqadhafi, S., (2002) *Libya and the XXI Century*, One 9 Media, Italy.

Ameer, R., (2003) "Financial Liberalization and Capital Structure Dynamics in developing countries: Evidence from Emerging Markets of South East Asia", Working paper, Aston University, Department of Finance, Accounting and Law.

Al-Qudah, K., (1991) "Capital Expenditure Decisions and Company Market Value", unpublished PhD thesis. Department of Accountancy and Business Finance, The University of Dundee.

Al-Sakran, S., (2001), "leverage Determinants in the absence of Corporate Tax System: The Case of Non-financial Publicly traded Corporation in Saudi Arabia", *Managerial finance*, Vol 27, issue 10, pp 58-86.

Alsharif, A., (2003) "The Suitability of Tax System for Libyan Economy", The Tax System in Libya, Vol 1, published by the Academy of Postgraduate Studies. Tripoli, Libya (In Arabic).

Altman, E., (1984) "A Further Empirical Investigation of the Bankruptcy Cost Question", *Journal of Finance,* Vol 39, issue 4, pp 1067-1089.

Altman, E., (2002), *Bankruptcy, Credit Risk, and High Yield Junk Bonds*, Blackwell, Oxford.

Ang, J., and Jung, M., (1993) "An alternative test of Myers' pecking order theory of capital structure: the case of South Korean firms", *Pacific-Basin Finance Journal*, Vol 1, issue 1, pp 31-46.

Antoniou, A., Guney, Y., and Paudyal, K. (2002) "Determinants of Corporate Capital Structure: Evidence from European Countries", Working paper, University of Durham.

Atkin, M., and Glen, J., (1992) "Comparing Corporate Capital Structure Around the Globe", *The International Executive*, Vol 34, issue 5, pp 369-387.

Bait Elmal, M. M., Thaw, K., Bozrida, M., Eshtawi, E., Bait El-Mal, M. A., and Badi, M. (1988) A survey and an evaluation of the accounting standards applied in Libya, unpublished study, The Economic Research Centre, Benghazi, Libya (In Arabic).

Bait-Elmal, A., (1999) The Role of Management Control Systems in Libyan Organisation: A Libyan Development Policy Case Study with special performance to the industrial sector, unpublished PhD thesis. Manchester Metropolitan University.

Bancel, F., and Mittoo, U., (2002) "The Determinants of Capital Structure: A Survey of European Firms", Working paper.

Bancel, F., and Mittoo, U., (2004) "Cross-Country Determinants of Capital Structure Choices: A Survey of European Firms", *Financial Management*, Vol 33, issue 4, pp 103-132.

Barclay, M., and Smith, C., (1996) "On Financial Architecture: Leverage, Maturity and Priority, *Journal of applied Corporate Finance*, Vol 8 issue 4, pp 4-17.

Barclay, M., Smith, C., and Watts, R., (1995) "The Determinants of Corporate Leverage and Dividend Policies, *Journal of applied Corporate Finance*, Vol 7 issue 4, pp 4-19.

Barton, S., and Gordon, P., (1987) "Corporate Strategy: Useful Perspective for the study of Capital Structure", *Academy of Management Review*, Vol 12, issue 1, pp 67-75.

Barton, S., and Matthews, C., (1989) "Small Firm Financing: Implications from a Strategic Management Perspective", *Journal of Small Business*, Vol 3, pp 1-7.

Baxter, N., (1967) "Leverage, Risk of Ruin and the Cost of Capital", *Journal of Finance,* Vol 22, issues 3, pp 395-403.

Bennett, M., and Donnelly, R., (1993) "The Determinants of Capital Structure: Some UK Evidence", *British Accounting Review*, Vol 25, issue 1, pp 43-59.

Bevan, A. and Danbolt, J., (2000) "Dynamics in the determinants of capital structure in the UK", Working paper, University of Glasgow.

Bevan, A. and Danbolt, J., (2002) "Capital structure and its determinants in the UK- a decompositional analysis", *Applied Financial Economics*, Vol 12, issue 3. pp 159-170.

Birley, S., and Westhead, P., (1990) "Private Business Sales Environment in the United Kingdom, *Journal of Business Venturing*, Vol 5, Issue 6, pp 349-373.

Booth, L, Aivazian, V, Demirguc-Kunt, A, and Maksimovic, V., (2001) "Capital structures in Developing Countries", *Journal of Finance*, Vol LVI, issue 1, pp 87-130.

Borda, M., and McLeay, S., (1996) Accounting and economic transformation in Hungary, In Garrod and McLeay (Eds.), *Accounting in Transition*, London: Routledge, pp1-11.

Bradley, G., Gregg, J., and Kim, H., (1984) "On the Existence of an Optimal Capital Structure: Theory and Evidence", *Journal of Finance*, Vol 39, issue 3, pp 857-878.

Brealey, R., and Myers, S., (2003) *Principles of Corporate Finance*, McGraw-Hall.

Brigham, E., (1992) *Fundamentals of Financial Management*, 6 the edition, Philadelphia: The Dryden Press. In Philosophov, L., and Philosophov, V., (1999) "Optimization of corporate capital structure a probabilistic Bayesian approach", *International Review of Financial Analysis*, 8:3, pp 199-214.

Brounen, D., Jong, A., and Koedijk, K., (2004) "Corporate Finance in Europe: Confronting Theory with Practice", *Financial Management*, Vol 33, issue 4, pp 71-101.

Bryman, A., (2001) *Social Research Methods*, Oxford University Press, New York.

Burton, G., Carrol, G., and Wall, S., (1999) *Quantitative Methods for Business and Economics,* Longman, London.

Cassar, G., (2004) "The financing of business start-ups", *Journal of Business Venturing*, Vol 19, issue 2, pp 261-283.

Cassar, G., and Holmes, S., (2003) "Capital structure and financing of SMEs: Australian evidence", *Journal of Accounting and Finance*, Vol 43, issue 2, pp 123-147.

Castanias, R., (1983) "Bankruptcy Risk and Optimal Capital Structure", *Journal of Finance*, Vol 38, issue 5, pp 1617-1635.

Chen, J., (2004) "Determinants of capital structure of Chinese-listed companies", *Journal of Business Research*, Vol 57, issue 12, pp 1341-1351.

Chirinko, R., and Singha, A., (2000) "Testing Static trade-off Against Pecking Order Models of Capital Structure: A Critical Comment", *Journal of Financial Economics*, Vol 58, Issue 3, pp 417-425.

Chung, K.H., (1993) "Asset characteristics and corporate debt policy: an empirical test", *Journal of Business Finance and Accounting*, Vol 20, issue 1, pp 83-98.

Churchill, N., and Lewis, V., (1983) "Five stages of small business growth", *Harvard Business Review*, Vol 61, pp 30-50.

Demirguc-Kunt, A., and Moksimovic, V., (1999) "Institutions, Financial Market, and Firm debt maturity", *Journal of Financial Economics*, Vol 54, issue 3, pp 295-336.

Demirgucs-Kunt, A., and Levine, R., (1996) "Stock Market Development and Financial Intermediaries: Stylized Facts", World Bank Economic Review, Vol 10, pp 291-322.

Denzin, N., (1978) *The Research Act: A Theoretical Introduction to Sociological Methods*, McGraw-Hill, New York.

Derwish, B., (1997) "Libyan foreign direct investment: an analysis of investment motivations, strategic, postures and performance of Libyan companies abroad, unpublished Ph.D. Thesis, The University of Bradford.

Dewenter, K., and Malatesta, P., (2001) "State-Owned and Privately Owned Firms: An Empirical Analysis of Profitability, Leverage, and Labor Intensity", *American Economic Review*, Vol 91, Issue 1, pp 320-334.

Donaldson, G., and Lorsh, J., (1983) *Decision making at the top: The Shaping of Strategic Direction*, Basic Books, New York.

Drobetz, W., and Fix, R., (2003) "What are the Determinants of the Capital Structure? Some Evidence for Switzerland", Working paper, The University of St. Gallen.

Easton, P., and Harris, T., (1991) "Earnings as an Explanatory Variable for Returns", *Journal of Accounting Research*, Vol 29, issue 1. pp 19-36.

Everitt, B., (1981) *Cluster Analysis*, John Wiley, New York.

Everitt, B., and Dunn, G., (1991) *Applied Multivariate Data Analysis*, Edward Arnold, London.

Fad, J., and Wong, T., (2002) "Do External Auditors Perform a Corporate Governance Role in Emerging Markets? Evidence from East Asia", Working paper. The Hong Kong University of Science and Technology.

Fan, J., Titman, S., and Twite, G., (2003) "An International Comparison of Capital Structure and Debt Maturity Choices", Working paper.

Fattouh, B., Scaramozzino, P., and Harris, L., (2003) "Capital Structure in South Korea: A Quantile Regression Approach", Working paper, Centre for Financial and Management Studies, University of London.

Fayad, M., (2000) "Government Expenditure and growth in Libya", unpublished Ph.D. Thesis, Liverpool John Moores University.

Fayad, M., (2003) "The role of commercial banks in financing the private investment in Libya", Investment in Libyan economy, Conference was held in University of Grayoness, Libya, 8-10 July 2003 (In Arabic).

Ferri, M., and Jones, W., (1979) "Determinants of Financial Structure: A New Methodological Approach", *Journal of Finance,* Vol 34, issue 3, pp 631-644.

Fielding, N., and Fielding, J., (1986) *Linking data*, Beverly Hills: Sage.

Fischer, E., Heinkel, R., and Zechner, J., (1989) "Dynamic capital structure choice: theory and tests, *Journal of Finance*, Vol 44, issue 1, pp 19-40.

Fisher, W., (1990) *Libya, the Middle East and North Africa Report*, 36th Edition: Europe Publications Limited, London.

Frank, M., and Goyal, V., (2003) "Testing the Pecking Order Theory of Capital Structure", *Journal of Financial Economics*, Vol 67, issue 2, pp 217-248.

Fredickson, J., (1985) "Effects of Decision Motive and Organisational Performance Levels on Strategic Decision Processes" *Academy of Management Journal*, Vol 28, issue 4, pp 821- 843.

Freund, R., and Wilson, W., (1993) *Statistical Methods*, Academic Press, INC, San Diego.

Garrod, N., and McLeay, S., (1996) The Accounting Implications of Political and Economic Reform in Central Europe, In Garrod and McLeay (Eds.), *Accounting in Transition*, London: Routledge, 1-11.

Gaud, P., Jani, E., Hoesli, M., and Bender, A., (2003) "The Capital Structure of Swiss companies: An empirical analysis using dynamic panel data", Working paper, International Center for Financial Asset Management and Engineering.

Giurnaz, A., (1985) Economic of Oil: A Case of Libya, unpublished PhD thesis. University of Keele.

Gleason, K., Mathur, L., and Mathur, I., (2000) "The Interrelationship between Culture, Capital structure, and Performance: Evidence from European Retailers, *Journal of Business Research*, Vol 50, issue 2, pp 185-191.

Glen, J., and Singh, A., (2003) "Capital Structure, Rates of Return and Financing Corporate Growth: Comparing Developed and Emerging Markets, 1994-2000", Working paper.

Gonenc, H., (2003) "Capital Structure Decisions Under Micro Institutional Settings: The Case of Turkey, Working paper, College of Economics and Administrative Sciences, Hacettepe University.

Grabowski, H., and Mueller, R., (1972) "Managerial and Stockholders Welfare Models of Firms Expenditures, *Review of Economics and Statistics*, Vol 54, Issue 1, pp 9-24.

Graham, J., and Harvey, C., (2001) "The theory and practice of corporate finance: evidence from the field", *Journal of Financial Economics*, Vol 60, issue 2 & 3, pp 187-243.

Green, R., (1984) "Investment incentives debt and warrants", *Journal of Financial Economics*, Vol 13, issue 1, pp 115-136.

Hall, G., Hutchinson, P., and Michaelas, N., (2004) "Determinants of the Capital Structures of European SMEs", *Journal of Business Finance & Accounting*, Vol 31, issue 5&6, pp 711-728.

Harris, M., and Raviv, A., (1990) "Capital Structure and the Information Role of Debt", *Journal of Finance*, Vol 45, issue 2, pp 321-349.

Harris, M., and Raviv, A., (1991) "The Theory of Capital Structure", *Journal of Finance*, Vol 46, issue 1, pp297-355.

Hempel, G., (1983) Teaching and research in finance: Perceptions, conflicts, and the future. *Financial Management*, Vol 12, issue 4, pp5-10.

Homaifar, G., Zietz, J., and Benkato, O., (1994) "An Empirical Model of Capital Structure: some new evidence", *Journal of Business Finance and Accounting,* Vol 21, issue 1, pp 1-14.

Huang, S, and Song, F., (2002) "The determinants of capital structure: Evidence from China", Working paper, The university of Hong Kong.

Jackson, D., (1976) *Jackson Personality Inventory*, Goshen, NY: Research Psychologists Press.

Jalilvand, A., and Harris, R., (1984) "Corporate behaviour in adjusting to capital structure and dividend targets: An econometric study, *Journal of Finance*, Vol 39, issue 1, pp 127-145.

Jensen, M., (1986) "Agency Costs of Free Cash Flow, Corporate Finance and Takeovers", *American Economic Review*, Vol 76, issue 2, pp 323-339.

Jensen, M., and Meckling, W., (1976) "Theory of the Firm: Managerial Behavior, Agency Costs and Ownership Structure", *Journal of Financial Economics*, Vol 3, issue 4, pp 305-360.

Jenson, M., and Murphy, K., (1990) "Performance Pay and Top-Management Incentives", *The Journal of Political Economy*, Vol 98, issue 2, pp 225-264.

Keister, L., (2000) "Capital Structure in Transition: Financial Strategy in China's Emerging Economy", Working paper, The Ohio State University.

Kilani, A. K. (1988) The Evolution and Status of Accounting in Libya, unpublished Ph.D. Thesis, Hull University.

Kim, B., and Lee, I., (2003) "Agency problems and performance of Korean companies during the Asian financial crisis: Chaebol vs. non-Chaebol firms", *Pacific-Basin Finance Journal*, Vol 11, issue 3, pp 327-348.

Korajczyk, R., and Levy, A., (2003) "Capital structure choice: macroeconomic conditions and financial constraints", *Journal of Financial Economics*, Vol 68, issue 1, pp 75-109.

Kwansa, F., and Ho Cho, M., (1995) "Bankruptcy cost and capital structure: the significance of indirect cost", *International Journal of Hospitality Management*, Vol 14, issue 3 & 4, pp 339-350.

La Porta, R., Lopez-de-Silanes, F., Shleifer, A., and Vishny, R., (1997) "Legal Determinants of External Finance", *Journal of Finance*, Vol 52, Issue 3, pp 1131-1150.

La Porta, R., Lopez-de-Silanes, F., Shleifer, A., and Vishny, R., (1998) "Law and Finance", *The Journal of Political Economy*, Vol 106, Issue 6, pp1113-1155

Leland, H., and Pyle, D., (1977) "Information Asymmetries, Financial Structure, and Financial Intermediation", *Journal of Finance*, Vol 32, Issue 1, PP 371-388.

Mahmud, M., (1997) "Accounting and the Economic Development of the Oil and Gas Sector in Libya: Historical review, Theoretical analysis and Empirical investigation", unpublished PhD thesis. Dundee University.

Mahmud, M., and Russell, A., (2002) "Evidence that the terms of petroleum contracts influence the rate of development of oil fields", *OPEC Review*, March, pp 21-43.

Mahmud, M., and Russell., (1999) "An analysis of Libya's revenue per barrel from crude oil upstream activities, 1963-93, *OPEC Review*, September, pp 213-249.

Mann, P., (1995) *Statistics for Business and Economics*, John Wiley, New York.

Mathews, C., Vasudevan, D., Barton, S., and Apana, R., (1994) "Capital Structure Decision Making in Privately Held Firms: Beyond the Finance Paradigm", *Family Business Review*, Vol 7, issue 4, pp 349-367.

McLaney, E., (1997) *Business Finance*, Pitman Publishing, London.

Michaelas, N., (1998) "Financial Policy and Capital Structure Choice in UK privately held companies", unpublished PhD thesis. Manchester Business School, Manchester University.

Michaelas, N., Chittenden, F., Poutziouris, P., (1997a) "Quantitative Evidence on the Determinants of Capital Structure in SMEs", Working paper, Manchester Business School, Manchester University.

Michaelas, N., Chittenden, F., Poutziouris, P., (1997b) "Qualitative Evidence on the Capital Structure in SMEs", Working paper, Manchester Business School, Manchester University.

Michaelas, N., Chittenden, F., Poutziouris, P., (1999) "Financial Policy and Capital Structure Choice in UK SMEs: Empirical Evidence from Company Panel Data", *Small Business Economics*, Vol 12, issue 2, pp 113-130.

Modigliani, F., and Miller, M., (1958) "The Cost of Capital, Corporation Finance and the Theory of Investment", *American Economic Review*, Vol 48, issue 3, pp 261-297.

Modigliani, F., and Miller, M., (1963) "Corporate Income Taxes and the Cost of Capital: A Correction", *American Economic Review*, Vol 53, issue 3, pp 433-443.

Mustafa, M., (1977), "Towards theory for interpreting the Companies financing behaviour in Egypt", unpublished PhD thesis. Ain Shams University (in Arabic).

Myers, S., (1977) "Determinants of Corporate Borrowing", *Journal of Financial Economics*, Vol 5, issue 2, pp 147-175.

Myers, S., (1984) "The capital structure Puzzle", *Journal of Finance*, Vol 39, issue 3, pp 575-592.

Myers, S., (2001) "Capital Structure", *Journal of Economic Perspectives*, Vol 15, issue 2, pp 81-102.

Myers, S., and Majluf, N., (1984) "Corporate Financing and Investment Decisions when Firms have Information that Investors do not have", *Journal of Financial Economics*, Vol 13, issue 2, pp 187-221.

Nachmias, C., and Nachmias, D., (1981) *Research Methods in the Social Sciences*, Arnold, London.

Norton, E., (1990) "Similarities and Differences in Small and Large Corporation Beliefs about Capital Structure Policy", *Small Business Economics*, Vol 2, pp 229-245.

Nuri, J., (2000), "A study of capital structure in the UK: hotel and retail industries", unpublished PhD thesis. Surrey University.

Omet, G., and Nobanee, H., (2001) "The Capital Structure of Listed Industrial Companies in Jordan", *Arabic Journal of Administrative Sciences*, Vol 8, Issue 2, pp 273-289.

Openshaw, S., (1983) Multivariate Analysis of Census Data: The Classification of Areas, In D. Rhind, (Eds.), *Census User's Handbook*, London: Methuem, 243-262.

Ozkan, A., (2001) "Determinants of Capital Structure and Adjustment to Long-Run Target: Evidence from UK Companies Panel Data", *Journal of Business & Accounting*. Vol 28, issue 1 & 2, pp175-198.

Pallant, J., (2001) *SPSS Survival Manual*, Open University Press, Buckingham, Philadelphia.

Palmer, M., (1971) "The application of psychological testing to entrepreneurial potential", *California Management Review*, Vol 13, issue 3, pp 32-38.

Pandey, M., (2001) "Capital structure and the firm characteristics: evidence from an emerging market", Working paper, Indian Institute of Management Ahmedabad.

Pandey, M., (2002) "Capital structure and market power interaction: evidence from Malaysia", Working paper, Indian Institute of Management Ahmedabad.

Parrino, R., and Weisbach, M., (1999) "Measuring investment distortions arising from stockholder-bondholder conflicts", *Journal of Financial Economics*, Vol 53, issue 1, pp 3-42.

Pfeffer, J., and Salancik, G., (1978) *The External Control of Organisation: A Resource Dependence Perspective*, New York: Harper and Row.

Philosophov, L., and Philosophov, V., (1999) "Optimization of corporate capital structure a probabilistic Bayesian approach", *International Review of Financial Analysis*, Vol 8, issue 3, pp 199-214.

Rajan, R., and Zingales, L., (1995) "What Do Know about Capital Structure? Some Evidence from International Data", *Journal of Finance*, Vol 50, issues 5, pp 1421-1460.

Rao, S., and Lukose, J., (2003) "An Empirical Study on the Determinants of the Capital structure of Listed Indian Firms", Working paper, Shailesh J Mehta School of Management, Indian Institute of Technology Bombay.

Ratcliff, R., (1980) "Bank and Corporate Lending: An Analysis of the Impact of the Internal Structure of the Capitalist Class on the Lending Behavior of Banks", *American Sociology Review*, Vol 45, issue 4, pp 553-570.

Rees, W., (1997) "The Impact of Dividends, Debt and Investment on valuation models", *Journal of Business Finance & Accounting*, Vol 24, issues 7 &8, pp 1111- 1140.

Remmers, L., Stonehill, A., Wright, R., and Beekhuisen, T., (1974), "Industry and Size as Debt Ratio Determinants in Manufacturing Internationally, *Financial Management*, Vol 3, issue 2, pp 24-32.

Reynolds, T., and Flores, A., (1989) *Foreign Law: Current Sources of Codes and Basic Legislation in Jurisdictions of the World.* Littleton, Colo, Rothman.

Ross, G., (1977) "The Determination of Financial Structure: The Incentive Signalling Approach", *Bell Journal of Economics*, Vol 8, Issue 1, PP 23-40.

Saleh, M., (2001) "Accounting Information Disclosure and Accountability: cases from Libya", unpublished PhD thesis. Sheffield Hallam University.

Sapar, S., and Lukose, J., (2003) "An Empirical Study on the Determinants of the Capital structure of Listed Indian Firms", Working paper, Shailesh J Mehta School of Management, Indian Institute of Technology Bombay.

Scapens, R. (1984) Management accounting – A survey paper, Chap. 2, In Scapens, R., Otley, D. and Lister, R., *Management Accounting Orgaizational Theory and Capital Budgeting*, London: Macmillan Press, PP 15-95.

Scapens, R. (1991) *Management Accounting: A Review of Recent Developments*, 2nd ed., London: Macmillan Press.

Scherr, F., Sugrue, T., and Ward, J., (1993) "Financing the small start-up: determinants for debt use. *The Journal of Small Business Finance*, Vol 3, pp 17-36.

Scott, C., (1961) "Research on Mail Surveys", *Journal of the Royal Statistical Society Series A*, Vol 124, issue 2, pp 143-191.

Sharma, S., (1996) *Applies Multivariate Techniques*, John Wiley & Sons, USA.

Sharpe, S., and Nguyen, H., (1995) "Capital market imperfection and the incentive to lease", *Journal of Financial Economics*, Vol 39, Issue 2-3, pp 271-294.

Shyman-Sunder, L., and Myers, S., (1999) "Testing static trade-off against pecking order models of capital structure", *Journal of Financial Economics*, Vol 51, issue 2, pp219-244.

Singh, A., Hamid, J., and Salimi, B., (1992) "Corporate financial structure in developing countries", *International Finance Technical Paper No 1*, Washington, D.C, International Finance Corporation. In Xie, E., (2000) "Essays on corporate capital investments", unpublished PhD thesis. University of Pittsburgh.

Stevens, J., (1992) *Applied Multivariate Statistics for the Social Sciences*, Lawrence Erlbaum Associates, New Jersey.

Stulz, R., (1990) "Managerial discretion and optimal financing policies", *Journal of Financial Economics*, Vol 26, issue 1, pp 3-27.

Sudman, S., and Bradburn, N., (1983) *Asking Questions: A Practical Guide to Questionnaire Design*, Jossey-Bass, London.

Sun, Q., Tong, W., and Tong, J., (2002) "How Does Government Ownership Affect Firm Performance? Evidence from China's Privatization Experience", *Journal of Business Finance & Accounting*, Vol 29, Issue 1&2, pp 1-27.

Sutherland, J., and Canwell, D., (2004) *Key Concepts in Accounting and Finance*, Palgrave Macmillan, New York.

Tabachnick, B., and Fidell, L., (1989) *Using Multivariate Statistics*, Harper & Row, New York.

The Act No. 5 of 1997 of Foreign Capitals Investment Encouragement.

The Act No. 9 of 1992 of Economic activities.

The Libyan Income Tax Law No. 64 of 1973.

The Secretary of Planning (1998) Economical and Social Development Achievements in 28 years, Tripoli, Libya.

Titman, S. and Wessels, R. (1988) "The determinants of capital Structure Choice", *Journal of Finance*, Vol 43, issue 1, pp 1-19.

Um, T., (2001) Determination of Capital Structure and Prediction of Bankruptcy in Korea, unpublished PhD thesis. Cornell University.

Westhead, P., (1990) "A Typology of New Manufacturing Firm Founders in Wales: Performance Measures and public Policy Implications", *Journal of Business Venturing,* Vol 5, Issue 2, pp 103-122.

Weston, F., (1989), "What MM Have Wrought", *Financial Management.* Vol 18, issue 2, pp 29-38.

Weston, F., and Brigham, E., (1979) *Managerial Finance*, Hold Rinehart& Winston, London.

White, H., (1980) "A Heteroskedasticity-Consistent Covariance Matrix Estimator and a direct Test for Heteroskedasticity", *Econometrica*, Vol 48, issue 4, pp 817-838.

Wiwattanakantang, Y., (1999) "An empirical study on the determinants of the capital structure of Thai firms", *Pacific-Basin Finance Journal*, Vol 7, issue 3&4, pp 371-403.

Xie, E., (2000) "Essays on corporate capital investments", unpublished PhD thesis. University of Pittsburgh.

Appendices

Appendix (3-1): Gross Domestic Product by kind of Economy Activity, 1969-2000.

(Figures in Million Dinners)

Year	Oil and Natural Gas Activity		Total Non-oil and Natural Gas Activities		Gross Domestic Product
	Amount	%	Amount	%	
1969	754.7	61.7	468.3	38.3	1223
1970	812.6	63.1	475.7	36.9	1288.3
1971	922.7	58.2	663.8	41.8	1586.5
1972	920.6	52.5	832.4	47.5	1753
1973	1131	51.9	1050.5	48.1	2182.5
1974	2385.3	62.9	1410.4	37.1	3795.7
1975	1961.1	53.4	1713.2	46.6	3674.3
1976	2750	57.7	2018.1	42.3	4768.1
1977	3275.9	58.4	2336.8	41.6	5612.7
1978	2808.7	51.1	2687.4	48.9	5496.1
1979	4545.3	59.8	3057.7	40.2	7603
1980	6525.7	61.8	4028.1	38.2	10553.8
1981	4403.3	50	4395.5	50	8798.8
1982	4235.8	47.4	4696.6	52.6	8932.4
1983	3823.6	44.9	4688.1	55.1	8511.7
1984	3209.8	41.1	4594.9	58.9	7807.7
1985	3500.4	44.6	4351.7	55.4	7852.1
1986	2595.8	37.3	4364.9	62.7	6960.7
1987	1875.4	31.2	4136.2	68.8	6011.6
1988	1570	25.4	4616	74.6	6186
1989	2055.5	28.6	5135.5	71.4	7191
1990	3243.8	39.3	5003.1	60.7	8246.9
1991	3104.3	35.4	5653	64.6	8757.3
1992	2925.7	31.7	6306.2	68.3	9231.9
1993	2460.1	26.9	6677.6	73.1	9137.7
1994	2892.9	29.9	6777.9	70.1	9670.8
1995	3380	31.7	7292.3	68.3	10672.3
1996	3960.3	32.1	8367	67.9	12372.3
1997	4505.8	32.6	9294.7	67.4	13800.5
1998	2786	22.1	9824.6	77.9	12610.6
1999	3995.9	28.4	10079.3	71.6	14075.2
2000	6661	37.8	10959.2	62.2	17620.2

Source: General Planning Board, Economics and Social Indicators, 1962-2000.

Appendix (3-2): Growth Rate of Gross Domestic Product by kind of Economy Activity, 1969-2000.
(Figures in Million Dinners)

Year	Growth rate of GDP from Oil and Natural Gas Activity %	Growth rate of GDP from total Non-oil and Natural Gas Activities %	Growth rate of Gross Domestic Product %
1969	16.4	10.4	14.00
1970	N/A	N/A	N/A
1971	13.5	39.5	23.1
1972	-0.2	25.4	10.5
1973	22.9	26.2	24.5
1974	110.8	34.3	73.9
1975	-17.8	21.5	-3.2
1976	40.2	17.8	29.8
1977	19.1	15.8	17.7
1978	-14.3	15	-2.1
1979	61.8	13.8	38.3
1980	43.6	31.7	38.8
1981	-32.5	9.1	-16.6
1982	-3.8	6.9	1.5
1983	-9.7	-0.2	-4.7
1984	-16.1	-2.00	-8.3
1985	-9.1	-5.3	0.6
1986	-25.8	0.3	-11.4
1987	-27.8	-5.2	-13.6
1988	-16.3	11.6	2.9
1989	30.9	11.3	16.2
1990	57.8	-2.6	14.7
1991	-4.3	13.00	6.2
1992	-5.8	11.6	5.4
1993	-15.9	5.9	-1.00
1994	17.6	1.5	5.8
1995	16.8	7.6	10.4
1996	17.2	14.7	15.5
1997	13.8	11.1	12.00
1998	-38.2	5.7	-8.6
1999	43.4	2.6	11.6
2000	66.7	8.7	25.2

Source: General Planning Board, Economics and Social Indicators, 1962-2000.
N/A: Not Available

Appendix (6-1): The English version of the questionnaire

Dear Participant

The researcher is a lecturer in the Accounting Department at the University of Garyounis-Libya, and is currently undertaking an investigation into Libyan companies' financing behaviour. He would be very grateful to you if you could spare a few minutes to complete the attached questionnaire. In return he will be happy to provide you with a summary of the survey findings.

This questionnaire survey is an important part of the research that the researcher is undertaking for the degree of Doctor of Philosophy under the supervision of Dr Kenbata Bangassa and Dr Lynn Hodgkinson, at the University of Liverpool, UK.

The information you disclose will be treated with strict confidentiality.

Thanking you in anticipation.

Yours sincerely,

Fakher Buferna

Notice:
If you would like a summary of the results of this study, please complete the slip below. However, if you prefer to remain anonymous please return the slip under separate cover. This study is being conducted in strict confidence.

Name: _____
Company: _____
Address: _____
Telephone Number: _____
Please return the slip to: _____

THE UNIVERSITY
of LIVERPOOL

Survey on capital Structure
By: Fakher Buferna

" If you do not have enough space, please feel free to write anywhere in the questionnaire"

1. What source(s) of finance does your firm use?

Please rate on a scale from 1 to 4 where: 1=Not Used & 4= Used to a very large extent

Not used / Used to a very large extent					Not used / Used to a very large extent				
1	2	3	4		1	2	3	4	
☐	☐	☐	☐	a) Trade credit (suppliers)	☐	☐	☐	☐	b) Bank loans
☐	☐	☐	☐	c) Bank overdraft	☐	☐	☐	☐	d) External equity
☐	☐	☐	☐	e) Government subsidies	☐	☐	☐	☐	f) Retained earning
☐	☐	☐	☐	g) Foreign sources	☐	☐	☐	☐	h) Affiliated companies
☐	☐	☐	☐	i) Other: ----------					

2. Does the firm have any preference between short term and long-term debt?

☐ Prefer short-term finance (i.e. less than 1 year, e.g., bank overdraft)

☐ Prefer long-term finance (i.e. more than 1 year, e.g., bank loans)

☐ Prefer to have a mix of short and long-term finance

☐ No Preference

3. If there is preference between short and long-term debt, what factors affect your firm's preference?

Please rate on a scale from 1 to 4 where: 1=Not Important & 4= Very Important

Not Important / Very Important				
1	2	3	4	
☐	☐	☐	☐	a) Matching the maturity of our debt with the life of our assets
☐	☐	☐	☐	b) We borrow short-term debt so that returns from new projects can be captured more fully by shareholders
☐	☐	☐	☐	c) We borrow long-term debt to minimise the risk of having to refinance in "bad time"
☐	☐	☐	☐	d) Other: ----------

4. Does the firm have an overdraft facility? ☐ Yes ☐ No

- *If yes, what percentage of this facility do you use on average?*

☐ Less than 25% ☐ 25-50% ☐ 51-75% ☐ More than 75%

5. Does the firm have a preferred leverage ratio (debt to total assets) that you attempt to achieve?

☐ Yes ☐ No

If yes, what is your preferred leverage ratio?

☐ Less than 25% ☐ 25-50% ☐ 51-75% ☐ More than 75%

6. Does your company pay dividends?

☐ Yes, it pays cash as dividends

☐ Yes, it pays shares as dividends

☐ No, it does not pay any dividends

7. Do you currently face any problem in obtaining an adequate level of external finance? ☐ **Yes** ☐ **No**

- *If yes, what are the problem(s)?*

Please rate on a scale from 1 to 4 where: 1=Strongly Disagree & 4= Strongly Agree

Strongly Disagree 1	2	3	Strongly Agree 4		Strongly Disagree 1	2	3	Strongly Agree 4	
☐	☐	☐	☐	a) Lack of collateral (security)	☐	☐	☐	☐	b) Deterioration in the state of the economy
☐	☐	☐	☐	c) Absence of stock market	☐	☐	☐	☐	d) The suppliers of finance are in small and/or undeveloped sector
☐	☐	☐	☐	e) Poor relationships with banks	☐	☐	☐	☐	f) Lack of good trading record
☐	☐	☐	☐	g) Inability in convincing lenders of the profitability of the investments	☐	☐	☐	☐	h) Inability in getting enough debt
☐	☐	☐	☐	i) Other: ----------					

8. Do you have any problem with your lenders regarding loans or overdraft facilities?

☐ **Yes** ☐ **No**

- *If yes, what are the problems (s)?*

Please rate on a scale from 1 to 4, where 1= Not a reason & 4= Major reason

Not a reason 1	2	3	Major reason 4		Not a reason 1	2	3	Major reason 4	
☐	☐	☐	☐	a) Loan application rejected	☐	☐	☐	☐	b) Approached by another lender
☐	☐	☐	☐	c) Charges too high	☐	☐	☐	☐	d) Relationship difficulties
☐	☐	☐	☐	e) Red tape (Bureaucracy)	☐	☐	☐	☐	f) Interest rate too high
☐	☐	☐	☐	g) Bank mistakes					
☐	☐	☐	☐	i) Other: ----------					

9. To what extent does each of the following affect the amount of debt for your firm?

Please rate on a scale from 1 to 4, where 1= Not a reason & 4= Major reason

Not a reason 1	2	3	Major reason 4	
☐	☐	☐	☐	a) The potential costs of bankruptcy, or financial distress
☐	☐	☐	☐	b) Growth opportunities
☐	☐	☐	☐	c) We limit debt so our customers/ suppliers are not worried about our firm going out of business
☐	☐	☐	☐	d) We limit our borrowing so that profits from new /future projects can be captured fully by shareholders and do not have to be paid out as interest to debtholders
☐	☐	☐	☐	e) The tax advantage of interest deductibility
☐	☐	☐	☐	f) If we use debt our competitors know that we are very unlikely to reduce our output
☐	☐	☐	☐	g) Using debt gives investors a better impression of our firm's prospects than issuing shares
☐	☐	☐	☐	h) We use debt when our recent profits (internal funds) are not sufficient to fund our activities
☐	☐	☐	☐	i) A high debt ratio helps us bargain for concessions from our employees
☐	☐	☐	☐	j) Interest rate
☐	☐	☐	☐	k) Other: ----------

10. To what extent do you think each of the following increase /decrease your leverage ratio?

Please rate on a scale from 1 to 4, where 1= Strongly Decreases & 5= Strongly Increase

Strongly Decrease 1	2	3	Strongly Increase 4		Strongly Decrease 1	2	3	Strongly Increase 4	
☐	☐	☐	☐	a) Increase in Profitability	☐	☐	☐	☐	b) Increase in Growth rate
☐	☐	☐	☐	c) Increase in the Size of firm	☐	☐	☐	☐	d) Increase in the value of fixed assets

11- What factors affect your firm' decisions about issuing shares?

Please rate on a scale from 1 to 4, where 1= strongly Disagree& 4= Strongly Agree

Strongly Disagree 1	2	3	Strongly Agree 4	
☐	☐	☐	☐	a) Whether our recent profits have been sufficient to fund our activities
☐	☐	☐	☐	b) Providing shares as dividends
☐	☐	☐	☐	c) Shares are our cheapest source of funds
☐	☐	☐	☐	d) Maintaining a target debt-to-equity ratio
☐	☐	☐	☐	e) Diluting the holding of certain shareholders
☐	☐	☐	☐	f) Fulfil some legal requirements regarding the capital
☐	☐	☐	☐	g) Shares are our "least risky " source of funds
☐	☐	☐	☐	h) Issuing shares give investors a better impression of our firm's prospects than using debt
☐	☐	☐	☐	i) Inability to obtain funds using other sources of finance
☐	☐	☐	☐	j) Earning per share dilution
☐	☐	☐	☐	k) Other: ----------

12. To what extent do you agree or disagree with the following statements?

Please rate on a scale from 1 to 4, where 1= Strongly Disagree & 4= Strongly Agree

Strongly Disagree 1	2	3	Strongly Agree 4	
☐	☐	☐	☐	a) We feel that lenders tend to underestimate the future prospects of our firm
☐	☐	☐	☐	b) This problem (underestimating the future prospects of the firm) remains after our firm provided confidential information to the lenders
☐	☐	☐	☐	c) We will not provide extra information at all in an attempt to alleviate the lender's underestimation of the future prospect of our firm
☐	☐	☐	☐	d) If retained earnings are used to finance new investments, this is because we find it hard to convince lenders of the profitability of the new investment

13. Rank the following sources of funds in order of preference for financing new investments?

Please rate on a scale from 1 to 8, where 1= the first choice, 8 =the last choice.

☐ Banks	☐ Retained earnings	☐ Suppliers	☐ Foreign sources
☐ Government	☐ Private sources	☐ Affiliated firms	☐ Other: ----------

14. Rank the following types of funds in order of preference for financing new investments?

Please rate on a scale from 1 to 7, where 1= the first choice, 7=the last choice.

☐ Short-term bank loans	☐ Long-term bank loans
☐ Trade credit from suppliers	☐ New Shares
☐ Retained earnings	☐ Bank overdraft

☐ Other----------

15. To what extent do you agree or disagree with the following statements?

Please rate on a scale from 1 to 4, where 1= Strongly Disagree & 4= Strongly Agree

Strongly Disagree 1	2	3	Strongly Agree 4	
☐	☐	☐	☐	a) Does your company encourage you to take business risks when there is another option?
☐	☐	☐	☐	b) Does your company encourage you to take risks so long as the potential gains are high?
☐	☐	☐	☐	c) Does your company usually hesitate in putting itself in uncertain situations even if the expected returns are high?
☐	☐	☐	☐	d) Does your company encourage you to borrowing money for a business deal so long as it should be profitable?

16. How important are the following strategic goals for the future of the firm?

Please rate on a scale from 1 to 4, where 1= Strongly Disagree & 4= Strongly Agree

Not Important			Very Important	
1	2	3	4	
☐	☐	☐	☐	a) Increase profitability
☐	☐	☐	☐	b) Expand the firm
☐	☐	☐	☐	c) Repay borrowing
☐	☐	☐	☐	d) Providing job opportunities
☐	☐	☐	☐	e) Providing domestic market with goods and services
☐	☐	☐	☐	f) Maintain control
☐	☐	☐	☐	g) Other: ----------

17. Please fill in one square from each category that provides the best description.

a) Age of respondent (in years)

☐ Less than 35 ☐ 35-45 ☐ 46-55 ☐ Over than 55

b) Highest qualification of respondent

☐ School level ☐ Undergraduate ☐ Master ☐ PhD ☐ Others: ----------

c) Experience of respondent in this company or similar post (in years)

☐ Less than 5 ☐ 5-10 ☐ Over than 10

d) Position in the company

☐ Chief Executive Officer ☐ Chief Finance Officer ☐ Other management position---------

e) Industry

☐ Trade ☐ Communication &Transport ☐ Energy& Oil and Gas

☐ Manufacturing &Mining ☐ Financial ☐ Construction

☐ Agriculture ☐ Service ☐ Media

☐ Others (please specify) ----------

f) Age of Company (in years)

☐ 〈5 ☐ 5-10 ☐ 11-20 ☐ 〉20

g) Total assets (Millions LD)

☐ 〈1 ☐ 1-10 ☐ 11-20 ☐ 21-30 ☐ 31-40 ☐ 〉40

h) Ownership

☐ Public ☐ Private

Thank you very much for your participation

Appendix (7-1): High and Low Asymmetric Information Groups

Panel A. High and low asymmetric information groups according to survey response to the question: This problem (underestimating the future prospects of the firm) remains after our firm provided confidential information to the lenders.

Rank	All %	Sector		Industry		Size	
		%Public	%Private	%Manu	%Others	%Small	%Large
High asymmetric information group	59.7	56.4	63.6	60.9	59.2	72.2	55.6
Low asymmetric information group	40.3	43.6	36.4	39.1	40.8	27.8	44.4

Panel B. High and low asymmetric information groups according to survey response to the question: We will not provide extra information at all in an attempt to alleviate the lender's underestimation of the future prospect of our firm.

Rank	All %	Sector		Industry		Size	
		%Public	%Private	%Manu	%Others	%Small	%Large
High asymmetric information group	73.6	76.9	69.7	73.9	73.5	66.7	75.9
Low asymmetric information group	26.4	23.1	30.3	26.1	26.5	33.3	24.1

Panel C. High and low asymmetric information groups according to survey response to the question: If retained earnings are used to finance new investments, this is because we find it hard to convince lenders of the profitability of the new investment.

Rank	All %	Sector		Industry		Size	
		%Public	%Private	%Manu	%Others	%Small	%Large
High asymmetric information group	65.3	64.1	66.7	65.2	65.3	72.2	63
Low asymmetric information group	34.7	35.9	33.3	34.8	34.7	27.8	37

Manu denotes manufacturing companies, and others denotes to non-manufacturing companies. Small companies are defined as those companies, which have less than one million Libyan Dinners of assets.

Appendix (7-2): Correlation Matrix

	Increase profitability	Expand the firm	Repay borrowing	Providing job opportunities	Providing domestic market with goods and services	Maintaining control
Increase profitability	1.000					
Expand the firm	.056	1.000				
Repay borrowing	-.141	.182	1.000			
Providing job opportunities	.343	-.044	.194	1.000		
Providing domestic market with goods and services	-.002	-.059	.138	-.046	1.000	
Maintaining control	-.063	.461	-.218	-.232	.355	1.000